





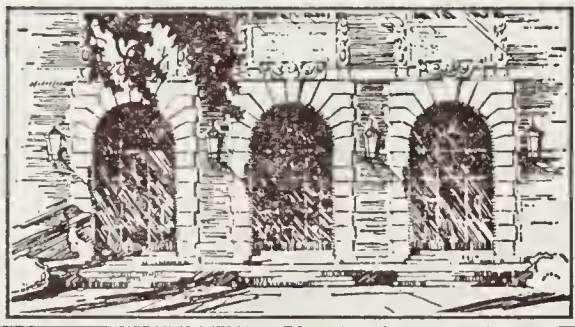
LIBRARY OF THE  
UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN

610.5

AM

v.51<sup>1</sup>

c.6



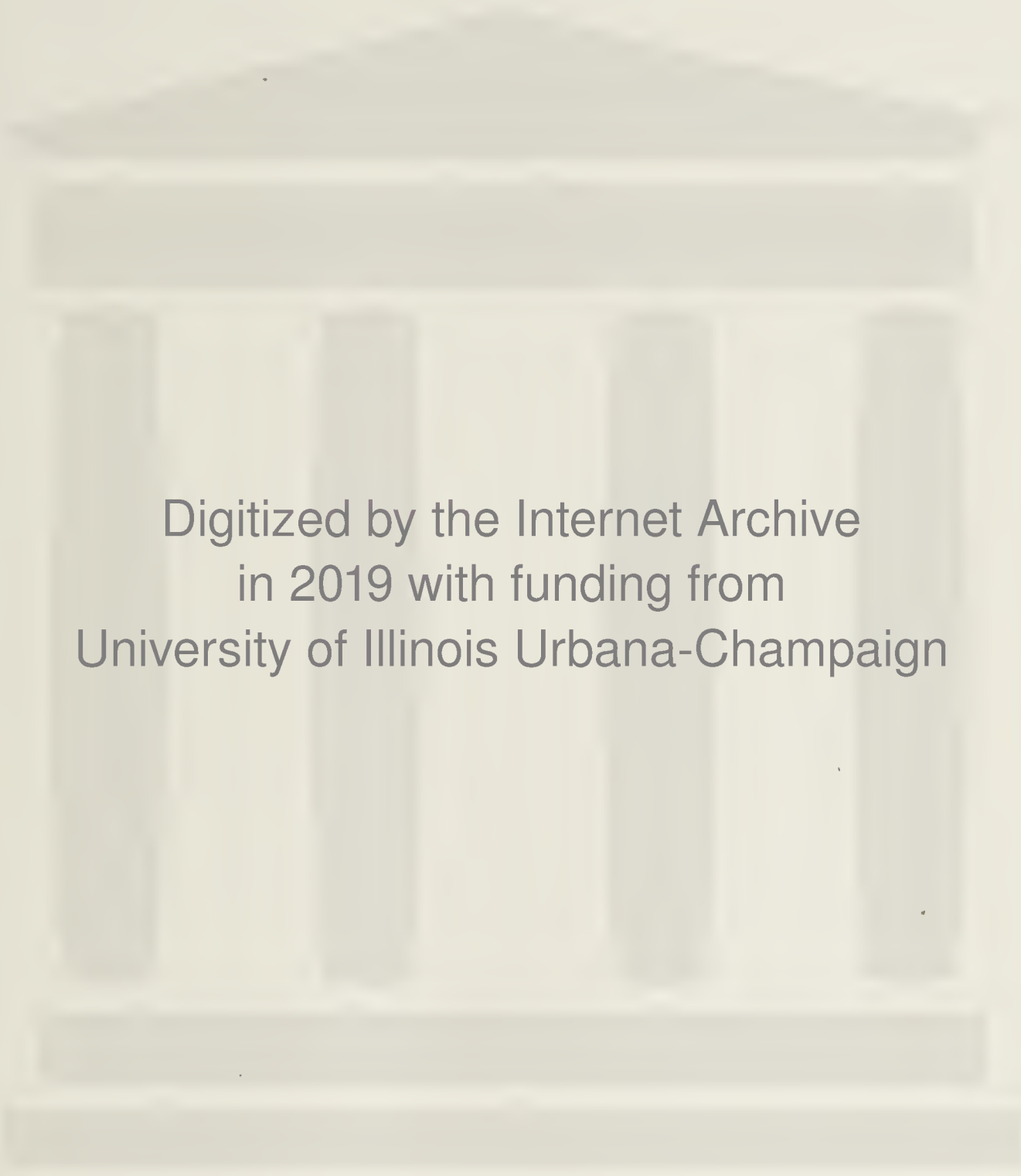












Digitized by the Internet Archive  
in 2019 with funding from  
University of Illinois Urbana-Champaign

<https://archive.org/details/journalofamerica5111unse>







# The Journal

OF THE

# American Medical Association

---

A MEDICAL JOURNAL CONTAINING

THE OFFICIAL RECORD OF THE PROCEEDINGS OF THE ASSOCIATION, AND THE PAPERS READ AT  
THE ANNUAL SESSION, IN THE SEVERAL SECTIONS, TOGETHER WITH THE

MEDICAL LITERATURE OF THE PERIOD

EDITED FOR THE ASSOCIATION UNDER THE DIRECTION OF THE BOARD OF TRUSTEES BY  
GEORGE H. SIMMONS, M.D.

---

VOLUME LL : : : : : JULY—DECEMBER, 1908

AMERICAN MEDICAL ASSOCIATION, CHICAGO, 1908



# OFFICERS OF THE AMERICAN MEDICAL ASSOCIATION—1908-1909.

## GENERAL OFFICERS

PRESIDENT—HERBERT L. BURRELL	- - - - -	Boston.
PRESIDENT-ELECT—WILLIAM C. GORGAS	- - - - -	Ancon, Panama.
FIRST VICE-PRESIDENT—T. J. MURRAY	- - - - -	Butte, Mont.
SECOND VICE-PRESIDENT—J. A. HATCHETT	- - - - -	El Reno, Okla.
THIRD VICE-PRESIDENT—T. A. WOODRUFF	- - - - -	Chicago.
FOURTH VICE-PRESIDENT—E. N. HALL	- - - - -	Woodburn, Ky.
GENERAL SECRETARY—GEORGE H. SIMMONS	- - - - -	103 Dearborn Avenue, Chicago.
TREASURER—FRANK BILLINGS	- - - - -	Chicago.

## BOARD OF TRUSTEES.

William H. Welch, Chairman	- - - - -	Baltimore, 1909.
Miles F. Porter	- - - - -	Fort Wayne, Ind., 1909.
M. L. Harris, Secretary	- - - - -	Chicago, 1909.
T. J. Happel	- - - - -	Trenton, Tenn., 1910.
W. W. Grant, Vice-Chairman	- - - - -	Denver, 1910.
Philip Marvel	- - - - -	Atlantic City, 1910.
Wisner R. Townsend	- - - - -	New York, 1911.
Philip Mills Jones	- - - - -	San Francisco, 1911.
W. T. Sarles	- - - - -	Sparta, Wis., 1911.

## JUDICIAL COUNCIL.

C. E. Cantrell, Chairman	- - - - -	Greenville, Texas.
R. C. Cabot	- - - - -	Boston.
G. W. Guthrie	- - - - -	Wilkes-Barre, Pa.
Thomas McDavitt	- - - - -	St. Paul, Minn.
Charles J. Kipp	- - - - -	Newark, N. J.

## COUNCIL ON MEDICAL EDUCATION.

Arthur Mayo Bevan, Chairman	- - - - -	Chicago.
W. T. Councilman	- - - - -	Boston.
Victor C. Vaughan	- - - - -	Ann Arbor, Mich.
J. A. Witherspoon	- - - - -	Nashville, Tenn.
James W. Holland	- - - - -	Philadelphia.

## COUNCIL ON PHARMACY AND CHEMISTRY.

J. A. Capps	- - - - -	Chicago.
D. L. Edsall	- - - - -	Philadelphia.
Otto Folin	- - - - -	Boston.
C. S. N. Hallberg	- - - - -	Chicago.
R. A. Hatcher	- - - - -	New York City.
Reid Hunt	- - - - -	Washington, D. C.
L. F. Kebler	- - - - -	Washington, D. C.
J. H. Long	- - - - -	Chicago.
F. G. Novy	- - - - -	Ann Arbor, Mich.
W. A. Puckner, Secretary	- - - - -	Chicago.
J. O. Schlotterbeck	- - - - -	Ann Arbor, Mich.
George H. Simmons, Chairman	- - - - -	Chicago.
Torald Sollmann	- - - - -	Cleveland.
Julius Stieglitz	- - - - -	Chicago.
M. I. Wilbert	- - - - -	Philadelphia.
H. W. Wiley	- - - - -	Washington, D. C.

## BUREAU OF MEDICAL EDUCATION.

Charles A. L. Reed, Chairman	- - - - -	Cincinnati.
C. S. Bacon	- - - - -	Chicago.
Charles Harrington	- - - - -	Boston.

## SECTION OFFICERS

PRACTICE OF MEDICINE—Chairman, Joseph L. Miller, 100 State St., Chicago; Secretary, Wilder Tileston, 311 Beacon St., Boston. Executive Committee—Herbert C. Moffitt, San Francisco; Thomas D. Coleman, Atlanta, Ga.; C. F. Hoover, Cleveland.

OBSTETRICS AND DISEASES OF WOMEN—Chairman, W. P. Manton, 32 Adams Ave., W., Detroit; Vice-Chairman, H. G. Wetherill, Denver; Secretary, C. Jeff Miller, 124 Baronne St., New Orleans. Executive Committee—C. S. Bacon, Chicago; J. Wesley Bovée, Washington, D. C.; W. B. Dorsett, St. Louis.

SURGERY AND ANATOMY—Chairman, John C. Munro, 173 Beacon St., Boston; Vice-Chairman, J. E. Summers, Omaha; Secretary, John F. Binnie, Argyle Building, Kansas City, Mo. Executive Committee—Robert F. Weir, New York City; Arthur D. Bevan, Chicago; Rudolph Matas, New Orleans.

HYGIENE AND SANITARY SCIENCE—Chairman, Joseph H. White, P. H. and M.-H. Service, 609 Canal-Louisiana Bldg., New Orleans; Vice-Chairman, J. N. Hurty, Indianapolis; Secretary, S. T. Armstrong, 144 East 37th St., New York City. Executive Committee—Denslow Lewis, Chicago; Prince A. Morrow, New York City; William C. Gorgas, Ancon, Panama.

OPHTHALMOLOGY—Chairman, Alvin A. Hubbell, 212 Franklin St., Buffalo; Vice-Chairman, Melville Black, Denver; Secretary, Albert E. Bulson, Jr., Fort Wayne, Ind. Executive Committee—Lewis H. Taylor, Wilkes-Barre, Pa.; G. C. Savage, Nashville, Tenn.; Wm. H. Wilder, Chicago.

DISEASES OF CHILDREN—Chairman, Thomas S. Southworth, 807 Madison Ave., New York City; Vice-Chairman, C. F. Wahrer, Fort Madison, Iowa; Secretary, W. W. Butterworth, 609 Macheca Building, New Orleans. Executive Committee—W. C. Hollopeter, Philadelphia; J. Ross Snyder, Birmingham, Ala.; E. E. Graham, Philadelphia.

STOMATOLOGY—Chairman, Edward C. Briggs, 129 Marlboro St., Boston; Vice-Chairman, Thomas L. Gilmer, Chicago; Secretary, Eugene S. Talbot, 103 State St., Chicago. Executive Committee—H. P. Carlton, San Francisco; M. I. Schamberg, New York City; E. A. Bogue, New York City.

NERVOUS AND MENTAL DISEASES—Chairman, M. Allen Starr, 5 West 54th St., New York City; Secretary, Wm. Alexander Jones, Pillsbury Bldg., Minneapolis. Executive Committee—Wharton Sinkler, Philadelphia; Morton Prince, Boston; T. H. Weisenburg, Philadelphia.

CUTANEOUS MEDICINE AND SURGERY—Chairman, Wm. Allen Pusey, 72 E. Madison St., Chicago; Vice-Chairman, Grover W. Wende, Buffalo; Secretary, M. L. Heidingsfeld, 19 West 7th St., Cincinnati. Executive Committee—Douglas W. Montgomery, San Francisco; R. R. Campbell, Chicago; M. B. Hartzell, Philadelphia.

LARYNGOLOGY AND OTOTOLOGY—Chairman, W. Sohler Bryant, 57 West 53d St., New York City; Vice-Chairman, B. R. Shurly, Detroit; Secretary, Geo. E. Shambaugh, 100 State St., Chicago. Executive Committee—Otto T. Freer, Chicago; S. MacCuen Smith, Philadelphia; H. W. Loeb, St. Louis.

PHARMACOLOGY AND THERAPEUTICS—Chairman, Reid Hunt, 25th and E Sts., N.-W., Washington, D. C.; Vice-Chairman, W. W. Tompkins, Charleston, W. Va.; Secretary, C. S. N. Hallberg, 36 Twelfth St., Chicago. Executive Committee—Thomas F. Reilly, New York City; H. C. Wood, Jr., Philadelphia; M. H. Fussell, Philadelphia.

PATHOLOGY AND PHYSIOLOGY—Chairman, M. J. Rosenau, 25th and E Sts., N.-W., Washington, D. C.; Secretary, H. Gideon Wells, 6025 Kimbark Ave., Chicago. Executive Committee—Henry A. Christian, Boston; Walter L. Bierring, Iowa City, Iowa; W. B. Cannon, Boston.

*"The American Medical Association, though formally accepting and publishing the reports of the various Standing Committees (and Sections), holds itself wholly irresponsible for the opinions or criticisms therein contained, except when otherwise decided by special resolution."*—TRANSACTIONS, 1851.



610.5  
AM  
V. 51  
no 1-13  
cop. 6

# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOLUME II.

CHICAGO, ILLINOIS, JULY 4, 1908.

NUMBER 1.

## Addresses

### NEUROLOGIC TEACHING IN AMERICA.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON NERVOUS  
AND MENTAL DISEASES, CHICAGO, 1908.

T. H. WEISENBURG, M.D.

Professor of Neuropathology and Associate Professor of Neurology,  
Medico-Chirurgical College, Neurologist to the Philadelphia  
General Hospital.  
PHILADELPHIA.

#### HISTORICAL.

A more brilliant exponent of the teaching of neurology and psychiatry than Benjamin Rush, who in the latter part of the eighteenth century first inaugurated such instruction in this country, would have been difficult to select. In a lecture on "The Necessary Connexion Between Observation and Reasoning in Medicine," delivered Nov. 7, 1791, before the medical students of the University of Pennsylvania, Dr. Rush outlined a course of lectures which he was about to give. He divided the institutes of medicine into physiology, pathology and therapeutics. Under physiology he stated: "I shall include the faculties of the mind in this part of our course and shall endeavor to explain their operation in a manner so simple as to make them intelligible to the youngest student of medicine."

A syllabus of these lectures, with the additions which became necessary after the author undertook to teach the practice of medicine, was subjoined to this lecture.

Under the head of physiology, among other divisions, he has that of the nervous system in which are included the offices of the brain, nerves and muscles, and under faculties and operations of the mind he takes up its subdivisions, such as instinct, memory, imagination, understanding, will, passions, emotions, faith, etc.

Under practice of medicine he discusses "the diseases as they appear in the blood vessels and nervous system, in the latter of which are included the nerves, muscles, brain and mind, and the alimentary canal predominating in each of them more or less according to circumstances."

It will be seen from the above that Rush was in the habit of discussing at length in his medical lectures the nature and phenomena of diseases of the mind and of the nervous system. Doubtless his work on "Diseases of the Mind," which was first published only a few months before his death, was the ripe fruit not only of years of study and observation, but also of teaching. This treatise was the fifth volume of his principal works in seven volumes, which is entitled "Medical Inquiries and Observations on Diseases of the Mind," and appeared first in 1812, passing through several editions.

It would hardly seem necessary at this time to emphasize again the important place in the history of

medicine occupied by Benjamin Rush were it not for the fact that, so far as I know, after his death in 1813 and until 1870, a period of fifty-seven years, no systematic teaching in psychiatry was attempted in any medical school in this country. Not only that, but his work on psychiatry was the only systematic American treatise on this subject until the year 1883, when William A. Hammond and C. E. Spitzka and later E. C. Mann published text-books on insanity.

#### FIRST LECTURESHIP ON NERVOUS DISEASES.

Doubtless diseases of the nervous system as distinctive from diseases of the mind were taught from the time of Benjamin Rush under the head of practice of medicine. It was not, however, until 1867 that the first distinctive lectureship on diseases of the nervous system was established in the Bellevue Medical College in New York City. In that year Dr. William A. Hammond first taught this subject. This distinguished physician after having been Surgeon-General in the United States Army went to New York and soon after his arrival became interested in editorial work, and for five years, beginning with 1867, he edited the *Quarterly Journal of Psychological and Medical Jurisprudence*. Later he also edited the *New York Medical Journal* and the *Journal of Nervous and Mental Disease*. He was appointed professor of nervous and mental diseases in the Bellevue Hospital Medical College in 1867, this probably being the first professorship in nervous diseases held in this country. He taught there for six years and in the University Medical College for nine years more. In 1871 the first edition of his book on nervous diseases appeared. Although it was a complete treatise, it was published as a second volume to "A Treatise on the Physiology and Pathology of the Nervous System," the fourth volume of Dr. Austin Flint's "System of Physiology" forming Volume I. The first edition was soon exhausted, and a second was put out without reference to the volume on physiology. This was the first distinctive book on diseases of the nervous system by any American writer and found such favor that it was translated into most of the foreign languages.

A year later a lectureship on diseases of the nervous system was established in the College of Physicians and Surgeons, New York City, now the medical department of the Columbia University. The first lectures were given by Dr. E. C. Seguin during the summer session of 1868, and the first clinic for diseases of the nervous system was announced in 1874 and was given by Dr. Seguin. This was the beginning of clinical teaching in New York City. He was succeeded by Dr. M. Allen Starr, who still holds the position.

About this time, that is, in 1864, Dr. J. Hughlings Jackson made his memorable suggestions that movements of the various parts of the body are controlled by special convolutions, and in 1868 he first applied the



principles of evolution and dissolution to the study of language. It was undoubtedly through the enthusiasm created by the work of this master, combined with the researches of Hitzig, Fritsch, Ferrier and later of Charcot, that diseases of the nervous system gained an additional and renewed importance, and from this time began a new era in neurology.

#### THE FIRST NEUROLOGIC PAPERS.

In America the first neurologic papers appeared between 1864 and 1874 when Dr. S. Weir Mitchell, of Philadelphia, published a number of important contributions to neurology, the first being his celebrated work on "Injuries of Nerves," in collaboration with Morehouse and Keen; while in 1874 Dr. J. J. Putnam, of Boston, with the assistance of Drs. Bowditch and James, experimented with faradic currents on the cortex and subcortex.

Following the lead of the Bellevue Medical College and the College of Physicians and Surgeons of New York, other medical schools soon fell in line. In 1871 Dr. H. C. Wood was appointed lecturer on nervous diseases in the University of Pennsylvania and in 1873 he was made clinical professor.

In the West, Dr. J. S. Jewell was appointed in 1872 professor of nervous and mental diseases in the Chicago Medical School, now the Medical Department of Northwestern University. Dr. Jewell took a leading part in organizing the American Neurological Association, and was not only its first president, but occupied that honored position for five years. As a matter of history it is interesting to record that Dr. S. Weir Mitchell was elected the first president and Dr. Jewell the first vice-president, but for personal reasons Dr. Mitchell declined to serve and Dr. Jewell became the first president. Dr. Jewell also in 1875 founded the *Journal of Nervous and Mental Disease*.

In Boston, Dr. J. J. Putnam was first made lecturer in neurology in 1872 at Harvard University, and after occupying various positions was made professor of diseases of the nervous system in 1893, when the department of neurology was made separate.

#### BEGINNING OF SYSTEMATIC INSTRUCTION.

Although from this time on professorships in neurology were established in nearly all the medical schools, it was not until within a few years that systematic teaching was attempted, for, curious as it may seem, although the general medical public, as a rule, recognizes the importance of neurology as a distinct branch, in some of the medical schools neurology is still regarded as part of the general course in medicine. In Harvard, for instance, it was made a separate department in 1893, while in the University of Pennsylvania it was not until shortly after 1901, when Dr. Charles K. Mills was made clinical professor of nervous diseases, that the department of neurology became separate from that of medicine, and this subject was for the first time taught entirely by its members. It was also at this time that systematic ward class teaching was first instituted.

The teaching of neurology was not confined exclusively to the medical schools, for in various nervous clinics and hospitals which were established in different parts of the country independent neurologic teaching was done. Among the best known of these, and probably the first neurologic clinic in this country, was the Orthopedic Hospital in Philadelphia, which was estab-

lished in October, 1867, the neurologic department of which, designated as the infirmary for nervous diseases, being opened in 1870 with Dr. S. Weir Mitchell in charge and Dr. Wharton Sinkler and others as assistants. The out-patient department in this clinic is enormous, and here such well-known men as Drs. S. Weir Mitchell, Wharton Sinkler, Morris J. Lewis, J. K. Mitchell and others taught and are still teaching. It was from this clinic that Dr. S. Weir Mitchell published his "Clinical Lessons."

#### ESTABLISHMENT OF NERVOUS WARDS.

No American neurologic history would be complete without some reference to the nervous wards of the Philadelphia Hospital, which were established in 1877 through the energy and far-sightedness of Dr. Charles K. Mills. These wards which had thirty-five patients in 1878 now have on an average about four hundred organic nervous cases, this being undoubtedly the best collection of nervous material in any one hospital in America and possibly the equal of any abroad. From 1877 patients from these wards have been used for clinical teaching, first by Dr. Mills and later by such men as Wood, Bartholow, Dercum, Lloyd, Sinkler, Burr and others.

Electro-therapeutics as a department of neurology began to be taught about the year 1875 by Neftell and Beard and Rockwell, of New York. Beard and Rockwell were the first to write a book on this subject, it being entitled "A Treatise on the Medical and Surgical Uses of Electricity," published in 1881. In Philadelphia Dr. Charles K. Mills was appointed lecturer on electro-therapeutics in the University of Pennsylvania in 1877.

Neuropathology as a distinctive branch and under that name was taught by Dr. E. W. Taylor, of Boston, in the spring of 1894 in Harvard University, although this subject was undoubtedly taught previously under the head of pathology. Dr. William G. Spiller was the second to teach neuropathology, he being appointed assistant professor of neuropathology in the University of Pennsylvania in 1901 and in 1903 full professor. Since then similar positions have been created in Harvard, the Medico-Chirurgical College of Philadelphia and elsewhere.

Before discussing the present methods of teaching neurology, it might be well to briefly review the history of the teaching of psychiatry. After Benjamin Rush there were no lecturers on insanity until 1867, when Dr. William A. Hammond taught in the Bellevue Hospital Medical College, and following him Dr. E. C. Seguin in the College of Physicians and Surgeons of New York in 1871.

In Philadelphia psychiatry was not taught until 1870, when Dr. Isaac Ray was appointed lecturer on insanity in the Jefferson Medical College of Philadelphia. He taught during the spring sessions of 1870-1872. During the time that he was engaged in lecturing and partly with the view of illustrating his remarks Dr. D. D. Richardson, then superintendent of the insane department of the Philadelphia Hospital, gave clinical demonstrations on insanity to students at the hospital. Not only was Dr. Ray one of the earliest physicians in the United States to follow the example of Rush and pay special attention to the study of psychiatry, but he was the first to write a book on the "Medical Jurisprudence of Insanity," it being published in Boston in 1838. After him Dr. Charles K.



Mills taught psychiatry in the University of Pennsylvania, being appointed lecturer on mental diseases 1881 and being later made professor of mental diseases and of medical jurisprudence in 1893. In Boston the first teaching was done by Dr. C. F. Folsom, who lectured on mental diseases in Harvard University in 1877.

In discussing the methods now employed in teaching neurology in the medical schools of America, it will be manifestly impossible to review all; consequently only four have been selected, these being the medical departments of Harvard, Cornell, Pennsylvania and Northwestern universities. Attention, however, has also been paid to the methods of other schools, chiefly of Columbia and Bellevue of New York, Jefferson and the Medico-Chirurgical in Philadelphia, Johns Hopkins, Baltimore, and Rush Medical College in Chicago, the courses in which do not differ radically from those in the four institutions selected for analysis.

#### METHODS AT HARVARD.

Perhaps the most elaborate course in both nervous and mental diseases is given in Harvard. Here the department of neurology has been separate since 1893, although psychiatry until last year formed a part of the department of theory and practice. Neuropathology became separate a year ago, but is in close affiliation with both the pathologic and neurologic departments. Neurologic teaching begins in the second year, with a course in neuropathology for a period of three weeks, occupying each afternoon. This time is given to a lecture, or talk, of an hour explanatory of microscopic sections and two hours is given to laboratory work. Lantern slides are freely used. In addition to these required exercises two or three quizzes are given of a wholly voluntary character in which anatomic considerations are reviewed. These lectures are preparatory not only for the study of neurology, but also in part for that of psychiatry, while the laboratory work aims, so far as possible, to fit the student to better appreciate clinical work and to complete his knowledge of pathology. An optional course is also given in applied psychology.

In the third year the student receives one clinical lecture a week in neurology during the first term and two during the second. These lectures are made as informal as possible and deserve rather the name of conferences. Besides, two exercises a week are given in psychiatry throughout the whole of the second term. One of these exercises consists in a lecture and the other in a clinical demonstration in an insane hospital.

The fourth year is given up largely to elective courses and the students who elect neurology and psychiatry spend nominally about two hundred hours in practical work in the out-patient department of the general hospitals. In detail the classes consist of about five men each and each class has two months' teaching, during which they spend three forenoons a week in neurology and two in psychiatry. As a part of this course the students receive some special instruction in neuropathology and also have a weekly evening conference. Besides, there is an elective course in the department of neuropathology. This consists either of all day teaching for a single month or half a day for two months. The method of instruction is elastic and varies with the desires and preparedness of the individual student. The technical methods of neuropathology are taught and sometimes a neuropathologic problem is given.

#### NEUROLOGY AT CORNELL AND NORTHWESTERN UNIVERSITIES.

In Cornell University, the neurologic department is distinct from the department of psychiatry. The second-year students are taught the normal and pathologic histology of the nervous system in a laboratory course of six weeks. In the third year a course of thirty-two clinical lectures is given, and the students are divided into classes of twelve, each of which has twelve hours of practical work in the dispensary. In the fourth year twenty-four clinical lectures are held and the classes are divided into sections, each having six hours of bedside instruction in the hospital wards. Psychiatry is taught by lectures, clinics, reviews and optional section work in the fourth year.

In Northwestern University all the neuropathologic work is under the department of pathology. In the third year neurology is taught by recitation only. In the fourth year didactic lectures are given once a week for the first half of the year on nervous diseases and in the second half in psychiatry. Besides one clinical lecture a week on nervous diseases is held throughout the whole year. The students are also divided into dispensary classes of twenty, each having two hours daily for four weeks, and are also divided into small classes for ward walks.

#### INSTRUCTION AT UNIVERSITY OF PENNSYLVANIA.

In the University of Pennsylvania instruction begins in the third year, the men being given a course in neuropathology, each man having one hour a week for the first half of the term. First, gross specimens are shown, and later lantern demonstrations illustrative of the different diseases. In the fourth year two clinical lectures are held for the first half of the term and one in the second half. The students are also divided into classes of ten, each man receiving ward instruction weekly for the first half of the session. In addition the students in small classes have as part of the course what are termed ward visits in which particular attention is paid to the method of recording as well as studying cases. Psychiatry is taught by the professor of mental diseases who gives one clinical lecture a week in the first half of the fourth year.

In reviewing the methods employed in these four schools it will be seen that in all, with the exception of Harvard, instruction is somewhat alike, in so far as the fourth year is concerned. Clinical lectures are given both in neurology and psychiatry, and ward classes are held either in one-half or throughout the entire year. In the third year in the Northwestern University recitations only are used, in the University of Pennsylvania neuropathology only is given, while in Cornell both clinical lectures and ward classes are held. In the second year there is no direct neurologic instruction with the exception that in the course of pathology reference is made to the nervous system. In Harvard pathology is taught in the second year, clinical lectures on nervous and mental diseases are given in the third, whereas in the fourth year it is optional with the student whether he elects neurology and psychiatry.

#### TEACHING NEUROLOGY IN EUROPE.

It is interesting to compare the methods employed in this country with those of the leading schools of Europe, although comparisons are rather difficult to make because the methods of medical teaching are so different.



In Vienna, for instance, the students are required to devote one semester each to clinical neurology and psychiatry. These consist of five clinical lectures each week, one hour in duration, and the student may take these during the seventh, eighth or ninth semesters, as he prefers. Neuropathology as a distinct branch is considered extra work and is not a required part of the curriculum.

In Paris neurologic teaching is not conducted systematically, but is divided among the departments of anatomy, physiology, pathology and clinical medicine. In addition courses are given by the professor of diseases of the nervous system and the professor of psychiatry, these consisting of clinical lectures in the various hospitals and clinics. No systematic teaching is attempted, however, and each professor lectures on those topics which interest him. Ward class teaching, as it is known in America, is not given to the undergraduate student, and neuropathology is considered a postgraduate study.

In England neurology is taught as a part of general medicine. In the London Hospital, for instance, Dr. Head, being interested in nervous diseases, has more neurologic patients in his beds than the other physicians and he lectures on these cases every week and gives definite teaching in neurology, and any student, whatever his standing, can attend. In the physiologic class, instruction is given in the structure and functions of the nervous system, and in the class in pathology specimens are shown illustrating nervous cases.

It will be seen, then, in comparison, that is, so far as systematic teaching of neurology to undergraduates is concerned, the American schools are by far in the lead, especially of those in France and England, and possibly of those in Germany and Austria. Whether the results are as good or better is difficult to tell because the course of study abroad is longer, and again no adequate comparisons are possible.

#### POSTGRADUATE INSTRUCTION IN AMERICA.

Postgraduate medical instruction in this country has not received the attention that it has abroad. The first postgraduate school was the New York Polyclinic, established in 1881. A year later the Postgraduate School was established in New York and the Polyclinic in Philadelphia. Here the students are taught in the outpatient departments of the attached hospitals and cases are demonstrated, but no systematic teaching is attempted. In Harvard a postgraduate course is given, this practically consisting in the fourth-year undergraduate instruction.

An essay of this kind would hardly be complete without some effort being made to outline a course which would be peculiarly fitted to the needs of the American medical student. From the experience of others and also from my own experience it is rather questionable whether it is possible to give a satisfactory course in the limited hours assigned to neurology and psychiatry in a four-year course. Paradoxical as it may seem, neurology has not received attention in the curricula in some of the leading medical schools equal to that of some of the other specialties, as, for instance, the eye. There is no need of discussing here the importance of teaching the student more of nervous and mental diseases, for that is evident, and yet even at the present time neurology receives such little attention that in most of the medical schools those who hold neurologic professorships are not members of the major faculty. Not only

that, but in some of the schools a separate examination is not given by the professor of the department. In still a number of others the lectures are given by the professor of medicine, while the clinical lectures are held by the professors of nervous and mental diseases.

In the first place, when considering the nature of our medical students and the methods of our teaching, it is a matter of universal experience that students will not pay much attention to a subject in which there is no required examination. Not only should an examination be held in neurology, but it should also be held in psychiatry. At the present time lectures are given in mental diseases, and it is optional with the student whether he attends and no examination is given, at least that is the rule in most of the medical schools.

Of course, it is taken for granted that the student who graduates at a four years' course can only have a general knowledge of the specialties, and it is not to be thought for a moment that any effort should be made to make him a specialist. The best that should be attempted is to give him a good course in the principles of the anatomy, physiology and pathology of the nervous system and to teach him how to recognize the more important nervous and mental diseases and how to treat them.

#### GENERAL NEUROPATHOLOGY NOT A SPECIAL BRANCH.

It is rather questionable whether general neuropathology should be taught as a distinct branch. My personal views are that the general pathology of the nervous system should be taught as part of the regular course in pathology and that it should be given in the second year by a specially trained neuropathologist. After all, the pathologic changes in the nervous system are not so very different from those in any of the other organs of the body, and a course consisting of two or three hours daily for a period of three weeks will fully cover the subject. It is advisable in this course to teach the student only the more important stains and general pathologic changes so that he should be prepared to appreciate further instruction. The special pathology of the different diseases of the nervous system should be taught later.

It is a good plan to begin the third year by a course in terminology. Then the student should be instructed in the ordinary clinical signs, such as reflexes, the different tests for sensation, gait, station, etc. In other words, he should be given a clinical demonstration of the ordinary signs employed in nervous diseases and their meaning. After this it is advisable to take up serially the teaching of what could be called applied anatomy and physiology.

#### A METHOD SUGGESTED.

By that I mean, for instance, this: A brain is shown and the different fissures and convolutions outlined. Then starting, for instance, with the motor centers, the physiologic subdivisions of the precentral convolution are given and the students told what irritative and then what destructive lesions will produce. An ideal plan would be, if such a thing is possible, to show a patient illustrative of the subject, but this is hardly feasible. If this plan is continued, the anatomy, physiology and pathology of the brain can be taken up in serial order, first of the cortex, then the subcortex, internal capsule, crus, pons, medulla and later of the spinal cord, illustrating the whole course with pathologic specimens and lantern slides both of normal and then of pathologic



specimens. This subject can be thus covered in the first half of the term with two hours a week.

In the second half of the term the different diseases then can be taken up in serial order and the symptoms taught, applying the knowledge gained from the instruction in the previous term. The pathology of the more common mental diseases should be included. In conjunction with this course the student should attend the clinical lectures on nervous diseases which are primarily held for the fourth-year men, and, if possible, ward classes should be given in the second half of the term or throughout the entire year, so that the student should be able to fix more definitely the didactic instruction received.

In the fourth year the primary object of the teaching should be to show as many clinical cases as possible and to teach the student to reason the pathology from the clinical symptoms. It is questionable which is the better method of teaching, that is, whether it is advisable to take up a certain given subject like hemiplegia and devote one-half of the lecture to the didactic exposition of the symptoms and then to illustrate by the cases, or to show patients immediately, making the remarks depend on the individual case. My own views are that the first plan is the better. If this plan is followed, the more common diseases can be taught first and toward the latter end of the year the rarer cases can be taken up.

There should be at least one clinical lecture a week, and if possible two, throughout the entire year. Besides, the class should be divided into groups of no more than ten and taught either in the out-patient department of a hospital or in special nervous wards.

Each student should receive at least one hour a week throughout the entire year. In conjunction with this, if there is time and material, it would be a good plan to place each student in charge of a certain number of cases in the wards of a hospital and make him responsible in a manner similar to that of a resident physician.

Psychiatry should be taught throughout the entire fourth year. It would be a good plan to first give a short didactic course, to be followed by clinical lectures. Here, also, it should be advisable to divide the class into sections and give personal instruction in the wards of an insane hospital.

The course that is herein laid out is one that is followed with few exceptions in the Medico-Chirurgical College.

The exceptions are that no ward classes are held in the third year in nervous diseases and none in psychiatry in the fourth year. In the present scramble for more teaching hours, a subject of the utmost importance to every one connected with medical institutions, it is evident that we are coming to a time when it is impossible to crowd more hours into the curriculum of the already overworked student, and it is imperative that the course should be lengthened with an additional year.

This has been recognized by most medical institutions, and it is only a question of a few years when such a step will have to be taken, for with the increased entrance requirements and demands made on the graduate it is necessary that he should not only be more proficient in the fields of general medicine and surgery, but that he should also be better equipped in the specialties.

203½ Chestnut Street.

#### DISCUSSION.

DR. CHARLES E. BEEVER, London, Eng., said that in England there was no special course of instruction on diseases of the nervous system. Diseases of the mind were separated from diseases of the nervous system, and there was a special course on diseases of the mind. Diseases of the nervous system, however, were considered as properly embraced in the student's study of general medicine, and no more properly subjects for special instruction than diseases of the lungs, kidneys or other part of the body. Dr. Beevor said that in every hospital in London there was always in charge of all the nervous cases one physician especially interested in nervous diseases. This physician showed the students pathologic subjects and really taught them just as students were instructed in the hospitals here. The intention, however, was to produce good general all-round practitioners.

Dr. Beevor explained that the English student, after completing his course, came around to special hospitals and then to a hospital like National Hospital of Queen's Square, there meeting and studying nervous diseases; or he might come to the hospital before finishing his undergraduate course. He thought that perhaps they did not specialize quite as much in nervous diseases in London as in other countries. At the National Hospital, Queen's Square, almost every physician was also a physician in the general hospital. Dr. Beevor said that he himself, besides being in the National Hospital, was also physician at the Great Northern Hospital, where he saw cases of rheumatism, typhoid, pneumonia, and in fact all general medical cases and he believed that this was a good thing.

Dr. Beevor thought that, if the neurologist saw nothing but nervous cases, he was led to view everything through neurologic spectacles. The daily sight of cases of pneumonia and rheumatic fever would prevent that mistake. He said that the general practitioner often referred to the specialist a case of mis-called nervous disease. Dr. Beevor instanced three such cases which had been brought to him. The general practitioner had made the erroneous diagnosis of melancholia. Another was called paraplegia in a patient with gangrene of the foot. That was very rare in connection with nervous disease. Examination developed a thickening of the bone at the brim of the pelvis which accounted for the pressure on the artery and for the gangrene. The person had a large clavicle, a large humerus, and was suffering from osteitis deformans.

The third case had been brought to him as a case of cerebral tumor. The patient suffered from heavy vomiting and possible neuritis. Dr. Beevor examined the patient and found cardiac hypertrophy and high tension pulse. The general practitioner did not know whether there was any albumin present or not. Dr. Beevor asked leave to examine for it and found albumin. That was evidence of granular kidney, and none of tumor of the brain at all. Dr. Beevor added that the patient did not believe him because he was a nerve specialist, and went to a general physician to have the diagnosis confirmed.

DR. M. ALLEN STARR, New York City, said that it seemed to him that the profession was confronted with two alternatives: Was the average medical student to be given a fair general knowledge of neurology such as would enable him to do his work in the world as a general practitioner, or the careful, differential training of a specialist? The first, he said, was the endeavor of the College of Physicians and Surgeons; the second was what Harvard University was trying to accomplish by the optional or elective course. Dr. Starr thought that the English method as detailed by Dr. Beevor was, perhaps on the whole, the better for the general practitioner and that medical education was bound to produce well-rounded medical students and not specialists. He thought that the finer special line of work obtainable in Germany in the special clinics, or in England at the National Hospital at Queen's Square could not be given in this country.

DR. F. X. DERCUM, Philadelphia, said that specialists had forced medical schools to give undue attention to the specialties. When he was first given an examination in neurology at Jefferson Medical College, his average had counted 100, the same as in internal medicine. Now it counted 40, which Dr.



Dereum thought an improvement and not a lowering at all in the importance of neurology. He said that the students at Jefferson Medical College received in the third year a course in neuropathology and formal clinical demonstrations in nervous diseases; in their fourth year they had section teaching and clinical and didactic lectures on both nervous and mental diseases. He believed that, if more time were set aside for special branches, internal medicine would not receive its due proportion. Special teaching, he believed, should be principally postgraduate.

DR. CHARLES K. MILLS, Philadelphia, feared that what had been said might be misinterpreted by some to mean that the occupant of the chair of the practice of medicine could teach neurology, and some other subjects, such as dermatology or pediatrics as well as the specialist, or better. Dr. Mills was strongly in favor of the teaching of the special branches comprised in general medicine by those best versed in those branches. He believed that special teaching should be proportioned to the time which the student had for everything.

Dr. Mills was inclined to believe that the American system was better than the English in having recognized specialists as professors and lecturers on neurology. He believed that they should also examine on neurology, that the examination should be controlled by the teachers of the subject; and that the student should be given a mark proportionate to the importance of the subject. He thought that good neurologic teaching could be given only by good neurologists.

DR. ARCHIBALD CHURCH, Chicago, said that the purpose at Northwestern University had not been to develop specialists; nor even to cultivate the research student especially. The school had for its object the production of practitioners of medicine, and this idea had been a controlling principle in the neurologic department. He said that in the second year a course in connection with the chair of physiology was given by a trained neuropathologist on the physiology of the nervous system. In this course not only was an understanding of the physiologic aspect of the nervous system sought, but attention was also focused on the modification of functional responses by pathologic conditions. Thus in conjunction, for instance, with the physiology of the reflex arc, the modification of the minor reflexes presented by diseases in various portions of the arc, or any conditions modifying responses in that arc, were brought to the attention of the student. He said that, in short, the symptomatology pertaining to the physiology of the nervous system was given to the second-year student. Neuropathology was taught as far as included in the general subject of pathology. The faculty hoped later to have a neuropathologist give those studying pathology a special course on the pathology of the nervous system in the second or third year.

In the third year a course was conducted by the assignment of a certain number of pages of text-book, portions of the text-book being selected for the purpose of training the student to a knowledge of symptomatology, including the methods of examination and the peculiar features of neurologic conditions. The purpose of this text-book course in the third year, Dr. Church said, was so to instruct the student that in his fourth year he might be in position to study intelligently the large amount of clinical material presented.

In the Northwestern University, as everywhere else, Dr. Church said, the internist desirous of doing everything, and the specialist desirous of teaching everything, had existed; but the tendency had been to subject the neurologic specialty to the field of general medicine; to attempt to teach as well as possible, special subjects, not with the purpose of making specialists and research students, but of so equipping the all-round professional man that when confronted with the ordinary or even with the rare forms of diseases of the nervous system, he might grasp the situation, make diagnoses, and give the best treatment provided by the medical profession. Dr. Church added that, on observing the work of the graduates of this school during the last eighteen years, it was seen that those who graduated ten or twelve years ago were not as well equipped as those who graduated five years ago; that cases of multiple neuritis were no longer brought to specialists with the presumptive diagnosis of tabes; that where

formerly many rare forms of nervous disease were not recognized at all, it was no unusual thing now for recent graduates to bring cases of tumor well diagnosed, well located, well considered from every point of view; and that many of the rare forms of pathologic changes were equally well presented by them.

DR. D. I. WOLFSTEIN, Cincinnati, O., said that on account of the congenital aplasia of medical altruism in this country in connection with the acquired hypertrophy of political influence, it was doubtful if one would often have the opportunity of holding two chairs—one in internal medicine, and one in neurology. It was as much as any one could do under crude American methods to get one position. He said that many students after four years of the ordinary American curriculum, still looked on the pyramidal tract as some wandering pathway down the side of Cheops. There was, he thought, a considerable field for careful teaching of the student in college by the trained neurologist. Such instruction could not be properly given by the professor of internal medicine at all for his field was too broad, his time too limited, and his course too extended. Dr. Wolfstein doubted the wisdom of placing too much stress on a complete laboratory course in neuropathology. Neuropathology more than any other branch of pathology must be founded on thorough understanding of neuro-anatomy. Six weeks' instruction would be quite inadequate; three months might accomplish more, but he feared that all that the average student would get would be a hazy idea of the appearance of Weigert and Marchi specimens under the microscope. In order to draw any valuable deductions at all it was necessary to work intimately with the material for a long period of time and, as a rule, to cut complete serial sections. Much could be done, however, even in this short time and especially if the instructor demonstrated typical specimens.

Dr. Wolfstein believed that the great error in specialism to which Dr. Beevor had referred—one-sidedness—would be obviated only when men should take up the practice of neurology as a specialty after a thorough training in general medicine. To illustrate the errors in diagnosis made by practitioners without previous training, Dr. Wolfstein cited the case of a young lady seen by him who had been treated for neurasthenia for two or three years. Her temperature was 99.5, and Dr. Wolfstein, on careful examination, found that her neurasthenia was due to a widespread tuberculous involvement of both apices. Dr. Wolfstein thought that the tendency here as in England should be to specialize only after a broad general education and experience in the principles of medicine.

DR. GEORGE WATERMAN, Boston, said that the case system of teaching had been adopted in the medical department of Harvard University, from the methods employed in the law school. The third-year students each provided themselves with a book containing reports of about one hundred and fifty cases, illustrating in various ways the different diseases of the nervous system with which they were expected to become familiar. In this book the organic and functional cases were mixed in such a manner that cases apparently more or less similar might have widely different causal pathologic bases. Students had their demonstrations and their lectures and discussions for the first two-thirds of the third year. The last third of the third year was given up to this system of case-teaching. Dr. Waterman explained that two students would be given one of these cases to study outside, having a week for preparation, and to arrive at their diagnosis. Then they were supposed to present the case to the class, first giving the focus of the lesion, then the nature of the lesion and its probable cause. They would then submit to questioning by the rest of the class. The subject would then be taken up for general presentation by the one conducting the course. This had been found a valuable method of making the students use their wits in making diagnoses themselves.

Dr. Waterman considered that the students still lacked that which could be acquired only by personal contact with the patient; and this was provided by the fourth year course of two months which was not intended to make specialists of the students, but simply to enable them to get at the root of the disease without having it presented to him by others.



In this course, which was taken by half the class in the fourth year, the men were made to take patients for half an hour, to take the history and make the diagnosis, and then to present the case to the class. He said that the students rarely specialized in neurology on graduation, but they were enabled to meet neurologic cases better than when prepared simply by didactic lectures and by the reading of cases.

## THE GROWTH OF EDUCATIONAL REQUIREMENTS AND OPPORTUNITIES IN STOMATOLOGY.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON STOMATOLOGY AT THE FIFTY-NINTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, 1908.

E. A. BOGUE, M.D., D.D.S.  
NEW YORK.

It has seemed to me appropriate to draw the attention of the members of this body to the now rapidly changing conditions that affect our specialty. The physician and surgeon of long ago was supposed to be qualified to practice medicine and surgery in all its branches. The extent of the field presently caused certain ones, who had had their attention turned specially in certain directions, to become specialists.

About 1837 or 1838 the University of Maryland School of Medicine was petitioned to establish a dental department. The movers in this petition were themselves medical men who had turned their attention to affections in and around the mouth as a specialty. There were, however, so many others practicing this art, without any legal qualification, and engaged mostly in prosthetic work, that is, in supplying lost tissue, whether that loss consisted of parts of single teeth or of whole teeth or many teeth, that the Baltimore school returned a negative answer to the petitioners. These gentlemen being broader in their views than the authorities of the medical school, themselves founded a school in 1839 for the instruction of those wishing to practice dentistry, whether they were graduates in medicine or not.

From this small beginning in this country have grown the fifty-five dental colleges in the United States entitled to confer the doctor's degree without the full medical course. There are also two dental schools or departments in Canada, two or three in Italy, two in Switzerland, three or four in England having a limited connection with medical schools, and at least two in France acknowledged by the government as being of "public utility."

While a full medical course is not required of the dental practitioner in this country, Russia, Austria, Hungary, Roumania, Italy, and I know not how many other countries, all require a medical degree to be held by the practitioner of dentistry. A few countries—for example, Germany, Hungary, Austria, Spain—have provided a certain amount of dental teaching in their university courses, but the strictly dental and stomatologic teaching provided for the dental practitioner is quite as limited in amount as the medical teaching in the dental schools of America and England. When it comes to the treatment of serious oral disease, therefore, the stomatologists of Europe, as a class, look down on the dentist as lacking in professional training, while the dentist, engaged so largely in preventive work, looks on the medical man practicing dentistry as incompetent because he does not prevent the very diseases which the dentist has so assiduously qualified himself to treat;

for the serious diseases, especially those requiring surgical treatment (unless they are congenital) are seldom if ever found in mouths where the teeth are in good condition. This, roughly stated, leaving out all unnecessary points, is the condition recognized by the stomatologists of Europe, who held a convocation in Paris last summer, from August 1 to August 5. This meeting was attended by about 250 men, all holding medical degrees, and a society was formed with a membership of about 400. Of this more later.

I may say right here that the intellectual qualifications of these gentlemen as a whole are, so far as I could judge, far in advance of any body of dentists of the same number that I have ever met. I make this admission now in view of certain criticisms which I feel bound to utter.

One incentive to this meeting of stomatologists was doubtless the refusal of the authorities, acting for the International Medical Congress to be held in Budapest in 1909, to recognize as members of the oral section any other persons than those holding medical degrees.

International medical congresses since the one held in Washington in September, 1887, which recognized dentists as practitioners of the healing art, have with one or two exceptions continued to recognize them, up to and including the meeting in Berlin, and to admit to the meetings of the oral section dentists in good standing holding degrees from reputable dental colleges.

The American Medical Association, thanks largely to the influence of Dr. Talbot, which has been continuously exerted for many years, maintains the same attitude still and admits to its section graduates of reputable dental schools.

The *New York Post-Graduate*, a journal of medicine and surgery, says in its issue for October, 1907:

The first dentists of this country were nearly all graduates in medicine. The medical profession made a great mistake that it did not warmly welcome this new specialty taken up by men in its own ranks. It is our fault that all dentists are not first graduates in medicine, and many of them are. This error will finally be fully corrected. American dentists have made themselves famous throughout the world by their practical and scientific attainments. They were, in the beginning, members of our craft and would have remained so but for our failure to give them a warm welcome. Specialists in medicine were then under the ban.

This kindly prophecy presupposes that an ever-increasing number of educated men will adopt dentistry as a calling, and that the logical outcome will be that a larger number of dentists will take also the medical degree in order to fit themselves more fully for their life work, or else that each educational institution will make such modifications in its curriculum as to permit it to confer the medical degree, or its equivalent, on all medical specialists.

The establishment of independent dental schools was by no means an unmixed evil, for it has resulted in giving more or less training to a vast army of ingenious men, who have improved on their teachings until they have truly "made themselves famous throughout the world" for their skill, notwithstanding the limited scope of the teaching they had received and the limited field that they occupied. This led to concentration, and concentration has brought results, although the practitioners were not medical graduates.

It is true that many of the rulers and people high in political and social position in European countries have very generally employed American dentists when they



were procurable, and on that account, I have been informed, police protection has been granted to a number of American dentists practicing abroad who had not the necessary legal qualifications for them to practice in the countries where their services were desired.

This condition of things would naturally cause the native dental practitioners, some of whom have been members of the government or of legislative bodies, to become very impatient. The result has been the passage of protective laws, ostensibly designed to protect the people from unskilled practitioners, but really operating to keep out foreign graduates of dental colleges.

This legal condition applies equally to England and France, Italy, Switzerland, Austria, Roumania, and various other European countries, in all of which the foreign dentist is disqualified unless he goes through the same preparation in the country where he wishes to practice as the native of that country is obliged to do before he can engage in practice. Those countries in which the laws requiring the dental practitioner to be a graduate in medicine are the most stringent are those in which the standard of operative dentistry is lowest. There are, of course, a few notable exceptions in every country.

What I have just said is not in disparagement of the very highest qualification possible for the practitioner of any branch of the healing art. It is a bare statement of facts with which we have to deal practically.

As I have previously mentioned, there was formed in Paris last summer an International Society of Stomatologists with a membership of about 400, to the presidency of which Prof. Joseph von Arkövy of Budapest University was called. The object of this society is to draw into closer relations the skilled practitioner of dentistry and the stomatologist, who is recognized simply as a medical specialist, like the rhinologist, the oculist or the gynecologist. Needless to say, it would please the stomatologists if all the first-class dentists became stomatologists, for the stomatologists can not all become first-class dentists, and they decline to be dentists on any other terms.

In 1903 the British Medical Association formed a dental section, thereby acknowledging the importance of dental and oral surgery and giving it its proper position in the medical world. Just at that time there was a movement made in England to separate dental surgery from the medical profession and place it on its own footing, as though it were possible to cut out one branch of the healing art and place it by itself. As if to emphasize the action of the British Medical Association, the new Royal Society of Medicine, formed in England and established in 1907, embracing all departments of medicine, included the entire Odontological Society of Great Britain among its members, thereby accepting quite a number of men who were not full graduates in medicine.

Coming now to our own country, we see that the result of the establishment of dental departments by a number of universities, and the introduction by them of dental teachings, has been to raise the standard of qualifications in every instance, so that in university towns where dentistry is taught the dental graduate of these universities takes rank at once with their other graduates in the estimation of the general public. All this indicates healthy growth and is but a repetition of the process by which the early barbers became surgeons and surgery took its place as the right arm of healing.

Our program shows what this Section is doing for advance, and I think our acknowledgments and sincere thanks are due to the members who have brought us these contributions in our special branch. We may well be proud of the progress indicated by these papers.

Dentistry has been a process of repair and has remained so up to now. It has the reputation of having made great strides; so it has, but principally along mechanical lines. Dr. Miller demonstrated the cause of decay. Dr. Black, by careful analytical research, demonstrated the reason for recurrent decay, and that led to what is now known as "extension for prevention." Dr. Sim Wallace and Dr. Harry Campbell of England have both gone further back, first in causation and then in preventive measures, and not only have announced their conviction that proper feeding would most effectually prevent decay of the teeth, but have put this theory into practice within the last few years by placing a considerable number of children on a diet calculated to promote the proper development of teeth, the proper growth of the jaws, and consequently the proper alignment of the two rows of permanent teeth in the jaws. This condition of things, as is well known to those who have spent any time in the study of the osteology of the head, face and jaws, leads to the formation of rows of teeth that are essentially self-cleansing in the presence of hard and fibrous food, and, therefore, are nearly or quite immune to decay.

The tendency of all research in this direction is to show that the luxurious mode of life of the more civilized countries, and especially of those members thereof who are able to select the finest food, requiring the least mastication and the least effort on the part of the partakers before it is swallowed, is not what is best for the health, either of the dental organs or the individual possessing them.

The effects on the face, nose and jaws of withdrawing the influence of hard and fibrous foodstuffs, which are the natural stimuli to the proper development and growth of these parts, are visible in the narrow jaws and irregular dental arches that so generally prevail. This leads to a general diminution of physical strength, resulting in a diminished resistance to infantile disorders, and almost always resulting in an incompletely adult.

In closing, let me leave this thought: If we "extend" our investigations and practice to "prevent" dental decay we shall most effectually practice "extension for prevention."

63 West Forty-eighth Street.

#### DISCUSSION.

DR. G. V. I. BROWN, Milwaukee, said that he believed that the meeting at Budapest was entitled to the very best assistance and cooperation it could get from the men in this country who believed the medical degree an advantage in addition to the dental degree. Comparison between the older countries and this was, however, difficult and uncertain because the whole scheme of education there was entirely different from the American. Dr. Brown said that the foreign course of study covered many more years than Americans usually cared to give; the actual hours of study were largely optional with the students, who took examinations pretty much at their own convenience. They drifted into one line or another of special interest to them, and Dr. Brown had learned that it was usual for men to continue in laboratory work there for ten and twelve years without any special thought of taking up the active practice of medicine. In this country, the class rules, the requirements of attendance, the rigorous way students were kept under control, almost like schoolboys, made the



whole proposition entirely different. Dr. Brown said that many of the more highly educated men were not good operators in the technical parts of operative work; but on the other hand, some of the best operators this country had ever seen had been medically educated dentists.

DR. M. H. FLETCHER, Cincinnati, said that he thought that the knowledge gained by the study of medicine enabled one to make a more exact diagnosis and to treat in a more comprehensive manner the disease of decay. To him caries was a disease. Dr. Fletcher did not find that he could put in permanent fillings immediately in all cases. He noted the condition of the tooth and of the mucous membrane, and made up his mind from the symptoms and signs present whether or not it was a suitable case in which to do the mechanical piece of work which the non-medical practitioner would call the best operation. Dr. Fletcher agreed with the chairman that there was a higher plane of treating the diseases of the mouth than that which comprehended only the purely mechanical features.

DR. THOMAS L. GILMER, Chicago, said that to him dentistry was part of medicine. There were many diseases in the mouth other than those affecting the teeth, and the dentist who did not take cognizance of them was not serving his patients in the best possible manner. Dr. Gilmer doubted if it were possible radically and quickly to change the present method of teaching dentistry. Liberally endowed schools for the teaching of dentistry as a special department of medicine might accomplish the change much sooner, but there were no such institutions. He thought that honest schools connected with honest universities should be encouraged and they would in time grow into higher and better things. Dr. Gilmer said that he was decidedly of the opinion that it was not practicable, at least now, for a dentist to secure the medical degree first and afterward acquire his dental education. He believed that, after a man had first graduated in medicine, the specialty of stomatology was not sufficiently attractive to induce him to spend two years more to qualify himself for its practice. It seemed to Dr. Gilmer that while not the ideal, about the only practicable method at this time was to induce the dentist to continue the study of medicine to graduation after having gained the D.D.S. degree.

DR. EUGENE S. TALBOT, Chicago, said that there should be no separate dental schools; all should be departments of universities; there should be no dental graduates; all should be university men on an equal footing with graduates of other departments of universities. The graduate of dentistry should, like other specialists, be educated in all departments of science. Dr. Talbot said that only three or four of the so-called dental departments were in reality dental departments of universities, and that the student's first lesson in dishonesty consisted in learning to believe himself that which he was not. There could be no middle ground; the dental schools were either schools of mechanics, or educational institutions fit to be associated with other departments of a university. Dr. Talbot believed that the weaker schools should unite with the stronger to reduce the number. There should be only one institution for dental instruction in each of the large cities or states. Dr. Talbot thought that the dental profession should anticipate disease and take up the study of preventive medicine. The time, he said, was ripe twenty years ago; and if the teachers in the dental schools had been educated up to the times by the reading of collateral science, they would now have fully equipped physiologic and pathologic laboratories for the purpose of experimental research. More than twenty years ago Dr. Talbot demonstrated the law of economy of growth, or use and disuse of structures. He said that there was a possibility of the prevention of irregularities of the teeth and decay, and that the experiment was worth the trial. The only way satisfactory work could be accomplished was to take a community of people and have them undergo the same methods of treatment for three or more generations.

DR. BOGUE, New York, said that dentists stood in a curious position. The men called in France *médecins de la bouche* (physicians of the mouth), and in Germany *Zahnärzte* (tooth-physicians), were men who had been graduated as physicians, and later taken up dentistry. The consequence was that they did not at first know anything about dentistry. Those men

and a few others added had formed themselves into the Society of Stomatologists and ostensibly wished to unite with dentists. Dr. Bogue said that this was admirable, but the question was, how dentists could be parties to that union. Dentists were not all doctors of medicine, and stomatologists would not accept them unless they were. Stomatologists were not all good dentists, and dentists would be sorry to form a union with them unless they were good dentists. Dr. Bogue thought that dentists should be medically educated, but believed it wise to remember also that especially in a new country there were many people with limited income or opportunities who got toothache and were glad to apply to any one for professional services. Dr. Bogue knew that the wife and son of a member of congress went to the blacksmith in their native village to get their teeth fixed. A little knowledge might be dangerous, but it was also helpful.

Dr. Bogue defined good operators as those men who were able, for the longest possible time and in the best possible condition, to preserve in comparative health the teeth treated by them. It was not a question of fillings, which question did not and should not come up. Dr. Bogue could not approve of the destruction of tooth material which is now being waged throughout Europe and elsewhere, filing and chiseling and extracting right and left. It was not necessary, but those men who had not been instructed how to do otherwise were going to do that as the next best thing. European stomatologists. Dr. Bogue said, had not as a class undergone dental instruction, and American dentists lacked a medical foundation. He had hoped to receive light on the question of how to harmonize the two conditions.

---

## Original Articles

---

### A CASE OF ALTERNATING PERSONALITY.

CHARACTERIZED CHIEFLY BY AMBULATORY AUTOMATISM  
AND AMNESIA WITH RESULTS OF HYPNOTIC  
EXPERIMENTS.\*

EARL E. GAVER, M.D.

Lecturer in Neurology in Starling-Ohio Medical University, Assistant Physician Columbus State Hospital for the Insane,  
COLUMBUS, OHIO.

All of the cases of alternating personality probably are of sufficient interest and value in the study of hysteria to merit report. This account presents a picture perhaps only slightly different from some already recorded. The patient is possessed with a neuropathic constitution and presents a group of the stigmata of hysteria including the dissociation of the personality. The experiments serve to indicate a close analogy between the hypnotic state and the hysterical lapses. On the theory that all cases of dissociated personality occur in hysterical patients, and in view of the above analogy, we may be easily led to believe that all the departures from the primary or normal personality are partly self-induced hypnotic states. The most prominent features in the case are the ambulatory automatism and amnesia, both common characteristics of these peculiar and interesting hystericals. The usual, and what seems to be the patient's normal, personality we have designated as the primary state and the epochs of changed personality or the new condition the secondary state. In the abstract the case is as follows:

*Patient.*—Male, aged 29, white; electrician, American, average height, weight 163, and fairly well nourished.

*History.*—This was negative up to 1898 when he contracted typhoid fever while in the Spanish-American war. Since that

---

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908



time had had periodical (annual) attacks of "tender spine," and hyperesthesia along the left side involving also the left upper and lower extremities. Patient stated the pain was so intense that it caused a partial paralysis and that each succeeding attack seemed to be worse. The above condition he regarded as the result of the typhoid fever inasmuch as these attacks came on him each year about the same time he had the fever. Electrical tests negative.

*Examination.*—Physical examination revealed normal conditions excepting in the nervous system. He complained at times of feeling nervous. Deep and superficial reflexes all heightened and very prompt. Pupils variable, mydriatic most of the time, equal and reacted promptly to light and accommodation. Tactile sense was blunted on the entire left side and more deeply so in certain areas. Right side was normal. Allochiria was well marked on the back. Partial analgesia on the left side only. The thermic sense was considerably modified on the left side. He complained of paresthesias such as tingling, formication, and itching over the upper part of the chest anteriorly and posteriorly, also over the shoulders. A peculiar tender area extended from the base of the occiput medial down to the fourth cervical spinous process and over the left transverse process of the second cervical vertebra just below and anterior to the tip of the mastoid process on the left side. Pressure over this zone gave him an intense frontal headache. There was a marked superficial tenderness at these points, and he also had a marked tenderness over the left midpoint between the anterior superior spine of the ilium and the spine of the pubes.

The sensory symptoms were all variable. From time to time various symptoms had been presented that could be placed on the list of hysterical stigmata. The most prominent of these was his extreme suggestibility. This condition had been present at nearly all times and when hypnotic tests were desirable it facilitated them greatly. Variable anesthesia and other sensory phenomena were to be found at certain times. Abulia was a prominent characteristic in his case. There was a pronounced craving for attention and the patient would always see to it that he was not missed in the regular visits of the physician. Hypochondria was fairly well marked.

*Patient's Story.*—"In the fall of 1901 I was collecting for the Lynchburg Street Railway Co. One evening I was coming back alone from the country where I had been collecting money for some arc lights and motor-power and was crossing the bridge near home when I was struck a fierce blow on the head from behind. I did not remember anything more for about four days when I came to myself sitting up in bed and the first thing I did was to make a move for my pocket that had my money in it. The money had not been taken from me, however, but I had lost my watch and my own pocketbook with a small amount of money in it. I was afterward told that one of the conductors on the street railway saw me lying on the bridge and thought I was drunk and carried me back home. The doctors said I was struck with a sand bag. I was bruised on the back of the head. My head was so sore I couldn't touch it, and for about a month I did not go out of the house. From that time all that winter I was conscious, at times, of not knowing what I was doing, just at intervals probably lasting from fifteen minutes to half an hour.

"In the spring of 1902, I purchased a suit of clothes on Thursday. On Sunday morning when I got up to dress I found two suits of clothes exactly alike, afterward finding out I had bought the second suit of clothes not knowing what I was doing. I took it back and told the clerk in the store and he said when I was in there he thought I acted kind of funny. He asked me what I wanted and I selected a suit just like the one I had purchased a day or two previous. I commenced to get bad after that, that is, of getting a day, maybe two days which would seem like perfect blanks, to me. My home people didn't know what to make of me, and I told them that at times I didn't know what I was doing. I believed that blow on the head did most of the harm.

"In May, 1902, there was an excursion down to Norfolk, and I told my parents I was going to take that trip and go by boat to Baltimore and go to Johns Hopkins and seek a

physician, in the hope that he might do something for me. I did not receive much attention from the physicians I consulted in Baltimore. This discouraged me. I sent word home that I would return the following week by the same route I had taken to Baltimore. However, at this time I lost consciousness of myself and when I came to, found myself in London, England. I didn't know where in the world I was and was very much frightened. On inquiry I found that I was in London. I didn't know whether I was dreaming or what had happened. I wandered around London and afterward found I was in Whitechapel. I wandered over on Commercial Road which is the main thoroughfare leading to the docks. Here I found a lodging house where I stayed over night and wrote a letter home. They would never show me the letter and that was the only time they heard from me while I was away. How I got across the water to London is something I have never been able to tell. I tried to find out but I never could. I tried every ship that came from Boston, New York, Baltimore and Norfolk, giving them my name and description, but could gain no information.

"The last thing I remember in London was being down by the old Tower, and the next time and place I realized anything was about two weeks later in Capetown, South Africa, and how I got there I don't know. Here I was more frightened than ever. I didn't have any money and was so far away from home. I secured employment as timekeeper for a contractor and went up to Johannesburg, about 250 miles over in Central Africa. Most of the time here I did not realize, yet I must have carried out my work daily as there was no complaint. At the end of two months I had about \$225 which I thought was enough to take me home. I went to Capetown, got a vessel for London, sailed from London to Boston, and from there on home. I reached home in November, 1902, in such a condition that my mother couldn't recognize me. I got along very well without much loss of memory until the year 1905. At this time my mind was very clear, with the exception of an almost constant headache.

"In the meantime I had married and moved to Canton, Ohio, where I got along first rate until the above mentioned date, December, 1905. At this time, I again showed some loss of memory for certain periods. I was taken to a sanitarium in Columbus, remained there a short time, and was discharged as recovered. Secured employment in Columbus, operating an electric crane. I worked there one week, when I felt an attack coming on. I tried to wear it off; thought I could work it off. I left my home on Tuesday morning—this was in April—and the last thing I remember I was crossing Neil Avenue, which is about half a mile from the shop. The foreman of the shop told my wife that I went to work on the crane, operated it for about 20 minutes, came down and told him that my head was hurting so that I would have to go home. However, I came to myself in the afternoon of the same day at Newark, Ohio, not knowing where I was or how I got there. I telegraphed my people, and my brother immediately made arrangements for my commitment to this hospital."

*First Attack at Hospital.*—At about 8 p. m., May 22, 1906, the patient was standing on the veranda of the hospital, watching the fire department go by; soon after he turned and came into the parlor. In a few minutes he went to the interne's room and sat down on the bed, saying, "Oh dear, doctor, I am feeling so bad," and immediately fixed his eyes with a continuous stare and did not notice anything around him. His attention could not be gained by asking him questions, but after sitting thus for about ten minutes, the physician touched his wrist to feel his pulse, and he awakened with a start, looking up naturally and smiling. His pulse at the time was 102. The doctor resumed his reading, and the patient immediately returned to the stuporous condition. In about five minutes, with an offended manner, he got up and precipitously left the room, going to the west veranda. After a little while he was found sitting with his head in his hands. In an endeavor to open a conversation, all that could be obtained was, "Oh, my head hurts me so." At this time the nurse came out and told the patient it was time to



retire, and in a moment he arose and walked to the parlor sofa throwing himself down. When again told it was bedtime, he got up, walked up and down the side hall, then entered his room and sat down on his chair and looked steadily out of the window. Later, the interne and nurse again enjoined him that he would better go to bed and began to take off some of his clothing in which he later assisted, but on getting him to bed, instead of lying down, he sat in a semi-recumbent position, leaning against the head of the bed, with his hands on his head. Just before getting into bed he said, "Where is Mattie?" (his wife's name) and in bed he said, "Oh, my head hurts so, I can't think." The interne revisited his room many times during the evening, always finding him with a fixed troubled look. He arose at 5 o'clock, walked into the west parlor, immediately sat down with his head in his hands, and with an expression of extreme dejection, entirely foreign to his usual smiling countenance. This position was not changed until the nurse asked him if he wanted to eat, which he seemed to understand perfectly, but would not speak, simply shaking his head. During the meal he walked into the reception room and leaned his chair back against the wall, sitting there with bowed head and strained expression till about 9 o'clock, then he suddenly awoke and was startled till he saw where he was. He then went to the nurse in an extremely nervous condition and asked for something to quiet his nerves. On being questioned concerning his spell, he said that he did not remember a thing after he was standing on the east veranda the evening before. He felt awfully tired and worn out as though, as he said, he "had done three weeks' work in one day," but his head did not ache so badly as it did the evening before.

*Second Attack at Hospital.*—In the evening of July 6, the physician asked how he was feeling, to which he replied, "Not very well, doctor, my head hurts me so." This was about 5:30 p. m. After taking a seat in one of the rooms, he was spoken to by one of the patients to whom he made no reply. He was then noticed to walk about the cottage till almost bedtime. He then went to his room, where he was found sitting on a chair peering steadily out of the window into the darkness. He had a very troubled, worried and sullen look on his face, and when the nurse touched him on the arm, acted as though he were angry. On being repeatedly told by the nurse and interne that it was bedtime, he did not move or take any notice of them, whereon he was undressed and put to bed without much resistance. He did not lie down, but sat up in a half reclining posture, which position he maintained till 10 p. m., when the nurses and interne were in the room, and at which time he suddenly awoke as if from a deep sleep. From the time we put him to bed till he came to himself, he had a heavy frown on his face, and kept slowly winking his eyes and gazing steadily at the foot of the bed. When he awoke, he said, "I am so tired," and then lay down on his pillow and was soon fast asleep. The next morning he was very weak and tired, and remembered nothing of the interval of time between 5:30 and 10 p. m. the evening before.

*Third Attack at Hospital.*—Patient was feeling in fine condition, July 22, until he had a little difficulty with one of the patients, which made him very nervous and out of sorts. He kept gradually feeling worse and his headache increased until on Monday, July 23, 1:15 p. m., the attack began. He was in his room staring out of the window, with a troubled look on his face. His pupils reacted sluggishly to light and his eyes were more or less fixed and staring. The facial expression was anxious and some times depressed, and he wore a frown continually. He did not seem to hear what was said to him and yet when told in a commanding voice to protrude his tongue, he did so, also stood up and walked down the hall and out the door; after this, he did not obey any commands. He would not answer any questions or give the least hint of a facial expression that would lead one to believe that he understood what was said to him. His leg and arm reflexes were exaggerated, especially the left side. He had a very noticeable tremor of his left leg. After the above observations were made, he was conducted out of the cottage to the grounds and allowed to go wherever he chose. He started

direct for the gate leading to the street. He had his hands in his pockets, head down and eyes resting on the ground a few feet in front of him. He walked fairly rapidly, paying no attention to walks or driveway, but cutting straight across to the gate. He was followed closely, yet he took no notice of anybody, and did not seem to know anybody was around. On coming to the street, he turned and walked up it a short distance, and then on an intersecting street for one-half block. The physician called to him, but he would not stop. On catching up with him and taking him by the arm, without any particular resistance he was turned and started back. On reaching Broad Street, a street car was coming and he acted as though he wished to get on, and when the car stopped would have done so, had he not been prevented by his attendant. He wandered around on the street and then he was started back to the hospital, but he would not walk far till he would turn around and go towards the gate.

He would keep perfectly still when photographed; did not eat any supper, and sat for a while in his room where he came to himself at 6:10 p. m., feeling very much the worse for his experience. He asked for something to quiet his nerves. He ate a light lunch and went to bed, but did not rest well all night and felt very bad, weak and depressed all the next day. (Tuesday, July 24), and came in the office after supper, stating that he was trying to fight off a spell and asked to be allowed to stay up awhile till he overcame it, but at 9:10 p. m., he passed into his secondary state with a very deep frown on his face, just as though he was angry. On being advised to go to bed, he got up, and in an offended manner went to another part of the hospital, but would not talk, answer any questions, or pay any attention to anything we said to him. We kept telling him to go to bed, whereon he went into the parlor and sat down. The nurse took him out of the parlor and put him in his room, where he seated himself on his chair, and at 10:20 p. m. he was persuaded to go to bed. He partly undressed himself, being coaxed and commanded at times to do so. The interne was in to see him ten minutes later (10:30) and he had his head and shoulders propped up and steadily gazed at the foot of the bed. He remained in this condition all night, and in the morning dressed himself as usual, but did not eat any breakfast. His medicine was brought to him in his room, but he refused to take it. A few minutes later he came to himself, with a little start and jump. He felt very bad, but not nearly as much so as he did the day previous after the preceding attack.

*Attack Occurring July 30, 1906.*—In the afternoon of July 30, the patient repeatedly complained to the interne of feeling so weak and done up. Just after supper he asked for something to quiet his nerves. He said that he had a peculiar headache this afternoon, and felt as if everything in his body was trying to get into his head, and it felt so awfully sore. In the evening at 8 p. m., he came into the office and without saying a word, seated himself in a chair with his head resting on his right hand, his elbow on an arm of the chair, and his eyes fixed on the floor. When spoken to he did not look up or make any reply. He soon got up and walked out of the office, turned down the hall and went to his room. His face was deeply flushed, and he had an offended manner. He was observed in his room a few moments later (8:15 p. m.) seated on a chair with his head on the bed, and both hands holding the back of his head. He could not be roused or made to give any response whatever. A little later (8:30) the physician found him lying on the bed with his head and shoulders propped up high, eyes partly open and fixed. On commanding him to protrude his tongue, the scowl on his face grew deeper. He muttered that his head hurt him so badly. At 9 p. m. he had not changed his position and would not undress himself, but his apparent anger would increase when he was urged to do something. At 9:30 the interne and night watch went into his room and he was still in the same position, but a little more restless than usual, rubbing his hands over his head, sighing and exclaiming alternately from time to time, "Oh, dear," and "My head hurts so."

At 9:45 p. m. the physician found him sitting in one of the windows, looking steadily out and downward through the



window. He refused to turn his head even when some force was used. He sat there for quite a while and then suddenly came into the interne's room and, sitting down on the bed, with his head in his hands, steadily gazed at the floor. He soon threw himself over on the bed, holding his head as if in intense agony, and exclaiming, "Oh dear." He groaned more or less while he was lying on the bed. Soon he muttered something, and on being asked several times what he said, he replied, "I want some smelling salts." On holding the cork from a bottle of aqua ammonia under his nose while he lay on the bed, he awakened with a sudden start, and looked at the physician and smiled, and said, "Oh, what a relief; please let me smell it again." A moment later he said that smell seemed to take an awful weight off his head. He said his head felt as clear as a crystal. He went to bed at 1:30 a. m. and said he was feeling fine, except that he was very weak.

*First Hypnotic Experiment.*—On the evening of September 20 the patient came into my office saying he felt quite miserable, suffering intensely with his head and feeling very nervous. Felt certain that he was about to pass into one of his states of secondary consciousness. I suggested that I hypnotize him, to which he agreed, stating that he had been hypnotized once by a professor. This was about 7 o'clock in the evening. I made the trial of hypnotism and succeeded in a very short time in having him under my control. I made several tests which assured me that he was hypnotized. At this time he was bearing an expression of discomfort and frowning. I suggested that he throw off that scornful expression and look pleasant and agreeable. He did this immediately. I also suggested that he was in a much better physical condition, and was not suffering any discomfort or pain, and judging from his expression, this seemed to be realized by the patient. I directed him to go to his room and take off his clothes and go to bed. This he did without any opposition whatever, carrying out every suggestion just as I gave it. After getting into bed, I suggested that he sleep soundly until 5 o'clock and then awaken and feel first rate and go to his breakfast. Our experiment, however, fell short somewhat in all this. He slept beautifully until nearly 2 o'clock, at which time he awakened and sat up in bed quite himself again. He soon began feeling bad, and at 4 o'clock got up and dressed. Later in the morning, at the regular getting-up time, 5 o'clock, he helped with the usual duties about the hospital, went to his breakfast, and about 6:30, as he was on his way down to the bathroom, lost all account of everything, and the secondary state was again on him. On visiting him about 7:30 I found him lying on the bed, looking very irritable and cross and displeased. At this time he would not talk with me, but clearly manifested that he didn't want anybody to bother him. I endeavored to engage him in conversation, but failed. I tried to get him up and have him move around, but failed in this. He would do nothing but lie on the bed, apparently angry about something. I didn't see him again until 11 o'clock, at which time he was sitting up in the chair in his room with his cap on, and looking in a staring manner out of the window. Seeing him with his cap on, I asked him if he wanted to go out, when this conversation took place:

"Do you want to go out?"

"I don't want to go with you."

"Do you know who I am?"

"Yes, I do." (Very cross.)

"Who is talking to you?"

"I know you all right."

"Well, who am I? What is my name?"

"I wouldn't be apt to forget you; it's Jim Fulton, and I know you well enough; you might as well go on and let me alone."

Seeing that he believed me to be some other individual, and that he was not friendly to this person, I didn't insist on talking with him much or doing much for him under this condition. He continued in this state, at times walking about in the cottage, trying to open the different doors, and seemingly wanting very much to get out and go somewhere. After failing to get out of the door, he would go to the window and look longingly. This lasted until 12:05 at noon, September

21, when he came to himself again, feeling very nervous and weak. Patient all this time stated that he didn't remember anything during the six hours of the lapse. When told of his irritable mood and mistaken notion concerning his physician, he regretted it very much and seemed to feel bad about it. On further investigation I found that Jim, the man referred to above, was a man of the patient's acquaintance, and was not very friendly to the patient, but repeatedly circulated stories reflecting on him. This accounts for the patient's irritable manner in my presence, while taking me to be this man.

*Second Hypnotic Experiment.*—Patient, with consent, was easily hypnotized with purpose of securing some history of some of his lapses. We know that in his primary state of consciousness he was entirely unable to recall anything that occurred during any period of secondary consciousness. Therefore, thinking that a state of hypnosis might aid me in adding the missing links of his life, I made the experiment with that end in view. As recorded above, we know that concerning his sojourn from Baltimore to London he knows nothing. Not a single event could be recalled. The same is true of his journey from London to Cape Town, Africa. Under the state of hypnosis he was enabled to recall nearly everything that occurred during that particular lapse or "spell." I learned that he traveled from Baltimore to New York by rail, going over the Pennsylvania Railroad. At New York he paid \$5.50 for a ticket to London, making the trip in a fast vessel in six and one-half days. He traveled under the assumed name of Frederick Fields. He also revealed that after a few experiences in London he secured employment on a merchant vessel bound for Cape Town, Africa. On this vessel he labored in the kitchen and elsewhere. This much knowledge gained from him hypnotized satisfied me as to the success of the experiment, so I awakened him.

The ease with which the patient gave himself up to hypnotism and the very marked resemblance in expression, demeanor, etc., while in the hypnotic state to that while in the secondary conscious state was very striking. The chief difference, however, existed in the fact that while hypnotized he was amenable to suggestion and in the state of secondary consciousness he as a rule was not so. After coming out from the hypnotic state he felt the same tiredness and exhaustion he experienced after one of his periods in the state of secondary consciousness. Because of these facts I am led to suspect that the hypnotic state is closely analogous to the conditions of the dissociation of the personality.

The patient is still under my observation and has not had any disturbance in the field of consciousness since November, 1907, and the stigmata, excepting the abulia and suggestibility, have disappeared.

We regard the condition of the patient as improved only, and so long as the abulia and suggestibility remain we may look for a return of the dissociated personality. He is now employed as the hospital photographer and is getting along with ease and comfort, and this may be a factor in keeping him as well as he is at the present.

#### DISCUSSION.

DR. EDWARD P. ANGELL, Rochester N. Y., asked Dr. Gaver if he had looked up the data given by this patient in regard to his trips to London and elsewhere. Such statements were frequently the results of a dream-state represented by the mind as a fact. Dr. Angell added that fact and fiction were often alike to the patient.

DR. ALFRED GORDON, Philadelphia, said that he had reported, under the title of "Double Ego," the case of a young lady who told him that she had taken a trip to Europe and described, with such minute precision as to be almost convincing, the beautiful landscapes that she had observed in Switzerland and Italy. Yet Dr. Gordon doubted the story, and investigation proved it false. On another occasion, among many others, the patient told Dr. Gordon that she had been invited



to play a certain rôle in a theater; that she had done so and met great success; that everybody had applauded her, and that many managers had invited her to appear in this rôle in different places. Inquiry proved this story also untrue; it was simply a case of subconscious state in a hysterical person with autosuggestions. Dr. Gordon explained that the patient had suffered from distinct attacks of hysteria simulating epilepsy; that she was accustomed to spend hours in reading, especially novels of the ten-cent order, containing wonderful descriptions and thrilling adventures, which were a factor in the suggestion which induced her condition.

DR. W. T. WILLIAMSON, Portland, Ore., said that the likelihood of subjective error was sometimes in point, but it would not cover all such cases. Dr. Williamson cited a case in Connel Bluffs. A young man left home to go down-town, and disappeared and was not heard of for several months. At length his parents got a cablegram from Australia from the young man, stating that he was there and wanted money to get home. The father and mother met the young man at Seattle, brought him to Portland and placed him in Dr. Williamson's care. Dr. Williamson said that though he kept the young man under observation for months, he never found anything that suggested fraud. At Seattle the patient's father made investigations which corroborated the young man's story. Dr. Williamson believed that these facts could not be explained by the hypothesis of dream-state, subconscious state, or fraud.

DR. GEORGE A. MOLEEN, Denver, asked whether this subject had been afflicted at all with epileptic attacks. He remarked that he had seen a number of cases of postepileptic amnesia; one recently in which the patient's actions were automatic, during an attack of amnesia lasting for six hours. A number of cases in Denver had been under the observation of several neurologists, some of the attacks being of several months' duration; but no history of epilepsy was obtainable. Dr. Moleen said that he would like to know in all cases how many of the patients were afflicted with epilepsy.

DR. G. P. EDWARDS, Nashville, believed that the diagnosis should be considered more carefully. He said that he had always looked on these patients as paranoiacs, or afflicted with periodical or circulatory insanity rather than with hysteria.

DR. GAVER said that at the office of the ship company he had found that a man had travelled at the date mentioned by the patient, under the name of Fred Fields, the assumed name the patient had given while in the hypnotic state. Dr. Gaver could not give further corroboration except what was obtained through hypnotism. It seemed to him that if the patient's statements had not been true, he probably would not have been able to corroborate the story as he had told it while in the primary personality or normal state. The hypnotism, therefore, would have been the means of proving the fallacy of his story if it had been untrue. Dr. Gaver said that he had never seriously considered the case as one of epilepsy, not having observed any epileptic symptoms at any time. In substantiation of the diagnosis of hysteria, Dr. Gaver called attention to the fact that the case presented most of the major symptoms of hysteria, namely, marked suggestibility, abulia, breaking up of the field of consciousness, and very marked sensory disturbances, such as anesthesia and paresthesia. He did not regard the dual personality cases as epileptic or as the equivalent of epilepsy.

---

**Serum Diagnosis of Syphilis.**—Plant, Henek and Rossi, in the *Riv. di Patol. nerv.*, December 1907, xii, 12, conclude from their studies of the precipitation test of Fornet and his collaborators, (*Deutsche med. Wchnschr.*, 1907, No. 41) that this test can not be satisfactorily substituted for the deviation of complement test of Wassermann in the serum diagnosis of syphilis. They obtained the same reaction of precipitation by contact between the sera of syphilitics and paretics as well as between that of syphilitics and normal persons and also between two normal non-syphilitic sera. They do not deny the possibility of such a specific reaction under favorable conditions, but do not consider it reliable.

## THE ATTITUDE OF NEUROLOGISTS TOWARD ELECTROTHERAPY.\*

FRANK R. FRY, A.M., M.D.

Professor of Diseases of the Nervous System, Washington University.  
ST. LOUIS.

The history of electrotherapy reaches back many years, a hundred or more. It includes a long list of names of those prominently connected therewith as investigators and writers, some of them very eminent. The investigations show at all periods much scientific effort, to say nothing of the voluminous records of enthusiasts that have no actual scientific value. The modern treatise on electrotherapy begins, much as its predecessors have, with a recital of the physical, physiologic and chemical effects of electric currents, but fails, as its predecessors also have, to establish any important relation between these effects and the therapeutic results claimed from the application of electricity to the body in various ways. The only probable exceptions to this statement are certain well-understood surgical results and some of the results of phototherapy, so-called. The body of the profession has not only been open to conviction, but it has anxiously, I may say, awaited convincing evidence that this agent would eventually yield certain specific or special therapeutic properties. So far it has not done so except in the limited field above indicated. This at least is the verdict of the great majority of those who are best prepared to render one.

The neurologist can not avoid the responsibility of an opinion in this matter, although he realizes that there is still a considerable contingent of the electropathically inclined who are anxious to contest his conclusions. A strenuous argument on therapeutic questions is rapidly becoming a thing of the past, and I have no desire to engage in one. My purpose is to state and to briefly explain what I believe to be the attitude of neurologists generally toward the use of electricity in those diseases which they are called on to treat. Neurologists more than any other class of practitioners are appealed to both by the laity and by other physicians for an expression of opinion in this matter because it is naturally supposed that they are the best prepared for one, and I think it must be conceded that they are. In the first place, the most numerous claims for electrotherapy have been made in the treatment of neuropathic diseases; second, there are few neurologists, especially among those who have practiced for twenty years or more, who have not used electricity a good deal; third, and most important, only those capable of making reliable diagnostic distinctions in neuropathic diseases are as a class capable of reliable opinions concerning the therapeutic measures to be addressed to these diseases.

The use of electricity in the treatment of neuropathic diseases does not in any instance rest on a scientific basis. It is as purely empirical, in this class of diseases at least, as any of the remedies employed in medicine. This means that the results attributed to it and the manner in which they are obtained are simply matters of opinion—always an unreliable kind of testimony, and perhaps never more so than in questions of therapeutics. For example, one observer relates remarkable effects from a battery from which no current issues; another, admitting the psychic origin of certain effects, prefers to produce them by the sensation of the passing current.

---

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



To obtain certain results one insists on the galvanic, another the faradic and another the sinusoidal; another is confining himself to the static machine and getting more cures than he can account for; another is enthusiastic over electrophototherapy only; another has seen the most astonishing results from Arsonvalism.

Any one who has seriously and carefully used any kind of current in the treatment of disease for any length of time can truthfully testify that he has seen "good results," and even remarkable and astonishing things therapeutical. If he is a diagnostician he must soon discover that at least many of these results are psychic in their origin. He soon realizes, furthermore, that even if all the conspicuous results are not psychic he nor no one else has any means of proving the fact scientifically. In short, we know beyond question that many of the results are purely psychic, and we have no means of knowing that they are not all psychic. It will be readily seen that the whole argument reduces itself to a consideration of this fact.

Naturally, the neurologist with a growing diagnostic capability in neuropathic maladies has been first among practitioners to discern the psychic possibilities of certain remedies. He knows also what are the most convenient ones to use for this purpose and the proper places to apply them. He knows better than any one else, for example, where to use hypnotic suggestion and where electricity in order to test their greatest value, which means that he also knows where these remedies are weak or where harmful.

In the more serious and intelligent treatment of many neuropathic conditions we must rely on persuasion and education, i. e., persuasion in its technical sense and education in its broad sense. In doing this we strive for a deeper hold on our patient's ego, so to speak: a reliable footing in his confidence that can not be maintained by therapeutic clap-trap. Sometimes suggestive measures — electricity, for example — assist us in breaking into certain difficult psychic situations. For this purpose it is at times a convenience. But too often it is an inconvenience. The patient's cognizance of these things, i. e., of agents possessed of supposed special or unusual therapeutic power, is a hindrance, an inconvenience to the practitioner who is trying to reach an ultimate, a reliable therapeutic basis for a certain large class of patients. We can not teach these patients to rely on the simple hygienic measures in which they must eventually find security until we have entirely overcome their yearnings for therapeutic specialties. This is what we mean by the inconvenience of electricity, and not merely the inconvenience due to the time and patience consumed in handling electrical apparatus.

In view of the foregoing the futility of attempting to formulate rules for the use of electricity in this particular field is evident. Some will continue to use it extensively and find a satisfaction in doing so. One practitioner will write four times as many prescriptions as his next-door neighbor and intimate friend in professional life, but he can not convince this friend that it is commercially profitable or scientifically necessary to follow his example. Our therapeutic tastes and habits still vary with our temperaments and training, but we are learning to be very broad and charitable about questions of "practice" and scientifically more accurate. In short, we are all awakening to the great rôle that suggestion plays in the whole field of therapeutics and learning how to apply the gauges that are furnished by it.

Twenty years or more ago marked a period of great improvement in electrical apparatus. There began to appear perfected static machines, better and more convenient galvanic and faradic batteries, and appliances for controlling house currents, milliamperemeters and "normal" electrodes for measuring dosage, etc. With all this there was an increased interest and decided activity in the use of electricity, and many believed that an important renaissance in electrotherapy had begun. At that time neurologists quite generally began to equip themselves for a new trial, as it were, a scientific test, of electricity. Their verdict at the present time is founded on this kind of a trial.

In closing I wish to merely allude to the diagnostic use of electricity for the purpose of reminding my hearers, I hope unnecessarily, that neurologists as a class have not slighted any important known function of electricity in practice. The diagnostic value of it is appreciated only by neurologists, or those actually capable of diagnostic refinements in neuropathic diseases, and it is the only practical scientific use that has been made of it in medicine proper, and this, I repeat, is to the credit of neurologists alone, and they must also determine ultimately the therapeutic values of electricity in their particular line of practice.

#### DISCUSSION.

DR. C. EUGENE RIGGS, St. Paul, said that commercialism had placed its stamp on the use of electricity; that manufacturers had flooded the country with various forms of apparatus, and that sometimes doctors had been unfortunate in their handling of this remedy, especially when they had placed it in the hands of incompetent nurses and ill-informed internes. As a consequence reliable data could not be expected regarding electrotherapy. Dr. Riggs said that nobody could question the value of cataphoresis in the relief of pain or of galvanism in the relief of neuralgias, or of the high-frequency current in the relief of pain and high arterial tension. Dr. Riggs said that electricity had a real tonic and sometimes a sedative influence.

DR. WILLIAM BENHAM SNOW, New York, took an attitude opposite to that of Dr. Fry and said that Dr. Fry's premises were not based on scientific recognition of the physical or physiologic action of any of the electric currents. Dr. Fry had assumed that the effects of these currents were purely the result of suggestion. Dr. Snow said that if the current or the application of the current would remove pain, swelling, tenderness, and the lesion itself, in the case of a severe sprained ankle or wrist, it was something more than any suggestion that the personality of the physician could effect. Dr. Snow said that he knew from a long experience in the intelligent use of the static current that its great field was in its action on congested processes. He added that it must be understood and would be recognized in the future, if not to-day, that the treatment of nervous diseases was the treatment of inflammatory processes. Reflex neuroses, he said, unquestionably had their origin in, and were relieved by the relief of these inflammatory conditions. Dr. Snow said that he was effecting these results regularly in cases of neurasthenia, hysteria, neuritis and nervous diseases associated with every sort of inflammatory process; and these results were certain; there was no such things as failure in the treatment of localized uncomplicated peripheral neuritis or an inflamed joint, with the static current in the hands of an operator who was capable of applying it.

DR. CHARLES K. MILLS, Philadelphia, said that electricity in medicine had a field of usefulness, both in diagnosis and in therapeutics; but he thought that field a limited one, and believed that a definition of the uses and limitations of the agent would be most serviceable. Dr. Mills said that after many years of observation he was convinced that at times he was able to clinch the differential diagnosis of a peripheral from a central palsy, and perhaps to determine certain facts with



regard to organs out of sight, by painful effects of the use of electric currents. Dr. Mills believed that electricity was largely a suggestive treatment, but not merely a method of treatment by suggestion. He believed with Dr. Mitchell that the skilful use of the faradic current in the treatment of patients suffering from neurasthenic conditions might prove useful by serving as a passive exercise, and in all probability by improving the condition of the blood. This covered much of its value even outside of neurasthenia. Dr. Mills said that neuritis, especially the chronic forms of it, could be treated with some advantage by a galvanic current of a moderate number of milliamperes, but he did not think this treatment beneficial in a wholesale way. Dr. Mills believed that pain not due to neuritis could also be relieved, not only by the currents of high-frequency, but by currents of the old-fashioned sort used skilfully. Some other beneficial results could be secured, as for instance in states of anemia and in some forms of indigestion. To make a sweeping assertion that the whole subject of these diseases of the nervous system and their treatment might be comprehended by regarding them as inflammatory with reflex results, was misleading. Dr. Mills believed that static electricity had some use. He stated that there was a good electrotherapeutic plant and an opportunity to test its value at the University of Pennsylvania. He said that it probably did some good in certain conditions of anemia and in a few other affections. Dr. Mills said that the value of electricity in medicine should be acknowledged but not exaggerated.

DR. WHARTON SINKLER, Philadelphia, thought that in many cases the effects of electricity were psychic, especially in cases of neurasthenia, hysteria, spinal tenderness, etc., but believed nevertheless that electricity had a distinct place in the treatment of various nervous diseases, more especially in the local palsies, facial paralyses, local neuritis and other conditions. He had recently seen a man with musculospinal palsy, the result of carrying a load of trees on his shoulder and arm. He had complete wrist-drop and palsy of the extensors of his fingers for eight weeks. After five days of faradism he was able to extend his wrist and fingers. That result was not psychic. Therefore, Dr. Sinkler believed that the proper use of certain forms of electricity was a remedy in many conditions.

DR. CHARLES R. BALL, St. Paul, reported the case of a patient who had received a fall in a runaway and evidently had hemorrhage of the spinal cord in the cervical enlargement. He had something of the nature of the so-called Brown-Séquard symptom-complex paralysis of motion on one side and of sensation on the other. This man last winter had been brought into the hospital after having lain on his back three years, unable to feed himself and absolutely helpless. Yet in four to five months' time, with daily treatment by means of a simple faradic battery, the man had been put on his feet and was now able to walk several miles without sitting down, could feed himself and partially dress himself. Dr. Ball said that perhaps that result could just as well have been obtained by other means, but it seemed to him doubtful if any form of massage could so have selected and separated the muscles atrophied from disuse and from disease and have developed the muscles still capable of development as did electricity. It seemed to Dr. Ball that such results as that proved electricity an important factor in the medical armamentarium that should not be neglected. Another case cited by Dr. Ball was that of a man 75 years old, stupid and feeble-minded, with cortical degeneration, and blood pressure at 180. He had been a hack-driver but was entirely unable to follow his occupation, because of mental dulness. With treatment by autocondensation every other day, inside of ten days this man became bright, alert and natural; his blood pressure went down from 180 to 165. Dr. Ball believed that to be electrical nihilists would deprive the profession of the use of an important therapeutic agent, valuable where intelligently applied in many ailments.

DR. FRANK R. FRY, St. Louis, believed that the mere citation of individual cases would not have much weight without comparison with control experience and consideration of the different ways of looking at results by different persons. In

the treatment of rest-cure cases, Dr. Fry said that he had formerly been accustomed to use the faradic battery, but he now found that he could get very good effects from brush massage. He had written his paper, not to deny the possibility of obtaining results from electricity, but to suggest the advantage of occasionally recasting current ideas on the subject.

## THE SERUM TREATMENT OF EPIDEMIC CEREBROSPINAL MENINGITIS.

BASED ON A SERIES OF FORTY CONSECUTIVE CASES.\*

CHARLES HUNTER DUNN, M.D.

Clinical Instructor in Pediatrics, Harvard Medical School; Assistant Physician at the Children's Hospital; Assistant Physician and Pathologist at the Infants' Hospital.

BOSTON.

This report is based on a series of forty consecutive cases of epidemic cerebrospinal meningitis treated with Dr. Flexner's antimeningitis serum. All cases in which the *Diplococcus intracellularis* was found in the cerebrospinal fluid, without regard to the type of case or stage of disease, are included in the series. Sixteen cases occurred in the Children's Hospital in the service of Dr. Rotch, eight cases occurred in various other hospitals in cities and towns of Massachusetts, and sixteen cases occurred in private practice.

### CONDITIONS OF ADMINISTRATION.

The antiserum was administered in all cases by injection into the cerebrospinal canal according to the technic recommended by Dr. Flexner and described in a previous publication.<sup>1</sup> As soon as a suspected case was reported to me, lumbar puncture was at once performed. If the cerebrospinal fluid obtained was cloudy, the antiserum was injected at once, without waiting for the bacteriologic examination of the cerebrospinal fluid, and if fluid was clear, no antiserum was given until subsequent examination revealed the presence of the *D. intracellularis*.

Thus in some cases of meningitis in which other organisms, pneumococcus or streptococcus, were subsequently found, the patients were given one injection of antiserum. In none of them did its use appear to do any harm. These cases are, of course, not included in the series, but are mentioned in order to bring forward the point that I believe the advantages to be gained by the earliest possible use of the antiserum in epidemic cerebrospinal meningitis are great enough to outweigh any possible disadvantage from its use in other forms, and that it should be used at once in all cases in which the patients have cloudy cerebrospinal fluid.

In those cases in which a rapid and marked improvement in the symptoms occurred after the first injection, accompanied by a permanent fall of temperature to the normal, no further injection was given. In those cases in which this did not occur, the injections were repeated daily until nervous and subjective symptoms were completely relieved and the temperature had reached the normal, or until four doses had been given. In resistant or relapsing cases further doses were given according to circumstances. The routine dose was 30 c.c.; in many instances larger doses were given, the maximum being 45 c.c. In some instances, when the amount of fluid obtained was small, and in all instances when too great an increase of intradural pressure was feared,

\* Read at the Annual Meeting of the American Pediatric Society, Delaware Water Gap, Pa., May 25-27, 1908. The discussion on this paper and on the paper of Dr. Churchill, which follows, will be found under Society Proceedings, this issue.

1. Boston Med. and Surg. Jour., Feb. 19, 1908.



smaller amounts were injected, the minimal being 10 c.c. This was the general routine; there were some exceptions.

The serum has been used in forty-five cases of epidemic cerebrospinal meningitis, but cases still pending are not included in the series. Of the forty finished cases nine patients have died and thirty-one have recovered. This is a mortality of 22.5 per cent. and a rate of recovery of 77.5 per cent. Of the thirty-one cases in which the patients recovered, two were left with sequelæ, one being deaf and one both blind and deaf. The recovery was complete in twenty-nine cases, or in 72.5 per cent.

Mortality figures are never of conclusive value, on account of the variations in the mortality rate with various localities, seasons and epidemics. I believe, however, that this low mortality rate is of considerable significance as bearing on the value of the Flexner antiserum. I have collected a number of reports, from various epidemics and hospital records, from which the average mortality appears to be between 70 and 80 per cent. Although in certain epidemics it has been considerably lower than this, it has never fallen nearly so low as in this series of cases.

#### OBJECTIONS MET.

The significance of these figures as bearing on the value of the antiserum may be objected to on the following ground: That, as the mortality of this disease

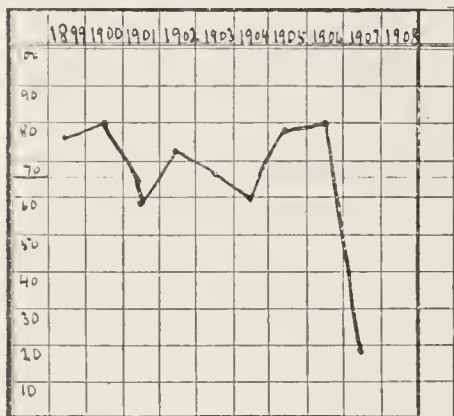


Figure 1.

Fig. 1.—Chart showing death rate from cerebrospinal meningitis at the Children's Hospital from 1899 to 1908.

Fig. 2.—Case 10. Showing temperature curve in aborted case. Early injection of antiserum followed by critical fall of temperature and immediate cessation of all symptoms.

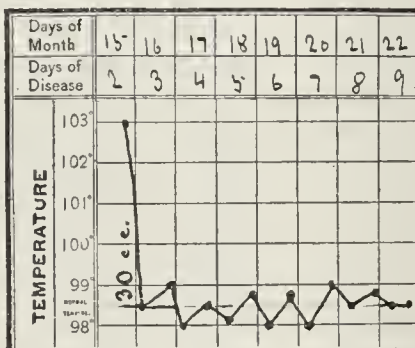


Figure 2.

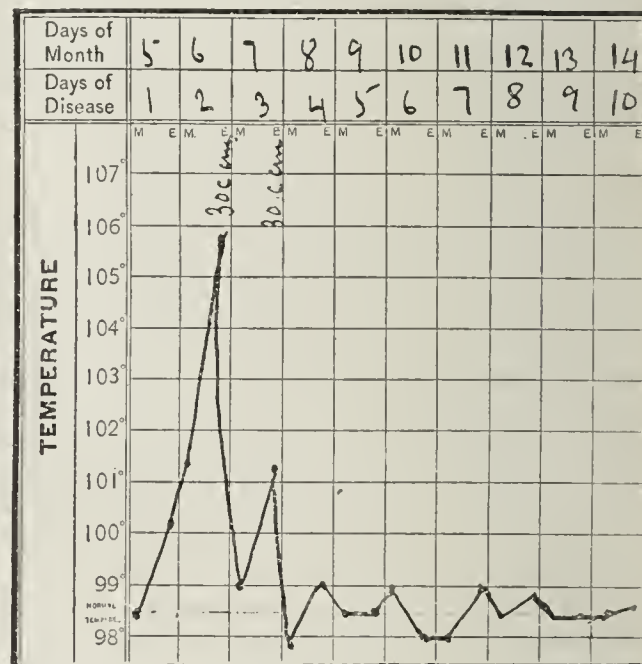


Figure 3.

Fig. 3.—Case 32. Aborted case, with slow onset on the first day, becoming suddenly fulminant on the second day. Injection of antiserum followed by crisis, and the immediate and permanent relief of symptoms.

is known to present wide variations at different times, the present series of cases may represent a particularly mild type of disease prevalent this year in Boston and the surrounding cities and towns. In answer to this objection I would say that clinically the type of disease prevalent this year has not been milder than that which occurs every year sporadically in Boston and its vicinity. It must be remembered also that all types were included in the series, fulminating cases in which the patients were moribund when seen, chronic cases with the patients in the latest stage of exhaustion, and cases in which the patients died of an intercurrent disease while under treatment.

The disease may for convenience be divided into the following types:

1. The well-known fulminating type, in which the progress of the disease was so rapid that the patients when seen were already in an extremely serious condition, with profound coma and weak heart.

2. Severe cases, in which the patients were unconscious, or in violent delirium, with poor general condition.

3. The common type, in which the patients were not unconscious, but very apathetic or in mild delirium, with fairly good general condition when seen.

4. The mild type, in which the patients were perfectly rational, with headache, rigidity, or retraction, and good general condition.

5. The chronic type, in which the patients were seen late in the course of the disease, unconscious, but without fever or active symptoms.

In the present series these types were distributed as follows:

Type.	Cases.	Deaths.
1. Fulminating .....	3	1
2. Severe .....	6	2
3. Common .....	19	1
4. Mild .....	6	0
5. Late chronic .....	6	5

#### BASIS OF COMPARISON.

I have not been able, for purposes of comparison, to collect enough cases treated in Boston and vicinity this year without the antiserum. It is possible, however, to compare the mortality at the Children's Hospital this

year under the use of the antiserum with the mortality in other years under other methods of treatment, as sufficient cases have been treated in this hospital each year to afford a basis for such a comparison. While the number of cases treated each year varies, the average yearly number for the last ten years is twenty. This comparison also throws light on the comparative value of the treatment with the antiserum and of other methods.

Up to 1903 the treatment was largely symptomatic. In 1903, 1904 and 1905 lumbar puncture was largely employed as a therapeutic measure. Whenever the withdrawal of the cerebrospinal fluid appeared to be followed by improvement in the patient's condition, it was repeated at short intervals, particularly at those times when the condition showed any tendency to grow worse. It was concluded at that time that repeated lumbar puncture is of some slight value as a therapeutic measure. In 1906 the cases were treated by the frequent or daily administration subcutaneously of diphtheria antitoxin.

In 1907 a vaccine prepared from the *D. intracellularis* was used in connection with the estimation of the op-



TABLE OF RESULTS OF USE OF SERUM IN CEREBROSPINAL MENINGITIS.

No.	Age.	Dates of Injections.	Total Amount Given in c.c.	Maximum Single Dose in c.c.	Day of Disease.	Type of Case.	No.	Immediate Effect.	Duration of Fever.	Temperature Range.	Duration of Symptoms.	Result.
1	3 years.	Nov. 6, 7, 8, 9, 25, 26. . .	105	30	2	Common. . . .	1	Temporary fall of temperature.	23 days. .	99-105	20 days.	Complete recovery.
2	3½ years.	Nov. 14, 15, 16, 17, 25, 26, 27, 28.	200	30	8	Common. . . .	2	Temporary fall of temperature.	16 days. .	99-103	16 days.	Complete recovery.
3	3 years.	Nov. 15, 16. . . . .	30	15	14	Chronic stage	3	None. . . . .				Death.
4	6½ years.	Nov. 28, 29, 30, Dec. 1. .	120	30	3	Severe. . . . .	4	Marked relief of symptoms.	6 days. .	99-103.6	3 days.	Complete recovery.
5	1 year. .	Dec. 10, 11, 12, 13, 18, 19, 20, 21.	325	40	21	Chronic stage..	5	Permanent fall of temperature.	1 day . .	101-102	. . . . .	Death.
6	6 years.	Dec. 17, 18, 20. . . . .	90	30	2	Common. . . . .	6	Critical fall of temperature to normal; relief of symptoms.	5 days. .	98-101	2 days.	Complete recovery.
7	7 years.	Dec. 22. . . . .	30	30	1	Mild. . . . .	7	Permanent fall of temperature.	1 day . .	98.4-99.6	4 days.	Complete recovery.
8	10 years.	Dec. 27, 28, 29, 30. . .	100	30	4	Common. . . . .	8	Marked relief of symptoms.	5 days. .	98-100	1 day..	Complete recovery.
9	6 years.	Jan. 6 (twice). . . . .	60	30	1	Fulminant. . . .	9	Fall of temperature to normal; marked relief of symptoms.	12 days. .	99-100	2 days.	Complete recovery.
10	4 years.	Jan. 15. . . . .	30	30	2	Severe. . . . .	10	Fall of temperature to normal; marked relief of symptoms.	12 hours. .	. . . . .	1 day..	Complete recovery.
11	21 years.	Jan. 23, 24, 28, Feb. 3. .	180	45	21	Severe in chronic stage.	11	Slight fall in temperature; no relief of symptoms.	2 days. .	. . . . .	. . . . .	Death.
12	14 weeks.	Jan. 28, 29, Feb. 2, 8, 10.	90	30	5?	Common. . . . .	12	Fall of temperature. .	15 days. .	98-100	2 days.	Complete recovery.
13	29 years.	Feb. 6, 7. . . . .	60	30	8	Mild. . . . .	13	None. . . . .	4 days. .	99-102	4 days.	Complete recovery.
14	9 years.	Feb. 7, 8, 9, 10. . . . .	120	30	5	Common. . . . .	14	Fall of temperature; marked relief of symptoms.	6 days. .	99-103	6 days.	Complete recovery.
15	8 years.	Feb. 6, 7, 8, 9, 16, 19, 20, 21.	270	45	5	Common. . . . .	15	Fall of temperature; marked relief of symptoms.	16 days. .	98.6-103.8	5 days.	Complete recovery.
16	2 years.	Mar. 1, 2, 3, 5. . . . .	120	30	3	Severe. . . . .	16	Marked relief of symptoms.	7 days. .	100-102	8 days.	Complete recovery.
17	11 mos. .	Feb. 25, 26. . . . .	60	45	?	Chronic. . . . .	17	None. . . . .	1 day . .	. . . . .	. . . . .	Recovered; blind and deaf.
18	16 years.	Feb. 20, 21, 23, Mar. 2. .	120	30	18	Common. . . . .	18	Slight relief of symptoms; lysis.	8 days. .	. . . . .	8 days.	Death, bronchopneumonia.
19	3½ years.	Mar. 17, 18, 19, 20. . . .	140	40	11	Common. . . . .	19	Temporary collapse. .	17 days. .	. . . . .	5 days.	Complete recovery.
20	5 mos. .	Mar. 11, 13, 17, 19. . . .	45	15	4	Common. . . . .	20	Marked improvement in general condition.	10 days. .	. . . . .	7 days.	Complete recovery.
21	13 years.	Mar. 18. . . . .	30	30	29	Chronic moribund.	21	None. . . . .	. . . . .	. . . . .	. . . . .	Death 3 days.
22	16 years.	Mar. 21, 22, 23, 25, Apr. 4.	150	30	5	Common. . . . .	22	Fall of temperature; relief of symptoms.	. . . . .	. . . . .	. . . . .	Complete recovery.
23	4 years.	Mar. 21, 23. . . . .	60	30	50	Chronic, mild..	23	Improvement in general condition.	. . . . .	. . . . .	8 days.	Complete recovery.
24	2 years.	Mar. 22. . . . .	30	30	8	Mild. . . . .	24	Relief of symptoms; otitis media.	. . . . .	. . . . .	7 days.	Complete recovery.
25	2 years.	Mar. 25. . . . .	120	30	3	Common. . . . .	25	Marked relief of symptoms.	3 days. .	100-105	4 days.	Complete recovery.
26	4½ years.	May. 25, 26, 27, 28. . . .	120	30	5	Common. . . . .	26	Relief of symptoms. .	7 days. .	. . . . .	8 days.	Complete recovery.
27	21 years.	Mar. 24, 25, 27, Apr. 1, 2, 3, 4, 15, 16, 17, 18.	330	30	3	Severe. . . . .	27	Rapid fall of temperature; relapses.	. . . . .	. . . . .	. . . . .	Death.
28	5 years.	Mar. 25, 26, 27, 28, Apr. 3, 6, 8, 15, 16, 17.	305	40	2	Severe. . . . .	28	Slight improvement in general condition.	24 days. .	. . . . .	25 days.	Recovery; deaf.
29	9 years.	Apr. 11, 12. . . . .	145	30	3	Common. . . . .	29	None. . . . .	14 days. .	. . . . .	13 days.	Complete recovery.
30	29 years.	Mar. 30, 31. . . . .	60	30	3	Fulminant. . . .	30	Temporary return to consciousness.	. . . . .	. . . . .	. . . . .	Death in 28 hours.
31	16 years.	Mar. 30, 31, Apr. 1, 2. .	120	30	6	Mild. . . . .	31	Marked relief of symptoms.	3 days. .	. . . . .	3 days.	Complete recovery.
32	5 years.	Apr. 6, 7. . . . .	60	30	2	Fulminant. . . .	32	Permanent fall of temperature; marked relief of symptoms.	1 day . .	. . . . .	1 day..	Complete recovery.
33	24 years.	Jan. 25, 27. . . . .	60	30	21	Common. . . . .	33	Permanent fall of temperature and complete relief of symptoms.	1 day . .	. . . . .	1 day..	Complete recovery.
34	7 years.	May 4, 6. . . . .	45	30	8	Common. . . . .	34	Relief of symptoms; permanent fall of temperature.	1 day . .	. . . . .	1 day..	Complete recovery.
35	4 years.	Apr. 19, 20, 21, 25. . . .	105	30	5	Mild. . . . .	35	Complete relief of symptoms.	7 days. .	. . . . .	1 day..	Complete recovery.
36	21 mos. .	May 11, 12. . . . .	60	30	2	Common. . . . .	36	Marked relief of symptoms.	2 days. .	. . . . .	4 days.	Complete recovery.
37	14 years.	Apr. 21, 22, 23, 27, 28, 29.	180	30	. .	Common. . . . .	37	Relief of symptoms. .	10 days. .	. . . . .	10 days.	Complete recovery.
38	15 years.	Apr. 26, 27. . . . .	60	30	. .	Severe. . . . .	38	Slight fall in temperature; no relief of symptoms.	. . . . .	. . . . .	. . . . .	Death in 29 hours.
39	2 years.	Apr. 24, 25, 27. . . . .	45	15	. .	Late, chronic..	39	None. . . . .	. . . . .	. . . . .	. . . . .	Death in 2 weeks.
40	4 years.	Apr. 30, May 1, 2, 3, 6, 10.	195	45	. .	Common. . . . .	40	None. . . . .	14 days. .	. . . . .	6 days.	Thoroughly convalescent.



sonic index. Each year is regarded as beginning November 1 of the preceding calendar year, because we began to use the antiserum in November, 1907. I could not find any notable variation in the type of the disease from year to year. Figure 1 shows the figures.

It appears that the lowest mortality of any year before this was 58 per cent., and that it varied between 58 per cent. and 80 per cent., but that this year, under the use of the Flexner antiserum, the mortality has shown a remarkable drop to only 19 per cent. We may conclude that the other methods of treatment, vaccines, diphtheria antitoxin, and repeated lumbar puncture, are of little value in comparison with the antiserum.

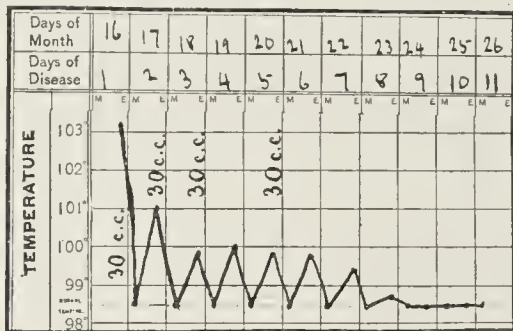


Fig. 4.—Case 6. Early injection of antiserum followed by temporary fall of temperature to normal, with marked relief of symptoms. Subsequent defervescence by lysis. This chart is typical of the commonest result of the early use of the serum in a severe case.

#### LIMITATIONS OF THE SERUM.

The nine fatal cases in the series throw a certain amount of light on the limitations of the value of the serum. Of these nine, five were cases seen late in the course of the disease, at a time when the patients were in the well-known chronic stage, unconscious, and without fever or active symptoms. In one of these the serum was not given until the patient was actually moribund. Of the other four cases, one was of the fulminating type, one a very severe case, and one patient died of an

the disease as to present a very sharp contrast with the course usually seen in cerebrospinal meningitis treated by other methods.

Epidemic cerebrospinal meningitis, while showing wide variations in symptomatology and severity, presents certain characteristic features, to which we have become accustomed. In the fulminating and severe cases the patients either grow progressively worse and die in a comparatively early stage, or the disease gradually passes into a chronic stage in which the patient lies unconscious, with a varying fever for weeks or months. In time the fever disappears, but death usually occurs after a long period of illness. Even in the com-

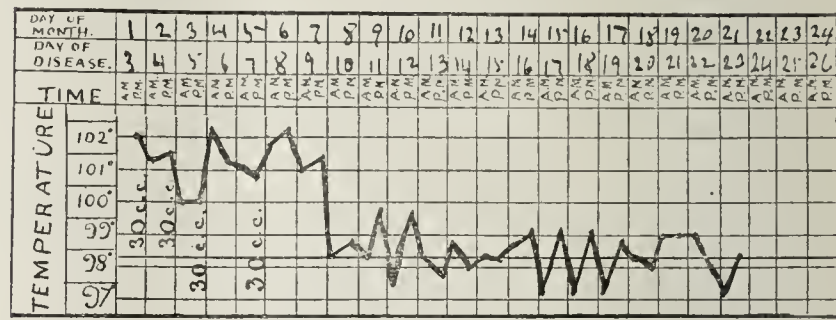


Fig. 5.—Case 16. Early injection of antiserum followed by gradual improvement in symptoms, and crisis after five days.

mon and milder types, when recovery occurs, it is usually after a prolonged illness, often reaching many weeks. In the records of the last nine years at the Children's Hospital I could find no instance in which a proven case of cerebrospinal meningitis was aborted or terminated suddenly by crisis.

#### EFFECTS OF THE SERUM.

The three principal effects of the use of the serum seem to be: First, to produce a fall of temperature; second, to produce a rapid improvement in the patient's general condition, accompanied by a more or less marked

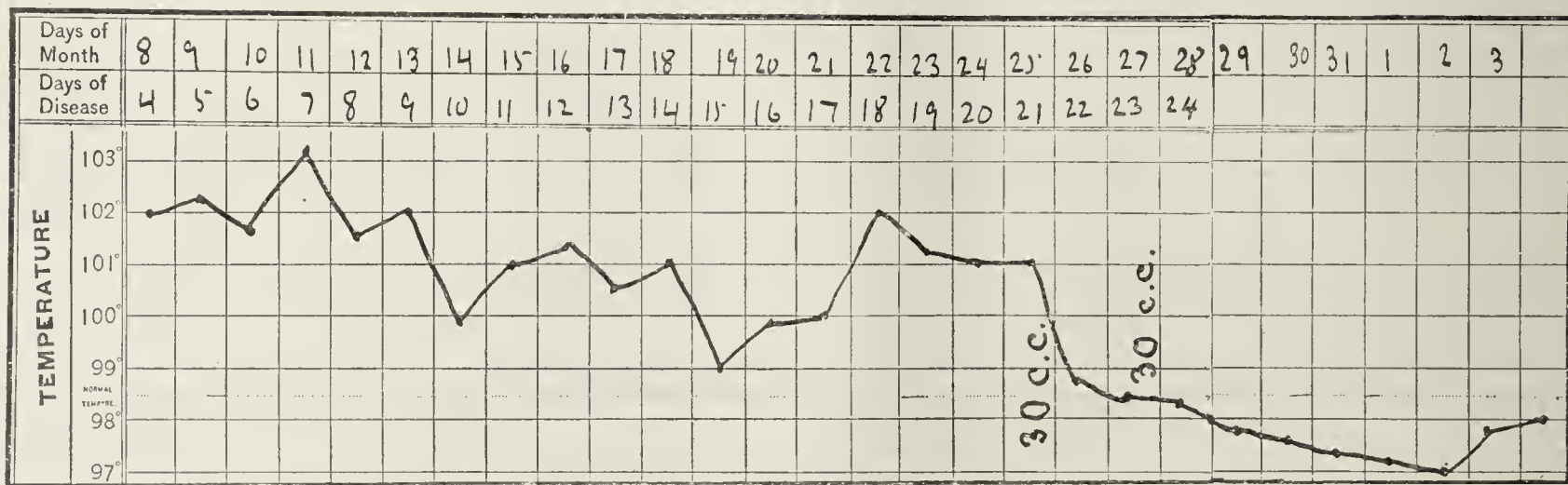


Fig. 6.—Case 33. Late injection of antiserum followed by immediate crisis and very rapid convalescence.

intercurrent bronchopneumonia, coming on after the temperature had come down to normal and all meningeal symptoms had subsided. The last case was one of average severity, in which the serum appeared to produce a slight improvement in the beginning, but which later appeared uninfluenced by the antiserum, advanced into the chronic stage, and a fatal result ensued after many weeks of illness.

My belief in the great value of the Flexner antimeningitis serum is based not chiefly on its apparent effect on the mortality of the disease, but on the very marked and striking effect which its use appears to produce in individual cases. It so modifies and changes the course of

relief of certain symptoms, and, third, to cut short the course of the disease.

The most striking effect on the temperature is a permanent critical fall following the first dose of serum. This occurred in ten cases, the temperature falling at once to normal, or nearly normal, and showing no further tendency to rise. Other cases showed a similar critical fall of temperature, which was, however, not permanent, the temperature rising again and finally coming down by lysis. Such a temporary crisis occurred in four cases. Another effect was seen in a rapid permanent lysis, which was very striking in cases in which there had been a consistent high temperature up to the time



when the first dose of serum was given. This occurred in nine cases. A similar lysis, but not permanent, the temperature going up again, occurred in two cases. A temporary sharp fall of temperature, not to the normal and not permanent, occurred in four cases; in these the temperature rose again, to come down by lysis later in the course of the disease. There was no immediate effect on the temperature noted in five cases. In the remaining six cases the patients had a normal temperature

particularly in the late chronic cases, no such effect was noted. The rigidity of the neck and Kernig's sign were usually much more persistent, so that at times patients remained for some time normal in every way, even playing with the other children of the ward while these signs still persisted. The frequency of occurrence of this improvement in the symptoms and general condition is shown by the following table:

Improvement.	Cases.
Immediate marked .....	18
Immediate slight.....	6
Immediate temporary .....	4
Slower .....	7
None (all late chronic).....	5

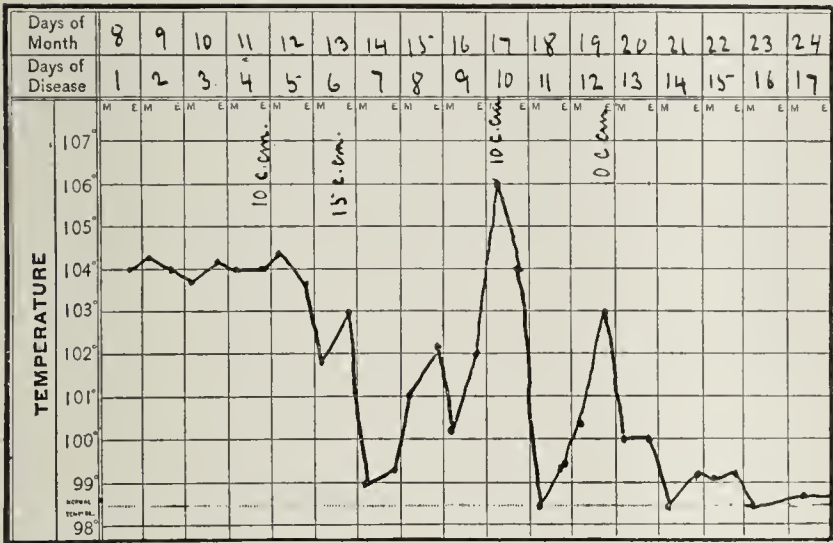


Fig. 7.—Case 20. Tendency to relapse, controlled by small doses of antiserum.

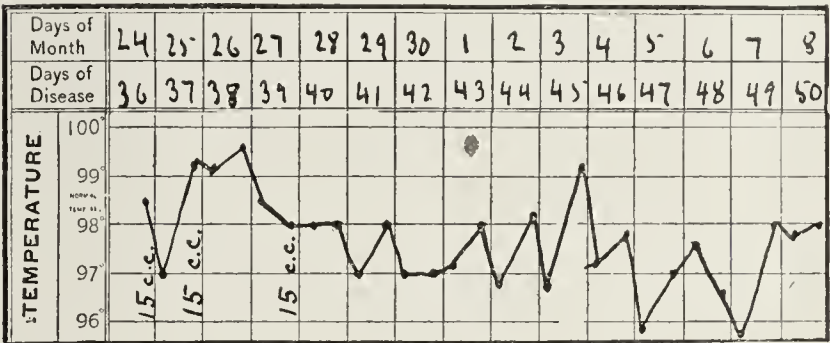


Fig. 9.—Case 39. Late case in chronic stage, with subnormal temperature after five weeks' illness. No effect from antiserum, and death from exhaustion.

when the serum was given. See illustrative charts (Figs. 2 to 9).

ITS EFFECT ON SYMPTOMS.

The effect on the symptoms and general condition is the most striking phenomenon observed with the use of the serum. In some cases there occurred a permanent return to consciousness, a disappearance of mental dullness, a disappearance of delirium, and a disappearance

As to the cutting short of the disease, the average length of time which patients remained under treatment was but a small fraction of the time which patients who recovered remained under treatment at the hospital in previous years. The duration of symptoms after the first dose of serum, including the rigid neck and Kernig's sign, which were the last to disappear, is shown as follows:

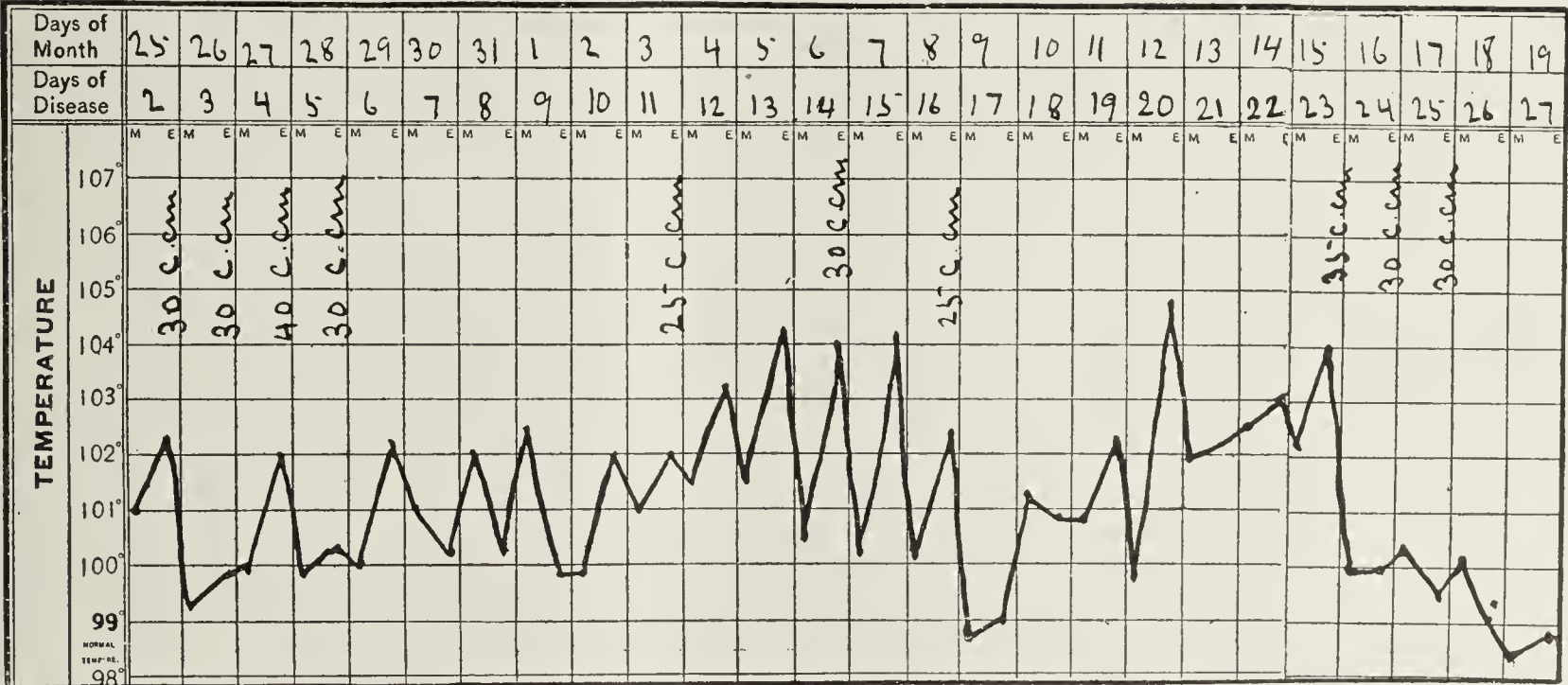


Fig. 8.—Case 28. Resistant case, in spite of early use of antiserum. Early improvement in symptoms, but persistent fever.

of headache, hyperesthesia, tenderness of the neck or vomiting. These symptoms were often relieved completely within twenty-four hours after the first injection, the patient changing in the most remarkable way from a serious condition of coma to a favorable condition of normal mental activity.

At other times the improvement in this set of symptoms occurred more slowly, and at still other times, par-

Weeks.	Cases.
1, or under.....	20
2.....	7
2 to 3.....	2
Over 3 .....	2

ITS EFFECT ON THE CEREBROSPINAL FLUID.

Another notable effect of the serum is seen in the successive examinations of the cerebrospinal fluid during



the period of its use. This effect is most striking in early cases, in which the cerebrospinal fluid contains large numbers of diplococci. In such a case a great many intracellular diplococci are observed in the fluid withdrawn by the first lumbar puncture. Twenty-four hours after the first injection the fluid presents a strikingly different picture. The whole number of organisms seen is much smaller, but the chief change is that the majority are intracellular, only rare extracellular forms being seen. The third lumbar puncture shows still fewer diplococci, and those only intracellular. In the fourth fluid, after three doses, there are frequently no diplococci to be found, or, at most, very rare intracellular forms.

Relapses sometimes occur under the use of the serum (Fig. 7). In a relapse, after a period of improvement, the symptoms begin to recur and the temperature to rise. This happened in seven cases. In two of these cases the serum was given in small single doses and was not repeated daily, although symptoms were not completely relieved, the treatment being repeated only in single doses when the relapses became plainly manifest. Each relapse responded to one dose of serum, but I believe the course of the disease would have been shortened if the treatment had been pushed at the outset, or if several successive doses had been given at the first relapse. In one case the treatment at the outset was interrupted by inability to obtain cerebrospinal fluid. Later, when the relapse occurred, it yielded promptly and permanently to three successive daily injections. In the remaining four cases the relapse occurred in spite of proper treatment at the outset. In two of these, treatment of the relapse by single doses of serum gave only temporary improvement, but both cases yielded permanently when four successive full doses were given.

#### THE LACK OF SEQUELÆ.

The completeness of recovery is another noteworthy point in this series. There were sequelæ in two cases only, one child being deaf and one blind and deaf. The results of the use of the serum appeared to depend chiefly on how early it was first used. The earlier it was employed the more marked were its effects. In 5 cases the disease was suddenly aborted after one dose of serum—that is, there was an immediate fall of temperature to normal and all symptoms were at once completely and permanently relieved. In 4 of these cases the serum was given in the first forty-eight hours. The fifth case was an exception, the disease having run a steady unchanged course for twenty-one days, with constant fever and symptoms. A crisis took place and there was complete relief of symptoms after one dose of serum. In 17 cases there was very rapid and permanent improvement, with a short convalescence. In 12 of these cases the serum was given in the first week, in 3 in the second week, in 1 in the third week, and in 1 case the patient was in the chronic stage, having been ill fifty days: in this case the temperature was normal when the serum was given, but the child was vomiting and in very poor condition. The organisms were still fairly numerous in the cerebrospinal fluid. Vomiting ceased and very rapid improvement occurred after one dose of serum. In 9 cases improvement was slower, with or without relapses. In 7 of these cases the serum was given in the first week, and in 1 in the second week. In 8 cases the serum had no marked effect: of these, 3 were in the first week, the other 5 being late chronic cases.

The relation between the mortality and the stage of the disease is shown by the following table:

Serum given in first week, 8 per cent.
Serum given in second week, 0 per cent.
Serum given after second week, 77 per cent.

We may conclude that the prospects of aborting or rapidly cutting short epidemic cerebrospinal meningitis are better the earlier in the disease the serum is given, and that the antiserum usually has no effect in the late chronic stage. There were cases which proved exceptions to this rule, as in three cases in which the serum was used comparatively early the patients died. On the other hand, one patient in the late chronic stage began to improve immediately after one dose of serum and made a rapid convalescence. This would show that there is always some hope of a good result so long as diplococci are present. I believe the serum in most cases causes a cessation of the active process and that the resulting course of the disease depends mainly on the extent of tissue damage which has already been done.

#### AMOUNT OF SERUM TO BE GIVEN.

As to the amount of serum which should be given, I was at first afraid to inject amounts larger than the quantity of cerebrospinal fluid withdrawn. After several patients, to whom small doses had been given, had shown a less favorable course, more prolonged illness and a tendency to relapse, I began to use larger doses. A few patients showed signs of collapse immediately after an injection, but in no case were these signs of long duration, nor did they end in death. I believe that 30 c.c. can be given usually with perfect safety, even when smaller amounts of fluid are withdrawn. I have given, without any bad results, as much as this when no fluid was withdrawn. One can judge to a certain extent how far it is safe to go by the feeling of resistance to the injection of the serum. In cases in which larger amounts of fluid are withdrawn I believe 45 c.c. should be given at a dose.

The daily injection of the serum in most cases seemed to be effective. After four doses have been given, if, after one or two days the case proves resistant, or at any time if there is a tendency to relapse, this treatment should be repeated. It is a question whether in some severe cases the serum should not be administered oftener than once in twenty-four hours. In two very severe cases death occurred in spite of the early use of the serum. In both of these cases a notable improvement was shown after the first dose and continued up to within a few hours of the time I arrived to give the second injection. Then both patients began to grow rapidly worse, so that when the second injection was given the condition of each was practically hopeless. I think it is possible these patients might have been saved by more frequent use of the serum, and I believe fulminating cases should be very closely watched and provision made for giving a second dose at any time.

#### CONCLUSIONS.

I conclude from this series of cases that:

1. The use of the Flexner antiserum is of great value in epidemic cerebrospinal meningitis. I believe its value to be comparable to that of diphtheria antitoxin in diphtheria.
2. The use of the serum at times aborts the disease, frequently rapidly relieves its symptoms, shortens its course, lessens the liability to sequelæ, and greatly reduces its mortality.



3. The serum should be used as early as possible in all cases, even of suspected epidemic meningitis.

4. It should be frequently repeated as long as there are symptoms or any tendency to relapse.

5. Late chronic cases are unfavorable for the use of the serum, but any case in which the diplococci are present has some hope of relief by its use.

6. Some cases are resistant.

220 Marlborough Street.

## TREATMENT OF MENINGOCOCCIC MENINGITIS WITH THE FLEXNER SERUM.

### REPORT OF CASES.\*

FRANK SPOONER CHURCHILL, M.D.

Assistant Professor of Pediatrics, Rush Medical College.  
CHICAGO.

I have had the opportunity of using the Flexner serum in 11 cases of meningococcic meningitis. The number is, of course, small, but I am reporting them now in order to call the attention of the profession anew to this method of treatment of epidemic meningitis. The serum is still on trial. Its efficacy is not yet proven. Enough has been accomplished by its use, however, to warrant, or rather to necessitate, a much more extended trial of it. It is desirable that it should be used in a large number of cases, records carefully kept, collected and analyzed. Dr. Flexner has kindly furnished me with the serum for general use in this community, requesting that records be kept of all cases, collected and forwarded to him.

In the 11 cases (all in Chicago) in which the serum was used, 7 of the patients have recovered, 4 have died. Of the 4 patients who died, only 2 of the cases were proved by bacteriologic examination to be of the meningococcic type, and, of these two, one was of the fulminating type, and in the other the patient entered the hospital in a moribund condition on the tenth day of the disease. Thus, in 7 of the 9 proved cases the patients have recovered.

It is not the purpose of this paper to describe at length the symptoms in the cases. All were clinically meningitis and, except in the two already mentioned, the meningococcus was found in the spinal fluid on lumbar puncture. I wish only to call attention to the effect of the serum on the disease as a whole, on the general condition of the patients, on the leucocyte count and on the spinal fluid as manifested by color, number of leucocytes and organisms.

The technic of giving the serum is simple. A lumbar puncture is done and, if possible, 30 c.c. of fluid is withdrawn. Then to the canula still in place is attached an ordinary antitoxin syringe, the serum poured from the bottle into the barrel of the syringe and allowed to run directly into the spinal canal. As a rule, the piston must be used to force at least the last part of the serum. The serum should be heated to body temperature before using. This may be done by standing it in warm water. Flexner recommends, for the present, a dose of 30 c.c., to be repeated every 24 or 48 hours, for 3 or 4 times if there be no improvement. It also seems safer to withdraw spinal fluid equal in amount to the serum to be injected, to avoid pressure symptoms. Some cases have been reported, however, in which no fluid whatever has been withdrawn and as high as 20 c.c. of the serum in-

jected without bad results. If, for any reason, it is found impossible to inject into the spinal canal, the serum may be given subcutaneously, but good results are not expected by this method.

### CASES

CASE 1.—*Patient*.—R. S., school girl, aged 14, entered the Presbyterian Hospital March 11, 1908. Service of Dr. A. C. Cotton.

*History*.—Eleven days before admission she began to have severe headache, followed by vomiting. On attempting to walk, she would fall on her side. Unconscious since 9 a. m. of day of admission. Just before becoming unconscious she said she could not see.

*Examination*.—Well developed and well nourished girl, apparently moribund. Head retracted and rigid. Slightly cyanotic, breathing stertorous. Pupils dilated, reacting sluggishly to light. Deviation of eyes to left. Numerous medium and coarse râles everywhere throughout the chest. Respiration irregular. Heart regular, rapid, fair strength. Abdomen flat. *Tâche cérébrale*.

*Treatment*.—Lumbar puncture at 12 midnight, and about 30 c.c. of cloudy fluid withdrawn and 15 c.c. serum injected. Smears and cultures from the spinal fluid showed a gram-negative diplococcus, intracellular, corresponding morphologically and culturally to the meningococcus. Cultures from the nose showed the same organism. The child was practically moribund on admission. She sank steadily and died at 4 p. m. the next day, March 12. The temperature ranged from 101 to 103 F., the pulse and respiration were continuously rapid. The serum had no effect on her condition, except possibly on the leucocyte count. This was 34,000 at 11 p. m. on March 11, before the injection, and 24,000 at 11 a. m., the next day, 11 hours after injection. The drop may or may not have been due to the serum.

CASE 2.—Baby R., girl, aged 2; service of Drs. Hughes and F. B. Earle, Chicago; entered St. Bernard's Hotel Dieu, March 4, 1908.

*History*.—Uncle died of meningitis years ago. Family history otherwise negative. Child was normal at birth, after an instrumental delivery. Never breast fed, brought up on artificial food; always delicate; had considerable digestive disturbance during the first few months of life. Early in January, 1908, had an attack of enterocolitis and "bronchitis," but improved after two weeks' treatment. For about one week before admission, had been drowsy and "lifeless," vomiting all food; had had apparent fever, restless sleep, retracted head and apparent general pain on being handled. No convulsions.

*Examination*.—Fairly well-nourished. Head square, retracted, produced pain on being moved. Chest negative except for rachitic rosary. Abdomen distended. Child lay with legs flexed stiffly and cried out when they were extended. Leucocyte count 30,000. Urine showed albumin, otherwise negative.

*Treatment*.—March 6. Lumbar puncture and about 30 c.c. of clear spinal fluid removed. Smears showed some polymorphonuclears. Baby seemed more comfortable and brighter after puncture.

March 9. Lumbar puncture and about 30 c.c. of spinal fluid withdrawn, clear and of same character as in former punctures. Flexner serum, 30 c.c., injected into the spinal canal. Baby seemed better after puncture and injection, for about 24 hours.

March 11. Child weaker; died at 12 midnight. Exact type was not determined, evidently.

CASE 3.—*Patient*.—Moses S., aged 2, entered Michael Reese Hospital, Feb. 10, 1908. Service of Drs. Hess and Spitz.

*History*.—Present illness began six weeks before admission, when mother noticed that the child did not look well, was not as bright as usual, cried much and was constipated. One week before admission retraction of the head began, increased steadily and when seen opisthotonos was quite marked.

*Examination*.—Marked emaciation, marked opisthotonos; purulent conjunctivitis. Numerous mucous râles everywhere over the chest. Abdomen negative. Kernig's sign present on both sides. Babinski reflex on left side only. Temperature, 96.7 F.; pulse, 148; respiration, 48.

\* Read at the Annual Meeting of the American Pediatric Society, May 25-27, 1908.



*Treatment.*—Child remained in about this condition for two weeks with a low temperature, when a lumbar puncture was done and 20 c.c. of bloody fluid was withdrawn and 10 c.c. of serum injected. Seemed only a little better next day; second lumbar puncture and 15 c.c. of bloody fluid withdrawn, and 7.5 c.c. of serum injected. No particular change was noticed until two days later when child seemed weaker. Was then taken out of the hospital by the parents and died a few days later.

The examination of the spinal fluid in this case showed gram-positive diplococci and many polymorphonuclear leucocytes. Cultures were contaminated. The exact nature of the organism was never positively determined, but it evidently was not the meningococcus. The case can not be regarded as one of this type of meningitis and was, therefore, no test of the value of serum.

*CASE 4.—Patient.*—Joe B., aged 16, school boy, entered Cook County Hospital, April 16, 1908, service of Dr. Kerr.

*History.*—Family history negative. Boy said that he had a tuberculous dactylitis a few months ago, for which the finger was amputated. Six days before admission he was running a great deal and got very hot. On the day following when he got up his neck was a trifle stiff and later he had some pain in the back. The next day his legs pained him somewhat. The stiffness of the neck had increased and the head had become retracted. No headache, no nausea, no vomiting.

*Examination.*—Well-nourished; lay with head somewhat retracted; face flushed. Eyes normal. Slight herpes about the angle of the mouth. The neck was rigid and movement painful.

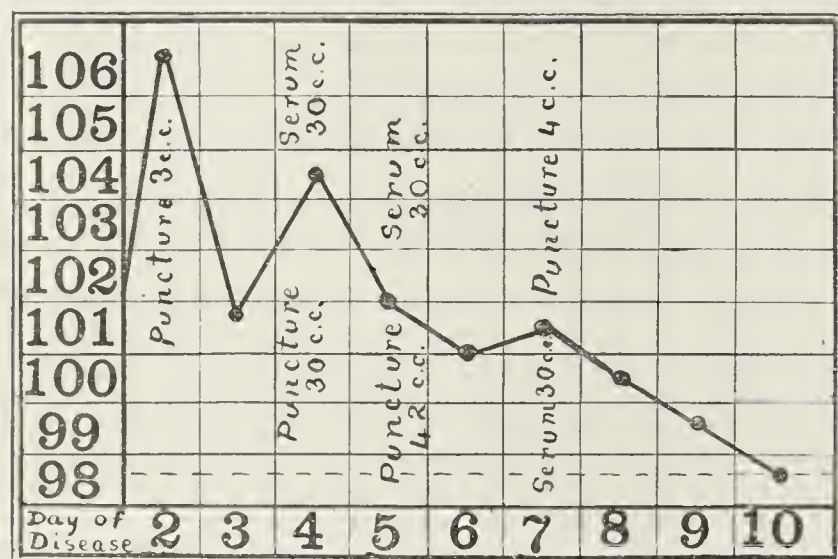


Fig. 1.—Chart illustrating temperature curve in Case 5, Frank J.

Kernig's sign present on both sides. No Babinski; movement of the lower limbs very painful.

*Treatment.*—April 17. Lumbar puncture and 20 c.c. of turbid fluid withdrawn, showing 2,880 leucocytes and 288 meningococci to the cu. mm. The diplococci were mostly extracellular, only 1.5 diplococci within the cell on the average. Blood: 13,600 leucocytes.

April 18: Better, less rigid. Lumbar puncture and 45 c.c. of turbid fluid withdrawn, containing fewer leucocytes and diplococci. Injection of 30 c.c. of serum into the spinal canal. Blood: 17,400 leucocytes. Restless and in pain for 6 or 8 hours after injection, then more quiet.

April 21: Much better, less rigid. Leucocytes, 15,800.

April 23: Improvement continued. Leucocytes, 20,200. Abdomen tender on right side.

April 28: Seemed perfectly well. Leucocytes, 10,200.

May 24: Went home, No sequelæ.

*CASE 5.—Patient.*—Frank J., aged 14, printer, entered Cook County Hospital, April 12, 1908, service of Dr. E. F. Wells.

*History.*—Scarlet fever one year ago. Ear-trouble for years, with occasional discharge. No exposure to meningitis cases. Sore throat and earache five days before admission, latter was relieved by discharge from right ear. Continued to work until night preceding admission, when he went to bed with a severe headache, vomited (projectile), had a chill.

*Examination.*—Well nourished boy; complained at times of severe headache and pain in back of neck, and at times mut-

tered deliriously. Neck was rigid, pain apparently increased on moving. Pupils equal and reacted to light. Tongue coated, breath foul. *Tâche cérébrale*. Both knee-joints exaggerated. Kernig's sign present on both sides. No Babinski.

*Treatment.*—Lumbar puncture done and 3 c.c. of very cloudy fluid removed with difficulty. Many large diplococci 6 to 12 in each field, and pus cells in smear; a few of the cocci intracellular. Cultures showed gram-negative diplococci.

April 13: Urine showed a trace of albumin, otherwise negative.

April 14: Restless and noisy. Lumbar puncture done and 30 c.c. of purulent fluid withdrawn and 30 c.c. serum injected. Blood: Leucocytes 22,400. Profuse perspiration 6 hours after injection.

April 15: Mentally clearer but rigidity the same. Convulsion at 6 a. m. Lumbar puncture and 42 c.c. of fluid withdrawn, less cloudy, containing about half as many leucocytes as on previous day and only one diplococcus to every 6 fields. Injection of 30 c.c. of serum. Blood: 17,000 leucocytes.

April 17: Better. Lumbar puncture and 4 c.c. fluid, less cloudy, withdrawn; and 30 c.c. of serum injected. Blood: 17,000 leucocytes.

April 19: Much better; entirely rational. Urticaria on face. Blood: 8,000 leucocytes.

May 9: Had progressed steadily. Urine cleared up. Went home well.

This was a very severe case, the boy being desperately sick when the first injection of serum was given and apparently having but a slight chance of recovery. The spinal fluid at the second lumbar puncture was thick with pus cells, and, on standing, looked like the urine from a severe case of pyelitis, with a thick layer of pus at the bottom of the glass. The response to the first injection of serum was striking, as evidenced by the clearer mentality, the drop in the temperature and leucocyte curves and the clearer spinal fluid the next day. He might have recovered without the third injection, but it seemed better not to take any chances.

*CASE 6.—Patient.*—Margaret B., aged 7, from practice of Dr. E. A. Streich, Chicago.

*History.*—On March 28, 1908, patient was taken suddenly ill with a convulsion lasting about 5 minutes followed by complete unconsciousness for several hours. Later vomiting, restless and crying out in apparent pain.

*Examination.*—Patient unconscious, head retracted, neck and back rigid. Pupils dilated, did not react to light, nystagmus and strabismus present. Patellar and plantar reflexes, and ankle clonus all absent on both sides. Kernig's sign present on both sides.

*Treatment.*—Lumbar puncture and 10 c.c. of thick, bloody fluid withdrawn showing microscopically many red cells and a few polymorphonuclear leucocytes. No organisms found.

March 29: Patient still screamed on slight movement of head; opisthotonos marked, unconscious. Lumbar puncture and 15 c.c. of a thick, sero-purulent fluid withdrawn and 15 c.c. of Flexner serum injected. Microscopic examination of the spinal fluid showed many polymorphonuclear leucocytes, containing meningococci. Many diplococci extracellular. Cultures confirmed the smears.

March 30: Child partially conscious and complained of intense headache and severe pain in the abdomen; marked general hyperesthesia; very restless, but no longer vomiting.

March 31: Patient had not improved since previous day, still complained of headache and pain in abdomen; was crying. Rigidity persisted. Lumbar puncture, under slight chloroform anesthesia, and 15 c.c. of thin, watery, slightly turbid fluid withdrawn. It contained not nearly as many leucocytes as the previous specimen. Serum, 15 c.c. injected into spinal canal.

April 1: Child much brighter, recognized parents. No vomiting, some pain in head and abdomen. Slight opisthotonos, Kernig's sign less marked; slept comfortably a short time.

April 2: Conscious, resting quietly, opisthotonos nearly gone. Slight headache and pain in abdomen.



April 3: Cerebral symptoms had entirely disappeared, asked for something to eat.

April 4: Improvement continued. All rigidity gone; slept most of the time. From this time on the child made an uneventful recovery, except that on the thirteenth day of her illness she developed an urticaria, covering the entire body and causing intense itching. It disappeared within 48 hours. An acute parenchymatous nephritis was present at first, but had cleared up by the eighth day.

THE BLOOD DURING COURSE OF DISEASE IN MARGARET B. (CASE 6.)

March 29: Total leucocytes, 19,800; polymorphonuclears, 90.2 per cent.; lymphocytes, 9.3 per cent.; large mononuclears, 5.5 per cent.

March 30: Total leucocytes, 13,800; polymorphonuclears, 83 per cent.; lymphocytes, 15.4 per cent.; large mononuclears, 1.5 per cent.

March 31: Total leucocytes, 15,000; polymorphonuclears, 78.5 per cent.; lymphocytes, 19.8 per cent.; large mononuclears, 1.7 per cent.

The total leucocyte count after this date ranged from 10,800 to 13,800.

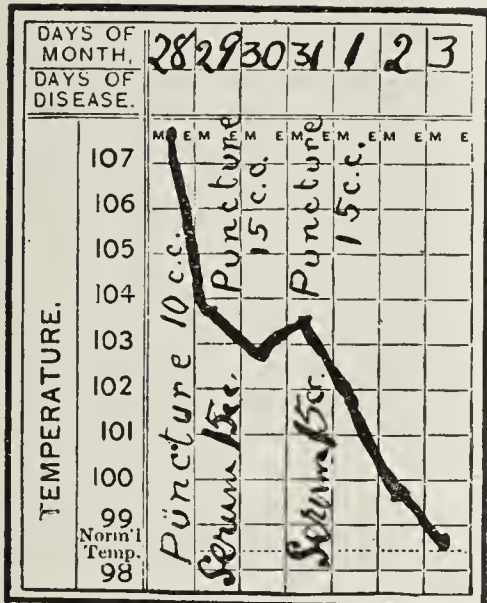


Fig. 2.—Temperature curve in Case 6, Margaret B.

*Treatment.*—Lumbar puncture done and 12 c.c. of turbid fluid withdrawn and 15 c.c. serum injected. Many meningococci and leucocytes in spinal fluid. Total leucocytes in blood, 15,000.

March 25: Lumbar puncture and 15 c.c. turbid fluid withdrawn, containing 2,400 leucocytes to the cu. mm. Injection of serum, 15 c.c. Blood: 12,000 leucocytes.

March 28: General condition the same. Puncture and 24 c.c. turbid fluid withdrawn containing 1,200 leucocytes to the cu. mm. Injection of serum, 15 c.c.

March 29: Brighter, less rigid.

April 2: Much worse in every way. Lumbar puncture and 15 c.c. fluid withdrawn, much more cloudy and containing 3,800 leucocytes to the cu. mm. Injection of serum, 15 c.c. Blood: 28,000 leucocytes; six hours after serum, 22,000.

April 3: No better. Blood: 21,000 leucocytes. Puncture and 30 c.c. bloody fluid withdrawn. Injection of serum 30 c.c.

April 4: Little more quiet. Leucocytes 20,000. Subcutaneous injection of 15 c.c. of serum.

April 7: Restless and noisy. Leucocytes, 12,000. Injected serum, 15 c.c., subcutaneously.

May 10: Steady improvement since last date, except for a mild attack of diphtheritic tonsillitis (ward epidemic). Went home well.

CASE 8.—*Patient.*—Wilbur L., aged 30, entered St. Luke's Hospital, April 15, 1908. Service of Drs. Nichols and Fuller.

*History.*—One sister died of spinal meningitis, not recently. On April 12 patient had a chill, followed by fever, vomited a great deal, had much headache and great pain in the neck. These symptoms continued for three days, when he became delirious and violent, continued thus for about twelve hours, when he became unconscious, in which condition he was brought into the hospital.

*Examination.*—White man, well built and muscular, in moderate coma. Head retracted; herpes on upper lip. Pupils small, equal and reacted to light. Nystagmus, eyes roll upward, photophobia. Tongue coated, breath foul. *Tâche cérébrale*. Kernig's sign present on both sides. Patellar reflexes de-

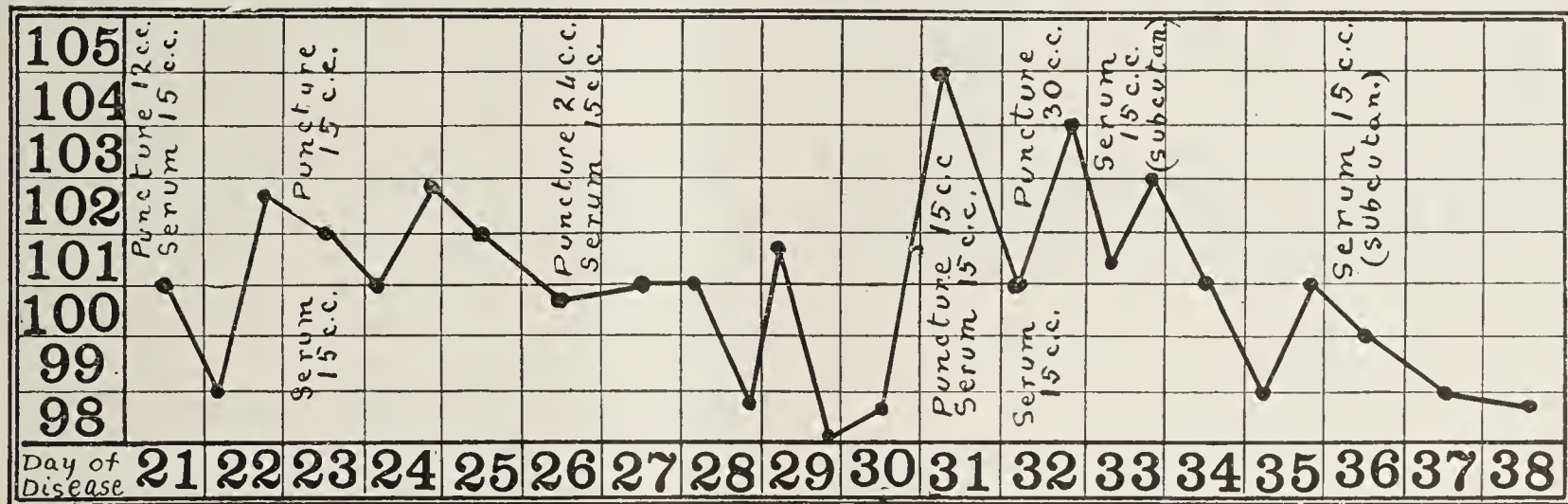


Fig. 3.—Temperature curve in Case 7, Herant M.

This was a very severe case and remarkably short in its duration. The rapid improvement after the injections of the serum made one believe that it must have been due to this method of treatment. The results are graphically shown in the temperature chart (Fig. 2).

CASE 7.—*Patient.*—Herant M., aged 9, entered Presbyterian Hospital March 23, 1908. Service Dr. A. C. Cotton.

*History.*—Patient was taken suddenly sick three weeks before admission with fever, nausea and vomiting, and rapidly became delirious. He could be aroused during the first three days but since then had been practically unconscious. Nausea and vomiting stopped after the third day.

*Examination.*—Child was semiconscious, head retracted, rigid, painful on motion. Pupils rather large, reacted to light. Cried much. Abdomen scaphoid and rigid. *Tâche cérébrale*. Extremities all rigid. Kernig's sign present on both sides. Patient cried out from time to time as if in pain. Seemed very sick.

creased. Spine very rigid and flexion of it caused patient to cry out. Urine: Color normal, sp. gr. 1.025, much albumin, chlorids a trace only; sediment—a few red blood corpuscles, few leucocytes, few epithelial cells; few narrow, coarsely granular casts. Blood: 20,000 leucocytes, 99 per cent. of polymorphonuclears.

*Treatment.*—Lumbar puncture, 4 p. m. fluid turbid, straw colored and contained floeculi. Albumin 1 per cent. (Esbach). Sediment showed many leucocytes, 95 per cent. polymorphonuclears, 5 per cent. mononuclears. No micro-organisms in dried smears. At 11 p. m. puncture, 15 c.c. serum injected.

April 16: Following a bad night, patient seemed worse. Rigidity as on previous day. Blood: Red corpuscles, 4,700,000; leucocytes, 9,200; differential count, poly., 93 per cent.; small mono., 6 per cent.; large mono., 1 per cent. Cultures from blood showed no organisms after 48 hours' growth on bouillon. Lumbar puncture done at 5 p. m. and 30 c.c. cloudy fluid withdrawn and 30 c.c. serum injected. Patient desperately sick, had a bad day.



April 17: Another bad night; weaker. Grew steadily weaker and died at 3:15 p. m. Smears from the culture of April 16 showed the same number and proportion of leucocytes as on April 15. Cultures showed the meningococcus.

This was a desperate case, a fulminating one from the start, the patient dying on the fifth day of his illness. The serum apparently affected the leucocyte count, but had no effect on either his general condition or the character of the spinal fluid. Temperature went up steadily from 101 F. at admission to 106.5 at death.

CASE 9.—*Patient*.—Raffaella, G., aged 30, house-wife; entered Cook County Hospital, April 11, 1908. Service of Dr. J. J. Herriek.

*History*.—Patient had been sick three weeks with severe headache, pain in back and legs. Six days before admission had a chill, two days later vomited and had another chill, more severe than the first, and has had slight chills every morning since.

*Examination*.—Patient lay in bed moaning at times. Seemed fully conscious of her surroundings, answered questions through an interpreter, but easily lapsed into a kind of stupor. Neck rigid and painful on moving. Face flushed. Pupils equal, contracted and reacting slightly to light. Tongue coated and dry. Abdomen retracted. *Tâche cérébrale*. Knee jerks brisk; Kernig's sign present on both sides; no Babinski. Blood: 19,000 leucocytes.

*Treatment*.—Lumbar puncture and 10 c.c. cloudy fluid obtained, many meningococci.

April 16: Restless and violent. Puncture and 30 c.c. turbid fluid withdrawn containing 4,250 leucocytes to the cu. mm., but

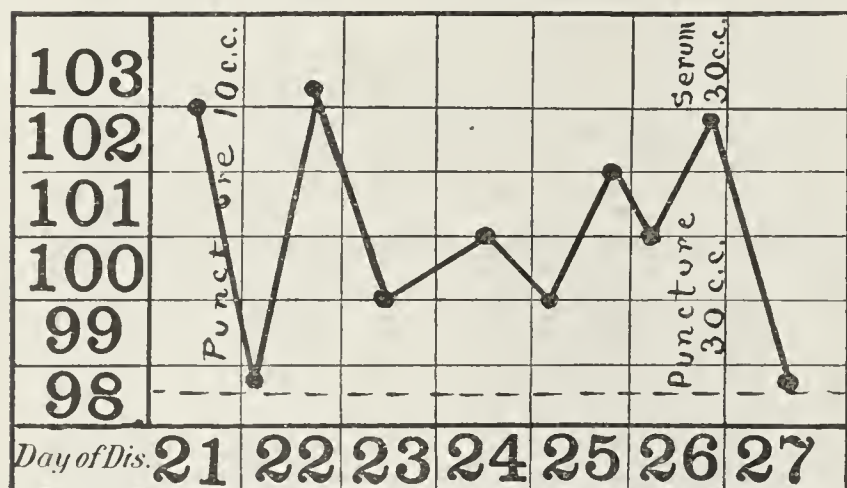


Fig. 4.—Temperature curve in Case 9, Raffaella G.

only one diplococcus in several fields. Injection of serum, 30 c.c. Blood: 15,000 leucocytes.

April 17: Leucocytes, 8,200.

April 22: Puncture unsuccessful.

May 9: Disease ran a protracted course, gradually clearing up. The single dose of serum may or may not have influenced the final result. The only immediate effect was the sharp drop in temperature to normal. It never went up again. A similar drop took place after the first puncture (without any serum), followed, however, by an immediate rise.

CASE 10. *Patient*.—Charles T., aged 19, entered Presbyterian Hospital 7 p. m., May 8, 1908. Service of Dr. Billings.

*History*.—Patient was as well as usual on the morning of the day he was admitted and went to work. At 3 p. m., while at work, he was suddenly seized with a severe chill, followed by fever, pain in head and abdomen. He stopped work, laid down and slept for a few minutes and was then taken home and put to bed, talking incoherently. He vomited a small amount of greenish material. Temperature, 104 F.

*Examination*.—(7 p. m.) Well developed and well nourished young man. Head slightly retracted, not rigid. Eyes normal. Loud systolic *bruit* heard at the apex. Marked kyphosis in lower dorsal region. Extremities, flexed on abdomen. Kernig's sign absent on both sides. Babinski absent. Blood: (10 a. m.) 23,600 leucocytes; blood pressure, 98 mm. Hg. At 5 p. m., blood 28,000 leucocytes.

*Treatment*.—May 9: Had a restless night. Lumbar puncture done at 10:30 a. m. and about 30 c.c. of cloudy fluid

evacuated under considerable pressure, containing 24,000 leucocytes to the cu. mm. Smears showed a gram-negative diplococcus 1 to every 10 cells, extra-cellular, resembling the meningococcus. Cultures confirmed this. Patient was not relieved by puncture. At 5 p. m., puncture done again and 15 c.c. of bloody fluid obtained and 25 c.c. of serum injected.

May 10: Restless for ten hours after puncture, then slept and awoke entirely rational, with normal temperature, but rigidity the same. Blood: 14,200 leucocytes.

May 11: Rigidity continued. Puncture done and 20 c.c. of fluid withdrawn containing 6,000 leucocytes and 212 diplococci to the cu. mm. Injected serum, 30 c.c. Blood: 10,800 leucocytes.

May 15: Been doing well. Restless, pulse irregular. No apparent cause for elevation of temperature.

May 18: Kernig's sign gone. Neck a little rigid.

May 25: Practically well, though still in hospital.

CASE 11.—*Patient*.—Annie B., aged 11, entered Cook County Hospital May 11, 1908. Service of Dr. I. A. Abt.

*History*.—Patient was taken ill suddenly about 2 a. m., May 8, with pain in back of head and neck, which continued to increase in severity, with rising temperature till about 7 a. m., when she became semi-delirious. She continued in this condition until she was brought in to the hospital at noon, May 11.

*Examination*.—Child well developed and well nourished. Semi-conscious, head markedly retracted, body and limbs rigid. Face flushed, respiration rapid and irregular. Herpes on lips. Pupils unequal, both responded sluggishly to light. Tongue badly coated, breath foul. Semi-purulent discharge from nose. A few petechial-like spots on front and upper part of chest. Few râles over lower lobes of lungs posteriorly, both sides. Heart, rapid but irregular. Abdomen rigid, otherwise negative. Extremities all rigid; thighs flexed on abdomen. Kernig's sign present on both sides; reflexes absent. Child very sick.

May 11: (5 p. m.) Lumbar puncture done and 25 c.c. of turbid fluid withdrawn containing many leucocytes and a few extracellular diplococci. Injected 30 c.c. of serum. Blood: 18,000 leucocytes.

May 12: About the same at 4 p. m., lumbar puncture was done and 30 c.c. of turbid fluid withdrawn showing 80,000 leucocytes to the cu. mm. and 9,000 diplococci (3,000 extra- and 6,000 intra-cellular). Injected 30 c.c. of serum. More quiet after injection and rational by 8 p. m. Blood: 29,800 leucocytes.

May 13: Brighter mentally, but still rigid and pulse irregular. Puncture done and 30 c.c. fluid withdrawn less turbid showing 11,400 leucocytes and 855 diplococci (570 extra- and 285 intra-cellular).

May 14: Much brighter; playing with the other children, though the head was still retracted and she was generally rigid. Blood: 15,200 leucocytes.

May 16: Continued to improve. Leucocytes 17,800. Cause?

May 18: Seemed perfectly well; no rigidity; Kernig's sign gone. Leucocytes, 25,000. Cause?

May 24: Smear from vagina showed a diplococcus resembling the gonococcus, probably causing the leucocytosis (15,000 to-day). Still under observation.

Observations have been made, in these cases, on the general condition, on the temperature, on the number of leucocytes in the circulating blood, and on the spinal fluid.

#### GENERAL CONDITION.

As a rule, the patients were more comfortable after a puncture and injection, though in one or two of the cases this did not take place for several hours after the puncture. The immediate effect of this procedure seemed to stir up the patient. None of the punctures were done under an anesthetic, but I believe that there would be considerable saving of wear and tear in certain patients if they were given an anesthetic, for example, those not very toxic, but in a fairly conscious condition.

The first sign of permanent improvement noticed in at least 5 of the patients was a clearing up of the mental condition. They became perfectly rational after an in-



jection (not always the first one), were more quiet, while the rigidities were still very marked. It was a curious sight to see the patient lying in bed with head strongly retracted, yet with no expression of pain; quiet, looking about and interested in the ward doings.

#### THE TEMPERATURE.

The temperature has shown a decided tendency to drop steadily from the beginning of treatment, at least in those cases running a short course. This is especially notable in Case 6. This was not so pronounced in the more protracted cases, for example in Case 7, the course of the patient's temperature was not steadily downward, yet even here we see a decided tendency to remit after individual injections. The more prolonged course, with a sharp exacerbation, was undoubtedly due to the fact that he did not come under treatment till late in the disease—the twenty-first day. Also he was the first patient in whom I used the serum and we were possibly somewhat timid in our dosage. I believe we should have given him the full doses from the start. The two subcutaneous injections, by the way, seemed to produce as quieting an effect as did the intradural ones.

#### THE LEUCOCYTE CURVE.

The effect of the serum on the total leucocyte count was striking and uniform. There was almost invariably a drop after the first injection, sometimes to a marked degree, e. g., in Case 6, from 19,000 to 13,000 within 24 hours after the first injection; Case 5, from 22,000 to 17,000; Case 10, from 23,000 to 14,000. In Case 11, a very severe one, the first injection failed to produce any effect on the general condition, and the disease apparently continued to advance, for we see in the first 24 hours a jump in the leucocyte count from 18,000 to 29,000. Then the second injection evidently began to produce its effect, as was seen by the brighter mental condition of the patient and a considerable drop in the leucocyte count, from 29,000 to 15,000.

I am unable to account for the continued leucoeytosis in Case 4. It was not accompanied with a high temperature, nor lack of improvement in general condition. The patient had, however, considerable tenderness and some dulness in the right iliac region and it is possible he had some slight trouble with his appendix. Everything eventually cleared up. In Case 8 the drop from 20,000 to 9,000, with a steady advance of the disease to a fatal issue, was due presumably to lack of resisting power on the part of the patient and is comparable to the similar phenomenon observed in fatal cases of lobar pneumonia.

#### THE EFFECT ON THE SPINAL FLUID.

It being particularly desirable to have information as to the effect of the serum directly on the seat of the disease, special attempts have been made to study the spinal fluid. The color has been noted in all cases, the number of leucocytes and organisms present, in 6 cases. The fluid has, of course, been turbid at the first puncture, in one or two instances clearing up at the subsequent punctures, in others not.

The number of leucocytes to the cu. mm. has been counted as in the blood. They have ranged from 2,400 to 80,000 in the first puncture, and from 80 to 7,000 in a final puncture. The last puncture done generally showed a decided drop in the number of cells. The count in Case 7 is of special interest, showing a decided increase over that noted in the previous puncture, from

1,200 to 3,800, coincidently with an increase of all other symptoms and signs, temperature, total leucocytes, etc.

The leucocytes were, of course, largely of the polymorphonuclear variety. The proportion has been noted in only one case (Case 8), in which it showed 95 per cent. of polymorphonuclears and 5 per cent. of mononuclears.

The number of organisms to the cu. mm. in the spinal fluid has been estimated roughly by counting both leucocytes and diplococci in several fields, noting the proportion and then calculating the latter from the leucocyte count. Thus in Case 10 there were 24,000 leucocytes to the cu. mm. and about one diplococcus to every ten cells, making approximately 2,400 organisms to each cu. mm. They also decreased with the progress of the disease.

#### SIGNIFICANCE OF THE RESULTS.

The number of cases reported in this paper is, of course, small, and taken by themselves would be of no significance. Taken with the cases already reported by Flexner and his other investigators, the results of this treatment of meningococcic meningitis are most remarkable. As one watches the behavior of these patients after one, two or three injections of this serum, he is impressed with the astonishing change which comes over them, the clearing mentality, the unsuffering expression of countenance, the evident comfort, even with a still retracted head and rigid muscles, and he is filled with an optimism as to the ultimate result which perhaps is not yet justified.

Enough has already been done by the serum, however, to warrant its use on a wide scale, and it is not too strong a statement to make that, given a case suspected to be meningitis, it is our duty to do a lumbar puncture and, if we get a cloudy fluid, to inject the serum at once and repeat it if bacteriologic examination prove the case to be one of the meningococcic variety.

I wish to thank Dr. Flexner for the opportunity of using the serum, and also the various physicians who have allowed me to study the effects of the serum on their patients. My thanks, also, are due to all the internes at the various hospitals for their cordial and interested help in the laboratory investigations of cases. Their assistance has been much appreciated.

439 North State Street.

### OBSERVATIONS ON THE THYROID AND THE PARATHYROIDS.\*

HERMAN TUHOLSKE, M.D., LL.D.

ST. LOUIS.

With our forebears, anatomy was the handmaiden of surgery; pathology its judge or jury. Modern aggressive surgery, the veritable *sectio in vivo*, demands of the anatomist a closer study of the viscera and ever and anon puts new problems before the physiologist.

The enormous amount of anatomic, embryologic, physiologic, chemical and animal experimental work on the thyroids and the parathyroids, growing out of the recognition of definite groups of postoperative symptoms, has shed much light on, and aroused much interest in, the functions of these important structures. I may not venture, because of the necessarily limited time

\* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



alloted to this paper, to give even a cursory epitome of modern research work, but may attempt to state the conclusions which, after a fairly complete review of the work done by hosts of experimenters and observers, and my own limited part therein, appear to me to logically present the present status of the subject.

#### EXPERIMENTERS NOT UNANIMOUS.

It is but fair to state that some observers and experimenters of note are not in accord with the majority of workers and the conclusions currently accepted. Vincent and Jolly say that neither the thyroids nor the parathyroids are to be considered as organs essential to life. Rats and guinea-pigs do not seem to suffer from the extirpation of the parathyroids; monkeys show only transient symptoms; dogs, cats, foxes and prairie wolves frequently suffer and die. On the other hand, badgers (purely carnivorous animals) are not affected by the operation. When parathyroidectomy proves fatal it is probably due to severe injury done to the thyroid. The thyroid and the parathyroids are to be looked on as a single physiologic apparatus, the two kinds of tissue being intimately associated embryologically and working together physiologically. When the thyroid is removed the parathyroids appear capable of functionally replacing it to a certain extent and their histologic structure changes accordingly.

Blum says the thyroid is no secretory gland, but a detoxicating organ, which by the removal of toxic material from the circulation by intraglandular detoxication exercises a protective power on the central nervous system. The thyroid has especially the power of splitting off iodine. The iodine stored in the thyroid never leaves the boundaries of that organ. Blum can not subscribe to the prevalent view that the parathyroids play a separate and distinct rôle. He accepts the dictum of Kishi, who says morbus basedowii can not be the result of hypersecretion of the thyroid, since the thyroid normally produces no secretion. The assumption of thyroid insufficiency alone can justify the foregoing observation. Basedow's disease must be treated by a diet free from meat. Kishi claims that his therapeutic results are as good as those obtained by surgical measures and, being without danger, are to be preferred. According to his view, the operation which reduces the thyroid mass is to be abandoned.

#### VIEWS GENERALLY ACCEPTED.

The large majority of writers hold views opposed to the foregoing. The views entertained at present are that the thyroid and parathyroids differ embryologically, histologically, anatomically and functionally. The removal of all parathyroids in man and in many animals is followed by tetany and death; the removal of the thyroid by chronic nutritive disturbances which make up the picture of cachexia strumipriva, eventually ending in death. Erdheim's experiments on rats for the demonstration of the consequences of the destruction of the parathyroids led him to assert that not the loss of thyroid substance but the destruction of the parathyroids is followed by tetany, and he furthermore was able to prove that in three cases of strumectomy, followed by tetany, the parathyroids were wanting or had been destroyed. McCallum in his experiments on dogs found tetany to follow the removal of the parathyroids, and so did a host of noted observers. Death from complete parathyroidectomy may be deferred for a time by feeding with beef parathyroids, and acute tetany entirely prevented, as demonstrated by Halsted, McCal-

lum, Beebe and Rogers. Feeding with thyroid extracts or iodine-containing albumins, iodothyron and similar preparations will overcome many symptoms of cachexia strumipriva and prolong life. After the removal of the thyroid gland the parathyroids never change structurally, never get to be like, never resemble thyroid tissue and never assume its functions. The removal of both is followed by death, the chronic symptoms perhaps predominating.

#### ANATOMY AND PHYSIOLOGY OF THE PARATHYROIDS.

The knowledge of the anatomy of the parathyroids and their arterial supply has by the labors of Halsted, Evans, McCallum and others become quite exact. On a few points the observations differ slightly. First as to the number of parathyroids in man; four is the usual number; there may be fewer and occasionally one more. Verebely found four parathyroids in 108 out of 138 autopsies. Thompson and Harris in 250 routine autopsies in the St. Louis City Hospital found four parathyroids in 90 per cent. of the cases. They also found in their experimental work that the symptoms resulting from slow deprivation of functioning parathyroid tissue differ materially from those following extirpation of the glands. The slow deprivation of functioning parathyroids was produced by as complete devascularization as possible. The animal (in their cases the dog) dies eventually; but instead of the acute tetanic death which follows excision, with slow destruction of the glandules, the animal loses in weight and strength, disturbances of a trophic character ensue, and finally a comatose condition ends the scene without tetany.

These observations are not quite in accord with the presentation of the subject in the classical article on "The Parathyroid Glandules, Their Blood Supply and Their Preservation in Operation on the Thyroid Gland," by Halsted, an article which has been closely studied and much quoted. Halsted distinctly warns against interference with the parathyroid arteries, whether coming directly, as they usually do, from the inferior thyroids or from the channel. Ernst Hagenbach, in his valuable contribution on "The Function of the Thyroids and the Parathyroids," finds that injury or destruction of the parathyroid arteries of one side is followed by a passing tetany, then cachexia and death by cachexia; destruction of the arteries of both sides results in death in acute tetany; removal of the thyroid and of the inner parathyroids, saving the external ones produces no tetany but the development of cachexia; secondary removal of the external parathyroids causes death from tetany.

#### RELATIONSHIP OF THE DUCTLESS GLANDS.

Recent studies of the ductless glands or organs producing an internal secretion, hinting at the intimate interdependence of the thyroid, the parathyroids, the adrenals, the glandular part of the pituitary body, the liver and the pancreas, seem to show that the physiologic rhythm of the body demands the integrity of all. A pathologic condition of one of them calls for an attempt at a *restitutio ad integrum*—unless some other organ vicariously assumes its function—an attempt, aiming in fact at a therapeutic ideal, not reached by the method which removes or destroys.

Take, for an illustration, exophthalmic goiter. The thyroid has been proven to be a gland deserving to be ranked as a vital organ. The best results have been obtained, we all believe, by the removal of one-half or



three-fifths or, with the saving of the parathyroids and their arterial supply, of nearly the whole of the gland. Injury to the parathyroids has been for a time atoned for by feeding with beef parathyroids, with Beebe-Rogers serum, or the transplantation of parathyroid tissue into the spleen, culminating in the beautiful and logical method of Halsted. Similarly, removal of too much of the thyroid has been counterbalanced by the administration of thyroid extracts or iodine-containing albumins.

#### NONOPERATIVE TREATMENT.

Measures other than operative may favorably influence some symptoms or the condition. A patient of mine, who was in a most miserable condition with a pulse of 190, delirium cordis, exophthalmos, loss of weight, and muscular tremors improved for a time by the application of ice to the neck and the region of the heart, by absolute rest, a diet free of meat, and belladonna administered for three weeks. The patient gained in weight, the exophthalmos improved, the pulse came down to 100. The patient assumed that he was almost cured. He returned to the hospital after two weeks in almost as bad a condition as before. A repetition of the above outlined treatment improved him sufficiently to prompt me to obtain a permanent result by an operation described later. We have not yet found the non-surgical treatment which gives satisfactory results, although Blum in a rather recent article asserts the opposite.

Professor Guthrie of Washington University, St. Louis, in whose experimental work on the vascular system I have been much interested, included in his experiments work on the thyroid of the dog, and a number of specimens show the results of the reversal of the circulation and the ligation of the arteries and veins. In ligating the veins of the thyroid in dogs he showed that at first, for perhaps three days, there results an edematous swelling of the gland, followed soon by reduction to the normal and finally a small reduction in size and a slightly increased firmness. The dogs then invariably gained in weight. With these proven facts as a basis, the following suggested itself to me. In exophthalmic goiter we have an enlarged gland, an enormous increase in vascularity and capillary dilatation, a multiplication of the thyroid cells with abnormal activity, the presence of a great number of indifferent or vagrant cells and a peculiar change of the thyroid gland cells—the whole condition resembling a reactive process without physiological termination.

#### PASSIVE HYPEREMIA BY SURGICAL OPERATION.

The plan then adopted, tried on several dogs, one a goitrous one, gave the results expected. I then tried it on the patient before mentioned. The plan rests on the following proposition: Ligation of the thyroid veins produces dilatation of the capillaries with increased pressure, transudation of blood plasma through the endothelial capillary tubes into the extravascular spaces until the pressure of the plasma in the intercellular spaces equals the pressure in the capillaries. We might count on the escape of some extravascular fluid by the lymphatics. The effect of the transudate at first is a mechanical one; there is a crowding of the cells, an interference with oxygen admission, the retention of carbonic acid, an asphyxia. In this condition the vagrant or indifferent cells, the least fit to survive, suffer a degenerative process and die, while the limitation of arterial afflux brings the gland cells from hyperactivity to the normal. As part of the process the connective tissue stroma would increase and, in the later contraction, les-

sen the size of the gland—in other words, restore it to a condition near the normal. The result of the experiments on the dog distinctly demonstrates the success of the procedure, which in reality consists in the production of a Bier's passive hyperemia.

At a future time I shall publish the complete history of the case of my patient with observations during recovery and the final late effect. Objections to my suggestion may be made. At present I see one, surely not one to be regarded by the experienced operator; the infinitely greater difficulty of ligating the veins than the arteries. In my case I ligated both inferior thyroid and both superior thyroid veins. I am in doubt whether, on the right, I secured the trunk or only a large branch of the superior thyroid vein.

465 North Taylor Avenue.

#### DISCUSSION.

DR. C. H. MAYO, Rochester, Minn., said that the study of the thyroid gland could not be dissociated from that of the parathyroid, thymus, pancreas and adrenal, and, probably, the pineal gland also. The thyroid had the most beautiful circulation in the body, with the exception of the brain; it would be impossible to destroy it except by deliberate act. At one time the thyroid undoubtedly delivered its secretions into the alimentary canal through a duct, and that was why the feeding of thyroid does so much good in some cases. Dr. Mayo said that Dr. MacCarty had made a classification comprising practically all goiters other than malignant; fetal thyroid; fetal activity; then, again, the normal gland activity; retention secretions; and then the degenerative conditions. So much had been written concerning the parathyroids that the surgeon, in any operation in the neck, feared that he might injure a parathyroid. Dr. Mayo said that in operating on over seven hundred goiters he had not had a single case of tetany. In 1896, in three cases, he had removed one parathyroid on the back of the gland. He did not know how many he might have taken out before that, but no symptoms were manifested in the cases where he knew that he had cut a parathyroid. Therefore, Dr. Mayo thought that the functions of these glands must be associated with other conditions. He did not believe that it was quite as serious to remove one of these parathyroids in the exophthalmic type of goiter as it would be in the old simple colloid goiter or diffuse adenoma. Dr. Mayo thought that the operation of ligation of the veins, producing passive hyperemia, which Dr. Tuholske had brought forth, was in the right line in certain cases. Operation was the rule in these cases of hyperthyroidism—and that was the term which should be applied to all of these cases.

Dr. Mayo said that the history of these cases and the classification of the disease from symptoms had been made without any foundation in fact. One spoke of Graves' disease, first described in 1835, of Basedow's disease, first described in 1840, or Parry's disease, first described in 1825. Two symptoms, exophthalmos and goiter, had been taken as of prime significance, whereas 80 per cent. of cases would present either one or both symptoms, and 20 per cent. might show neither the enlarged thyroid nor the exophthalmos. Prior to the appearance of these symptoms, Dr. Mayo said, these patients would be treated for heart disease. The nerve specialist would prescribe rest. The enterologist would call the case one of gastritis and enteritis, and order white meat of chicken and no oysters for the patient. Another treatment which Dr. Mayo said had been advocated was the injection of antitoxin. One might almost read the entire pharmacopeia to cover the history of the treatment of hyperthyroidism. If a patient with heart disease had protruding eyes, Dr. Mayo said, the case was diagnosed as exophthalmic goiter.

He said that ligation should be done in three types of cases. It should first be recognized that 25 per cent. of patients would recover with, without, or in spite of treatment. In very mild cases, which did not justify the removal of half the thyroid, a simple operation of ligating one or both superior thyroid arteries and veins should be done. Another type was so dangerous that there might be a degenerated heart muscle,



possibly brown atrophy with soft spleen, with nephritis albumin in urine, and fatty degeneration of liver. The physician might be afraid to operate. If under cocaine anesthesia, ligation of first one artery and then the other, with the accompanying vein were done. Dr. Mayo said, the patient would improve. In another type of cases the right and middle lobe would perhaps be extirpated and the patient would improve; if there was insufficient improvement, or a relapse, it should not be considered a mistake to have operated on that thyroid. Ligation of the superior thyroid artery and vein on the other side would have a remarkably good effect in such cases.

Dr. Mayo said that last January he and his colleagues had gone over the last 200 cases of exophthalmic goiter and sent out 190 letters. (Ten patients, 5 per cent., had died from operation.) They had received 167 answers to these letters. Seventy per cent. of the patients were cured, and 89 per cent. had either been cured or greatly improved. A few more cases brought the percentage up to 94 per cent. cured, greatly improved or somewhat improved. Some were not improved at all. In some cases, Dr. Mayo said, surgery could do anything but many of these cases were treated so long medically that the burden of surgical mortality was of necessity much greater than it should be; it ought to be called medical and surgical.

Dr. A. J. OCHSNER, Chicago, said that there was no operation in the entire field of surgery in which the importance of knowing when and how was greater than in this particular operation for exophthalmic goiter. The surgeon did well to operate when the patient's condition was at a standstill or, in general, reasonably good, so that resistance to the slight shock of operation might be counted on. When there was no resistance left, the results of operation would be exceedingly bad. Dr. Ochsner mentioned another class of advanced cases in which the other organs of the body still were sufficiently good, so that if the patient's temporary condition were improved the immediate, as well as the late result, would be good because the absorption of the thyroid secretion would be stopped. Recovery, however, would be slow. Dr. Ochsner said that much had been learned from Kocher, Mayo and others; namely, that in the operation itself the patient could be protected, first, by reducing the trauma; second, by preventing shock, especially in cases which have gone too long before operation, and by performing preliminary operations in these cases, such as Dr. Tuholske and Dr. Kocher had recommended, or by following the method of Charles Mayo, of dividing the operation into two stages. There was no operation in surgery that had improved so much during the last ten years, both as regards the choice of time and the number of operation as this one.

## CASES OF VERY GENERALIZED POLYNEURITIS.\*

PHILIP ZENNER, A.M., M.D.

Professor of Neurology in the Medical College of Ohio, Medical Department of the Cincinnati University.

CINCINNATI.

The purpose of this paper is to present two cases of polyneuritis, which, so far as I know, present features which are unusual and appear to me to be of much interest. In the first case the patient had the added distinction that he had two attacks, in some respects alike, at intervals of thirteen years.

*CASE 1.—History.*—A. R., aged 13, of a healthy family, was seen Jan. 3, 1891. He gave a history of having ached all over for four weeks, of his face being drawn to the left side for three weeks, and of pains in his face and limbs.

*Examination.*—When I saw him he still suffered sufficiently to disturb his night's rest. He had double facial paralysis. The upper and lower branches of the seventh nerves were affected, but the paralysis was not complete, as the eyes could

be feebly closed. The electrical reaction of the facial muscles were those of degeneration—loss of faradic contractility, "tardy" reaction to the galvanic current, with the normal formula reversed. The patient also had an unsteady gait. The muscles of the legs were weak but not distinctly parietic. They responded to faradic electricity, but only to a rather strong current. The knee jerks could not be elicited. The urine was normal; sensation, special senses, disks, pupils, etc., were normal. The patient gradually improved.

March 28: It was noted that the facial paralysis had disappeared on the left side and nearly so on the right.

May 25: A note stated that the patient was well, but the knee jerks could not be elicited.

The patient now remained in good health for 13 years, though in 1896 he was examined merely for the purpose of learning the state of the knee jerks, and they were found to be normal.

*Subsequent Examination.*—I was called to see him again Oct. 20, 1904, on this occasion in consultation with Dr. Stephen E. Cone. Some ten days prior to this date he began to suffer with aching in his back and legs and, about a week later, with weakness in the legs and face. When I saw him he had a good pulse and normal temperature, but a heavily coated tongue, no appetite, and could not sleep on account of his general distress. He now had complete double paralysis, the muscles presenting the reaction of degeneration. He was weak on his feet so that he could scarcely walk. The knee jerks and Achilles tendon reflexes could not be elicited. The plantar reflexes were present, though slight, and normal, that is flexion. There were no other objective symptoms. For some time the subjective symptoms were, so to speak, the predominant ones. His suffering, aching, pains, etc., was very great, so that with hypodermic injections of morphin and hypnotics he scarcely obtained any relief, and very little sleep. But at the end of about three weeks the subjective symptoms left him, and thenceforth he slept without the aid of drugs. In the meantime his paralysis had steadily increased, reaching its acme about the time the subjective symptoms ceased. A few days after my first visit he was altogether unable to walk.

November 8: Patient could flex and extend toes fairly well; plantar flexion of ankles was quite weak, dorsal flexion nil, extension of knees nil, flexion and adduction quite weak, abduction stronger; hips weak but stronger than the knees. The right leg was a little stronger than the left. The muscles responded to the faradic and galvanic current, but it required a very strong current to produce contraction, especially of the quadriceps. (At a later period the leg muscles most profoundly paralyzed failed to respond to either faradism or galvanism, a fairly strong current having been applied.) Sensation in legs was very slightly blunted. The patient spoke of the bladder and rectum being weak, though there was no retention nor incontinence. This was complained of for but a short time. The patient began slowly to improve, but about December 20 he suddenly got worse, the paralysis increasing beyond what it had been before, and for a short time there were also subjective symptoms.

Jan. 8, 1905: Patient called attention to the fact that the left deltoid was slightly parietic, but this condition was of short duration. It was noted on this date that for several weeks some power of voluntary movement had been observed on the right side of the face, and for several days on the left side, and that he furrowed the brow quite well.

May 28: Two weeks previous to this date he began walking with the assistance of two helpers and at this date he could walk with only the assistance of a cane, but it was with the "steppage" gait, especially noticeable on the left side, the right leg being the stronger. The larger number of muscles had considerable strength. The most decided weakness was in the dorsal flexors of the left toes, extension of the big toe being almost nil. There was some sense of numbness in the left foot. The appearance of the face was not far from the normal.

August 22: Patient could walk up and down stairs unassisted. Chief weakness was in dorsal extensors, ankles and toes. Knee jerks, Achilles tendon reflexes and plantar reflexes could not be elicited.

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



September 13: Gait was still improving. Still slight impairment of tactile sensation of left big and little toe. Face still felt stiff and looked unnatural when he laughed. He could not expose upper teeth—paresis of upper lip. When he ate, tears frequently overflowed.

Jan. 15, 1906: Not much change in the face, but the facial muscles responded to faradism. It is well to note that the electrical reactions appeared to be normal, while voluntary control of the muscles had not yet become fully restored. He had an elastic, natural gait, but said he could not run.

February 5: Knee jerks were present, but no Achilles, nor plantar reflexes.

August 3: Knee jerks and Achilles reflexes were present, slightly more marked on the right side. No plantar reflex. Only noticeable defect was that the upper lip and dorsal extensors of toes and ankles had not regained their full strength.

I will again briefly refer to the more striking features of this second attack. The progress for several weeks was steadily from bad to worse, almost as steady as the movement of the clock, and the same was true of the improvement after it had once definitely begun. It was about a year after the onset of his illness that the patient again began to attend his business, and in about one and one-half years he was practically well. It is worthy of note that such extensive and profound paralysis should have left practically no traces.

The paralysis of the legs began in the muscles that move the large joints and only finally affected the toes, and it was in the latter that the paralysis was of longer duration. This is not the history of ordinary multiple neuritis, that is, the paralysis usually begins in the distal parts of the extremities. It is a rule, too, that the muscles first affected are last to recover.

The condition of the reflexes is noteworthy. At the very first examination the knee jerks and Achilles tendon reflexes were abolished, but a normal plantar reflex was present. The latter soon disappeared. It was more than one and a quarter years before the knee jerks returned, and some months longer before the Achilles tendon reflex was found. Even then the reflexes were probably not altogether normal, for they were more marked on the right side—the side which had been less affected—than in the left. The plantar reflex was absent in August, 1906.

The distribution of the paralysis also was unusual. While in multiple neuritis the four extremities are commonly affected, in this case, though the paralysis was extensive and profound, the upper extremities practically escaped. The double facial paralysis, though observed in cases of multiple neuritis, is rare. That there should have been so little anesthesia with such extensive motor paralysis is also uncommon.

With all its unusual features there is no room for doubt of the correctness of the diagnosis. The extent, profoundness and duration of the paralysis, the electrical reactions and full recovery all establish that. The most striking fact is that there should have been two such attacks in the same individual. There was no known cause for either attack, and they were assumed to be due to the grip.

CASE 2.—*History*.—Dr. T., aged 29, good family history, good habits, always had good health, never had venereal disease, was an athlete at college. Had been married three years and had a healthy child, one year of age. For six months before his illness he had much worry and mental strain on account of illness in his family and other troubles. The month before he became ill he was very hard worked, and lost much sleep. One warm night, perspiring and exhausted, he threw himself on his bed without clothes or cover, fell asleep, and awoke the

next morning chilled through, the temperature having fallen decidedly, and the cold wind blowing on him. He had had some severe pains in the back of his head for about a week prior to this time, possibly due to want of sleep, but he attributed his illness to this chilling, for his aching began immediately thereafter. I saw him July 5, 1907, in consultation with Dr. Ambrose Johnston, three or four days after his symptoms began. He suffered much with aching in his limbs and trunk, and was, therefore, moving constantly from side to side. So great was his suffering that he had just received a hypodermic injection of morphin. For a couple of days he had noticed that he was getting gradually weaker in his legs, and when seen observed that his hands and arms were getting weak. He also had paresthesia, numb, cold feelings, in the distal parts of the upper and lower extremities.

*Examination*.—On examination his pulse and temperature were found to be normal. Excepting that he was weak in his feet, there was no manifest paresis. All qualities of sensation, tactile, stereognostic, etc., appeared to be normal. Knee jerks and Achilles tendon reflexes could not be elicited. Pupillary reflexes were normal. Plantar reflexes were normal. The patient's condition now steadily grew worse. Four or five days after above date there was manifest paresis of shoulders, hips and knees.

July 12: Patient could not move the arms at the shoulders, nor the legs at the hips or knees, and there was considerable paresis of hands and feet. There was bilateral facial paresis. He had very little power in the muscles of the mouth and cheeks or in the orbicular palpebrarum, but he could furrow his brow well. His voice often became husky so that it was difficult to understand him, and he complained of accumulation of mucus in the throat, which it was difficult to remove. He required strong cathartics, and, at times there was weakness of the sphincter ani. He complained bitterly of paresthesia of the hands and feet. There was tenderness over the sciatics, also in other parts. He could not bear to have the legs extended, because, he said, it seemed to stretch the sciatics and it gave him extreme pain in them. There was still no manifest anesthesia. The paralyzed muscles responded to the faradic current. Plantar reflexes were normal. The patient had been closely watching his symptoms from the beginning. Probably partly from this cause, partly from his suffering, he was in an extremely emotional state. His condition continued to get worse, the power in the muscles of the extremities and face became less, his voice feebler, the accumulations in the throat more annoying and more difficult to remove, swallowing finally impossible (at times, the fluid in his throat would escape from his nose), so that from July 18 he was fed altogether through the stomach tube. About this time for several days he had some fever, highest 102 F. when his pulse was 140. At this time his physician believed, on account of his manner of breathing and all, that he was about to die. Soon after that his condition began to ameliorate somewhat, probably due in part to his receiving sufficient food, which had been taken in very small quantity prior to this time.

July 25: There was almost absolute paralysis of the four extremities, no abdominal, cremasteric or plantar reflexes. Strength of abdominal muscles seemed normal. Some impairment of sensation. Astereognosis in both hands. Patient had no stools without the aid of drugs and the nurse had to use his fingers. There were variations in the facial paralysis, one day eyes was somewhat restricted, especially in an outward direction, and the patient spoke of occasional double vision.

August 5: Decided anesthesia noted in hands and feet, and lower parts of arms and legs, and astereognosis. There was more marked paresis of the left abducens. There was very little power manifest in the left hand and elbow and right fingers. There were variations in the facial paralysis, one day one side of the face would be more paralyzed, the next day the other; the one day he could not furrow the brow, the next day he could furrow it. Accumulations in the throat had ceased, and patient could swallow saliva better, but still used the stomach tube.

August 15: Could swallow well; discarded stomach tube a week previously. Strength of upper extremities had in-



creased, some power of movement in all the joints, minimal power of movement observed in feet. Facial paralysis less.

August 26: Fair strength in muscles of face and upper extremities. In lower extremities some power manifested in muscles above the knees, none below. Still anesthesia of feet and hands. Movements of eyes better, but still somewhat limited.

September 7: Movement of eyes and muscles of face normal. Hands stronger. Some power manifested in all the muscles of lower extremities. Tactile sensation everywhere was fairly good. But there was some astereognosis; impairment of muscular sense and ataxia in the hands.

October 2: Strength of muscles and all qualities of sensation appreciably normal, excepting some weakness of the anterior tibial and peroneal groups of muscles, and slight impairment of sensation over the little toes. Knee jerks and Achilles tendon reflexes absent. Plantar reflexes could not be properly examined because of great sensitiveness of the soles of the feet.

November 21: Had been at work again for the past three weeks. Discarded a cane one week previously, walked well, and could run and jump, but not well. Some patellar tendon reflex present—occasional response. No Achilles tendon reflex. No plantar reflex. He still had numb tingling sensation on the dorsum of the feet, and occasionally in the fingers. There was also hyperesthesia of the feet, so that he could scarcely touch them without distress, and he could barely stoop to take off his shoes because it caused a pain in thighs and hips. His greatest complaint was that it took so long to fall asleep at night.

I examined him some six months later. His reflexes were normal, and he had been feeling quite well for several months.

This case can scarcely be considered otherwise than as one of multiple neuritis. Its manner of development, marked sensory symptoms and complete recovery after the extensive paralysis presents a clinical picture altogether unlike that of poliomyelitis anterior. In the recent epidemic of poliomyelitis in New York cases were reported which were very different from the ordinary disease, cases with very pronounced and widespread paralysis, presenting cerebral as well as spinal symptoms, in which there was speedy and complete recovery. But these cases appeared to be altogether in young children, and in addition to the fact that no epidemic cases appeared in Cincinnati the history in this case differed in many essentials from those just referred to.

Apart from the very widespread paralysis this case is certainly striking in many ways. The degree of suffering was excessive, even for a case of multiple neuritis. It was the earliest symptom and remained to a degree after other symptoms were practically gone. The sensory paralysis, the anesthesia, considering its extent and degree, was very late in its appearance. It, as well as some of the pains and motor paralysis, was rather sudden in its disappearance. The patient had always been a healthy man and came from a healthy family, but the manifestations last mentioned as well as some others made it appear that there might be no inconsiderable hysteric element in the case.

The electrical tests of the paralyzed muscles were not altogether satisfactory. His suffering and sensitiveness were such that usually no satisfactory examination could be made, but on several occasions some of the paralyzed muscles failed to respond to a strong faradic current. The comparatively early recovery of the muscles makes it probable that there had been no great changes in the electrical reactions.

As in the first case reported, the pronounced paralysis was first observed at the large joints and not in the distal parts of the extremities, as usually occurs in multiple neuritis.

## DISCUSSION.

HENRY W. FREUDENTHAL, of New York City: I would like to ask whether iodide of potassium was used in either of the cases reported, and whether there was a history of syphilis and what the reactions were?

DR. ZENNER said in reply to the question that there was no iodid given in the cases, and no syphilis found. There were the usual manifestations of reaction of degeneration in the muscles of the face while in the lower extremities a very strong current failed to produce any contraction in some of the muscles in the first case. In the second case the examination for electric reactions was unsatisfactory on account of the pain which it produced. At times, with the current strong, no reaction whatever was obtainable. But inasmuch as there was complete recovery in a comparatively short time, the chances were that there were no considerable changes in electric reactions.

## PATHOLOGY IN DENTAL COLLEGES.\*

L. G. NOEL, M.D.  
NASHVILLE, TENN.

Believing the course of study in pathology in dental schools defective in many respects and that it has not occupied the high place in the curriculum of study that its importance deserves, I conceived the idea of addressing a letter of inquiry to the various dental colleges in America. This was done with a view to comparing the methods pursued in this study, and with the hope of ultimately arriving at some improvement in teaching, perhaps causing the adoption of a uniform course of study. The body of the letter follows:

Wishing to acquaint myself with the methods employed in the leading dental schools in teaching dental pathology, and to ascertain to what extent students are taught the general principles of pathology in these colleges, I address you this letter, begging that you will kindly reply at your earliest convenience, setting forth as briefly as possible the methods pursued, in your school, in teaching this branch, the text-books employed, the extent of your requirements in examination, etc.

Believing there is need of improvement in the teaching of this important branch in nearly all of our dental schools, I am seeking by a comparison of methods to arrive at some correct conclusions about needed reforms. After stating briefly what you are doing in this teaching, I will thank you to point out also the improvements you conceive to be needed.

Forty-three letters brought twenty-five replies, a result showing, I think, a lively interest in the subject, especially when we consider that these inquiries were made during the month of January at the busiest part of the term and that the answer entailed considerable painstaking labor.

It would be instructive to reproduce all these letters here, especially as they come from the most eminent writers and teachers in our profession, but to do this would take up too much time and space, and I must try, therefore, to give briefly the salient points gleaned from this correspondence.

In several instances I wrote a second letter to draw out my correspondent more fully, to call attention to a question he had omitted to answer, or to ask another. Many of my correspondents sent carefully prepared syllabi of the course of study in pathology in their respective schools and these will be very useful in formulating a uniform course. It is apparent from these letters that very little laboratory work in biology, bacteriology and pathohistology is being done in our colleges, for the simple reason that we lack time for any

\* Read in the Section on Stomatology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



satisfactory pursuit of such work under the three years course. Several of our more important colleges were planning to construct laboratories, and to commence such a course when the brief period of the four years course was so suddenly terminated. Several of our schools are doing some work in pathohistology in connection with the studies in biology, bacteriology and histology, but this work is necessarily defective for want of time. There can be no question of the value of this method of teaching pathology. The student should pursue here the same methods of study as in anatomy, chemistry and histology, a practical training in laboratory processes.

Two letters from Dr. G. V. Black and two from Dr. James Truman show how these eminent teachers have labored under the difficulties caused by lack of time to give the training each felt so important for the life work of the dentist. Dr. Black in his reply to my second letter says:

DR. BLACK'S REPLY.

I have read your letter of February 13 with some care, and will say that in bacteriology, which is part of my own subject, one of my assistants, Professor Willard, doing the work, three hours a week are given to laboratory work during the whole year. There is quite a little done in the histologic laboratory in the pathology of the teeth, but the laboratory work in general pathology, and also in physiology, is not up to the standard that I should like to have. This is not because we have not room, or anything of that kind, but simply because we have not the time in our course to do that work. When it was arranged that we should have a four years' course, we were building, and I had planned for a physiologic laboratory and a pathologic laboratory for general pathology; but, as we did not get the time—the four years—we have been compelled to leave them out. I hope some of these days to be able to do this work; it ought to be done in every dental school.

Replying to a second letter of inquiry on this subject Dr. James Truman first calls my attention to his "Annual Fasciculus," which he sent me, in which is outlined the pathologic work in his school; then he says:

DR. TRUMAN'S REPLY.

You ask me for my opinion of "How to make the best of this work in the three years allotted us?" Each school naturally deems its plan the best with the limited time given. I must repeat that dentistry, and all branches included in that name, can not be taught in three years. At the best the student acquires a superficial idea of the work, and must depend on experience to fill up the lost spaces. When our department came under my care in 1883 I tried to bring to bear the experience of twenty years in another school. The guides were not many, and most of these were antagonistic to my own views in regard to teaching. This period was that which fell on dentistry between the old skilled mechanical metal workers and the unskilled rubber operators. In these years dentistry lost much, in fact, the working of the noble metals was practically a lost art. I felt that this should not be permitted, and that it must be taught, as the time would come when that skill would be needed. To accomplish this, I organized technical branches in the mechanics and operative in the freshman year. Having no guides, for these were not, I think, generally established, the beginning was somewhat crude, teachers had to be trained. Since then this original idea has been expanded until the first-year men now must go through the whole process from the making of metal work, etc.; and in the operative, from the beginning, an art student having charge of the modeling. The freshmen, as a rule, do not come to the living patient during the year.

The course thus subdivided between the three years, for it is extended in part over all, works as well as could be expected, and now that gold is so much used for crowns and bridges, as well as the base for artificial dentures, I feel that my earlier efforts in this direction have had full fruition. I do not wish

to be understood as claiming any special original credit for the technic work; this seems to come as a spontaneous need, perhaps not as I saw fit to start it.

The announcement sent you will explain the amount of time given to each branch, and I think it must be evident that the association of faculties made the mistake of its life when it killed the four years' course. The undergraduates reach the third year with much of mechanical, as well as theoretical knowledge, but with the operative largely theoretical. With some, I need not say to you, this may be sufficient, but the large majority have knowledge without skill. This is true of every school in the United States, in my opinion. In order to secure something of every study every one must be limited to a certain number of hours, and the test of knowledge must be examinations. If any set of teachers have been able to reduce this to an exact science I am not acquainted with them. To make the three years available, the subjects must be cut to fit the time. I am utterly opposed to the method, whether in our own school or any other. I will not live to see five years in undergraduate life, but I sincerely hope that the time will come when a dentist will be required to take as many years to study this complex profession as a bricklayer takes to lay brick. I do not know that I have answered your query, but perhaps you can glean something from it.

Surely we shall glean much from the statements of this earnest and conscientious teacher, who thus so frankly states the difficulties under which he has labored. It is probable that Dr. Truman's letter suggests these questions: What has the gold work in dental college to do with the study of pathology? Why does not Dr. Truman speak to the subject and answer briefly the query above quoted? Why do I reproduce so much of a letter that is apparently not germane to the subject? I will try to answer these questions and make my position plain.

Dr. Truman has for years been engaged in the practice of dentistry, in teaching dentistry, and in contributing to the literature of dentistry. He has not lived for selfish ends, but has endeavored most conscientiously to impart to his students the things needful to fit them for the practice of dental and oral surgery. Dentistry is a peculiar profession. It is unlike any of the other specialties of medicine, in that it is a texture made up of a warp of scientific facts with a woof of mechanical skill and handicraft. You can not separate the woof from the warp and maintain the integrity of the fabric. That Dr. Truman views the subject in this light is evidenced in this second letter from which I have quoted. It is difficult to bring the old practitioner to see the question in any other light, and especially is this true of the faithful teacher who knows what is required of him, and has personally felt the responsibilities the student must meet when he leaves the college and goes out to practice.

Feeling the importance of this practical training, as well as the need of the scientific knowledge as a foundation, Dr. Truman has endeavored to show how he has battled with these difficulties as best he could, trying to impart the most fundamental truths of each study in order that the student may continue his studies after graduation.

THE CAUSES FOR CRITICISM.

Dental colleges are often severely criticised by members of the profession who are not engaged in teaching, and who are therefore not familiar with the many and various difficulties that must be encountered. The arraignment is especially severe that so much time is devoted to mere mechanical training, to the operatory and prosthetic laboratory to the neglect of more important fundamental scientific studies.



This complaint, it must be admitted, is just; it is an evil that should be remedied. We all admit that, but we do not yet see our way to correct it. It is not a new complaint, for the trouble commenced in our two oldest dental schools shortly after they were founded. I remember seeing, years ago, somewhere in our literature as coming from Dr. James Taylor, this same complaint: that it was always difficult to get the students to leave the practical work of the operatory and laboratory, and attend regularly the lectures on the five fundamental scientific studies. Thus, it has, on account of the texture of our cloth, if I may be allowed to return to my simile, been ever with us from the beginning down to the present day, the same difficulty, except that it is growing.

We have lengthened the course of study but one year since the founding of the earliest dental schools, and this increase of time is utterly out of proportion to the growth of scientific knowledge, to the addition of biologic, histologic and bacteriologic lore, not to mention other things, that must be taught.

It is important now, as it was in the days of Chapin A. Harris and James Taylor, for the dental student to acquire manual skill. He comes to us for that, and when we send him forth from our colleges we give him a diploma which states to all the world that he is competent to practice the science and art of dentistry.

Why need we fall into the error of taking a one-sided view of this subject? We must not neglect those scientific studies which are the foundation of our art. Science is the foundation of all art, for painting, sculpture, music, architecture, etc. The painter must be an anatomist if he would portray the human form, the sculptor must be an anatomist if he would produce in marble the divine effigy.

#### SCIENCE OF FIRST IMPORTANCE.

Then if science is the foundation for our art it must necessarily take first place. If the time is too short for the needed study at school, and aught must be left unfinished, it must not be the foundation on which our superstructure is to rest; this must be securely laid that the building may be placed thereon, not hurriedly and defectively, but by gradual and careful accretion, until it stands complete, skilfully wrought, a thing of beauty.

Thus we dream of our work as teachers, but of how many educations commenced in our classes do we see even the foundations fairly completed? As teachers we must, for lack of time, as has been pointed out by Drs. Black and Truman, try to teach something of all the essential fundamental sciences, though giving but a superficial and unsatisfactory training in each. We must try to economize the student's time, working together to this end, eliminating from our requirements all useless technic work and substituting in its place such scientific training as we deem more important.

In the light of the recent great and brilliant contributions to our knowledge of pathology by such men as the late Dr. W. D. Miller, and our own beloved Dr. Talbot. I think I need not urge that our students should be taught as much pathology as possible while they are in the formative undergraduate state.

Whatever must be slighted in the preparation of our students for practice, it must not be these great studies on which the ability to recognize disease must depend. How can we hope for the application of intelligent therapeutic measures, or the inauguration of effective

prophylactic treatment, without a knowledge of etiology and pathologic conditions?

We must all admit that in many of our schools much time is consumed in technic work, which if not useless, is at least of minor importance when compared to the study of pathology. A dentist may be an operator of the rarest skill, but if without pathologic training he will be a failure as a practitioner, because he is without diagnostic discernment, without guides for the application of his skill. The infirmary is the best place to teach the application of the principles of pathology, and the student should be admitted early to the operatory for the acquisition of this training. I shall not attempt to say how early students should be admitted, that question must be decided by each school according to its own peculiar conditions, but it is clear to me that students should enter the operatory during the junior year.

Here we must show the student how to recognize the beginnings of systemic disease by its manifestations in the oral cavity, teach him how to arrive at correct conclusions and how to apply the various prophylactic and therapeutic measures available to the practitioner.

I must confess that at the time of this writing my thoughts in these subjects may be influenced and on some points at issue intensified somewhat by recent criticisms on dental education that have appeared in our journals. This is why I am endeavoring to show the peculiar features of dentistry as a profession even at the risk of tedious prolixity.

#### AN UNFAIR COMPARISON.

Our critics are comparing our methods with those pursued in medical schools, drawing therefrom conclusions unfavorable to us. The conditions to be met, the pursuits to be followed are very different. We must prepare our students to take up and practice a branch of surgery that is so exacting in its demands for manual skill that our state boards, many of them, require the candidate for a license to practice to perform certain operations in the presence of the examining board, which work is graded by the board and becomes an important factor in fixing his standard and deciding his fate.

Are such methods pursued by medical boards? Is the candidate for license to practice medicine and surgery required to amputate a limb, to ligate an artery, to operate for appendicitis, or to meet a crisis of any kind in medical practice? No, he may be asked how he would do these things, but is never actually required to perform the operations.

The state boards of examiners are made up of men many of whom obtain their appointments not because of mental and professional qualification for the place, but merely through political preferment, and regardless of their fitness for this work. Many of them are so ignorant that they could not themselves answer correctly one-half the questions they put to the candidates who come before them, yet these are the very men who are most severe in their criticism of dental colleges.

#### THE PROBLEM TO BE MET.

We must prepare our students to encounter these state boards, and when they fail before them we are censured for the failure. This explains why so much time is devoted to the mechanical and the manual, often to the neglect of the mental culture of the dental student.



We must prepare the student not only to pass the state board, but to commence practice, to compete with the old practitioner to earn his livelihood. We owe to him all this, it is what he comes to us for and what we have promised him. It is in most instances what he sadly needs, for seldom has he a large fund of available cash on hand at graduation.

We find ourselves as teachers navigating a stormy sea of criticism betwixt Scylla and Charybdis. Some of our critics are clamoring for all science, others seem to be for all technic and infirmity practice. We know that these things are to each other as the right hand is to the eye; that one cannot say to the other, "I have no need of thee." Fair science is the handmaid of art; science may be said to be the eye itself, but art is the right hand.

Then let us proclaim a truce to carping criticism and look the field over reasoning calmly together for betterment. The first step toward a remedy is clear and it is our duty as teachers to take it without delay. We must endeavor to bring the National Association of College Faculties to return to the four years' course, and if we fail in this effort, then I am in favor of making an appeal to all schools of dentistry of good standing in the United States, whose faculties are willing to lay aside all selfish motives and work for a high standard, to withdraw from the association and form a new organization which will adopt a longer course of study and inaugurate such other reform measures as we may deem necessary.

Some points brought out in my correspondence I hope to have further elucidated in the discussion of the subject. These relate to the preparation of the student for the taking up of this study, the order of this preparatory work, the time when the study of pathology shall actually commence and the order in which it shall be pursued.

#### DISCUSSION.

DR. EUGENE S. TALBOT, Chicago: I agree that a four or five years' course is necessary; yet improvements can be made and should be made at the beginning of the next course. President Eliot of Harvard recently stated that there is no necessity of the student's taking four years to do the work that could be done in three. There are men who graduate from Harvard in three years. In the dental school considerable obsolete material, now used for padding, could be cut out of lectures. Considerable time is wasted by students for want of system and opportunity to fill all the hours. Students entering dental schools should be required to graduate from high schools in which are taught physics, chemistry and biology, the last including zoology, which also includes evolution. Dentistry can not be taught to-day without these studies.

Medical schools devote three or four years to all the other specialties of medicine while the dental school spends the entire three years on one specialty. Subjects of the most vital importance to the dentist are omitted or only hinted at and of these he is entirely ignorant when he begins practice. First and most important of these is oral hygiene. Cleanliness should be the religion of the institution in which the student receives his instruction. This method naturally requires that the teacher and building be kept as cleanly as the surgeon and his operating-room. The first lesson taught the student in the clinic before operating on patients should be to place his own mouth in an hygienic condition as well as the patient's.

Most teachers discourse on diseases of the gums and alveolar process as *pyorrhea alveolaris*. It is an impossibility to teach students the pathology of these tissues under such a name. After the student learns what the term means he is all at sea when the different stages of inflammation are met with. He must always look for pus and if no pus is present, there

can be no "itis." I do not care whether the disease is called interstitial gingivitis or alveolitis; both are good terms. The term *pyorrhea alveolaris* should be used when pus is present. Few teachers on orthodontia give an intelligent course on etiology of deformities of the jaws and irregularities of the teeth. Another great mistake of some teachers is the invention of a new pathology to fit some particular mechanical hobby to advertise themselves. What is needed in dental schools is a better educated class of teachers to give a broader course.

DR. M. H. FLETCHER, Cincinnati: We are not all blessed with patients who can or will pay for services rendered by a physician or highly skilled stomatologist to treat diseases of the mouth. What are these people to do? Let us put ourselves in the position of some poor fellow who has no money to pay except for extraction and for a set of store teeth when the natural teeth are all gone. I have for years been an advocate of advertising dental offices, provided they have men to do this kind of work properly. Were we to have none but the highly educated practitioners, the probabilities are that many people would have to go without treatment and become toothless; or else men capable of more successful careers than those promised here, would necessarily deteriorate into that kind of practice at a very small price. On the other hand, there is a large clientele requiring what most of us can not give—treatment from the most highly skilled men that can be had, trained in anatomy, histology, pathology and diagnosis. I am thoroughly in accord with Dr. Talbot as to the failure in most of our dental colleges to teach pathology adequately in preparation for the practice of stomatology. Nomenclature is a point which has caused me a great deal of chagrin at times. Medical men say, for example, "You do not have in the text-books any description of the disease known as *pyorrhea alveolaris*." I would advocate every method that can be adopted to increase the knowledge of our students in the line of pathology and the treatment of disease.

DR. M. L. RHEIN, New York: I agree with Dr. Talbot as to the necessity for a generally better education, both of the teacher and student. Until we reach the same educational plane that practitioners in general medicine must attain, it is absurd for dentists generally to speak of dentistry as being on an equal footing with general medicine.

The subject of the teaching of pathology is one on which I feel very strongly. It is almost impossible to teach pathology of a part of the body until the student has not only had proper instruction in, but has shown by his examinations a proper understanding of, general pathology.

DR. N. S. HOFF, Ann Arbor, Mich.: The teaching of the subject of pathology is difficult, and I do not think it all depends on the extent of the student's preliminary education, neither does it depend altogether on the education of the teacher. Sometimes a student who is not what we call well educated gains a good understanding of pathology. On the other hand, a student with the very best recommendations, may disappoint us by turning out to be an inferior student. I hesitate to criticize the attitude that the dental colleges have taken towards the matter of preliminary education.

VIDA A. LATHAM, Chicago: Pathology comes a little too early in the present course of instruction. Pathology presupposes and accepts a knowledge of everything gone before; it takes in physiology, anatomy, general medicine, general pathology, surgery, etc. When we get it in the first and second years, as we do in many schools, it is difficult for a teacher of pathology to get the student to understand and make the references to all classes of work. A teacher gives a few points to learn by heart, and as a rule the student is not required to learn anything outside of that. I think the system of teaching in Michigan University some years ago, which required the student to look up branch or essay subjects, was one of the best incentives to a student to obtain a broader education in dentistry.

The literature of pathology, written by medical men as a rule, unfortunately, does not apply to conditions of the mouth particularly, as the tumors and pathologic conditions of the mucous membrane, the salivary glands, lymphatics of the mouth, etc., are not sufficiently known. I doubt if any one



knows whether or not we have lymphatics of the teeth. Why do not we make investigations along that line? The illustrations that are seen in the dental museums are usually of the gross anatomy. Where is the work done that would be acceptable, like Professor Shambaugh's work on the internal anatomy of the ear, the lymph spaces? We have no such work. The work of Dr. Broomell, of Philadelphia, is noted as of the best, though he is only a beginner in the subject, and he is perhaps the only man that has done the work in this country. But Dr. Broomell gets little credit for it—where do you hear him quoted? Where are other men who have tried to give us some dental pathology, dental bacteriology, dental histology? With the exception of Dr. Miller, not one has had an incentive to carry the work through. It is persecution to have to work night and day to earn bread and butter that research may be carried on! For that reason scientific dentistry and scientific medicine are the losers. I know laboratory men most eminent in this country and abroad. Have most of them ever received any credit or scientific standing for what they have done? The universities seldom recognize their work; the profession as a whole does not recognize it or seems to think anything but mechanics needed; and we are brought back to the same question: Why should we have professional dentistry taught by ordinary medical men? I think that this Section should make an effort to encourage the carrying on of research and secure laboratory facilities. The Section on Surgery invites men from abroad as guests. Why should not we? Why do we not invite Zigmundy, von Ebner, Zuekerkandl, Walkhoff and Gysi to attend our meetings? Then our meetings would be more largely attended. What we need is scientific dentistry and pathology.

DR. F. B. MOOREHEAD, Chicago: Three years is altogether too short a time in which to teach pathology. The didactic work given in two brief terms in dental colleges is altogether inadequate so far as the marvelous study of pathology is concerned. That course is not now long enough in the medical curriculum, and it will never be long enough in the dental school. I myself have spent several years in the study of pathology since graduation, and I am not yet inside the portals of the study of pathology.

In my opinion the subject of pathology ought not to be left to the department of pathology alone; other departments should be competent to teach it also. Students should be clinically taught practical pathology in the oral surgery clinic by a man who knows pathology. In that clinic every piece of tissue removed from the human mouth should be subjected by the students of the senior class to microscopic examination and study so that they may get a practical application. No matter how perfect one's preparation, no one can properly teach pathology didactically. It is not a didactic, but purely a laboratory subject. Therefore, we must have laboratories for the teaching of pathology, which presupposes that the student has done the required amount of work in histology. I have shown sections of tissue to senior students who were unable to determine whether a certain section was heart muscle—striated muscle—or connective tissue. A student who does not know normal histology can not intelligently study pathology. He must know normal tissue before he can study abnormal tissue. The student must first have a thorough course in histology, and then must be taught pathology practically. After this the student will be in a position to study the subject intelligently. The most we can hope for, is to prepare the student, in the three years he is with us, to take up the subject as a postgraduate study.

DR. G. V. I. BROWN, Milwaukee: Every one who teaches oral pathology will, I think, agree that there are four difficulties that must be met. First, insufficient time. I was an ardent advocate of the four-year course, and am glad to hear the general sentiment expressed in favor of it to-day. The second difficulty, and a very serious one, is that there is no literature on which any one who undertakes to give a modern course in pathology of the mouth, teeth, jaws, etc., can depend. To frame a course of lectures such as might satisfy one's own idea of what they ought to be if they are to be beneficial to the students, requires a great deal of general work. More books and miscellaneous literature must be consulted than it is really fair to ask students to undertake to go over in fol-

lowing that course of lectures. I meet this difficulty in my work at the University of Iowa as well as I can by preparing at the end of each year a long list of questions covering as far as possible those principles which I consider to be the most essential. I try to prepare them in such manner that the student can find the answers in no one work. This, in a general way, requires him to do more or less collateral reading in order to prepare answers, and it is on those questions that examination in the subject is based. The third and worst difficulty is that there is a lack of proper sentiment behind the study.

The fourth difficulty troubles me the most, and that is this teaching of applied pathology. In the University of Iowa, with which I am connected, the students have a thorough course in histology followed by laboratory and didactic work in general pathology before they come to me. I have put my work in two divisions: First, what I call the dental division or oral pathology, in which I teach only pathology of diseases of the teeth and surrounding tissues, the treatment of which does not belong to my course; and, second, that part of oral pathology properly belonging to the course in oral surgery, and of which I teach the treatment. I take up the consideration of the pathology in the following order: Etiology, pathology, symptoms, diagnosis, prognosis, and treatment of each disease, thus making the subject practical. The weakest point in all our teaching is due to the variance among those who should have opinions on the subject, more in accord.

DR. L. G. NOEL: I am indebted to those teachers who prepared letters giving their views in the matter of teaching pathology. I gathered from these letters that pathology is being taught in most of our dental schools, not from one chair alone, but from several, so that there is no escape from the subject. If a man is studious he can not help absorbing a large amount of pathologic knowledge while being instructed in the bacteriology and histologic departments, and he is also being thoroughly taught pathology from the chair of surgery in nearly all dental schools as well as in the clinical course. It is impossible for the student to have too much pathologic teaching. I believe that all dental students should be graduates in medicine before the dental school. We should then have all the branches that the student had studied in medical school, applied to his specialty of dentistry.

## DEMENTIA PRÆCOX.

### A COMPOSITE HISTORY OF TWO HUNDRED CASES WITH BLOOD FINDINGS IN FIFTY CASES.

H. D. PURDUM, M.D., AND R. E. WELLS, M.D.

Assistant Physicians in Northern Michigan Asylum.  
TRAVERSE CITY, MICH.

Several articles devoted to the etiology of dementia præcox have appeared within the last year in English and American journals; still, additions and contributions to knowledge on this point are much to be desired. It is with the hope of adding, even though slightly, to the knowledge of this condition that we present the following clinical findings:

On examining the histories of 200 cases, in 65 per cent. we were able to find some mental or nervous defect in the family. The greater majority of these patients were apparently normal in body and mentally well endowed; in fact, a great many showed unusual ability to acquire school knowledge until the pubescent period was reached. At this time many complained of nervousness and loss of ambition; others were shy, seclusive and showed vasomotor irritability; again others developed exaggerated sexual feelings and practiced masturbation.

These symptoms usually passed almost unnoticed by the other members of the family for a year or two; then the majority of these patients became restless, com-



plained of dull frontal headache, vivid disagreeable dreams, anorexia, digestive disturbances and inability to obtain restful sleep. If seen by a physician at this time they were usually found to have exaggerated deep and superficial reflexes, vasomotor disturbances (such as cold, clammy hands, cyanotic feet, dermatographia), anemia and loss of weight. To the prodromal symptoms just enumerated were now added the first real signs of mental aberration or the true onset of the psychosis. The first psychic field to show definite perversions was the emotional, and this was demonstrated in the change of feeling toward home, relatives and friends, and by periods of weeping, silly laughter and phobias. The next field to suffer included the various special senses. The patients heard unnatural sounds and voices, saw queer objects and visions, smelled disagreeable odors, their food tasted unnatural, sexual feelings were heightened or perverted, and frequently at night they experienced sensations as if suspended in space or lowered into some deep cavern. The patients as a rule at this stage of the psychosis tried to explain to themselves the cause of these unusual sensations, and as their judgment was defective, delusional ideas were the result. Delusions of persecution appeared first, and on them were engrafted those of position, grandeur, importance, religion, poisoning and also those of a sexual nature. At this point in the progress of the mental disease the attitude, manner and will became affected. Under the influence of hallucinations and delusions the patients usually became irritable, suspicious and egotistic. Lack of ambition and inability to perform simple tasks were quite noticeable at this time. Impulsive acts were often seen, some patients setting fire to their homes or destroying property while under the influence of these imperative ideas. A tendency to wander and travel was observed in a great many of these cases. As Kraepelin states, there is no doubt that among tramps a large percentage suffers from an arrested form of this disease.

The various psychic anomalies just enumerated were found to be more or less common to all cases of dementia præcox studied, but at this point in the progress of the mental disease certain psychic fields showed greater anomalies than others. For instance, in one group of cases the volitional field was found to be the one principally affected, the other symptoms being more or less in the background. In another group the emotional field was the one that suffered most, and in still another group the judgment showed the greatest weakness. For the above reasons the various authorities on psychiatry have divided dementia præcox into the catatonic, hebephrenic and paranoid forms. The three above-mentioned forms had, in the cases which we studied, a great many symptoms in common, but the degree to which certain psychic fields were invaded by the disease made these types stand out almost as distinct types of disease.

The most prominent symptoms displayed by the catatonic patients were those pertaining to anomalies of the volition or will, such as stupor with mutism, negativism, and more or less constant hypermuseular tension or excitement, during which the patients were destructive, untidy and noisy by shouting, and demonstrated stereotypy of speech and movements. While in the stuporous state the patients required a great deal of attention, were exceedingly difficult to care for, and usually needed to be fed artificially. The change from the stuporous to the excited state was frequently found to occur and usually took place spontaneously. One

patient who had been stuporous for over three months suddenly became excited, got out of bed, forced his face through a large pane of glass and succeeded in dissecting the greater part of the flesh from the facial bones. After the wounds were dressed he again became stuporous and is in that condition at the present time, over two years since the above attack. The periods of excitement in these cases were usually of short duration, lasting as a rule from the few seconds consumed by one impulsive act to three or four days. We found a great many of these patients in a mixed state, that is, in a condition of stupor and mutism with rhythmic movements and some constraint. Delusions, illusions and hallucinations in these cases, though present as a rule, were not prominent. Some authorities claim that all of the volitional anomalies are prompted by delusional ideas, but we were unable to prove this except in a few cases. The prognosis was found to be far better in this particular form than in the other two forms of the disease. Twenty-two per cent. were able to return to their homes; of these 10 per cent. had recovered and 12 per cent. were slightly demented. A few of the slightly demented patients were readmitted to the institution later.

In the hebephrenic form the emotional field presented the principal characteristic anomalies. The ones most frequently found were general apathy, unprovoked silly laughter, lack of interest shown on meeting friends or relatives, frequent blushing, weeping, shyness, seclusiveness and preoccupied states. As in the catatonic form, delusions and hallucinations were usually present, but of minor importance when compared with the emotional phenomena. The mental decline in these cases was uniformly progressive, with a few remissions and a small percentage of recoveries. Most authorities claim that the hebephrenic form of dementia præcox goes to make up about 75 per cent. of the tramps and vagabonds.

The paranoid form, on the other hand, showed marked irregularities in the field of judgment. The most striking features were the delusional ideas and the formation of more or less fixed delusions. The delusions in reference to persecution were the first to appear, on which were engrafted those of grandeur, position, power, religion and occasionally those of an erotic nature. This type of the disease usually affected the patients later in life than the other two forms. On account of these delusional ideas being partly based on facts, patients of this type often came to the asylum for the first time as late as the thirty-fifth year of age, after having served several short terms in prison or having caused their relatives an enormous amount of trouble and anxiety. Authorities on criminology and psychiatry have found that a large percentage of eccentrics, anarchists and criminals is made up of sufferers from this form of dementia præcox. On account of their apparently more or less logical ideas the civil courts often find them guilty of some criminal offense or let them go free, exempt from the guardianship of an institution for the insane, until the psychosis is well advanced. No remissions or recoveries occurred in the few cases of this form included in this paper.

Tables 1 and 2 contain the blood findings in twenty-five cases of catatonic stupor and twenty-five cases of hebephrenia. Nine of the catatonic cases showed some slight mental impairment, but the entire hebephrenic group is composed of fairly recent cases. Wright's blood stain was used for the differential count and Erlanger's sphygmomanometer for the blood pressure.



TABLE 1.—CATATONIA.

Case No.	Hem. Per cent.	Erythrocytes.	Leucocytes.	Neutroph. Per cent.	Small M. Per cent.	Large M. Per cent.	Eosin. Per cent.	Trans. Per cent.	Basoph. Per cent.	B. Pressure. S. P.	D. P.
1	70	4,496,000	14,340	83.1	11.7	4.7	.5	0.	0.	165	110
2	70	2,712,000	13,326	31.3	21.1	10.3	5.8	1.2	.3	140	98
3	90	4,888,000	12,564	79.8	13.1	5.2	1.1	.6	.2	152	86
4	70	3,656,000	11,548	71.7	11.1	10.2	3.4	.4	.2	156	102
5	60	3,792,000	11,422	81.	7.2	10.8	0.	.8	.0	138	70
6	80	4,288,000	11,422	63.7	13.6	16.2	1.1	4.8	.6	154	92
7	70	4,216,000	11,042	78.4	12.5	8.2	.7	.2	.0	132	88
8	80	4,488,000	10,660	60.2	28.3	6.3	4.8	.2	.2	180	120
9	75	3,824,000	10,408	80.5	10.6	6.5	.7	1.	.7	132	88
10	65	5,048,000	10,280	66.9	15.	13.3	3.9	.4	.5	162	110
11	70	3,200,000	10,026	66.3	22.2	8.6	1.5	.9	.5	142	88
12	65	3,712,000	10,026	65.9	18.0	11.4	3.7	.5	.5	130	78
13	75	4,640,000	9,898	54.6	32.5	5.9	2.1	3.2	1.7	148	102
14	80	3,848,000	9,010	60.2	25.6	8.0	4.8	.9	.5	150	98
15	90	5,512,000	8,884	57.6	20.8	9.0	11.5	0.	1.1	140	80
16	65	4,128,000	8,248	62.2	19.9	12.2	2.9	2.3	.5	150	106
17	80	4,320,000	7,994	65.3	21.1	10.6	1.7	.3	1.	167	103
18	75	3,952,000	7,868	67.2	20.6	5.2	6.3	.0	.7	130	68
19	70	3,080,000	7,356	60.9	25.3	7.7	3.6	2.1	.4	132	80
20	70	3,832,000	7,356	49.4	34.2	8.3	2.9	3.3	1.9	110	80
21	90	5,368,000	7,230	50.5	29.2	15.5	2.5	1.2	1.1	128	78
22	70	3,384,000	6,996	73.4	13.3	10.3	1.2	1.3	.5	135	88
23	70	3,144,000	6,592	61.4	22.0	10.1	6.0	.3	.2	160	94
24	90	3,912,000	6,340	59.3	24.7	10.8	4.2	.8	.2	158	92
25	90	4,344,000	6,848	50.5	30.2	13.8	1.5	3.	1.	140	90

TABLE 2.—HEBEPHRENIA.

Case No.	Hem. Per cent.	Erythrocytes.	Leucocytes.	Neutroph. Per cent.	Small M. Per cent.	Large M. Per cent.	Eosin. Per cent.	Trans. Per cent.	Basoph. Per cent.	B. Pressure. S. P.	D. P.
26	80	4,680,000	17,894	60.2	24.	8.5	5.	1.4	.9	172	104
27	80	4,872,000	17,006	74.6	19.7	2.	3.13	.2	.2	150	76
28	80	4,712,000	15,230	69.9	21.2	4.7	3.6	.4	.2	165	100
29	75	3,504,000	13,706	64.5	24.4	6.5	3.6	.5	.5	144	92
30	90	4,448,000	13,072	70.5	11.6	13.7	3.5	.5	.2	134	78
31	80	4,792,000	11,548	63.7	20.	10.9	1.9	2.6	.9	128	88
32	75	3,712,000	11,168	52.3	30.9	9.5	3.5	3.8	.0	139	92
33	70	4,760,000	10,660	61.7	14.6	6.6	15.4	.7	1.	136	96
34	70	3,872,000	10,660	63.7	17.6	14.0	2.	2.2	.5	156	84
35	80	3,840,000	10,534	60.5	31.4	5.1	2.	.0	1.	130	78
36	70	3,760,000	10,026	65.5	21.6	4.2	6.	2.2	.5	128	78
37	90	5,072,000	9,898	64.5	22.9	9.4	1.	1.4	.8	160	92
38	70	4,336,000	9,138	68.6	18.9	9.9	2.2	.0	.4	148	82
39	55	3,904,000	9,010	61.1	21.4	6.5	8.9	2.1	.0	132	88
40	90	4,640,000	9,010	55.5	34.3	6.7	2.0	.7	.8	138	88
41	70	4,696,000	8,248	59.3	23.3	13.2	2.0	1.6	.6	128	82
42	80	5,840,000	8,122	61.5	26.7	7.1	2.4	1.7	.6	130	74
43	75	4,064,000	7,742	68.6	18.7	9.7	1.8	.7	.5	150	98
44	80	4,232,000	7,356	72.5	13.5	5.3	6.5	1.8	.4	110	62
45	65	3,600,000	7,356	52.9	36.4	5.0	3.5	1.9	.3	126	80
46	70	4,560,000	7,356	30.	30.	8.6	.9	.5	.0	130	74
47	70	4,416,000	6,996	61.4	26.3	10.3	.8	.8	.4	128	86
48	70	4,944,000	6,592	57.5	24.4	13.2	1.3	3.1	.5	128	78
49	55	3,624,000	5,692	62.5	18.2	9.6	6.2	3.0	.5	128	82
50	85	4,592,000	5,300	57.8	23.7	12.9	4.0	.8	.8	146	72

Patient 11 was operated on in January of this year and four-fifths of the right lobe of the thyroid gland was removed. For six months previous to the operation he had been mute, rigid, tube-fed and cared for in bed. Immediately following the operation he became mentally clear and talked freely. This hopeful condition lasted five days, when the patient's mind became clouded and convulsive movements were seen to involve the angles of the mouth and the extremities. On the seventh day the patient had four tetanic convulsions lasting from three to four minutes each, during which the trunk and extremities were in a state of extreme flexion. We were of the opinion that the parathyroid glands of the right side had been either removed or injured during the operation and the tetanic convulsions were the result. Five-grain tablets of thyroid extract were administered every four hours. After the first dose, the patient had no more convulsions, and when four tablets had been given, the drug was discontinued. During the following six weeks the patient was cared for in bed, being very destructive, delusional and negativistic. At the end of this time he began to improve and was allowed to get up and dress. Improvement has been gradual since, and at present the patient is mentally clear, takes considerable interest in his surroundings and occupies his time by reading and assisting the attendants with the ward work. Delusions and hallucinations are absent and the patient appears to be in a normal state, except that his movements as well as his thought processes are slow. Since the operation he has gained 23 pounds and his blood-findings are practically normal, aside from a mild leucocytosis and a low erythrocyte count.

After the tabulated blood examinations were made in cases 23 and 33, thyroidectin was administered in five-grain doses every eighth hour for one week. A second blood count was made at the end of this period and the following changes noted: In case 23, the eosinophile percentage increased from 6 to 14.2 and the total leucocyte count from 6,592 to 8,884, while the

neutrophile percentage decreased from 61.4 to 49.6. In case 33, the eosinophile percentage increased from 15.4 to 25.1 and the total leucocyte count from 10,660 to 14,340, while the neutrophile percentage decreased from 61.7 to 45.6.

Bazzicalupo's theory that the eosinophiles and neutrophiles that have undergone presenile changes is well illustrated in the table. Those cases that showed an unusually high eosinophile count also showed a correspondingly low neutrophile percentage.

The urine of forty-four out of the fifty cases tabulated showed an excess of indican.

While we do not feel justified in making deductions from the above findings, yet we consider the prevailing mild leucocytosis and the increase in the percentage of the eosinophile and large mononuclear cells with a low neutrophile count of considerable interest. The above facts just enumerated in reference to the blood and urine point strongly toward a physical basis for this disease, possibly an autointoxication of intestinal or glandular origin.

**Pneumococcus Nephritis.**—Ferrand diagnosed acute nephritis in a child of 6, previously healthy. The child died in three days, and the trouble proved to be a pneumococcus infection with multiple localizations, most severe in the kidneys. The lesions in the pleuræ and lungs were subordinate. Papillon had a similar case in his service, the signs of the acute nephritis dominating the clinical picture although there was pneumonia of the right lung, evidently the primary affection. The meninges were also involved. The case was still under observation when reported in the *Bulletin de la Société de Pédiatrie*, April, 1908



## PSYCHOTHERAPY.\*

M. A. BLISS, M.D.  
ST. LOUIS.

The idea I desire to present is, that, as far as psychic influences are to be curative, they must be applied with that end solely in view and not with a reservation that admits greater development of a neurosis, so that the observer may make an interesting psychic analysis, may keenly dissect and examine in cool, critical fashion the abnormal working of the mind machinery as the physiologist examines the beating heart of the dog—good for science but bad for the dog. It goes without saying that we should apply our very best efforts to comprehend the innermost recesses of the patient's consciousness, but if in our warm pursuit of psychologic data we lose sight of our ultimate aim—the welfare of the patient—so much the better perhaps for scientific study, so much the worse for the patient. There is a very close comparison between this tendency in neurology and the over-zealousness in surgery, where a desire to build up statistics, to do rare and unusual operations, to witness in perhaps a purely scientific spirit the progress of disease processes may contribute ultimately to the welfare of mankind at large, but works hardship on the individual sufferers. The analogy will apply probably in all fields of the healing art, but certainly not least in the application to psychic work.

In spite of the effort to reduce psychotherapy to a scientific basis must we not after all confess that it is an art and must be applied as an individual and personal quality? Can it anywhere be claimed that the art may be mastered equally by men of equal ability any more than all men of equal intelligence and industry might paint equally acceptable pictures or write literary productions? I think not. Moreover, the great bulk of the work in this field must be generously interspersed with kindness and genuine human sympathy, with a spirit of friendship and comradeship, if it is to give the best results. The good old family doctor of the days now disappearing, who acted as general family counselor in moral as well as physical vicissitudes, has very successfully filled the rôle of psychotherapist. His very presence brought about favorable results that cold scientific analysis would utterly fail to attain.

Very recently one of my best friends in neurology, whose scientific work is well and most favorably known, was reporting a study of a hysteric situation. He was asked what suggestive work had been done toward removal of symptoms. He very naively replied, "None. In fact, it was the spirit of the game not to disturb the development of hysteric symptoms, but the hope existed that more profound manifestations might arise, that more might be learned of their nature." It may prove disconcerting in the end to find that a dislodgment of well-intrenched ideas is entirely beyond his suggestive powers.

It does not seem far-fetched to compare the development of psychic deviations to those of a purely physical nature. The relative ease of removal is certainly present in the beginning. So we may not privilege ourselves to study the growth of a neurosis coolly; we must apply our best efforts to its cure and store away whatever we may learn of scientific value, the acquisition of which

does not interfere at all with the best interests of the sufferer.

Another phase of this subject and one which gives rise to wide differences of opinion is how far may we use placebos and other means of presumably pure suggestive nature like the static battery, as a quick and easy way of removing troublesome symptoms which may arise in the progress of any neurosis.

There is good reason for believing this rarely justifiable, and certainly the tendency is toward less careful and painstaking efforts to get the patient to realize the mental origin and method of management of his troubles. One might compare this to the use of the coal tar products for the relief of headache. A symptom is relieved, but the underlying cause is in no wise removed or affected except possibly for the worse. Most psychics are indefatigable in their search for medicinal remedies and come to offices laden with thirty or forty prescriptions, about half of which call for one or another of the bromid salts. It may require an hour or more of valuable time and all our persuasive eloquence to put the truth plainly before them. We may not succeed even then, but it is none the less our duty to advise against all drugs, currents, etc., when the cause is a mental or moral one, than it is to write a prescription for quinin when the plasmodia appear in the blood.

I have had patients, with whom I had labored diligently, settle themselves rebelliously in a chair and declare they were not going to leave until they got a prescription for some medicine. They were tired trying my methods which, however successful at times, at other times failed completely to give relief. How easy to write for a cochineal mixture for such a patient to build up an elaborate expectancy and perhaps be later assured by him that it "worked like a charm." If there is a field in which psychotherapy actually cures anything, and it is the firm belief of many, if not most, neurologists that there is, there can be no excuse for weakly succumbing to this temptation to do at times what the quack does all the time, i. e., give some innocuous stuff to satisfy a desire of the patient and let Nature and hopeful expectancy do the rest.

Psychic analysis after the method of Freud and Jung certainly contributes extremely valuable knowledge to our branch of study, but it is questionable whether the material used in these experiments is not in some measure at least sacrificed to scientific enthusiasm.

After all, the largest use we find for psychotherapy, not the most urgent and indispensable but the most frequent, is in simple nervousness arising in patients who have never learned not to be governed by their emotions, whose philosophy has never been developed. When we run on to a genuine neurasthenia or psychasthenia, it takes two, three or four years to get it well, psychotherapy or none. A deep-seated hysteria we do not cure, though we fondly pride ourselves in our ability to "modify the personality." Our influence on the genuine psychoses, when we have crossed the shadowy line dividing them from simple nervousness, does not swell us with pride. It depends in a large measure on our ingenuity in devising employment, environment, and wholesome ways of living whether we succeed or not. The fascination of laboratory experiment and the easy way of the placebo may appeal to us according to our mood, but neither should be allowed to outweigh the one legitimate aim of our efforts—the cure, partial or complete, of the patient.

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



## Clinical Notes

### SUDDEN COLLAPSE FOLLOWING INJECTION OF DIPHTHERIA ANTITOXIN; RECOVERY.

FRANK W. THOMAS, M.D.  
CLAREMONT, CAL.

Recent reports in *THE JOURNAL* of fatal results following the use of antitoxin, especially the cases reported by Drs. Wiley<sup>1</sup> and Boone,<sup>2</sup> prompt me to report a very unpleasant experience with serum a few months ago. Although the patient survived, I certainly do not care to have any more experience of like character.

Dec. 15, 1907, I was called to see a boy 15 years of age. He had always been healthy in every way, until the past few days, when he thought he had taken cold, and was now complaining of his throat. Examination showed a flushed face, rapid respiration, and quick pulse, 120 per minute. He breathed through the open mouth, indicating nasal obstruction. Inspection revealed a large mass of diphtheritic membrane which almost filled the pharyngeal and postnasal spaces. I at once sent for antitoxin, and on its arrival injected, by the usual technic, a dose of 4,000 units into the subscapular region.

Immediately there was a change in the boy's countenance. A look of intense anxiety came over him, and the lips, face and neck quickly became livid in appearance. He gasped for breath, and cried out that he was smothering, and that he had a pain in his heart. Froth poured from his mouth, and he clutched with his fingers at his throat and chest. There was a peculiar death-like stare in his eyes; the pupils became widely dilated, and very soon he went into convulsions, throwing himself from one side of the bed to the other. Finally his breath seemed to leave him, and he dropped back on the bed in a state of complete collapse and unconsciousness, while the radial pulse entirely disappeared from both wrists. Death seemed imminent.

Restorative measures were promptly instituted in the form of strychnin, atropin, and nitroglycerin, hypodermically, while heat was applied to the extremities and hot coffee injected into the bowel. Dr. Frank Garcelon of Pomona was called in consultation. Stimulation was pushed to the limit, without any apparent benefit, so far as restoration of consciousness or pulse was concerned. After lying in this condition for an hour and a half with no improvement, and as the throat was filling up rapidly with the false membrane which continually threatened strangulation, it was decided to try another dose of antitoxin, and 3,000 units were injected in the submammary region. One hour later, another dose of 2,000 units was administered. In each instance strychnin 1/30 gr. was given hypodermically coincident with the antitoxin.

No immediate effect was noticeable from either of these doses, one way or the other. Respiration continued weak and rapid, while the extremities were cold and blue. The case at this time seemed hopeless. One hour later an ounce of hot saturated camphorated oil was injected into the bowel, and retained. Two hours later respiration began to improve, and a faint radial pulse could be detected, the first perceptible in six hours' time, and the patient soon regained consciousness, but was very much prostrated.

As the boy could not now swallow, alcoholic stimulants were freely given, and peroxid of hydrogen spray, full strength, was used in the nose and throat at frequent intervals. At 9 a. m., the next day, 3,000 units of antitoxin were given, and the same sized dose repeated at 1:30 and 5:30 p. m., making in all 18,000 units administered in twenty-two hours.

Improvement in pulse and respiration became more noticeable, and the symptoms much more favorable, but the membrane did not begin to slough until the fourth day. After this it was freely cast off. On the eighth day severe muscular and articular pains came on, and the characteristic eruption ap-

peared over the whole body, accompanied with intense itching, and the eyes became bloodshot.

Absolute rest was enjoined for several weeks after all troublesome symptoms had disappeared, and strychnin was continued until the patient had regained his strength. Convalescence was rather slow, but the patient finally made a complete recovery.

The question may be asked why succeeding doses of antitoxin were given this patient after the untoward effect of the first dose. The answer is that the boy's system was so thoroughly saturated with the toxemia of the disease that recovery seemed impossible without heroic measures such as antitoxin offers. The precaution was taken to give strychnin coincident with each of the succeeding doses of antitoxin for the purpose of sustaining the flagging heart action. Whatever theory may be applied to the case, the important thing is that the boy recovered. Without vigorous and continued stimulation death would certainly have followed.

The question of the untoward effects of serum injections have attracted the attention of the profession to a considerable extent within the past few months,<sup>3</sup> and now the federal government, through the Marine-Hospital Service, is making extensive investigation and study of the subject with reference to this point, and it is hoped that the department will be able to throw light on a mysterious condition concerning which we are in the dark at the present time.

The difficulty is that we have no criterion by which we may be able to foresee contraindications for the use of the serum that is so universally recognized as the most potent remedy we have with which to combat the poison of diphtheria. I have used antitoxin for years, and have given it twenty-five times since that unfortunate experience five months ago, and only with good results; but in the light of the experience reported during the past few months it behooves the profession to be on guard in the use of this remedy that we have heretofore given with feelings of absolute safety.

### A NEW METHOD FOR THE QUANTITATIVE ESTIMATION OF ALBUMIN IN URINE.\*

EDWARD H. GOODMAN, M.D.

Physician to the Dispensary of the Phipps Institute for the Study,  
Treatment and Prevention of Tuberculosis; Dispensary  
Physician to the Presbyterian Hospital; Assistant  
Instructor in Medicine, University of Pennsylvania, etc.

AND

SUZANNE STERN.

PHILADELPHIA.

Although there have been many new methods devised in past years which have simplified and enriched our laboratory equipment, there seems to have been no method suggested whereby the percentage of albumin in a given specimen of urine can be rapidly determined. The only means we possess is the Esbach albuminometer, which besides being inaccurate, possesses the added disadvantage of requiring twenty-four hours before a result can be obtained.

We have worked out a method which is extremely simple, accurate and which gives results in a few minutes. It is based on the precipitation of albumin by phos-

1. *THE JOURNAL A. M. A.*, Jan. 11, 1908, 137.

2. *THE JOURNAL A. M. A.*, Feb. 8, 1908, 453.

3. *THE JOURNAL A. M. A.*, March 14, 1908, 875.

\* A preliminary report from the private laboratory of Dr. John H. Musser.



phosphotungstic acid in the presence of a mineral acid. We dissolved 1 gm. of crystallized egg albumin in 100 c.c. of distilled water (Solution A). Of this we took 1 c.c. and diluted with 9 c.c. of distilled water (Solution B) so that in the 10 c.c. there was 0.01 gram of albumin; in 1 c.c., 0.001 gram, and in 0.1 c.c. 0.0001 gram. We put in a test tube 5 c.c. of the following solution:

Phosphotungstic acid ..... 1.5 gm.  
Hydrochloric acid (conc.) ..... 5 c.c.  
Alcohol 95 per cent., q. s. ad. .... 100 c.c.

We found that if the above solution of egg albumin (Solution B) were added with a pipette graduated in 0.1 c.c. that it took 0.1 c.c. to cause a cloudy precipitate with the phosphotungstic acid; in other words, there were 0.0001 gram albumin in the 0.1 c.c. of the albumin solution.

To prove the delicacy of this we took 1 c.c. of Solution B and diluted it with 9 c.c. of distilled water so that in the 10 c.c. there was 0.001 gm. albumin, in 1 c.c., 0.0001 gm., and in 0.1 c.c. 0.00001 gm., and we found that it required exactly 1 c.c. to cause a precipitate, or 0.0001 gram albumin.

Having established the delicacy of the test we applied our method to urine. First the Heller's test was made and if much albumin was present, the urine was diluted 1 in 10, if not, undiluted urine was used. Of the phosphotungstic acid solution, 5 c.c. were put in a test tube and then with a 2 c.c. pipette graduated in tenths of a c.c. the filtered urine was added to this, shaking after the addition of each tenth, and adding urine until a whitish cloud appeared. The number of tenths of a c.c. was read off and expressed in terms of 100 c.c.

For example, if it took 1 c.c. of diluted (1 to 10) urine, there was .0001 gram albumin in .1 c.c. of undiluted urine, or in 100 c.c. there was 0.1 gram albumin, or 1 gram in 1000 c.c. On the other hand, if 0.7 c.c. diluted urine were used, then 0.07 c.c. undiluted urine equals 0.0001 gm. albumin; 7.0 c.c. equals 0.01 gm. albumin and 700 c.c. equals 1.0 gm. albumin. The following equation gives the percentage:

As  $700 : 1.0 :: 100 : x$  or 0.142 per cent. or 1.42 per thousand.

Our findings have been controlled by the gravimetric method and the results are given below:

No. 1.—Titration method...	0.06	per cent., or 0.6	pro mille
Gravimetric method...	0.06	per cent., or 0.6	pro mille
No. 2.—Titration method...	0.166	per cent., or 1.66	pro mille
Gravimetric method...	0.1100	per cent., or 1.10	pro mille
No. 3.—Titration method...	0.05	per cent., or 0.5	pro mille
Gravimetric method...	0.05	per cent., or 0.5	pro mille
No. 4.—Titration method...	0.33	per cent., or 3.3	pro mille
Gravimetric method...	0.34	per cent., or 3.4	pro mille
No. 5.—Titration method...	0.12	per cent., or 1.2	pro mille
Gravimetric method...	0.10	per cent., or 1.0	pro mille
No. 6.—Titration method...	0.1	per cent., or 1.0	pro mille
Gravimetric method...	0.17	per cent., or 1.7	pro mille

The method, as is seen, is exact, sensitive, simple and possesses the great advantage of giving the amount of albumin in a specimen of urine in a very few minutes. Further work is being carried on to determine the errors, if any, in this procedure, and a future paper will contain our final conclusions as to the value of our method.

2035 Chestnut Street.

**Children's Hospital, Hobart, Tasmania.**—The committee appointed to judge the designs for the proposed children's hospital have recommended that Mr. Rudolph Koch be awarded the first prize. The design provides for 24 beds, two wards of 10 beds, one of 3, and an isolation ward containing 1 bed.

## CORN OIL IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

JOHN RITTER, M.D.

Instructor in Medicine, Rush Medical College.  
CHICAGO.

The medical profession is fully conversant with the fact that, in the treatment of pulmonary tuberculosis, the oils and fats take foremost rank. All tissue waste, in excess of that in health, which always takes place during the active tuberculous process, must be met by an abundance of aliment to restore the metabolic equilibrium. Our chief reliance usually is placed on the ingestion of easily assimilable and readily digestible food. As food values the fats and oils are of the most importance. If the tuberculous patient refuses to take, or does not well tolerate, fats and oils which form part of the daily diet, such as butter, yolk of eggs, bacon, etc., then recourse must be had to some animal or vegetable fat given as a medicine.

Of animal oils, that obtained from the liver of the cod fish has for years been given the preference. Of late, the use of olive oil has come greatly into favor. Both cod liver oil and olive oil are expensive, and the price of these oils is, as a rule, beyond the reach of most tuberculous patients, as most patients suffering from pulmonary tuberculosis belong to the poorer classes. This has induced me to look about for an oil or fat which possesses all the good qualities and properties of either cod liver oil or olive oil, or of any other good vegetable oil, and which is inexpensive, palatable, easily assimilated, well borne by the stomach and does not cause nauseous eructations. My attention was directed about a year ago to an oil obtained from corn or maize and I began to recommend and prescribe it to patients who applied at the Central Free Dispensary of Chicago and who were suffering from pulmonary tuberculosis. This was to be used in lieu of either cod liver oil or olive oil. From the fact of its inexpensiveness, it being about one-fourth the price of that of any other oil or fat usually prescribed in pulmonary disease, I wished to give corn oil a fair trial. I ascertained from reliable sources that the output of corn or maize oil is practically unlimited and it being only a by-product in the manufacture of starch minimizes its cost of production and makes the selling price proportionately low. The low price of maize oil, combined with all the good qualities of a palatable and wholesome oil, makes it the ideal oil for patients suffering from pulmonary tuberculosis.

I have given it not only to such as applied at the Central Free Dispensary for treatment, but also to such as came under my care at the Tuberculosis Institute and in all cases with equal gratifying result. I am convinced, from many close observations, that as a food or tissue builder it is fully equal to cod liver oil or olive oil. The ingestion of corn oil is well tolerated. It does not cause the nauseous eructations which usually follow the taking of cod liver oil, and the prolonged and increasing dosage is always well borne by the stomach.

Corn or maize oil (*oleum mayidis*, *oleum zea mais*) is obtained from ordinary corn. The amount of oil in corn varies from 3.5 to 6 per cent. The oil is found almost entirely in the germ which represents about 6.5 per cent. of the weight of the corn and about 50 per cent. of this germ is pure oil. It possesses all the properties of the fixed oils, being insoluble in alcohol or water, but very readily soluble in chloroform, ether or carbon bisulphid. Its color is light straw, it possesses



a peculiar corn flavor, has very slight drying properties and a specific gravity of about 0.92, which is about the same as that of cod liver oil. Its viscosity is greater than that of olive oil. Its composition, like that of all vegetable fixed oils, is somewhat complex, mostly glycerids of the fatty acids, stearic, palmitic, oleic, arachidic, etc. The chief source of maize oil is as a by-product in the manufacture of starch, dextrin and glucose. A small quantity is obtained when corn undergoes the process of fermentation in the manufacture of alcohol, and a like small quantity is obtained from the hominy mills.

The usual process of manufacture is very simple. In making starch the corn grain is steeped until the kernel is softened and the germ has assumed a tough, elastic condition. The warm steeping water is run off, the grain washed and then shredded apart and coarsely ground. This usually suffices to loosen the germ from the rest of the grain. The magma is now placed into tanks of rinsing water in which the starch granules settle rapidly to the bottom, while the light germs float off from the top. These germs are then washed, dried, ground and the oil removed by hydraulic pressure. The oil as obtained is very easily refined and clarified, simply by placing the expressed oil in large airtight containers for a definite time when the albuminous matter subsides or the subsidence of the albuminous matter may be hastened by the addition to the oil of an inert, insoluble earth, such as kaolin, decanting the clear oil and filtering.

Every physician, with but limited experience with pulmonary patients, knows fully well that pulmonary tuberculosis is most prevalent among the indigent and needy poor and that the purchasing price of oils or fats, be it in the form of olive oil, cod liver oil, butter, etc., is not always within reach of these unfortunates; hence an oil or fat which possesses all the food values of the best oils or fats that are used in the building up of the wasting tissues, and at a cost to the purchaser of only one-fourth in money value, is undoubtedly an item which demands the careful consideration of every painstaking practitioner of medicine.

170 Colorado Avenue.

## THIMBLE AND DISSECTOR FOR SURGEONS.

HARVEY P. JACK, M.D.

Consulting Gynecologist to St. James Mercy Hospital, Hornell,  
CANISTEO, N. Y.

Every surgeon, doubtless, wishes almost daily that he had a long, strong, aseptic finger-nail and a thick insensitive callus on the end of one of his fingers. The



thimble here illustrated is designed for the purpose of giving him a substitute for these. Except that the depressions in it are twice as large and deep, it is an ordinary thimble, with a quadrangular piece of steel firmly

soldered in the position shown by the illustration. The steel projects one-fourth of an inch beyond the tip of the thimble and its edges are smoothly rounded. The thimble is designed for laying in interrupted or other sutures with a straight needle, the projecting tip being used to tuck in any everted edges. The instrument renders possible the sewing of tough structures without the aid of a needle holder and therefore with greater rapidity. Any long, sharp, straight needle may be used, but I have found it best that the needle should be two and one-half inches long. I have found the thimble very useful as a dissector for the purpose of picking up structures near large vessels and nerves.

## Therapeutics

### Elaterium, U. S. P.

Elaterin is a neutral, active principle obtained from the juice of the fruit (a cucumber-like affair) of a trailing vine which grows in the countries around the Mediterranean Sea. One hundred of these cucumbers yield only a gram (15 grains) of elaterin, and it takes about eighty pounds of them to produce thirty grams (an ounce). Elaterium, or the dried juice of the cucumber, occurs in small, grayish fragments or masses, and has a tea-like odor and an acrid taste. Owing to its adulteration and variation in strength the elaterium as such is not now recognized in the Pharmacopeia, but its active principle, elaterin, is extracted, of which the juice contains from 25 to 35 per cent.

Elaterin occurs in small white scales or crystals, is of acrid bitter taste, is without odor, is insoluble in water, and but slightly soluble in alcohol.

It is irritant to the skin and mucous membranes, and frequently causes ulceration of the fingers and eyes of those working with it.

Internally its action resembles that of colocynth, but it is far more powerful. In small doses it acts as a stimulant to the gastrointestinal mucosa, increasing its secretion. It is also a stimulant to the pancreas and liver, perhaps reflexly. In larger doses it is irritant to the intestine, producing profuse watery stools, usually accompanied with griping and nausea, and occasionally with vomiting. Elaterium is one of the most powerful hydragogue cathartics, and large doses can produce dangerous prostration and even death. Elaterin acts when used hypodermatically, but is much more efficient when given by the mouth, as the bile seems to render it more active.

Elaterium is indicated when it is advisable to produce profuse serous discharges from the intestines, and has been used for many years in dropsies. It is especially valuable when there is effusion in the serous membrane cavities (pericardial, pleural and peritoneal cavities), and it also is often used successfully when there is general anasarca. Frequently diuretics will not act efficiently until free watery catharsis has relieved the pressure from exudates. Whenever this drug or any other is used to relieve dropsies it must be remembered that the intake of water in any form must be diminished. Elaterium has long been used in uremic conditions, whether there is dropsy or not, and it has often seemed that it relieved cerebral symptoms better than other hydragogue cathartics. It has been thought that it caused the elimination by the intestines of more of the products of metabolism, that the kidneys could not excrete, than any other cathartic. It has also been used to relieve cerebral and pulmonary congestions, acting as a revulsant. However, in cerebral congestion a quicker acting drug, as croton oil, is often better, and in dangerous acute pulmonary congestion any quickly acting hydragogue cathar-



tic, as magnesium sulphate, will act as well, or better still, venesection as indicated.

The contraindications to the use of the elaterium are, gastric or intestinal inflammation, extreme exhaustion, any weak heart condition, and pregnancy. Unlike the action of croton oil, and unlike the action of the saline cathartics, after the movements of the bowels begin they tend to keep up, causing a large drain of water from the system which becomes very depressing, and sometimes can be stopped only by the hypodermatic use of morphin with atropin. This undesired action of elaterium prevents its frequent use.

The dose of elaterin is from 0.003 to 0.006 grams (from 1/20 to 1/10 grain), and it may be repeated once or twice at five-hour intervals, depending on the results.

TRITURATIO ELATERINI is the only official preparation of elaterin, and contains 10 per cent. of the drug. The dose is 0.03 gram (½ grain).

It is not wise to use elaterin every day or even every second or third day, as it causes prostration and may cause intestinal inflammation. Consequently, if watery catharsis is desired daily, some saline hydragogue cathartic should be selected.

#### Nitrites.

The value of the nitrites seems to be in their ability to reduce the blood pressure. In some instances such reduction needs to be instantaneous, and in other conditions, as in arteriosclerosis and chronic nephritis, it is sometimes advisable to keep the blood pressure constantly reduced.

The official preparations are:

AMYLIS NITRIS, nitrite of amyl, is a very volatile liquid which is administered by inhalation only, and the dose is a few drops on the handkerchief, or a glass capsule (or "pearl") is broken in a handkerchief and thus inhaled.

SPIRITUS GLYCERYLIS NITRATIS, the spirit of nitroglycerin, or glonoin, or trinitrin, as it is also termed, is a 1 per cent. solution of nitroglycerin, and the dose is one or two drops, administered in water.

SODII NITRIS, sodium nitrite, occurs in white opaque masses or as crystals. It is odorless and has a mild saline taste. It quickly changes to the nitrate on exposure to the air and is then unfit for use. It is very soluble in water, and the dose is 0.065 gram (1 grain).

Nitroglycerin is also offered in tablet triturate form, the dose ranging from 1/400 to 1/50 of a grain.

The action of amyl nitrite as a vasodilator is instantaneous, and with this action the heart is accelerated and the head feels full and throbs. It sometimes causes severe headache. If the amount inhaled is considerable the patient becomes faint, and always after nitrite of amyl has been used the patient should remain at rest for some time. The intensity of the action is soon over and, therefore, nitrite of amyl is indicated when instantaneous effect is desired, as typically in angina pectoris, or during the aura of an epileptic seizure. In the first instance, it obviates the danger of cardiac spasm, and in the second instance may abort the convulsion. In sudden cardiac failures, as in ether or chloroform narcosis, nitrite of amyl has sometimes been administered, but for such purposes is rarely indicated.

When a more prolonged vasodilator effect is desired, nitroglycerin is indicated, either administered hypodermatically in soluble tablet where the dose should rarely be more than 1/100 of a grain, or a tablet is allowed to dissolve on the tongue, or a drop or two of the spirit of nitroglycerin, or when slower action is desired, swallowed after a meal. Unless the condition is one of emergency and the quick stimulating effect of nitroglycerin is desired which will immediately be followed by dilatation of the peripheral blood vessels, nitroglycerin should be swallowed after a full meal. In this way

the sudden, intense action with throbbing and fulness in the head is obviated. Nitroglycerin may be administered, when considerable dilator action is desired, every three or four hours, but three times a day, or perhaps better, four times a day (i. e., after each meal and at bedtime), is generally the frequency that is sufficient to continuously keep a high blood pressure slightly reduced. In hypertension in chronic endarteritis or arteriosclerosis it may frequently be noted that a small dose acts more satisfactorily than a larger one, i. e., many times 1/400 of a grain of nitroglycerin will act better than a larger dose. It must be remembered that such patients do not do well with low tension. Nitroglycerin is also very efficient and very successful in overcoming cardiac distress and dyspnea when there is aortic narrowing, when the left ventricle is not weakened.

Nitroglycerin also often relieves insomnia, when given at bedtime, by causing enough relaxation of the vessels to produce normal anemia of the brain—this in old people. Also, many times in continued fevers when alcohol seems indicated, nitroglycerin may be substituted to cause just sufficient dilatation of the surface vessels to aid in diminishing the temperature, which is one of the valuable actions of alcohol in fever.

It should be emphasized that the disagreeable, sudden and unpleasant effect of nitroglycerin may be obviated by giving smaller doses and by administering it after a meal and swallowing it with water; in other words, not allowing the medicine to be absorbed from the mouth.

The value of nitroglycerin in asthma to abort or to shorten the acute attack is well understood. The dose selected, perhaps 1/100 of a grain, should be administered every fifteen minutes until the severe headache or frontal throbbing is relieved, at which time the bronchial spasm will generally have relaxed.

While nitroglycerin is not so quick in its action as nitrite of amyl, and is more prolonged, its action is not so lasting as that of sodium nitrite, hence sodium nitrite is often used in its place. This drug should be administered three times a day, after meals, as:

R.	gm.	
Sodii nitritis .....	1	or gr. xv
Sodii bicarbonatis .....	20	3v
M. et fac chartulas 20.		

Sig.: One powder, three times a day, after meals.

If the above alkali is not indicated as it often is in patients who need nitrites, any simple powder, as sugar of milk or any other combination, may be made that is deemed advisable.

H. Vaquez, *Archives des Maladies du Cœur, des Vaisseaux et du Sang*, January, 1908, advises the use of sweet spirits of nitre, spiritus ætheris nitrosi, not so much to decrease the vascular tension as for the general sedative effect on the circulation. If the sweet spirits of nitre is freshly prepared it may have some vasodilator effect, which is the only way that it could cause a sedative effect on the circulation, but for this purpose it is rarely used in the United States, the other preparations meeting better the indications for which nitrites are used.

---

**Remedies for Asthma.**—T. Brugsch contributes to the *Therapeutische Monatshefte*, December, 1907, an analysis of twenty-three of the various asthma remedies on the market. Most of them contain potassium iodid with or without some narcotic and a more or less harmless expectorant. The "inhalers" generally contain atropin, cocain or menthol, and the "smokers" some of the solanaceæ with potassium nitrate or nitrite. He gives working formulas for each, from his analysis, and adds that a similar compilation of analyses of proprietary remedies for gout might prove instructive.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price..... Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, JULY 4, 1908.

## FOURTH OF JULY ACCIDENTS.

After five years of active campaigning we commence our sixth annual compilation of statistics of Fourth of July accidents and fatalities. There is something gruesome and at the same time enraging to feel that to-day possibly hundreds of persons will be slaughtered and some 4,000 or 5,000 wounded and maimed who yesterday were care-free children preparing to make a Chinese holiday.

The supreme contempt of the American public for human life, as exemplified in our appalling daily slaughter by railroads, machinery, and preventable diseases, is nowhere so vividly shown as in this annual massacre. For the most part the responsibility can be laid at the doors of our inefficient municipal officials who make no earnest effort to check dangerous forms of celebration, although they are almost universally empowered by statute to do so. They will, with few exceptions, make this effort only when it becomes apparent that the public really demands it, and so the matter finally drifts back on public sentiment without waiting for which few public officers care to move. In a few cities there have been exceptional individuals in power who have demonstrated that it is not a difficult matter to check the dangers of the Fourth, and that any honest effort in this direction will receive public support and approbation.

Nevertheless we can look forward to having the responsibility of the care of some 5,000 wounded young "patriots" laid on the medical profession this year as every year, and we hope to see the steady and remarkable gain in the reduction of tetanus mortality continued. When THE JOURNAL first began its statistical studies five years ago the Fourth of July tetanus cases numbered 415, but after the publicity given these figures and the widespread demand for thorough surgical treatment and antitoxin prophylaxis in all blank cartridge and cannon cracker wounds, the morbidity dropped remarkably. From the 415 cases of 1903 the number was reduced to 105 in 1904, 104 in 1905, 89 in 1906, and 73 in 1907. As this improvement took place while the total number of accidents remained practically stationary, and with the deaths from causes other than tetanus rising steadily from 60 in 1903 to 102 in 1907, it is evident that the annual saving of 300 or

more lives from tetanus has been accomplished in spite of public carelessness and official incompetence, through the activity of the medical profession. We have observed with no little satisfaction that nearly all the tetanus cases have developed in persons who did not receive medical attention in time to check the disease—a statement that we could not make five years ago.

Every annual compilation that we make of this subject adds to the now conclusive evidence that tetanus antitoxin is an almost infallible prophylactic, and that it should be used at the earliest possible moment for every case of penetrating wound caused by Fourth of July injury. Thorough surgical cleansing under anesthesia is, of course, imperatively demanded, but this alone, no matter how carefully carried out, can not give the absolute security that is assured when good surgery is supplemented by antitoxin prophylaxis. Since the Hygienic Laboratory has provided a standard for testing tetanus antitoxin, and has defined a unit for measuring the antitoxin strength, the value of the antitoxins on the market has now become something tangible, and their usefulness have been greatly increased. The unit is defined as ten times the least quantity of antitetanic serum necessary to save the life of a 350-gram guinea-pig for ninety-six hours against the official test dose of a standard test toxin furnished by the Hygienic Laboratory of the Public Health and Marine-Hospital Service. The Society of American Bacteriologists, in December, 1906, adopted a resolution in regard to the standardization of tetanus antitoxin and decided that the minimal immunizing dose for a case of possible tetanus infection should be 1,500 units.

We regret that it is not possible to hold out more hope of success in the curative treatment of well-developed tetanus, but in this respect the situation has changed but little in several years, and the mortality of tetanus resulting from these Fourth of July wounds is still probably over 90 per cent., although we can not secure reliable figures on that point. There are occasional cures reported that stimulate interest, but on investigation these are for the most part in cases with less virulent infections as shown by a long incubation period or mild symptoms. Tetanus, except in the largest hospitals, is encountered so rarely that most of the newer methods of treatment must be considered as still in the experimental stage. On the whole, the most useful method of treatment applicable by the general practitioner seems to be the subdural injection of repeated doses of antitoxin preceded by withdrawal of as much as possible of the toxic cerebrospinal fluid, and accompanied by injection of large doses of antitoxin subcutaneously. Rational symptomatic treatment with sedatives, narcotics, and, when necessary, with anesthetics, should also be carefully followed out. Controlling the spasms by intraspinal injections of eucaïn or coeïn as proposed by Murphy, or magnesium sulphate as advocated by Meltzer, may also be found of value, but we



need many more clinical reports on these methods. As tetanus is so rare a disease that the experience of any one person is of necessity limited, it is desirable that the experience of each be recorded and made available for all. We will welcome any case reports or other information concerning cases of Fourth of July tetanus that will aid us in compiling the record of this year's celebration.

---

#### AMERICAN MEDICAL ADMINISTRATION IN PANAMA THROUGH BRITISH EYES.

It is gratifying to read such a generous appreciation of American state medicine as is contained in an article on "America's Triumph in Panama," by John George Leigh.<sup>1</sup> Mr. Leigh, it will be remembered, contributed articles to the *Lancet*<sup>2</sup> explanatory of the climatic and hygienic problems facing the United States administration in the inaugural stages of work on the Isthmian Canal. He insisted that the success of the undertaking would depend not on the skill of modern engineers, of which there was no doubt, but on the question whether the health environment could be so ameliorated as to abolish the disastrous conditions that had caused the failure of previous attempts. He urged that the last word in the fateful decision then pending, between high-level and low-level plans, respectively, should be spoken "not by the aspiring engineer, but by the profession which will be held mainly responsible should the prophecies of ill be justified by events." The temporary success of the adherents of the sea-level scheme and its speedy abandonment justified Mr. Leigh's foresight.

In the present article he records the history of the canal from that date. In view of the clear-spoken responsibility which he had previously laid on the work of the medical department, and indirectly on the attitude that the government should adopt toward that department, his comment on the results as they actually befell is well worthy of reproduction. After recounting the reconstruction of the commission, consequent on the "undenurable and even dangerous" situation into which the project had fallen, by a lack of heed to the warning as to the paramount importance of the hygienic administration, Mr. Leigh continues: "All these appointments have been fraught with happy consequences, and none more so than that of Colonel Gorgas, whose promotion to the rank of commissioner must be regarded, not only as a well-merited personal compliment but also as a national recognition through the chief executive of the immense services which are being rendered to the United States in the prosecution of its great undertaking by members of the medical profession." It is to Colonel Gorgas' efforts and to his loyal support by the administration that Mr. Leigh attributes the fulfilment of his prophecy in 1905, that the canal would, "during construction, prove the most striking object lesson ever

offered of the benefits to be derived from a well-organized sanitary organization associated with a great public work."

The article concludes: "In the lap of the gods rests the future of the Panama Canal enterprise. Whether it prove the great engineering triumph and commercial highway to which many of us look forward with confidence time alone will show, but of one credit history can never rob the United States. Among much good and evil it must record that it was under American administration that the knowledge and resources of modern science were applied to the hygienic redemption of the once noisome isthmus. Such fruits of labor in this direction have already been gathered that they promise to rival as a worthy monument of American achievement even the canal itself." We can thankfully accept this ungrudging praise, for we know it to be as just as it is generous.

---

#### A SPLENDID GIFT TO ADVANCE PSYCHIATRY.

Probably the phase of medical advance, in this age of progress, of which the world at large is least cognizant is that in psychiatry; and it is safe to affirm that in no country have greater strides in this branch of medicine been made than in the United States. They have, however, been unheralded by public clamor; rather, on the contrary, where the results of recent scientific research in that direction have been forced on the attention of the public, as by the attitude of the medical profession to the relations between crime and insanity, they have been greeted with indifference. But, for all that, the advance is real, and must sooner or later be acknowledged; indeed, the awakening is already at hand.

Significant, as well as munificent, is the recent splendid gift to Johns Hopkins University of Mr. Henry Phipps—to whose philanthropic interest in behalf of another great problem, tuberculosis, the Phipps Institute in Philadelphia, as well as the Phipps Dispensary for Tuberculous Patients at Johns Hopkins Hospital, bears practical and eloquent testimony. He now gives \$750,000 to build a psychiatric addition to Johns Hopkins Hospital and to endow it for ten years with clinical, research and educational facilities, as was briefly noted in *THE JOURNAL* last week. The director of the psychiatric clinic and professor of psychiatry appointed by the trustees, on the recommendation of the medical faculty, to fill the new office established by this benefaction, is Dr. Adolph Meyer, of New York. It would certainly have been difficult to make a better selection. To a general culture broad beyond the average, Dr. Meyer adds a notable experience as a scientist and psychiatrist. After a distinguished academic career at Zürich, where he was born, including study in London, Edinburgh, Paris, Vienna and Berlin, he came to America in 1892 and at once rose to prominence, becoming in

---

1. *Lancet*, June 6, 1908, p. 1646.

2. June 3, 10, and 24, 1905.



succession a teacher of neurology in the University of Chicago and pathologist to the Illinois Eastern Hospital; then director of the clinic and laboratory at the Worcester (Mass.) Insane Hospital and a teacher of psychiatry at Clark University, and, finally, director of the pathologic institute of the New York State Hospital, Ward's Island, and professor of psychiatry at Cornell University. His contributions to the literature of nervous and mental diseases are many and notable.

In accordance with a sound principle now becoming more and more general, Dr. Meyer and the architect of the proposed buildings will shortly make a tour of the principal psychiatric clinics abroad, with the view of starting the new institution from the most advanced point, in the matter both of building and of administration.

#### BACTERIAL THERAPY AND DIAGNOSIS OF GONOCOCCUS ARTHRITIS.

The strenuous application of opsonic therapy to clinical uses by persons of all degrees of qualification has led to a confused tangle of contradictory results and debatable conclusions, from which the solid facts are hard to isolate. Out of the confusion, however, certain facts have emerged definitely and prominently; one of these is the readiness with which hypersensitization to bacterial substance may be obtained, and the relation of this hypersensitization to the well-known tuberculin and mallein reactions. Another is the unquestionably favorable results that are sometimes obtained in certain tuberculous lesions, and in a few other forms of infection, from careful and judicious immunization with dead bacteria.

Acute infectious processes, as a rule, are much less likely to be favorably influenced by this method of treatment than chronic infections, even when produced by the same organism, and gonococcus infections constitute no exception to this rule. Bacterial therapy has given for the most part uncertain or no results in the treatment of acute urethritis and vulvovaginitis, although there are some who have been encouraged by their experience in this field. Gonococcus arthritis and periostitis, however, on account of their chronic course offer particularly favorable conditions for bacterial therapy, and here the results seem to be promising. Cole and Meakins observed favorable results in fifteen cases of gonococcus arthritis in which inoculations were given and systematic observations made on the opsonic index. Recently Irons<sup>1</sup> has reported forty cases of gonococcus infection, including thirty-one cases of arthritis, in which bacterial inoculation was tried, and the results were favorable, especially in the chronic forms of gonococcus arthritis. It was incidentally observed that massage of the prostate, when this organ is infected, has much the same effect as an injection of dead gonococci,

being followed by a marked rise in the opsonic index of the blood and a favorable influence on any coexisting gonococcus infection. Presumably the massage causes an autoinoculation with gonococci, which results in an augmentation of the powers of resistance.

Besides the therapeutic results Irons has made another observation that seems to promise much of value in the diagnosis of gonococcus lesions. He noted that in patients suffering with gonococcus arthritis or other localized infections with the same organism, injection of dead gonococci is followed by clinical phenomena that are similar in many respects to those following injection of tuberculin in tuberculous patients, while no effects are produced by injecting dead gonococci into normal individuals. A slight rise of temperature and some malaise accompany an increase in the local symptoms in the joints, and sometimes there is a local reaction at the point of injection; with these manifestations there is a temporary lowering of the opsonic index, which is followed by a rise in the index and an improvement in the course of the disease. As gonococcus arthritis is often difficult of diagnosis, and establishment of the correct etiologic factor is of especial importance now that specific bacterial therapy is being found of value, this "gonococcus reaction" may be of great assistance in the diagnosis of arthritic conditions. Several cases are cited by Irons in which this reaction was found to point out the presence or absence of gonococcus infection. His conclusions, which are quoted below, are tempered with scientific conservatism.

"Clinically in a number of cases the injections of dead gonococci have seemed to be of distinct value. Many more series of cases must be studied before a definite opinion can be expressed, but the results obtained thus far seem to indicate that in certain cases at least of gonococcus arthritis recovery can be hastened by the injection of dead gonococci. No harm has appeared to follow the injections, and it is possible that the use of larger doses will be found desirable in some cases. With further work the limitations as well as the advantages of the method will appear, and it should be recognized that while it is attractive theoretically as a specific therapeutic measure, too much must not be expected of it in the way of marvelous cures. It should be used rather in conjunction with other general measures such as rest, aspiration of joints distended with fluid, massage of the prostate, and other surgical and general hygienic treatment. The reliability of the clinical gonococcus reaction as a diagnostic procedure will also be determined only after many tests. It has many points in common with the tuberculin reaction, and similarly, too, there may well be cases of gonococcus infection found which do not respond. It appears, however, to be well worth a trial. Should the reaction prove to be reliable, a valuable and much-needed aid will be at hand for the diagnosis of obscure joint, synovial and periosteal diseases."

1. Jour. Infect. Diseases, 1908, v, 279.



## INTERNATIONAL CONGRESS ON TUBERCULOSIS.

The International Congress on Tuberculosis which convenes in Washington, September 21 to October 12 and which has frequently been referred to in these columns, will, for many reasons, be a most notable meeting. The remark has been made that it will be somewhat surprising if such a congress can hold the attention of the public in the midst of what will doubtless be a spirited political campaign. It is to be hoped, however, that it will do this, for the meeting will be one, not merely of local, but of international importance. It will be participated in by experts in tuberculosis from all over the world, and America will be given an opportunity to learn from other nations the details of the organized fight against tuberculosis. In this respect, although we have made a creditable beginning, it must be admitted that, on the whole, we are somewhat behind other nations. It is expected that the work of the noted foreign visitors will not be limited to the congress, but that they will remain some time after the congress has closed and give the benefit of their experience in a series of addresses in the various cities of the country. The national government will take part and many of the states have already appointed representative committees. Those which have not done so should lose no time in perfecting arrangements for a complete exhibit of the measures which they are taking against the spread of the disease.

The fear is sometimes expressed that we are pushing the antituberculosis propaganda too far and inducing a veritable phthisiophobia. This apprehension has its justification, perhaps, in certain extreme measures which have been proposed, but when it is realized that the successful prevention of tuberculosis depends, not on mere quarantine measures, but on a genuine hygienic and social reform, it must be admitted that the movement is in little danger of going too far. One of the great benefits of the congress will be the incentive and the opportunity afforded to unify and coordinate the efforts of the different sections of the country so that all may work together in harmony and with the greatest benefit.

The congress should awaken in the general public a widespread interest and should emphasize the fact that the movement against tuberculosis is one which in its economic and humanitarian aspects belongs to the general public and not to any class. To this end it is to be hoped that the exhibition and popular lectures will attract wide attention.

Aside from the services of the congress in the interests of preventive medicine, we may expect important contributions to the pathology and treatment of the disease. The preliminary work of preparation has been done largely under the auspices of the National Association for the Study and Prevention of Tuberculosis and the thanks of the profession are due this organization for its efficient efforts. The best expression of this

appreciation will be a determined effort on the part of every one so far as possible to make the congress a success.

## CLEAN ADVERTISING—A SIGN OF THE TIMES.

We are glad to add to our already published instances another example of "sweet reasonableness" on the part of the press in regard to the question of cleaning up the Augean stables of advertising. Considering that the task is a costly one for those publications engaged in it, it is meet that it should receive public recognition and thanks when it is conscientiously performed. The instance to which we refer this week was brought to our notice by Drs. Boyer and Boyer of Indianapolis. One of this firm, a subscriber to a monthly periodical called *Reason*, published at Rochester, N. Y., called the attention of the publishers to the fraudulent nature of *Actina*, an advertisement of which that journal carried. The publishers replied courteously, thanking Dr. Boyer for directing their attention to it. They stated, however, that they had investigated the matter, so far as they were competent to do so, before accepting the advertisement, and added: "You must admit that such statements as you have made call for substantiation and proof that will convince any fair-minded person. It is clearly 'up to you.' Make good your assertion and we will gladly cease advertising this firm and tender you our most sincere thanks. Failing this, we shall send your letter with a note of explanation to the *Actina* Company, as you are doubtless aware it is actionable for libel. This is quite fair, is it not?" Quite fair, it would seem—fair alike to the legitimate demands of subscribers and to the just interests of advertisers, showing bias in neither direction, but a level-headed sense of justice and a desire for the right. The reply of Dr. Boyer was simple but effective. He forwarded a marked copy of the "Great American Fraud" reprint. Thereupon the Austin Publishing Company wrote to thank him, and stated that they "have decided to suspend the advertisements of the *Actina* Company, classing them as 'undesirable.'" They further ask permission to keep the booklet, "for use as a check for future advertisements of this nature." This is a noteworthy demonstration of three important points: 1, The awakening of the press conscience to the fact that it has a duty in the matter of fraudulent advertising; 2, the effectiveness of Mr. Adams' Great American Fraud series; and 3, the service that can be rendered to the cause by individual physicians who have the strength of their convictions. *O, si sic omnes!*

## A CORONER ON OPERATIONS.

In our London correspondence<sup>1</sup> this week we are told that a British coroner is attracting attention among medical men by his attitude with regard to deaths due, directly or indirectly, to operations. The coroner's argument is that, with the great increase of surgical operations, some deaths are doubtless due to the operation itself and, therefore, come within the cor-

1. Page 50.



oner's jurisdiction. In the case referred to by our London correspondent, such a well known man as Sir Victor Horsley was called on to testify in a case of death resulting from the removal of a brain tumor. The coroner directed the jury that a verdict of accidental death would be proper if the members of the jury were "satisfied that the operation was justifiable and that all due care had been taken." Even were such supervision as that suggested by this zealous officer either necessary or desirable, the idea of a jury of twelve men, possessing neither medical nor surgical knowledge, passing on the question as to whether an operation performed by one of the foremost surgeons of the day was "justifiable," is, in its last analysis, laughable. Equally ridiculous is the attempt on the part of the same men to determine whether or not "due care had been taken" at the operation. The whole system savors too much of that relic of barbarism that obtains in many of our state courts in which a jury of laymen pass on the question of an individual's sanity. It is conceivable that, in those cases in which the surgeon has been, justly or unjustly, the subject of censure, a coroner's jury composed of an equal number of intelligent laymen and of physicians might render a valuable service both to the public and to the medical profession. The idea, however, that a jury composed only of laymen is competent to pass judgment on cases involving so many abstruse and nice points of a purely technical nature is preposterous.

## Medical News

### CALIFORNIA.

**Fees Allowed.**—In the circuit court recently, Dr. Peter C. Remondino, San Diego, was allowed \$2,000 fees for professional services to the late George W. Crane. Dr. Remondino's claim originally made was for \$3,900.

**Unlicensed Practitioner Sentenced.**—Thomas H. Storey, Los Angeles, is said to have been found guilty. May 15, of practicing medicine without a license and to have been sentenced to imprisonment for sixty days and to pay a fine of \$500.

**Medical Meetings.**—The Alumni Association of the College of Physicians and Surgeons, San Francisco, has elected the following officers: President, Dr. Francis B. Williams; vice-presidents, Drs. Thomas Fletcher and Frederick C. Keck; secretary, Dr. Charles M. Troppmann, and treasurer, Dr. H. A. Mager. The Orange County Medical Association, at its annual meeting and banquet, held in Santa Ana, installed the following officers: President, Dr. John Wehrly, Santa Ana, vice-president, Dr. J. L. Beebe, Anaheim; secretary, Dr. Jessie M. Burlew, Santa Ana; treasurer, Dr. John L. Dryer, Santa Ana, and librarian, Dr. Howard S. Gordon, Santa Ana.

### CONNECTICUT.

**Typhoid Epidemic.**—Typhoid fever is reported to be epidemic in Terryville. The health officer in making investigation as to the source of the epidemic, found that all the typhoid patients had procured their milk supply from one individual, and that a portion of this supply had been procured from a farm which has a typhoid history.

**Society Meetings.**—At the annual meeting of Litchfield County Medical Association, held in Winsted, the following officers were elected: President, Dr. Irving L. Hamant, Norfolk; vice-president, Dr. Salmon G. Howd, Winsted; clerk, Dr. Frank H. Lee, Canaan; and councilor, Dr. Edward H. Welch, Winsted. —At the one hundred and sixteenth annual meeting of Hartford County Medical Society, held in Hartford, the following officers were elected: President, Dr. Charles M. Wooster, Tariffville; vice-president, Dr. Charles D. Alton, Hartford; secretary-treasurer, Dr. Frederick B. Willard, Hartford; councilor, Dr. Oliver C. Smith, Hartford; censors, Drs. Thomas F. Kane, Hartford; Walter, G. Murphy, East Hartford;

and Edward G. Fox, Wethersfield. —At the annual meeting of Middlesex County Medical Association, held in Middletown, the following officers were elected: President, Dr. James Murphy, Middletown; vice-president, Dr. Michael D. Murphy, Middletown; clerk, Dr. Arthur B. Coleburn, Middletown; censors, Drs. Miner C. Hazen, Haddon, and John E. Bailey, Middletown; secretary-treasurer, Dr. James T. Mitchell, Middletown; councilor, Dr. Frank K. Hallock, Cromwell; and delegates to the state society, Drs. Arthur B. Coleburn and Jeremiah F. Calef, both of Middletown. —The Hartford Celtic Medical Research Society was organized June 11, and the following officers were elected: President, Dr. Daniel F. Sullivan; vice-presidents, Drs. Edward J. Turbert and Thomas F. Welch; treasurer, Dr. P. R. McPartland; secretary, Dr. James F. Rooney. —The Willimantic City Medical Society was organized June 19 by the physicians of the city, and the following officers were elected: President, Dr. Theodore R. Parker; vice-president, Dr. T. Morton Hills, and secretary-treasurer, Dr. Clarence E. Simonds. A committee was appointed to draft a constitution and by-laws, and the organization will be completed July 6.

### DISTRICT OF COLUMBIA.

**Recommended to Mercy.**—Dr. Robert C. Anderson, Washington, indicted for house-breaking, is said to have been convicted June 11. The jury recommended him for mercy and requested that his mental condition be made the subject of official inquiry.

**Unlawful Practitioner Sentenced.**—Edward Leon Thompson, known as "Dr. Leon," who was recently convicted for performing an illegal operation on a colored woman, is said to have been sentenced, June 5, to imprisonment for five years in the penitentiary.

**Dismissed from Service and Imprisoned.**—Assistant Surgeon David A. Spear, U. S. Navy, charged with forging endorsements on pay checks, and who is said to have admitted having stolen from officers, and whose defense was mental incompetency from drink, is said to have been found guilty and sentenced to dismissal from the service and to imprisonment for one year.

### ILLINOIS.

**Large Class Examined.**—At the Illinois State Board of Health examination, held in Chicago, June 24 and 25, there were 365 applicants, making the largest class on record to take the examination.

**Fined for Prescribing Beer.**—Dr. Roy C. Richards, Hopedale, accused of violating the "Dram Shop Act" by prescribing beer for a patient, is said to have pleaded guilty of technical violation of the law, and to have been fined \$20 and costs.

**Bids for Antitoxin.**—The State Board of Health, through its secretary, Dr. James A. Egan, Springfield, is advertising for sealed proposals for diphtheria antitoxin for free distribution by the board. The legislature has appropriated \$30,000 for this purpose.

**Smallpox.**—Elgin reports 18 cases of smallpox and 8 houses under quarantine. —Joliet still has 9 cases of smallpox; seven of the patients are in the Isolation Hospital and all are on the road to recovery. —Four cases of smallpox are reported at the Rock Island County Infirmary.

**Tribune Hospital Opened.**—The fourth consecutive season of the Tribune Summer Charities at Algonquin was inaugurated the first week in June. Building operations of the second building of the group have already been commenced. This building is to be a central pavilion, containing a dining hall, diet kitchen, laundry, general offices, etc.

### Chicago.

**Fire in Medical College.**—A fire on June 21, originating in the clinical laboratory of the College of Physicians and Surgeons, caused considerable alarm to patients in the hospitals near by, although no one was injured. The total loss was about \$3,000.

**Vaccinators Invade Black Belt.**—On June 25 a hundred physicians, under the direction of Drs. Heman Spaulding and I. Donaldson Rawlings of the department of health, made a house-to-house inspection of the territory lying between State and La Salle and Sixteenth and Forty-fourth streets. Every house was visited and the tenants were compelled to be vaccinated unless they could show satisfactory scars.

**Communicable Diseases.**—A total of 393 cases of communicable diseases was reported to the department during the week, 72 fewer than for the preceding week. To this total, measles contributed 177; diphtheria, 71; scarlet fever, 44;



whooping cough, 36; tuberculosis, 26; chickenpox, 22; typhoid fever, 12; smallpox, 2, and miscellaneous diseases of minor importance, 3. Of the two cases of smallpox, both patients were unvaccinated colored men, and in both cases the disease was apparently contracted outside of Chicago.

**Personal.**—Dr. G. R. Bailey obtained first place, Dr. H. B. Thomas second, Dr. Norman Kerr third, and W. R. Cubbins fourth in the civil service examination for the orthopedic surgery service at Cook County Hospital.—Dr. and Mrs. Arthur H. Brumback leave for Europe early in July.—Dr. E. C. Dudley and son expect to sail for Havre, July 18.—Drs. William A. Evans and George W. Webster have been elected members of the executive committee of the Chicago local advisory committee of the American Health League.

**Mortality of the Week.**—During the week 508 deaths were reported from all causes, or 53 more than for the preceding week, equivalent to an annual death rate per 1,000 of 12.23. The chief increase in mortality was from diarrhea diseases of infants and young children. Violence (including suicide) led the death causes with 55; consumption caused 47; acute intestinal diseases and pneumonia, each, 41; heart disease, 38; nephritis, 35; and cancer, 25. Eleven deaths were due to sunstroke; 12 to diphtheria; 7 each, to measles and typhoid fever; 6 to whooping cough, and 3 to scarlet fever.

**Fourth-of-July Wounds.**—The bulletin of the health department urges strongly the proper care of every Fourth-of-July wound, no matter how insignificant. The procedures advocated are as follows: Free incision of every wound; careful and thorough removal of every particle of foreign matter; thorough cauterization of the wound with 25 per cent. carbolic acid solution; application of a loose wet pack of 2½ per cent. carbolic acid solution; and the administration of a full dose of antitetanic serum. The wound should not be closed in any way and the dressing and packing should be renewed every day.

#### INDIANA.

**Society of Social Hygiene.**—The Indiana Society of Social Hygiene was organized at Indianapolis early in April, with the following officers: President, John H. Holliday; vice-presidents, Rev. Edwin Hughes and Hon. L. C. Walker; secretary, Homer G. Hamer; treasurer, Frank D. Stalnaker; official lecturer, Dr. Charles S. Woods.

**Hospital Damaged.**—The patients in St. Vincent's Infirmary, Indianapolis, were thrown into a panic, June 6, by a series of explosions in a gas plant, and one patient, one nun and four attendants were injured by flying debris, following the explosion. The coolness of the nuns and other attendants in the hospital alone prevented serious disaster.

**Communicable Diseases.**—Four new cases of smallpox are reported from Landessville.—Smallpox is still reported from Crawfordsville.—The smallpox epidemic in the southern part of Carroll County is now said to be under control.—Two new cases of smallpox were reported in Fort Wayne, June 9.—Fort Wayne reports sixteen cases of scarlet fever.

**Health Officers' School.**—The annual school for health officers of the state, under the auspices of the State Board of Health, was held in Indianapolis, May 14, nearly 400 officers being present and receiving instruction. Papers on various sanitary subjects were read and discussed, and the filtration works of the Indianapolis Water Company were visited.

**May Death and Disease.**—The most prevalent diseases in Indiana during May were rheumatism, tonsillitis and bronchitis. The total number of deaths were 2,694, equivalent to an annual death rate of 11.8 per 1,000. During the month 275 cases of smallpox were reported in 33 counties, with no deaths. Tuberculosis caused 389 deaths; typhoid fever, 27 deaths; diphtheria, 9 deaths; and violence, 221 deaths. There were 24 murders, 4 suicides, 33 deaths from railway accidents, 4 from street car accidents, 5 from lightning and electricity, 20 from burns and scalds, and 23 from drowning.

#### IOWA.

**Acquitted.**—Dr. Elijah M. Heflin, Calmar, charged with having performed a criminal operation on a Miss Kopet, was found not guilty by a jury at Decorah.

**Commencement.**—At the annual commencement exercises of Keokuk Medical College, May 26, a class of 38 was graduated.—Sioux City Medical College, at its annual commencement exercises, June 4, graduated a class of 9. Rev. Willis S. McFaddin delivered the doctorate address.

**Jury Disagree.**—After being out forty-eight hours, the jury in the case of Mrs. Annie Arp, asking damages of \$50,000 from Drs. Alphonse L. Hageboeck, Julius T. Haller and J. H. Meyhaus, Davenport, on account of injuries alleged to have been the result of leaving a surgical sponge in the body of the husband of the plaintiff, during an operation for appendicitis, reported that they were unable to agree, and were discharged.

**Personal.**—Dr. Jerger, Waterloo, is about to take a year's trip around the world, via the west.—Dr. Rose H. Rice, Council Bluffs, has been elected supreme physician of the Woodman Circle, to succeed Dr. Jenny Califas, resigned.—Dr. Lawrence W. Littig, Iowa City, is reported to be seriously ill with septicemia.—Dr. O. J. Ruth, Keokuk, was operated on at St. Joseph's Hospital, May 24, for cholelithiasis.—Dr. Charles J. Cooney has been elected health officer of Oelwein.—Dr. Frank E. St. Clair, Hampton, is reported to have been seriously injured in a runaway accident.—Drs. Joseph M. Emmert and C. L. Campbell, Atlantic, have been appointed physicians for the A. N. & S. Railway.—Dr. S. S. Lytle, Iowa City, has been chosen director of the Iowa Department, G. A. R.

#### KANSAS.

**Communicable Diseases.**—Measles is reported to be epidemic in and around Culver.—There are said to be six cases of smallpox in one house in Leavenworth.—Rock Creek is reported to be free from contagious diseases.

**Personal.**—Drs. Guy L. Millington, Wellington, and Edwin B. Packer, Osage City, have been appointed members of the State Board of Medical Registration and Examination.—Dr. Judson C. Cole, Effingham, has been appointed health officer of Effingham and Atchison County.—Dr. A. B. Oechali has located at Stockton, succeeding Dr. J. C. Hinkle.

#### KENTUCKY.

**Heavy Damages Claimed.**—A. T. Poole, administrator of the late Dr. Henry J. Poole, Robard, has brought suit against the Louisville and Nashville Railway for \$20,000 damages for the death of Dr. Poole, who was run over and killed by a train in December last.

**State Hospital Changes.**—Dr. Robert L. Willis, Lexington, has been appointed by the State Board of Control for Charitable Institutions, superintendent of the Eastern Asylum for the Insane, Lexington, vice Dr. John S. Redwine.—The following officers of the Lakeland State Hospital for the Insane have been reappointed: Superintendent, Louis H. Mulligan; assistant physicians, Dr. W. E. Gardner, John K. Wood and Louise B. Trigg, Glasgow.—Dr. Thomas W. Gardiner, Madisonville, has been appointed superintendent of the Western Kentucky Asylum for the Insane, Hopkinsville, vice Dr. James W. Stephens.

#### LOUISIANA.

**Lepers Cured.**—In the annual report of the Leper Home of the State of Louisiana, it is stated that one patient had been discharged cured, and that five others were practically well, but were still being held for observation.

**Faculty Changes.**—Dr. Isadore Dyer has been elected dean of the faculty and Dr. Gustav Mann, assistant professor of physiology in Oxford University, has been made professor of physiology in the Medical Department of the Tulane University of Louisiana, New Orleans.

**Against Tuberculosis.**—A branch of the Antituberculosis League of New Orleans was established at Winnfield, June 12, with Dr. Jonathan J. Peters, president, and Dr. Isaac E. Seiss, vice-president.—A branch of the Louisiana Tuberculosis League was organized at Bunkie, June 9, with Dr. E. Stanley Matthews, president.

**Personal.**—Dr. Robert P. Jones has been appointed a member of the Board of Health of Clinton.—Dr. A. A. Aucoin, Plattenville, has been elected president of the Assumption Parish Board of Health.—The school board of New Orleans has elected Dr. Edmond Moss chief inspector, and Drs. Edward McCarthy and J. J. Wymer inspectors of school children.

**Organization.**—The Attakapas Clinical Society was organized at New Iberia, June 10, with the following officers: President, Dr. Henry A. King, New Iberia; vice-presidents, Drs. Robert D. Voorhies, Lafayette, and T. T. Roussel, St. Mary's Parish; and secretary-treasurer, Dr. T. J. Williams. The American Medical Association's principles of ethics were adopted by the society.

**Alumni Meeting.**—At the meeting of the Charity Hospital Alumni Association, held in New Orleans, the following



officers were elected: Dr. James M. Batchelor, New Orleans, president; Drs. Arthur A. Herold, Shreveport, and Herman B. Gessner, New Orleans, vice-presidents; Dr. Charles N. Chavigny, New Orleans, secretary; Dr. Philip W. Bohne, New Orleans, treasurer, and Dr. Espy M. Williams, Patterson, historian.

#### MAINE.

**New Health Officers.**—Dr. Harris J. Milliken has been elected city physician of Bangor.—At the annual meeting of the Portland Board of Health, Dr. Edward J. McDonough was elected chairman.—At the annual meeting of the Westbrook Board of Health, Dr. Albion E. Cobb was elected secretary.

**State Association Meeting.**—The fifty-sixth annual session of the Maine Medical Association was held at Bangor, June 10 and 11, under the presidency of Dr. Barzillai B. Foster, Portland. The annual oration was delivered by Dr. Hobart Amory Hare of Philadelphia on "Hold Fast to that Which Is Good in Diagnosis and Therapeutics." The following officers were elected: Dr. Alfred D. Sawyer, Fort Fairfield, president; Drs. Calvin P. Thomas, Brewer, and Stanley P. Warren, Portland, vice-presidents; Dr. W. Bean Moulton, Portland, secretary, and Dr. Edwin W. Gehring, Portland, treasurer. It was decided to hold the next annual meeting in Portland.

**Society Meetings.**—The forty-fourth annual meeting of Somerset County Medical Association was held in Skowhegan, June 18, when the following officers were elected: President, Dr. Walter S. Milliken, Madison; vice-president, Dr. Leander A. Dascomb, Skowhegan; secretary-treasurer, Dr. Howard C. Taggart, Skowhegan; censors, Drs. Charles A. Moulton, Hartland, Warren G. Sawyer, Madison, and David S. Hunnewell, Madison.—At the annual meeting of Kennebec County Medical Association, held in Augusta, the following officers were elected: Dr. Theodore E. Hardy, North Vassalboro, president; Dr. Herbert E. Milliken, Waterville, vice-president; Dr. Wellington Johnson, Augusta, secretary-treasurer; and Drs. Virgil C. Totman, Oakland, Richard H. Stubbs, Augusta, and Asa B. Libby, South Gardiner, executive committee.—A medical club has recently been organized among the younger practitioners of Portland, with seven charter members.

#### MARYLAND.

**Smallpox Near Baltimore.**—Dr. James F. H. Gorsuch, Fork, health officer of Baltimore County, reports the smallpox epidemic in the river suburbs as well under control. 15 patients being cared for in tents and 10 in the State Quarantine Hospital.

**Election of Officers.**—At the nineteenth annual meeting of the Baltimore and Ohio Association of Railway Surgeons, held in Chicago recently, Dr. Franklin B. Smith, Fredericksburg, was elected president, and Dr. T. Murphy, Relay, secretary-treasurer.

**Physician Wins Suit.**—In the suit brought for \$10,000 damages against Dr. Adolph G. Freedom, for alleged improper treatment in a case of diphtheria, whereby the son of the plaintiff is said to have died, the jury, by instruction of the court, returned a verdict for the defendant.

**Vaccine Physicians Appointed.**—Drs. Foster Sudler, Sudlersville; William G. Coppage, Church Hill; Ernest F. Smith, Centerville; John R. Benton, Stevensville; Roland H. Ford, Queenstown; Walter H. Fenby, Ruthsburg, and E. A. Landers have been appointed vaccine physicians for Queen Anne's County.

**Health Bulletin.**—The first series of health bulletins issued by the Medical and Chirurgical Faculty of Maryland, appeared in the *Baltimore Sun*, June 25, and was entitled "Modern Medicine Aims to Prevent Diseases as Well as to Cure Them." The second appeared June 28, and was on "Lock-jaw." The articles appeared anonymously.

#### Baltimore.

**Alumni Election.**—The Alumni Association of the University of Maryland School of Medicine held its annual meeting and banquet, May 29. Dr. Thomas M. Chaney, Chaney, of the class of 1866 was elected president.

**Personal.**—Dr. Robert S. Kirk has been re-elected superintendent, and Dr. John Roth, assistant superintendent, of the Eastern Dispensary.—Drs. Roland B. Whitridge and C. Urban Smith have sailed for Europe.—Dr. Benjamin F. Lovelace, assistant in the department of chemistry, Johns Hopkins University, has been appointed professor of chemistry in

the University of Alabama.—Dr. Frederick H. Baetjer sailed June 2 for Italy.—Dr. D. Webster Cathell has been ill at the Church Home Infirmary.—Dr. Philip S. Evans, Jr., a medical missionary in China, has returned to Baltimore, after an absence of seven years.—Dr. William D. Booker, who is now in Florence, reports that he is much improved in health.

#### MASSACHUSETTS.

**Personal.**—Dr. D. C. Rogers has been appointed assistant in applied psychology in Harvard University.—Dr. Prentiss, Harvard University, has been appointed assistant professor of anatomy at the Northwestern University Medical School.—Dr. F. C. Shattuck, professor of clinical medicine, Harvard Medical School, has had conferred on him the degree of LL.D. by the University of Cincinnati.

#### NEW YORK.

**Death of Noted Optician.**—Dr. Henry Lomb, one of the founders of the Bausch and Lomb Optical Company, Rochester, and one of the most prominent men in his line in the United States, died June 13, aged almost 80.

**Typhoid at Auburn.**—For the past ten years typhoid fever has pretty steadily prevailed in this city, there being from 21 to 68 cases yearly. This year the outbreak occurred earlier than usual, and by the latter part of May there had been 33 cases, with six deaths. This led the health officer to investigate. As there were only two articles universally used, milk and water, he supposed one of these to be responsible. The milk came from 14 different sources, and it did not seem reasonable to suppose all of these contaminated, so the water supply was investigated. It was found that at the head of Lake Owaseo, from which the city supply is taken, there was a large influx of crude sewage. There seemed, therefore, but little doubt but that this was the source of the disease.

#### New York City.

**Another Healthy Week.**—Fewer persons died during the week ended June 20 than at any time since the establishment of the Health Department. There were 332 deaths less than for the week ended June 21, 1907. The rate was only equivalent to an annual mortality of 13.45 per 1,000. The Borough of Manhattan showed a lower death rate than any of the other boroughs.

**Blow to Greater Bellevue Hospital.**—The State Charities Aid Association has reported in opposition to the proposed enlargement of Bellevue Hospital and large expenditures for local and general hospitals in this city. They desire to have emergency relief stations in different parts of the city and eventually to replace these by local hospitals. The report provides for hospital needs until 1920.

**Cooperation for the Suppression of Noises.**—The health board has appealed to the police commissioner for aid in combating the noise nuisance. The noises are classified under four heads: the unnecessary whistling from boats in the rivers and harbor, the carting of loose metal through the streets, automobile horns and whistles and the noise incident to the Fourth of July. A patrolman will be stationed in front of every hospital on July 3, 4 and 5.

**Poster War on Tuberculosis.**—The committee on the prevention of tuberculosis have hit on a novel way of educating tenement dwellers in regard to the prevention of tuberculosis. A brilliant lithograph of a scene in Venice, around the border of which is printed advice in large type, has been distributed to 10,000 Italian families. The committee thinks the poster will be seen and its advice read by at least 50,000 persons. The same idea will be carried out among other nationalities.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ended June 20, 428 cases of tuberculosis, with 143 deaths; 841 cases of measles, with 21 deaths; 377 cases of diphtheria, with 30 deaths; 410 cases of scarlet fever, with 25 deaths; 48 cases of whooping cough, with 3 deaths; 38 cases of typhoid fever, with 9 deaths; 7 cases of cerebrospinal meningitis, with 7 deaths; one case of smallpox and 108 cases of varicella, making a total of 2,258 cases, with 238 deaths.

**Personal.**—Dr. Adolph Meyer has been appointed director of the newly founded psychiatric clinic of Johns Hopkins University, Baltimore. Since 1902 Dr. Meyer has been director of the pathologic institute of the State Hospital of New York on Ward's Island. Since 1904 he has been professor of psychiatry in the medical department of Cornell University.—Warren Brown, Ph.D., assistant professor of psychology in Columbia University, has been appointed instructor in psychology in the University of California.



## TENNESSEE.

**Commencement.**—At the commencement exercises of Tennessee Medical College, Knoxville, a class of 5 was graduated, Dr. W. Wallace Derrick, dean of the faculty, conferring the diplomas.

**Personal.**—Dr. A. C. Alexander, chief surgeon, and Dr. T. B. Hughes, assistant surgeon, of the Soldiers' Home, Johnson City, have resigned.—In the case of Dr. Abraham W. Boyd, Chattanooga, who was sued for \$5,000 damages for alleged improper care of a patient, the jury returned a verdict in favor of the defendant.—Dr. J. Herman Feist, Nashville, who has been confined in jail for fifteen months past, has been released on bonds of \$25,000.

**New Medical Journal.**—The advent of the *Southern Medical Journal* is announced at Nashville, the editorial staff consisting of Drs. Duncan Eve, Sidney S. Crockett, A. Bennett Cooke, William Litterer, Samuel M. Bloomstein, Joseph P. Keller, Marvin M. Cullom, William D. Haggard, Giles C. Savage, Lucius E. Burch, Hilliard Wood, George H. Price, Perry Bromberg, and George C. Trawick. The editor-in-chief will be Dr. John A. Witherspoon, and Drs. Worcester A. Bryan and James M. King will be the managing editors.

## TEXAS.

**Commencement.**—The seventeenth annual commencement exercises of the Medical Department of the University of Texas, Galveston, were held May 30, when a class of 25 was graduated. Dr. James E. Thompson delivered the faculty address and President David F. Houston conferred the degrees.

**Personal.**—Drs. Wood and William A. Garrett, Houston, were painfully injured in a runaway accident, June 12.—Dr. James Greenwood, Jr., Seguin, has been appointed demonstrator of medicine in the University Medical Department, Galveston, and assistant physician to John Sealy Hospital, vice Dr. Wallace Rouse, deceased.—Drs. Joseph R. Stuart and John D. Duckett have retired from the board of health of Houston.

**Alumni Meeting.**—At the annual meeting of the Alumni Association of the Medical Department of the University of Texas, Galveston, held May 29, the following officers were elected: President, Dr. David H. Lawrence, Galveston, and secretary-treasurer, Dr. Henry Hartmann, Galveston. It was decided that an effort should be made to have a special meeting of the alumni in Galveston in May next, on the occasion of the meeting of the state medical association.

## WASHINGTON.

**Personal.**—Dr. Aug. J. Ghiglione, Seattle, has gone to New York City to be away several months.—Dr. F. S. Burns has been made chief medical inspector of the health department, Seattle.

**Prevention of Tetanus.**—The health commissioner of Seattle, Dr. J. E. Crichton, has issued notice that in every case of wound from fireworks or premature explosion of revolvers or pistols, the victim immediately be inoculated with anti-tetanic serum.

**Hospital Notes.**—The contract for the construction of the new three-story addition to King County Hospital, Georgetown, has been awarded, to cost \$44,273.—It is proposed to ask the state legislature for an appropriation to build a hospital for the criminal insane.—The new open-air house of the Orthopedic Hospital Society of Seattle, was formally opened to public use, June 3. The building is intended for convalescents from the orthopedic ward of the Seattle General Hospital, and will accommodate 8 patients.

## WISCONSIN.

**Personal.**—Dr. Warren B. Hill has been elected dean of Milwaukee Medical College, vice Dr. William H. Earles, deceased.—Dr. Samuel Bell, Beloit, has been elected medical director of the Department of Wisconsin, G. A. R.—Dr. William F. Becker, Milwaukee, has been reappointed president of the Milwaukee Hospital for the Insane.—Dr. Andrew C. Mailer has been appointed health officer and city physician of De Pere.

**Commencement Exercises.**—The graduating exercises of the Milwaukee Medical College, Medical Department of Marquette University, were held at the Davidson Theater, May 25. Rev. James McCabe, president of the university, conferred degrees on a class of 50, and the doctorate address was delivered by Dr. William A. Evans, health commissioner of Chicago. The program of the graduation exercises was arranged in the nature of a memorial to the late dean, Dr. William H.

Earles. A dinner in memory of Dr. Earles was held at the Plankinton House, June 23, at which Dr. H. L. Banzhaf officiated as toastmaster, and addresses were made by Dr. W. Augustus Evans and Truman W. Brophy, Chicago, Mayor Rose and John H. Moss.—The fifteenth annual commencement exercises of the Wisconsin College of Physicians and Surgeons were held May 28, when a class of 9 was graduated. The dean, Dr. Thomas C. Phillips, assisted the president, Dr. A. Hamilton Levings, in conferring the degrees. It was announced that a large free dispensary would be established by the college on property now owned by the institution on Reservoir Ave., adjoining the college buildings.

## GENERAL.

**Another State Journal Established.**—The first number of *The Journal of the Oklahoma State Medical Association* was issued the first of the month. It contains an account of the recent meeting of the state association, the address by the president, the proceedings of the house of delegates, and a full roster of the members of the state association, with a list of the county societies and officers, as well as a number of original articles, case reports, news items, etc. The journal is edited by the secretary of the state association, Dr. Eugene O. Barker, Guthrie, who has as his assistants the board of councilors of the state association. This journal will certainly prove of great assistance to the association in carrying on its work in Oklahoma, and will be of great value to the members. The new journal is issued in magazine form, 6½x10, and typographically is a credit to the association.

**Pan-American Congress Routes.**—Dr. Ramon Guiteras, secretary, 75 West Fifty-Fifth street, New York, announces these routes to and from the Fifth Pan-American Congress at Guatemala, Aug. 5 to 10, 1908: *New York by train to New Orleans*; thence by United Fruit Company steamer to Puerto Barrios on the Gulf; thence by train to Guatemala City, \$56, plus the price of food and sleeper on train to New Orleans. Time, seven days. *From the Middle West*, rates and time about the same as above. Steamers leave New Orleans for Puerto Barrios Thursday mornings at 10 o'clock. *From San Francisco* by boat to San Jose; thence by train to Guatemala City, \$76.50. Time, eleven days. *Return trips*, by the same routes and at the same expense as above; or by train from Guatemala City to San Jose; thence by boat to Salina Cruz, a Mexican and Pacific port; thence overland to City of Mexico. Cost, \$53. Or: From City of Mexico to New York entirely by rail, including berth, \$80. Total cost from Guatemala City to New York City, \$133. Probably the same to the middle west. Or: From City of Mexico to Vera Cruz, \$10; thence by Ward Line Steamer to New York, stopping at Yucatan and Cuba, \$60. Total cost from Guatemala City to New York City, \$123. Hotels at Guatemala charge \$2 and \$4 a day. The Capitol at Guatemala is situated on a plateau, one mile above sea level. August is the time of year known as the "cunicula," when there is no rain and the heat is not as great as in our own southern states.

## FOREIGN.

**Plague in China.**—Vice-Consul Baker reports that plague has become epidemic at Amoy. This disease is also present in Hongkong.

**Quadrcentennial of Madrid University.**—Preparations are being made in Spain to celebrate on an extensive scale the four hundredth anniversary of the founding of the University of Madrid, Oct. 18, 1508.

**Medal for Rubner.**—The professor of hygiene at Berlin, Dr. Max Rubner, has been awarded the Liebig gold medal by the Bavarian Academy of Sciences for what he has done for veterinary science. Rubner's research was on the metabolism of the higher animals, and it unexpectedly developed some new points of view for the proper feeding of cattle.

**Physician Beloved by a Community.**—The *Gazzetta degli Ospedali* relates that the entire population of the town of Stiava, in the province of Lucca, Italy, gathered recently at the town hall to protest against the removal of the district physician (medico condotto) who had been ordered to another point. He had endeared himself to the community by fifty years of service, and the district was in a tumult until the order was countermanded.

**Memorial to Annandale.**—A reference to the memorial to the late Dr. Annandale, professor of clinical surgery in the University of Edinburgh, appeared in THE JOURNAL, May 9, 1908, page 1535. A sum of \$1,160 has been subscribed and \$840 remains to be found. Subscriptions may be forwarded



to Dr. H. M. D. Watson, at 13 Rutland Square, Edinburgh, secretary and treasurer to the committee. The subscription list will close on July 31.

**Medical Study Trips Abroad.**—The Italian Society for Climatology and Physical Therapy has organized an educational excursion to some of the Italian watering places, starting at Milan this week. The eighth German medical study trip will include a visit to the Canary Islands. It is in charge of Professor von Strümpell, of Breslau, and will leave Hamburg September 1. A large party of French physicians recently visited London on the occasion of the inauguration of the Franco-British exhibition.

**Zaufal Retires.**—At Prague, May 23, the clinic for diseases of the ear celebrated its thirty-fifth anniversary, and at the same time, Prof. E. Zaufal retired from its leadership. Zaufal founded the clinic in 1873, and it has always taken a leading place in surgery of the ear. He is said to have been the first to make bacteriologic examination of middle ear affections and to operate in otogenic sinus thrombosis. He is now 71, and the occasion proved an ovation from scientific societies, and the profession generally, in the German-speaking countries. It is described in the *Prager med. Wochenschrift*, June 4. Zaufal was one of the founders of this journal thirty-three years ago.

**Decisions of the Prussian Medical Tribunal of Honor.**—Among the recent decisions is one acquitting a physician of unethical conduct when he increased the amount of his bill, as it was returned to him by the patient for specification of details. The total was not exorbitant. In another case a surgeon found that no dressings had been supplied for the operation he was performing, and he made a caustic remark on the bad management of the director of the hospital in his presence. This case was dismissed as trivial. In another case a physician wrote on his certificate for a victim of industrial trauma: "If Dr. X says that there are no symptoms on the part of the nervous system, he either overlooked this striking symptom-complex or did not wish to see it." The court regarded the last seven words as a serious insult to another physician, and imposed a corresponding penalty, although conceding that scientific criticism of the certificates of other physicians is allowable.

**The Irish Medical Association.**—The annual meeting of the Irish Medical Association was held in Dublin, June 10, with Prof. J. S. McArdle, vice-president, in the chair. Sir William Smyly, the incoming president, in his address referred to the progress being made in the campaign against tuberculosis, and mentioned especially the work done by Lady Aberdeen. In regard to his own specialty of midwifery, he pointed out that improvement is needed. The old types of practitioner and midwife have passed away, and those now engaged in the work are fully alive to their responsibilities. But even now, he said, the average mortality of childbirth is nearly double that which exists in well-managed hospitals. He recommended practical clinical examinations in lying-in hospitals and regular attendance at these institutions. He expressed the opinion that the midwives act would prove a beneficial measure to poor women in Ireland who are dependent on midwives for care during labor.

#### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, June 13, 1908.

#### The Sanitary Work of the Port of London

The work of the Port Sanitary Committee of London in a single year is considerable. For its performance there are a medical officer, five assistant medical officers, three food inspectors, eight sanitary inspectors, and a large staff of nurses at Gravesend Hospital. The work of preventing disease from entering London by the river goes on day and night. Last year 37,000 visits of inspection were paid—18,000 to vessels from foreign ports and 19,000 to "coastwise" craft and 252 cases of infectious disease about to enter the port were detected. A constant war is waged against rats. Nearly 53,000 were destroyed last year—15,000 in the docks and 38,000 on vessels. Dr. Williams, the principal medical officer, in his report for 1907 makes the interesting statement that scurvy has practically disappeared from the mercantile marine. He attributes this to the fact that voyages are shorter and that better methods of preserving food are adopted. An important branch of the port authority's work is the seizure and destruction of unsound food. Nearly 3,000 tons of food were condemned. This included 3,000 carcasses of mutton, 5,000 packages of fruit, 1,000 chests of tea, and 7,300 eggs,

besides rabbits, fish, game and vegetables. The cost of the sanitary administration in the year was \$50,000.

#### The Crusade Against Tuberculosis in Ireland.

The crusade against tuberculosis in Ireland has been described in previous letters. The most important step was the founding by Lady Aberdeen, in 1907, of the Women's National Health Association to arouse the women of Ireland to the fact that each year almost 12,000 of the people die of consumption. She organized the tuberculosis exhibition and its success was so great that when the time came for it to start on a tour through Ireland so many towns asked for it that two exhibitions had to be prepared—one for going north and the other south. Up to the present these exhibitions have visited 60 towns and over 700,000 people have attended them—about one-sixth of the population of Ireland. The question may be asked, will all this produce any lasting benefit? Already it has done so. In Dublin a system of home nursing for consumptives has been introduced by means of the cooperation of the medical staffs of the hospitals and the Women's National Health Association. The nurses teach the patients and their friends the ordinary measures for preventing the spread of the disease—the importance of thorough ventilation and cleanliness. They also advise the best dietary and, in many cases, assistance is given in obtaining eggs, milk, meat, etc. Many other towns are following this example. In consequence of the educative effect of the exhibitions guardians of the poor and urban councils are putting up chalets, sheds, etc., in which tuberculous patients can be treated. These sheds are inexpensive, and being erected on the grounds of the hospitals, their cost of keeping is small.

#### The Supply of Male Nurses.

A want has long existed of a sufficient supply of male trained nurses for cases in which the female nurse is undesirable or objected to by the patient. This want has been filled by the "Army and Navy Nurses Cooperation," which was founded last year with the object of supplying well-trained nurses and sick attendants of good character, at the same time providing employment for retired non-commissioned officers and men of the nursing section of the Royal Army Medical Corps and of the Sick Berth Staff of the Navy. In explaining the objects of the institution Sir Frederick Treves said that a large section of the public held that a considerable number of patients who were now nursed by women should be nursed by men. But it was difficult to obtain trustworthy male nurses. They could only come from one course of training—the great naval and military hospitals, where a first-class course of instruction was given. The money earned by the nurses will be handed to them minus a small commission which is so small that it does not pay the working expenses of the institution.

#### A Coroner on Operations.

Coroner Troutbeck, who has aroused great animosity in the profession by calling in a pathologist in almost all the cases in which he orders a necropsy, and ignoring the local physician, now finds himself in conflict with one of the leaders of the profession, Sir Victor Horsley. Troutbeck held an inquest on a woman who died after the removal of a tumor from the brain, and he summoned this world-famous surgeon who was the operator. Sir Victor Horsley said that the case was such an ordinary one that he could not understand why an inquest was held. The coroner replied that, owing to the advance of surgery, operations were much more frequent than they used to be. Clearly they were, to some extent, a cause of deaths and came within the Coroner's Act which made inquests imperative in cases of deaths due to violence. Sir Victor Horsley pointed out that if this were so, 10,000 inquests would have to be held annually. In his remarks to the jury, the coroner said that a considerable proportion of deaths, which in great part were due to operations, were never reported to the coroner. They were certified and, owing to the system of certification, were accepted. As a result, the public were in complete ignorance as to what proportion of deaths were accelerated by operations. This was a serious matter for which a legal remedy was required. He did not intend to let the matter stand. He regarded it as extremely important from the public point of view, and in these matters the coroner represented the public, that such cases should be inquired into. They could leave these questions to no profession, however honored or however skilled. In the case before the court he directed that a proper verdict would be accidental death; if the jury were satisfied that the operation was justifiable and that all due care had been taken, such a verdict was returned.



## BERLIN LETTER.

(From Our Regular Correspondent.)

BERLIN, June 12, 1908.

## The Late Professor Hoffa and the Chair of Orthopedics.

As has been announced in the American press, Professor Hoffa of the Berlin University died some months ago. He was quite closely related to Americans, as he was born in South America. Four years ago, as is well known, he visited America and was much fêted by his American colleagues, which was not to be wondered at considering his charming personality and his remarkable scientific reputation. At the University of Berlin he was the official representative of orthopedic surgery, the second in this position, as his predecessor, the renowned Professor Wolff, was entrusted with the first professorship for this special branch. It created not a little sensation when the faculty, which of course, included the ordinary professors of surgery, made the proposition to the government that the chair (it is not a so-called regular professorship, but merely an "extraordinary" one) of orthopedic surgery should be permitted to lapse and that the orthopedic clinic and polyclinic should be united with one of the two surgical clinics. The proposal aroused opposition both among physicians and with the government which was supported by the public, especially in the Prussian parliament. The government consequently determined not to grant the request of the faculty, but to call a successor to Hoffa. The first attempt to find a suitable man was a failure. Prof. Friedrich Lange in Munich, a very capable man in his profession, refused a call. As usually happens, considerable concessions were made to him by the Bavarian government in order to retain him. He was made a professor in ordinary, i. e., a full member of the faculty, whereas, hitherto he, like Hoffa, had been only a professor extraordinary, and did not belong to the official body of the faculty, thus occupying as it were the position of a professor of the second class. This is the first instance in Germany of the advancement of orthopedic surgery to the dignity of a full professorship. But it will doubtless soon find imitators. It is still uncertain who will be called to Berlin in place of Lange. So far as I know the government has at present in view privat-docent Dr. Wullstein of Halle. The teaching position will not be definitely occupied during the summer but will be held in the interim by a former assistant of Hoffa. Such temporary occupation of ordinary or extraordinary professorships is now more common than formerly in our universities, and more common than should be the case. Even the regular professorship of pharmacology in Bonn, where Professor Binz has retired on reaching the age limit, as well as that in Marburg and in Göttingen are at present temporarily filled.

## Cremation in Prussia.

Cremation has hitherto not been permitted in Prussia. There are in Germany only fifteen institutions for burning bodies, so-called crematories, in Hamburg, Heidelberg, Gotha, Jena, etc. At Hagen, in Westphalia, a local society has erected a crematory, but the use of it has been forbidden by the police. As announced in the political press a legal regulation of the practice is to be instituted with a favorable settlement of the question.

## The Virchow Monument.

The matter of the Virchow monument has taken on a tragico-comic character. As is well known, the plan was made in 1902, shortly after the death of the great master, to erect a monument in a public square in Berlin. For this purpose a competition was started by the committee in the usual way which resulted in a number of designs for the monument being submitted. The jury, two years ago, awarded the first prize to the design of a talented sculptor, and gave him the right to erect the monument. The design, according to the opinion of many people, does not correspond to the requirements expressed in the original plan of the monument committee, viz.: "That the monument should bear witness to the high esteem in which the German nation held the great investigator, even after his death." The design is not a statue of Virchow himself, but introduces as the chief group, a symbolic representation of the lifework of Virchow, in the form of a struggle between a Herculean giant and a fabulous beast, while on a classic pedestal (beautiful in itself), only a small medallion portrait of Virchow was placed. Energetic opposition was made against this design, especially on the part of the Berlin profession. The *Deutsche medizinische Wochenschrift* first took up the work and protested that for a man like Virchow "who abhorred every mystic and symbolic ambiguity, and who represented in the highest degree the exact

investigator of nature, a monument is erected on which the personal and peculiar character to be preserved for posterity sinks to a dwindling little ornament, while elevated to the chief place is a group which symbolizes any fact you please from the struggle of the physical or intellectual giants of the world's history." To these, and other protests, the artist gave so much heed that he enlarged the medallion portrait and placed on the pedestal some reliefs that presented Virchow in his character as teacher. Unfortunately the carrying out of the design could not be hindered by the protest, but now a decided check has been interposed. The emperor, who under certain circumstances must give his consent to the erection of monuments in the public squares of Berlin, has expressed himself against the monument in its present form on similar grounds to those taken by the *Deutsche medizinische Wochenschrift*. One can not agree with all the views of our emperor on art and many innovations in the municipal art of Berlin, lacking in beauty, are referable to the will of the emperor, but in this case we can only be thankful to him that he is willing to protect us from a monument that would in no way be representative of Virchow. What further course the matter will take, whether the monument will be constructed and erected in some private square of the city (perhaps the Rudolph Virchow Hospital) or not, will be known in the near future.

## VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, June 10, 1908.

## Yellow Phosphorus in Matches.

Since the government has published the essential features of the new bill (to be brought before parliament in the autumn), regulating the use of yellow phosphorus in the manufacture of matches, the Vienna Medical Society has appointed a medical committee to investigate into and report on the conditions prevailing in the trade. About 70 per cent. of all matches made in Austria are made of the yellow phosphorus, the majority of the factories being in Bohemia because of the laxity of the law there. Phosphorus necrosis is not seen as frequently now as it was ten or fifteen years ago, but the records show that in Bohemia about 35 or 40 cases have been received annually for the last decade. Among the lower classes it is not unusual for match-heads to be taken internally as an abortifacient, and many cases of so-called attempted suicides by phosphorus poisoning are really the result of attempted criminal abortion. In Vienna alone the statistics show that 791 females and 80 males have, within the past ten years, attempted to kill themselves by eating match-heads. The mortality is high, no fewer than 340 having succeeded in killing themselves. The result of the committee's investigation was that there seems to be no positive way of preventing phosphorus necrosis except to prohibit the use of yellow phosphorus and substitute the amorphous form of the chemical.

## Resignation of Professor Toldt.

Professor Karl Toldt, the famous anatomist, intends to resign his position as director of the second anatomic institute because his research and literary work take all his time. Toldt is the author of many text-books on anatomy, the best known among them being his handbook of anatomy which he wrote in collaboration with Langer. One of his latest books is the "Atlas of Anatomy" which is a departure from the type usually seen. Professor Toldt is now engaged in completing his great work, "Anthropology," and as he is now 68 years old he does not wish to delay his self-appointed task longer.

## Medical Council Conflicts with a Sick Benefit Society.

The system of sick-benefit societies (*Krankenkassengesetz*) which makes the physician do much work for small remuneration has not hitherto been successfully fought in Austria because of the lack of proper organization on the part of the profession. The medical council of Vienna, a representative body equipped with certain disciplinary powers, recently ordered that a newly formed sick benefit society of bank clerks be boycotted by medical men. The sick benefit society appealed to the courts on the ground that the existence of sick benefit societies is required by law and the action of the medical council prevented the club from complying with the law. The court upheld the contention of the sick benefit society and its decision can not be appealed from. This occurrence has aroused the profession so that the Society to Promote the Economic Interests of Physicians, which was founded about a year ago, has increased its membership to such an extent that a boycott can now be maintained without fear of any court being able to interfere.



## Pharmacology

### THE BROADER AIMS OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

TORALD SOLLMANN, M.D.

Member of the Council, Professor of Pharmacology and Materia Medica at the Medical Department of Western Reserve University.  
CLEVELAND, OHIO.

(Continued from page 2146.)

#### XV. SOME STUDIES IN BOTTLED PSYCHOTHERAPY.

Great is the influence of mind over the body! Evidently, though, its potency of suggestion can be greatly enhanced by the simple process of marketing it in bottles; enhanced to the degree that it controls, not only the body, but also bacteria—and, even ferments. How else can we explain the testimonials of the psychic digestants and psychic antiseptics—when it comes to the psychic cardiac tonics, however, this simple explanation fails.

##### I. PSYCHIC DIGESTANTS.

In THE JOURNAL, Feb. 2, 1907, page 434, the Council exposed the absurdity of liquid mixtures of digestive ferments. In the same and succeeding issues, the experimental evidence was quoted and on February 9, the statements of text-books were contrasted with the claims made for these preparations. In THE JOURNAL, March 16, 1907, the Council reported that Lactopeptine, even in powder form, contains no pancreatic ferment, and only a small amount of pepsin. This result was confirmed by Prof. Charles H. Miller in THE JOURNAL, March 23, 1907. Indeed, all this had been anticipated by Prof. Emil Scheffer in 1876.

But profitable falsehoods die hard—which is the reason for again referring to these facts. The reply of the Lactopeptine manufacturers to the Council was the bald assertion that "the ferments referred to exist in the preparation as stated in the formula." Toward the profession, they have adopted a somewhat different tone, implying that the attitude of the Council is mere theory, and that Lactopeptine has "convincingly demonstrated, beyond all question, its practical value." They take pride in contrasting "theory" with "common sense." This is somewhat of a reflection on the acumen of the clinical authors who have condemned these mixtures—Boardman, Reed, Potter, Stevens, Yeo, Butler, Hemmeter, Gilman, Thomson, H. C. Wood, Crofton, Culbreth, and others.

Even if there were this difference between "theory" and "common sense," would it not be well to look for the simplest explanation, before resurrecting or resynthesizing pancreatin from its proteolytic cleavage products by the mysterious vital activity of the intestine? Many patients with digestive disorders doubtless improve under Lactopeptine—*plus* this, that and the other. But then, do they not improve under this, that and the other—*minus* Lactopeptine? I have even heard of digestion being improved by mere attention to diet, without any drugs; I have heard of the (peptic) juice being increased by pleasant tasting substances—and Lactopeptine Elixir does taste pleasant. I have also heard of amulets, and of psychotherapy!

The demonstration of a ferment has thus far been considered as belonging to the domains of chemistry; the promoters of Lactopeptine and the inventors of nucleoenzymes would transfer it to the domain of psychology.

##### II. PSYCHIC ANTISEPTICS.

What a fine antiseptic odor and taste are possessed by thymol! After comparing the odor and taste of a saturated solution of thymol with a 5 per cent. solution of phenol, or a 1 per cent. solution of corrosive sublimate, could one doubt for a moment which is the most active? Evidently not, for thymol, plus small quantities of boric and benzoic acid, under the name of Listerine, sells at a dollar a bottle. It is really

too bad that bacteria can not recognize a superior antiseptic as well as the nose—for, according to the bacteriologic tests, as quoted by Wood, four hundred and ninety-five dollars' worth of Listerine has the antiseptic action of a cent's worth of corrosive sublimate; or fifteen dollar's worth of Listerine equals a cent's worth of carbolic acid.

##### III. PSYCHIC CARDIAC TONICS.

Thanks to the unique discoveries of the eminent pharmacist of St. Louis, Mr. Sultan, and of the eminent exploiters of alkaloids (and a few other things) the Abbott Alkaloidal Company of Chicago, the treatment of heart-disease has been much simplified. *Cactus grandiflorus*, the famous Mexican plant, contains an inactive-active principle, isolated in pure form as an impure extract, which has the most remarkable actions on the human heart. Should the heart be too slow, cactus quickens it; if the heart is too fast, cactus slows it; should the heart be too weak, cactus strengthens it; if the heart is too strong, cactus weakens it; does the heart wobble, cactus steadies it; if the heart is normal, cactus does not meddle with it. No need to make a diagnosis—whatever is wrong or right with the heart, cactus fixes it.

The field of usefulness of this remarkable drug is being constantly extended. As the pellets or granules consist almost entirely of sugar, and are absolutely harmless in doses of one hundred or more (see THE JOURNAL, Sept. 21, 1907, page 1023; and March 21, 1908, page 956), they might be useful as an infant food.

A further property of this remarkable drug is that its action is confined to the human heart. This also opens up a new field for the drug in ethnologic research.

N. B.—A definite diagnosis of the cardiac lesion should not be made, since this interferes materially with the efficiency of cactus. Please refer to the title of this paragraph.

(To be continued.)

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE  
AMERICAN MEDICAL ASSOCIATION.]

#### UNOFFICIAL PREPARATIONS OF HYDRASTIS (GOLDEN SEAL).

W. A. PUCKNER.

In the price-lists issued by most manufacturers of pharmaceutical products there are to be found listed under fluidextracts, the following preparations of golden seal (hydrastis): "Golden seal U. S. P.," "Golden seal, aqueous," "Golden seal, colorless." As the term, "fluidextract," or "fluid extract," designates a class of pharmaceutical preparations of which 1,000 c.c. represent 1,000 gm. of the drug, the several golden seal preparations should be of the same drug strength. It is difficult, therefore, to understand why these preparations should differ so widely in prices. Thus, a recent price-list (Ray Chemical Company) quotes them at \$3.60, \$2.75, and \$1.25 a pint, respectively, in the order named above.

The price-lists of some manufacturers shed light on this subject to some extent, at least. Thus H. K. Mulford Co.'s catalogue contains under fluidextracts, "Hydrastis U. S. P.," "Hydrastis, Aqueous (without alcohol)," and "Hydrastis, Colorless (non-alcoholic)," but a foot-note explains that the last preparation is one of those which "differ from fluidextracts in that they are not made 1 gm. to the c.c." So also the price-list of Parke, Davis & Co., which quotes "Golden Seal," "Golden Seal, Aqueous" and "Golden Seal, Colorless," contains an explanatory note which states that "Golden Seal, Colorless" does not represent the crude drug minim for grain.

On the other hand, the price-list of Hance Bros. & White contains an explanatory note which leads to the inference that their golden seal preparations are all of the same strength, thus:

"The Golden Seal used in our preparations is assayed to the standard of 2 per cent., white alkaloid Hydrastin, this being the alkaloid which produces the characteristic physiologic effects.

"We list three Fluid Extracts: Golden Seal, U. S. P., Golden Seal, Aqueous, and Golden Seal, Colorless. Fluid Extract Golden Seal, U. S. P., contains resinous matter and will not make a clear



solution with water. Fluid Extract Golden Seal, Colorless, contains only the white alkaloid Hydrastine in an aqueous solution and is especially prepared for medication of the genito-urinary mucous membrane. It makes clear solutions with water and does not stain linen."

Yet the preparations are offered, respectively, at \$4.50, \$3.75, and \$3 per pint.

Evidently, therefore, there is something radically wrong in the system which lists under fluidextracts, Golden Seal, Aqueous and Golden Seal, Colorless. To investigate the matter further, the products of a number of manufacturers were purchased in the open market and examined.

#### GOLDEN SEAL, AQUEOUS.

The table below gives the descriptions as they appear on the labels of the products supplied by the manufacturers and also the percentage of the alkaloid hydrastin which they were found to contain when examined by the process of the U. S. Pharmacopeia and by a modification of the official method (Method B). The results of the assays by the latter method, as has been explained elsewhere,<sup>1</sup> are somewhat higher than those obtained by the official method. The latter determinations were made, and the results are recorded only as a verification of the values obtained by the first, the official method. It should be remembered that the official strength of fluidextract of hydrastis is 2 gm. alkaloid to the 100 c.c., whereas, the preparations mentioned below varied from 0.58 to 1.79 gm.

#### GOLDEN SEAL AQUEOUS.

No.	Firm.	Title on label.	Claims made.	Grams of hydrastin in 100 c.c. of preparation.	
				By U. S. P. Method	By Modified B.
1.	Hance Bros. and White.	"Fluid Extract Golden Seal aq."	"The irritating resin of golden seal is eliminated and only the alkaloid retained."	1.43	1.49
2.	Eli Lilly & Co.	"Fluid Golden Seal (Non-alcoholic)."	"The resin and other inert matter is eliminated while the hydrastin and berberin are retained in natural combination, 1.25 gm. hydrastin in 100 c.c."	1.09	1.16
3.	H. K. Mulford Co.	"Fluid Extract of Hydrastis aqueous."	"Represents the medicinal properties of hydrastis but excludes the resinous extractive."	0.58	0.64
4.	Parke, Davis & Co.	"Fluid Golden Seal, Aqueous."	"Represents the medicinal properties of hydrastis. The resinous extractive has been excluded." "Standard, 1 per cent. hydrastin."	0.93	0.95
5.	Ray Chemical Co.	"Ray's Fluid Extract Golden Seal non-alcoholic."	"Represents the medicinal properties of hydrastis. The resinous extractive has been excluded."	0.77	0.82
6.	Schiffelin & Co.	"Aqueous Fluid Extract of Hydrastis."	No statement except "contains no alcohol."	1.31	1.35
7.	Sharp & Dohme.	"Fld. Extr. Golden Seal Aqueous."	"Each cubic centimeter represents 1 gram . . . of Golden Seal."	1.50	1.62
8.	Frederick Stearns & Co.	"Fluid Extract Hydrastis Aqueous."	"No claims made."	1.79	1.79
9.	Truax, Greene & Co.	"Fld. Extr. Golden Seal without alcohol."	"Contains all the native principles of the drug except the inert, gummy and resinous matter. . ."	1.04	1.10
10.	Wm. Warner & Co.	"Fluidextract Golden Seal without alcohol."	No claims made.	1.26	1.35

1. Pharmaceutical Review, May, 1908, p. 132.

2. In Schiffelin & Co.'s prices current of March 30, 1907, it is stated that "Hydrastis, aqueous" is standardized to U. S. P. strength. On corresponding with this firm it appeared that the sample analyzed was of old stock, of which Schiffelin & Co. said: "None of the old stock should have been sent out subsequently to the issuing of the price list, and we regret to find that a few liters of what we had on hand were sent out. Therefore, we have no doubt that your analytic results are correct, and we can only express our mortification that our oversight should have put us in this position." Analysis of a new specimen submitted showed the amount of alkaloid present as represented—that is of standard U. S. P. strength.

The above table shows that, with one exception (No. 8), the "non-alcoholic," "aqueous" hydrastis preparations examined should not be designated as fluidextracts since they do not contain the amount of the alkaloid hydrastin which the Pharmacopeia directs for fluidextract of hydrastis (2 per cent.). Only one product, that of Stearns, approached the alkaloidal strength the official fluidextract. In reply to an inquiry, Frederick Stearns & Co. claimed that the preparation was made in April, 1907, and at that time assayed exactly 2 per cent. hydrastin.

Two firms, Eli Lilly & Co., and Parke, Davis & Co., do not use, on the label, the word "fluidextract," but instead, call their preparations, respectively, "Fluid Golden Seal, Non-Alcoholic," and "Fluid Golden Seal, Aqueous." These firms also state the amount of alkaloid which these preparations contain, viz., 1.25 per cent., and 1 per cent., respectively, and the examination confirms these claims in a general way.

The results of the analyses were submitted to the several firms interested who were requested to state how these results agreed with those obtained by their own chemists. The replies received, indicate that either the preparation is made and sold without control of its alkaloidal strength or, if assayed, no attempt is made to meet the official standard for fluidextract of hydrastis.

In brief, this examination demonstrates that few of the so-called "non-alcoholic" or "aqueous" fluidextracts of golden seal, deserve the title, "Fluidextract." It also indicates that, in addition to the claim that the inert constituents have been removed, equal prominence should be given to the fact that, to a large extent, the chief active constituent also has been removed. The replies of the manufacturers generally indicate that being an unofficial preparation, little attention is paid to its strength (something on the order of the "eggs good enough for eustard," of Mr. Peck's illustrious son); but they also show a willingness to improve the quality of the product or to label it properly.

#### GOLDEN SEAL, COLORLESS.

On the labels of the trade packages of the so-called "Golden Seal, Colorless" preparations, the following descriptions appear:

*Hance Bros. & White:* "Liquid Golden Seal, Colorless." "One fluidounce represents one and one-quarter grains (0.081 gm.) hydrastin."

"This preparation is simply a solution of the White Alkaloid of Hydrastis Canadensis in approximately the proportion in which it exists in a prime quality of the drug—twenty grains to the pound—and without the addition of any ingredient intended to increase its action."

*Eli Lilly & Co.:* "Liquor Hydrastin."

"This preparation, frequently called 'Colorless Hydrastis,' contains the colorless medicinal principles of Golden Seal."

*H. K. Mulford Co.:* "Fluid Hydrastis (Colorless)."

"Each pint of the fluid contains 20 grains of white alkaloid, the only valuable constituent of Hydrastis."

*Parke, Davis & Co.:* "Fluid Golden Seal, Colorless."

"Each fluidounce of this fluid contains 1¼ grains of Hydrastin, the white alkaloid of Hydrastis (Golden Seal)."

*Ray Chemical Co.:* "Ray's Fluid Extract Golden Seal (Colorless)."

*Sharp & Dohme:* "Fluid Golden Seal, Colorless."

"Each pint contains 20 grains Hydrastin, White Alkaloid, the principal and most valuable constituent of Golden Seal."

*F. Stearns & Co.:* "Fluid Golden Seal (Colorless)."

"Each fluidounce of this preparation contains 1¼ grains of Hydrastin (White Alkaloid), to which, recent investigations have shown, the valuable properties of Golden Seal (Hydrastis) are due."

*Truax, Greene & Co.:* "Liquid Hydrastin."

"Fluid Golden Seal, Colorless."

"One pint of this solution contains an amount of the 'White Alkaloid' Hydrastin equivalent to that contained in one pound of fresh Golden Seal root of average quality."

*H. K. Wampole & Co.:* "Fluidextract Golden Seal, Colorless."

"Each pint contains, in a non-alcoholic menstruum: Hydrastin, 20 grains."

*Wm. R. Warner & Co.:* "Fluidextract Golden Seal, Colorless."

"Each pint contains 20 grains Hydrastin."

The above shows that only a few firms use the word "fluid extract" on the label; nor, with one or two exceptions, is any attempts made to make it appear that the preparation approaches fluidextracts in strength. In general, the labels show that they are weak solutions of salts of hydrastin. While the fluidextract of hydrastis contains 2 per cent. of alkaloid, these preparations contain less than 0.3 per cent.



The statement made by Truax, Greene & Co. that one pint contains an amount of hydrastin equivalent to that contained in one pint of fresh golden seal root is, to say the least, misleading. Casual reading gives the impression that this preparation contains an amount of alkaloid equivalent to that prescribed for the official fluid extract. The word, "fresh," however, which probably will, and perhaps is intended to escape the reader, is of considerable importance in this case. According to J. U. Lloyd<sup>3</sup> and Alice Henkel<sup>4</sup> every 100 pounds of fresh golden seal, when dried for the market, yields only 28 to 30 pounds.

Since the U. S. Pharmacopeia requires that golden seal contain 2.5 per cent. hydrastin, the "fresh" drug should contain only 0.6 per cent. The preparation of Truax, Greene & Co., however, does not contain even this amount; examination<sup>5</sup> indicating that it contains less than 0.25 per cent. of hydrastin. To a considerable extent, the same criticism applies to the product of Hance Bros. & White, who state that the alkaloid is contained in their liquid Golden Seal, Colorless, "approximately in the proportion in which it exists in a prime quality of the drug." This is followed by the acknowledgment that it contains 20 grains to the pound. Hance Bros. & White apparently feel confident that physicians are quite unfamiliar with the alkaloidal content of drugs!

#### THERAPEUTIC INDICATIONS.

In conclusion, the following statements taken from the label for these preparations show the extent to which some manufacturers go in their desire to tell physicians (and others?) the various uses to which this remedy may be put:

"It is indicated in atonic dyspepsia, gastritis, and in the treatment of catarrhal affections of the mucous surfaces; also a wash in conjunctivitis and an injection in gonorrhea, vaginal leucorrhea and inflammation and ulceration of the mucous lining of the bladder. It is free from all staining properties. When used as a wash or injection, it should be diluted with from four to twelve times its volume of water." (HANCE BROS. & WHITE.)

"Non-irritant, permanent, will not stain, contains no alcohol. Will be found useful wherever Golden Seal is indicated."

"Medicinal Uses: It is recommended for various inflammatory and catarrhal conditions of mucous membranes; as an injection in gonorrhea, leucorrhea, and other catarrhal affections of the genitourinary tract; also in inflammatory conditions of the nasal and air passages. Internally is employed in fermentative dyspepsia, malarial troubles, biliousness, gastric catarrh, gastritis, etc. May also be used in combinations, according to the discretion of the prescribing physician." (STEARNS & CO.)

The examination demonstrates that these unofficial preparations, while listed and sold more or less directly under the titles of fluidextracts, do not comply with the standard adopted for the official fluidextract of golden seal; the results may serve as a suggestion to physicians to make some attempt to learn the composition of unofficial remedies. The analyses emphasize the fact that, with hydrastis as with many other drugs, as soon as the physician leaves the official preparations he is dealing with unknown quantities.

#### RESEARCH LABORATORIES OF MANUFACTURING PHARMACISTS.

##### Valuable Work in Standardizing and Investigating Drugs.

The advance of pharmacy and therapeutics has been due in a considerable measure to the enterprise of certain manufacturing pharmacists who have conducted research laboratories from which genuine scientific discoveries have emanated. In this work the American pharmacist has not been behind his continental brother. It is gratifying to observe that this effort to assist scientific progress still continues. Two contributions in the *American Journal of Pharmacy* (January and March, 1908), are striking examples of the practical value of such work. The first emanates from the biologic laboratories of Parke, Davis & Co., and consists of a study of *Cannabis sativa*, grown in the United States and Mexico (*Cannabis Americana*), as compared with *Cannabis sativa* of the East Indies (*Cannabis Indica*). It is generally believed that American hemp is practically worthless for therapeutic purposes and that one must employ the true cannabis from India

in order to obtain physiologic activity. In order to test the value of American grown hemp, Drs. E. M. Houghton and H. C. Hamilton compared the two drugs by administering the extract in a standard dose to especially selected dogs. They conclude that *Cannabis sativa*, when grown in various localities of the United States and Mexico is fully as active as the best imported Indian-grown *Cannabis sativa*.

The second contribution is an attempt to solve the problem of the standardization of the preparations of digitalis. For this purpose two different methods have long had their special advocates, some championing the chemical method, and others concluding that, because the essential active principle of digitalis is not fully known, nothing could be expected from the chemical method and that the method of physiologic testing must be resorted to. Dr. E. D. Reed and C. E. Vanderkleed, working in the research laboratory of the H. K. Mulford Company, have attempted to compare and combine the two methods. The question of physiologic standardization of digitalis, which is described by Dr. Reed, has resolved itself into the specific action of the drug on the heart of the frog. Frogs were treated with digitalis in varying quantities, and that amount of digitalis which would kill a frog of a definite weight, leaving its heart in systole, was considered to be an index of the physiologic activity of the preparation. This method, however, is considered by Dr. Reed to be unsafe since it is; after all, only a toxic effect and amounts to nothing more than determining the lethal dose. Reed uses, instead, the lethal dose for a guinea-pig and adopts, as a standard, the amount which will kill a guinea-pig of 240 grams weight in from 1½ to 2 hours, and he uses this amount for comparison with the chemical method of testing based on the amount of digitoxin in the drugs.

Vanderkleed, in discussing the objections to the chemical method of standardization admits that it is not proved that digitoxin represents the therapeutic activity of digitalis in its entirety. He maintains, however, that it may properly be taken as a guide for standardization if it can be shown that the physiologic activity runs parallel to the amount of digitoxin so that it may afford a reliable means of approximate estimation. He cites other cases in which it has been agreed to use the amount of an ingredient which is not the sole active principle. Thus, nux vomica is estimated by the amount of strychnin which it contains, although strychnin forms only one of the constituents to which nux vomica owes its activity. Acting on this principle he endeavored to ascertain the relation between the amount of digitoxin and the activity of the digitalis as determined by physiologic tests. The results showed that the relative activity could be estimated very closely from the amount of digitoxin, and it is only necessary to fix a standard of digitoxin corresponding to the physiologic unit in order to assay the drug satisfactorily by chemical means.

Vanderkleed made some interesting experiments to determine the rate of deterioration of liquid preparations of digitalis. Watery solutions of digitoxin are found to lose their activity rapidly so that the only stable preparations are hydroalcoholic or those in which a part of the alcohol has been replaced by glycerin. Even the fluid extract deteriorates, according to his experiments, under ordinary trade conditions, at the rate of about 11 per cent. a year.

The standardization of drugs which are to be depended on for definite physiologic effects is an essential for accurate clinical observation and effective therapeutics and should be demanded where possible. Every effort to extend our knowledge in this respect deserves the hearty support of the medical profession. Work of this sort that tends to make more effective the remedies we already have is much more to the credit of the manufacturing pharmacist, and will be more appreciated by the medical profession than the multiplication of formulas of the "shot-gun" order—already too numerous. It is to be regretted that even the firms which we have just had occasion to mention with praise have not always been willing to forego the temporary profit accruing from proprietary mixtures which have little to recommend them. It is to be hoped that the approval of their scientific efforts will lead them to give these efforts the greater em-

3. Drugs and Medicines of North America, vol. I, p. 84.

4. U. S. Department of Agriculture, Bull. 51, part 6, p. 14.

5. See Pharmaceutical Review, May, 1908, p. 132.



phasis and to leave the marketing of nostrums to the pseudo-pharmaceutical and chemical concerns which have too long humbugged our profession and disgraced American medicine and pharmacy.

#### Analysis of Nostrums in North Dakota.

It is gratifying to note that the officials of some of the state health boards have realized the true scope and responsibility of the work placed in their hands and appreciate the great injury to public health from the fraudulent manner in which many medicines are advertised and sold. In the eighteenth annual report of the North Dakota Agricultural Experiment Station, the food commissioner, E. F. Ladd, and the pharmacist, L. A. Brown, call attention to the evils arising in connection with the "patent medicine" business. Mr. Ladd says: "The more I have had occasion to look into the subject of 'patent medicines' and their use, the more fully I become convinced of the great fraud that is being practiced. Among the 'patent medicines' there are some possessed of merit, but the greater proportion of those now sold are nothing more than worthless products, often 'dope.'" He also quotes a drug journal to show the attitude of others with regard to some of these products "which claim to be ethical and, therefore, are supposed to be recognized and used under the direction of physicians, but which, in reality, seldom are recommended by physicians of standing."

Mr. Ladd makes the further comment: "By reference to the report of Professor Brown given further on, one will see something of the character of 'patent medicines' which have been sold in this state and have thus far been under examination. Their worthlessness in many cases is clearly indicated. They are often so prepared as to deceive and mislead and make victims of those who use the products. That there is necessity for a more stringent law than any which we now have is clearly indicated, and I can fully endorse the report of Mr. O. C. Beale, who was commissioned by the Australian government to make an investigation of the nostrums sold as 'patent' and proprietary medicines in all English-speaking countries."

Professor Brown's report shows a large amount of good work accomplished during the year. A long list of proprietaries containing cocaine is published. Vin Mariani is in this list and receives an exposure occupying over two pages and leading to the conclusion that whatever the claims made by the manufacturers, "according to our analysis of samples of Vin Mariani it does contain cocaine, and regardless of whether its presence is due to coca leaves or not, it constitutes it a cocaine preparation." Evidently hair-splitting distinctions are not very popular at the North Dakota Agricultural Experiment Station.

The results of the analysis of some "dyspepsia remedies" are very interesting. The report states: "Only a few preparations of this nature have been analyzed in this laboratory, owing to a limited amount of time and help trained in drug analysis, but enough has been done here and elsewhere to arouse in our minds the suspicion that there are very few preparations put up as aids to digestion that have any efficacy whatever." Among the preparations analyzed were Vigni and Malt Papaya, Borscherdt's. The first showed no digestive power and the second a slight action on starch, but none on albumin. It is suggested that in the combination of diastase and papayotin in the second preparation the two ferments mutually destroy each other as has been shown to be the case with mixtures which contain both pepsin and pancreatin in solution.

It is to be hoped that we may have more investigations of similar nature by the responsible boards which are equipped to do work in this field. One advantage of work done under public authority not connected with the medical profession is that the suspicion of medical bias is removed and the advice given in such reports as these ought to be of immense value to the people to whom they appeal and who are liable to be misled by the specious advertisements of nostrums which are both an injury to health and a fraud on the purse.

## Correspondence

### Priority in Regard to Patellar Synovial Fringes.

NEW YORK, June 18, 1908.

To the Editor:—The rapid increase of years renders it hardly probable that I can accomplish much further work of novelty or interest in surgery. Hence, I may be pardoned for calling attention to what I have done in the past in connection with a lesion presented in an able form by Dr. Abbott of Portland, in THE JOURNAL, May 23, p. 1675. He ascribes the recognition and the requisite surgical treatment of an unusual form of joint-locking due to a duplication of the synovial membrane on the under surface of the patella to Dr. Goldthwait, who operated for this condition in 1902. I venture to state that in the *Medical Record* of July 16, 1892, it will be found that I called attention to this lesion and, by a similar procedure to that used by Dr. Abbott, removed the projecting fold in two instances, though I did not then, nor do I now claim to be the originator of the operation or the discoverer of the disease. It was only recognized as a unique affection.

R. F. WEIR.

## Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

### Sentences for Charlatans in the German Courts.

The last number of the *Gesundheitslehrer*, the official organ of the Antiquackery Society, mentions nearly 20 suits brought against quacks, the penalty ranging from fines of \$5 to \$75 and imprisonment for from two weeks to three years. Among them is L. Bauer, of "antidiabeticum" fame, this being the eighth suit that has been brought against him. One Witte was given a year's imprisonment for treating a woman with cancer and promising to cure her. It says of another, a shoemaker, that he grew tired of working on shoes and determined to take charge of the health of his fellowmen, "and of course he found people at once to trust their health in his hands." He treated a lad with a tuberculous suppurating process in the pelvis and promised his father a cure in six weeks. He applied a plaster cast, never cleaned, but charged \$2.50 for each inspection. After the boy's death suit was brought and he was condemned to two weeks of prison, the fourth penalty for the same practices.

### Systematic Organization in Kansas City.

The Jackson County (Missouri) Medical Society has taken up systematic methods of organization, following the plan of the Chicago, Philadelphia and St. Louis medical societies, and dividing the county into districts. A representative from each district has been appointed on the general organization committee, thus forming an organization committee of twenty-seven, one for each ward in Kansas City and Independence, and one for each township in the surrounding country. The secretary, Dr. E. L. Stewart, has begun the compilation of a card index of all the physicians of the county, and is endeavoring to obtain personal data regarding all members of the profession in the county. Without doubt, the work in Jackson County will be as productive of good results as that in the other large cities which have adopted this method.

### Local Regulation of Nostrums.

Following the movement on the part of the national and state governments for the regulation of the sale of dangerous and fraudulent medical preparations, a number of cities have passed similar local ordinances. Such an ordinance was adopted recently by the council of Huntington, Ind. This example is being followed by a number of other cities in the state. Logansport has just passed an ordinance providing that any itinerant physician or other traveling person desir-



ing to sell any medicine, drug or remedy for use in curing or healing diseases must obtain a license and pay to the city treasurer \$50 for each day he intends to remain in the city. Such an ordinance is in every way to be commended, and it is to be hoped that other cities will take the same action. It might be advisable to consider an additional clause prohibiting the sale to the public of any medicinal preparation which had not been examined by the State Board of Health and pronounced safe for public use.

#### Medical Defense in Wisconsin.

The State Medical Society of Wisconsin, at its annual meeting in 1907, adopted a plan of medical defense which has now been in operation for nearly a year. The *Wisconsin Medical Journal*, May, 1908, contains extracts from reports received from many of the counties, showing that in almost every instance the system has met with general favor and that the members are much pleased with the plan. In only a single county was there any definite opposition, and in this county the year has shown a substantial gain in membership. So far as reported, there has been no loss in membership in any county on account of the adoption of this feature, and this experience is in accordance with that of other state associations which have adopted it.

The best thing about this plan of mutual protection is that, without exception, it has resulted in eliminating those cases which are without justification and which had been incited by lawyers for mercenary reasons. Cooperative defense has made systematic exploitation of the medical profession not only unprofitable, but inadvisable and impossible. The few cases which have some possible justification are easily adjusted and settled. The principle of cooperative medical defense as a function of state society activity seems now to be well established, and it is to be hoped that many other state associations will take up this matter and carefully consider it.

#### Local Physicians' Club.

For over ten years the physicians of New Kensington, Pa., have maintained a local club, composed of the physicians of the city, who are members of the Westmoreland County Medical Society. The club at present includes fourteen out of the fifteen physicians of New Kensington. Weekly meetings are held, which are always well attended. The club has recently taken up the postgraduate course of study with gratifying results. It has its own club room, and hopes in a short time to have the nucleus of a common medical library. The best of feeling and the heartiest cooperation prevails among the local physicians, due principally to their constant association and frequent meetings together.

This organization is an illustration of the necessity in some of the counties of a smaller organization inside the county society for purposes of mutual benefit. In many of the larger and more populous counties, it is practically impossible for all the physicians to assemble oftener than once a month, or, on account of the geographical conditions or railroad arrangements, it is exceedingly difficult for all the physicians of the county to meet in one place. These difficulties have been solved in some counties by the organization of branch or district societies, subordinate to the county society; in others, by the organization of local clubs, which are auxiliary to and limited to members of the county society.

While any tendency toward disintegration or drifting away from the county plan of organization should be carefully avoided, yet such local organizations when properly conducted are an additional incentive to membership in the county society, and can often be of benefit to its members in a way not possible to the larger organization.

#### The Chicago Medical Society and Its Active Work.

The *Bulletin of the Chicago Medical Society*, June 20, contains the report of the annual meeting of that body held on June 17, which shows in a striking manner the range of work covered by this society, as well as the possibilities of medical organization in the large cities.

Seven years ago the Chicago Medical Society was a single body of about 900 nominal members, confining its work

almost entirely to the reading and discussion of scientific papers. To-day it is a highly specialized organization, having 2,259 actual members of the main society, twelve affiliated special societies and fourteen district branches. Instead of one meeting a week, there is now an average of 32 medical society meetings every month in Cook County. Not only has the organization gained in membership, but its practical usefulness has largely increased. A council, composed of delegates from the different component parts of the organization, meets each month and transacts all the business for the society. At the annual meeting, reports were made by the secretary of each of the fourteen branches and of the twelve affiliated societies, as well as by the following committees: Membership, medicolegal, ethical relations, organization, propaganda, patent nostrums, business bureau, contract practice, abuse of medical charities, affiliated societies, educational campaign and constitution and by-laws.

The medicolegal committee reported that in the three years of its existence it had not lost a single case. The report of the organization committee showed that 454 applications had been taken during the year, of which 303 had been accepted up to the date of report, and that in the last six years there had been added to the society 1,460 new members. The committee on propaganda reported that 22 public lectures had been given in the Public Library Building during the year, with an average attendance of 140 and a maximum attendance of 350, and that more interest had been exhibited by the public in these lectures during the past year than at any previous time. The committee on business bureau reported that this institution had been in existence for five months and had collected a total of \$6,298 for members of the society, earning in commissions for the society \$1,279, and that 391 members were now sending their bills to the bureau for collection. The committee on abuse of medical charities reported that during the past year an organization of the free dispensaries of the city had been effected, comprising 27 of these institutions, and that plans were being developed to prevent the exploitation of the medical profession through the misuse of these establishments for the relief of the worthy poor. The educational campaign committee reported that seven meetings had been held during the year between local physicians and druggists for the solution of the proprietary medicine and nostrum situation. The report of the secretary showed the largest annual increase in the history of the society. Thirty-one meetings of the main society were held during the year with an average attendance of 185.

The Chicago Medical Society was one of the first of the large city organizations to realize the trend of the reorganization movement and to appreciate its possibilities. An enormous amount of hard work has been done by its officers and members in the past six years, with the result that it stands to-day as the largest and best organized local medical society in the world.

#### POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.  
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

#### Tenth Month.

#### THIRD WEEKLY MEETING.

#### Cholelithiasis.

#### Etiology.

Classification of gallstones, chief constituents. Origin of cholesterol and bilirubin—calcium, changes necessary to their production. Effects of chemical and bacterial irritants, organisms usually found in bile, in gallstones. Effect of stasis of bile. Entrance of micro-organisms (a) by common duct, (b) by blood current, from portal vein. Age and sex. Pregnancy, sedentary life, typhoid fever. Incidence.

#### Symptoms.

Obstruction of Common Duct: Symptoms of cholangitis. Mechanical effects. Jaundice; intensity, duration. Itching.



Pain. Temperature. chills, "Charcot's intermittent fever." Gastric disturbances. Physical examination. Symptoms of suppurative or ulcerative cholangitis. Association of pancreatitis.

Obstruction of Cystic Duct: Pain, jaundice, tenderness, gastric and intestinal disturbances, presence of tumor. Sequelæ, empyema, atrophy or calcification of gall bladder.

Remote Effects: (a) Stricture of the duct, (b) intestinal obstruction, (c) fistulas.

#### Amyloid Disease of the Liver.

Etiology: Microbic origin of amyloid degeneration, its occurrence in the body. Sequel of chronic suppurations, necrosis of bones, tuberculous, pyelitis, syphilis, blood dyscrasias. Tests for amyloid material.

Symptoms: General condition, gastrointestinal symptoms, mental derangements, pain, urine. Physical examination.

## Miscellany

**Acidosis in Pregnancy.**—J. B. Leathes (*Proceedings of the Royal Society of Medicine*, March, 1908), refers to "three groups of papers in which, in Germany and America attention has been called to the significance of the high proportion of the excreted nitrogen that may take the form of ammonia salts in the urine during pregnancy." These groups are represented, respectively, by the papers of Zweifel (*Arch. f. Gynäk.*, 1904, lxxii., 1; 1906, lxxvi., 536), Williams (*Johns Hopkins Hosp. Bull.*, 1906, xvii., 71), and Ewing and Wolf (*Am. Jour. Obst.*, 1907, lv.). Zweifel's consideration of eighteen successive cases of eclampsia lead him to the conclusion that "the acid is produced in the child and causes poisoning of the mother, and is not produced in the mother as a result, for instance, of the fits." Williams regards three remarkable cases (abstracted in this article), of severe vomiting in pregnancy as "cases of toxemic vomiting allied to yellow atrophy, and this latter as a fulminating variety of the same disorder. Other cases of severe vomiting in pregnancy, in which the ammonia coefficient is normal, may be recognized by that sign as of a comparatively innocent type—cases of neurotic or, it may be, reflex vomiting." The cases of Ewing and Wolf, which Leathes regards as affording the "fullest and most valuable set of analyses of the urine in pregnancy," are divided into six groups. These are analyzed, and from a consideration of them Leathes says: "The two types of abnormality are fairly distinct. One is characterized by severe vomiting in the early months with high ammonia coefficients and generally large amounts of undetermined nitrogenous substances, but no renal affection. The cases described by Williams emphasize the gravity of this condition, described as toxemic vomiting, and with their very high ammonia coefficients give further significance to this abnormality of the urine. The other is an affection of the later months, in which the vomiting is secondary to renal complications, a pre-eclamptic condition in which the urine does not commonly have a particularly high ammonia coefficient, though the undetermined nitrogen appears to be very abundant." Leathes then raises the question: "How far are these abnormalities in the urine diagnostic indications of the gravity of the disorder? Do they lie at the root of the malady, as early fundamental symptoms of a disturbance of metabolism of which, it may be, yellow atrophy or conditions of that order of gravity on the one hand, and eclampsia on the other, may be merely the final climax?" He discusses the subject, and concludes that so far as the ammonia figures in the disorders of pregnancy are concerned, before it can be safely maintained that these high figures are a sign in themselves of a toxemia that is likely to prove fatal unless the most active measures be taken, it is necessary to prove that they are not sufficiently accounted for by some of the attendant circumstances of the patient's condition: the low nitrogen content of the absorbed food, the imperfect nutrition due to the incessant vomiting, the loss of alkali in the vomit, aggravated possibly by the requirements of the fetus. The facts that the high figures may

occur without any symptom of general disturbance (Ewing and Wolf's cases, 3 to 6), and that profound disturbance may coexist with normal figures (*ibid.*, Cases 10 and 12, the latter fatal), are difficult to reconcile with such a view. In some of the recorded cases acetone is mentioned as having been detected, which is no more than could be expected, and, therefore, the acids associated with acetone were probably present in sufficient quantity to account for some of the excess of ammonia. The valuable data contained in Ewing and Wolf's paper, and the stray observations outside it, point to the necessity of decisive experimental work before their pathologic significance can be positively defined. The other abnormality of the urine, the large output of unknown substances containing nitrogen, is more striking and more suggestive, for this does not appear among the results of mere starvation, as the figures given by Cathcart (*Jour. Physiol.*, London, 1907, xxxv., 500) show. The only substances that have been detected giving rise to variations in the nitrogen in this category are amido-acids, and though, of course, this does not warrant a prejudice as to the meaning of the figures in disorders of pregnancy, if the presence of amido-acids in abnormal amounts were proved, it is possible that some of the abnormal ammonia figures might be explained in that way, and that the tendency to associate the abnormality of the urine with disturbance of hepatic functions, and to regard it with suspicion as a sign of danger from that quarter, would be strengthened. But the author concludes that further definite work on this subject is required before any attempts at interpretation of the phenomena are permissible.

**Treatment of Tuberculous Glandular Disease.**—A. Robin states that there is only one treatment for tuberculous adenitis, namely, medical treatment based on the following rules: 1. Treatment should be both local and general. 2. Local treatment should include local treatment of all the cavities with which the diseased glands are connected. 3. The glandular lesions may heal spontaneously under climatic or medical aid. 4. When tuberculous adenitis does not heal, it requires further measures, but not surgical ones. 5. Surgical intervention does not protect against recurrence; it exposes to generalization, and it leaves disfigurement. 6. The treatment should leave no disfiguring traces. 7. General treatment includes hygiene as for pulmonary tuberculosis; nutritious food, little meat but plenty of vegetable albumin, especially gluten, and articles like gelatin which oxidize easily and are thus consumed in the place of the tissues; tonics, and hydromineral treatment. He combats the "demineralization" with a powder each day containing:

R.	gm.	
Magnesii carbonatis .....	10	gr. iss
Calcii carbonatis .....	25	gr. iv
Tribasic calcii phosphatis .....	25	or gr. iv
Calcii fluoridi .....	10	gr. 1/6
Saccharii .....	1	gr. xv

He considers the seashore dangerous for children requiring or having passed through an operation, or when there is a prospect of acute exacerbation or when there is a tuberculous lesion in the lungs, pleura or abdomen or vague pains in the legs suggesting impending meningitis, or neuralgia. He applies locally to the glands compresses soaked in a solution made as follows:

R.	gm.	
Calcii chloridi .....	300	3x
Sodii chloridi .....		
Magnesii chloridi .....		or
Potassii chloridi .....	15	3ss
Water .....	1,000	3xxxii

He also advises a disinfectant spray to combat any possible tracheobronchial adenitis, with, further, lavage of the nose, throat and ears. He regards the care of the mouth as very important, and he has the teeth brushed three times a day with a disinfecting powder containing calcium carbonate, soap and camphor, followed by a beta-naphthol gargle. His lecture on the subject was published in the *Annales de Méd. et Chir. infant*, March 15, 1908.

**Prevention of Plague.**—The present epidemic of plague is remarkable for its geographic extent although it has not



reached alarming proportions in any country except India. In 1894, there was but one country, China, affected; in 1907, there were 51 in which it had gained a foothold. It appeared in India in 1896, and in 1907 attacked 1,400,000 people in that country with a mortality of 1,200,000. *Public Health Reports* (U. S. P. H. & M.-H. S., May 29, 1908) details the measures to be taken for preventing the disease. The subject is divided into (a) measures to prevent the introduction of the plague into a community; (b) the proper treatment of a community into which the disease has found an entrance. Precautions to prevent the entrance of the disease are directed: (1) Against infected persons; (2) against rats. Quarantine measures should be especially directed to the discovery and detention of ambulant cases and cases of pneumonic plague. The thermometer should be thoroughly used to detect infectious disease among the crew and passengers of incoming vessels. C. S. Braddock recommends the use of coal oil about the shoes, stockings, and leggings to prevent the access of infected fleas. A similar application should be made to floors and furniture after disinfection. Warning should be given against petting stray dogs which may harbor infected fleas. The period of incubation is seven days and the period of quarantine should be sufficient to complete a period of seven days from the last time of exposure to infection. Precautions should be instituted to prevent rats from coming ashore, infected vessels being unloaded by lighters at a distance (one-fourth to one-third of a mile), from which it will be impossible for rats to swim to the shore. The precautions against rats should be extended to fleas also. Fumigation of incoming vessels should be complete and provision should be made for the periodic fumigation of vessels trading with infected ports.

When plague has made its appearance in a locality an active campaign against rats should be instituted, these rodents being shut off from houses and food as completely as possible, all garbage being quickly collected and burned, and the rats poisoned or trapped. Arsenic, phosphorus paste, and carbonate of baryta are recommended as poisons. The kind of poison and the mode of displaying it should be frequently changed. Patients with plague should be removed to a rat-proof hospital and suspects should be segregated long enough to cover the incubation period.

Dead rats should be carefully examined and all precautions taken to prevent rats going from an infected city to vessels lying in the harbor. The ropes connecting the vessel with the wharf should be provided with rat funnels and for a distance of two feet somewhere between the wharf and the opening of the funnels the line should be copiously tarred. Rags should be sterilized or destroyed.

**Serious Epidemic of Sore Throat Traced to Milk.**—A peculiar streptococcus was found by Ustvedt in the throat in 146 cases, and by others also in large numbers, similar to the bacteriologic findings in the mastitis of a cow in the dairy from which the families involved purchased their milk. The symptoms included high fever and enlargement of the glands, tonsillitis, with or without an easily detached false membrane, although the aspect of the throat was generally scarlatinal. Gastrointestinal disturbances were rare. All the sick had used unboiled milk from this dairy near Christiania. Only one-third of the patients were children. About 208 sickened between March 3 and 7. In most cases the affection subsided in a week, but in the others complications were numerous, including otitis media, ulceration in the tonsils and vicinity, glossitis with the tongue so swollen that it protruded from the mouth, erysipelas, esophagitis, albuminuria, acute rheumatism or pericarditis, in one case hemorrhagic nephritis, in another thrombosis; one woman had febrile gastroenteritis for several days, two days after drinking four glasses of the milk. In one group of 53 patients the remissions and exacerbations of the fever and the glandular disturbances and local complications kept up the trouble in 47 for one or two weeks, for three weeks in 3, and from four to nine weeks in the others. The 6 fatal cases were in infants or the aged except one woman of 47, apparently convalescing; three weeks after the first symptoms pain suddenly developed

in the muscles and the temperature rose constantly with death the fifth day from edema of the lungs. The local medical society had a symposium on the "milk epidemic" May 13, reported in the *Norsk Magazin for Lægevidenskaben*, June. The epidemic was remarkable for its virulence in man while in the cow it caused merely a mild local affection. The total number of cases in regard to which the authorities were notified was 548, the notices being sent in by 29 physicians.

**Health-Education League Pamphlets.**—We have received a package of the booklets of the Health Education series, published by the Health Education League of Boston. These little pamphlets present the first necessary element for all efficient food, whether of mind or body; they are attractive. While all attractive things may not be desirable, and many even may be prejudicial, there can be no question that attractiveness of form vastly increases the probability of further investigation into the underlying nature. Here, too, the popular reader is not likely to be disappointed; for the books present, for the most part, good mental pabulum well prepared. The scope of the brochures may be best gathered from an enumeration of the titles of those already published: (1) Hints for Health in Hot Weather; (2) Milk; (3) "Colds" and Their Prevention; (4) Meat and Drink; (5) Healthful Homes; (6) The Successful Woman; (7) The Boy and the Cigarette; (8) The Care of Little Children; (9) The Plague of Mosquitoes and Flies; (10) Tonics and Stimulants; (11) Emergencies; (12) Microbes, Good and Bad; (13) The Care of Babies; (14) The Efficient Worker; (15) Sexual Hygiene. The prices vary from 2 to 8 cents each copy, or from \$1.50 to \$5 a hundred. The last one issued, that on Sexual Hygiene, is particularly timely. It carefully avoids saying too much, but what it does say is enough to suggest in what direction those who may require further information may best obtain it. The object of the league is to spread the knowledge of the laws of health among the people through the circulation of sound popular health literature.

**Insurance Against Industrial Accidents.**—Insurance of workmen against industrial accidents was introduced by law into Holland five years ago. At first the employers and physicians found it hard to reconcile the interests of all concerned, but as time has passed all has been amicably arranged, and the annual reports of the officials in charge of the system now comment in terms of high appreciation on the practical cooperation of the physicians. The first year or so they complained of excessive solicitude on the part of physicians, who were said to exaggerate the effects of the accidents and keep the injured workmen too long on the sick list. The profession took up the matter and discovered that two medical men had given rise to these just complaints, and the names of these two were stricken from the list of physicians eligible for the work. An Amsterdam letter in the *Wiener klinische Rundschau*, May 17, states that physicians have still to learn much in the matter of industrial accidents and their treatment. Functional results accepted as satisfactory a few years ago are no longer so regarded, especially in the matter of fractures. Impaired earning capacity from defective functioning of the limb entails extra expense and the insurance company is correspondingly dissatisfied when functional capacity is not restored. A recent meeting of the Netherlands Surgical Association was devoted to this question, the consensus of opinion being that the aim in treatment is to restore functional capacity, regardless of the original anatomic form of the limb. The best results in the majority of cases are secured by carefully individualized non-operative methods. Operative measures are necessary only in rare instances.

**Sanitary Work in Louisiana.**—The biennial report of the Special Medical Inspector of the Louisiana State Board of Health (1908) contains much interesting material. The work of the department is divided into the following five sections: (A) Educational; hygienic institute work. (B) Convention work. (C) Office work. (D) Legislative work. (E) Field work. The educational work will be commented on editorially in *THE JOURNAL* in the very near future. Of the rest, the field work is the most important, and covers an investigation



of yellow fever reports; of variola and typhoid outbreaks; vital statistics; the spread of tuberculosis, particularly among negroes; the extinguishing of an outbreak of yellow fever in New Iberia in 1906, etc. Dengue, bubonic plague, diphtheria, influenza, epidemic cerebrospinal meningitis, dysentery, scarlet fever, and other diseases receive attention. The purity of the milk supply and the danger of house flies as disseminators of disease are dwelt on. Undoubtedly, however, the most noteworthy feature of the report is the Louisiana System of Hygienic Education.

**Meat in the Diet and Intestinal Affections.**—P. Morsaline of Buenos Aires contributes an extensive article on mucomembranous enterocolitis to the *Semana Medica*, April 23. He protests against the assumption that meat is an important factor in the development of intestinal affections. Argentina is a cattle country and there is an unusual consumption of meat, and yet intestinal disorders are rare. In all his experience he has encountered only a very few cases of appendicitis or enteritis and none in the rural districts, either in his own or his colleagues' experience, and yet the cowboys live almost exclusively on meat. He admits that arthritic individuals are predisposed to such affections as they are subject to chronic autointoxication, and excess of nitrogenous food might be injurious, but individuals of this class mostly inhabit the cities. He adds that the Russian Jew immigrants are pre-eminently neuro-arthritic, and 60 per cent. of the women have colitis. Under other conditions all his observation in a meat-eating country discredits the idea that meat plays a preponderant part in the genesis of intestinal infections.

**Neurasthenia from Insufficiency of the Salivary Glands.**—Baccarani's experience has convinced him that the salivary glands have an important part in the elimination of toxic products generated in the body, and that their internal secretion is indispensable for the normal functioning of the economy. Absence of this internal secretion is liable to induce a syndrome in which neurasthenia predominates, as in a case he describes in the *Riforma Medica* for July 6. In extreme cases the metabolism may become gravely affected. Zagari has reported a fatal case of this kind, already mentioned in these columns.

---

## Book Notices

---

AN ABRIDGEMENT OF PRACTICAL MEDICINE AND ALLIED SCIENCES. By J. Candor McLaughlin, M.D. Flexible Leather. Pp. 524. Published by the Author, Kansas City, Mo.

That it is a marvel of condensation to reduce the medical science of the present day with all its allied sciences to the compass of a vest-pocket manual goes without saying. That some important subjects should get squeezed out in the process of compression was to be expected. It is, indeed, surprising that we find so few positive misstatements. Perhaps there is a use for such books, but it is doubtful if they do not do more harm than good. The use of such a manual leads to reliance on its statements and this eventually to the conclusion that the information contained in its pages is sufficient, which would indicate a lower estimate of the scientific standing of practical medicine than any possessed by the laity of to-day. That the perusal of such a book can be of service in preparing for state board examinations as is confidently asserted by the author is a sad commentary on the unpractical character of such examinations.

NEUROGRAPHS. A Series of Neurologic Studies, Cases, and Notes. Edited by William Browning, Ph.B., M.D. Vol. 1, No. 2. Paper. Pp. 164. Brooklyn: A. T. Huntington, 1908.

That the opportunity of the county practitioner to contribute to the progress of medical science should not be neglected is shown by the history of the development of our knowledge of Huntington's chorea. Several previous observers had noticed these cases, but the attention of the scientific world was not attracted until Dr. Huntington, a recent graduate, and then a country practitioner, reported the results of his father's and his own observations. His description was

so accurate and comprehensive that it has given his name to the disease. Neurographs devotes its second number to sketches of Huntington, and also Waters, Gorman, and Lyon who published observations before him and to a consideration of the present state of our knowledge of the disease as shown in contributions by various authors. It has been possible by the historical method to trace the cases described by the early writers and to determine that they came from well defined local groups, while it has been shown that in some cases the existence of the disease can be traced to the earliest period of the colonization of New England. The disease, however, is known to exist in all the European countries and, further, is not limited to a single race, as it has been observed in the negro.

ON THE WITNESS STAND. By Hugo Münsterberg, Professor of Psychology, Harvard University. Cloth. Pp. 269. Price, \$1.50. New York: The McClure Co., 1908.

Witnesses in courts of law are examined and investigated as to veracity and character, but little as to competency in observation. Münsterberg illustrates the error in this oversight by the results of experiments: Those who saw a pre-arranged quarrel write out accounts of it, and differ radically on essential points; students are asked to state the length of time between two sounds and variously estimate it from half a second to sixty seconds; the actual time being ten seconds, etc. The actions of the mind are being studied more and psychology is destined to occupy a more important position. Münsterberg takes up hypnotism, suggestion, untrue confessions, and the association test for crime, recently described in THE JOURNAL by Dr. Scripture. The book is not an elaborate treatise—only some fragmentary popular sketches which call attention to the importance from legal and humanitarian points of view of understanding how the mind operates under various conditions.

HYDROTHERAPY. By Simon Baruch, M.D., Professor of Hydrotherapy in Columbia University (College of Physicians and Surgeons), New York. Third Edition, Revised and Enlarged. Pp. 544, with illustrations. Cloth. Price, \$4.00. New York: William Wood & Co., 1908.

The necessity for a special work on hydrotherapy still appears to be urgent in the view of the author of this treatise. This is one of the best books on the subject of hydrotherapy and this third edition brings up to date the quarter century's labor of the author in this field. In this edition the chapters on phthisis and insanity have been enlarged by the addition of clinical and other material. Clinical histories have been retained as furnishing not only evidence of the patient's progress under hydropathic measures, but as setting forth, clearly and forcibly, the indications for a change in methods to meet changed conditions.

THE DEVELOPMENT OF OPHTHALMOLOGY IN AMERICA, 1800 TO 1870. By Alvin A. Hubbell, M.D., Ph.D., Professor of Clinical Ophthalmology in the University of Buffalo, New York. Cloth. Pp. 197, with illustrations. Price, \$1.75. Chicago: W. T. Keener & Co., 1908.

This review of the early period of American ophthalmology is an amplification of an address delivered by the author before the Section on Ophthalmology of the American Medical Association at Atlantic City, June 4, 1907. The factors which determined the development are described and brief biographic accounts of the principal actors in the drama are given. Some account is also given of the institutions that have served to further the development of ophthalmology as a separate department of medicine. The book is illustrated by the portraits of a large number of early American surgeons and forms a most worthy contribution to the history of medicine in this country.

STATE BOARD QUESTIONS AND ANSWERS. By R. Max Goepf, M.D., Professor of Clinical Medicine at the Philadelphia Polyclinic. Cloth. Pp. 684. Price, \$4.00. Philadelphia: W. B. Saunders Co., 1908.

The author has taken the questions of state board examinations, many of which he finds have been repeatedly asked and has given brief answers. An effort has been made to maintain a continuity of subject matter, and a carefully arranged index makes it possible to readily find any subject. In brief, the book is a quiz-compend covering the subjects usually contained in a state board examination. Although at their best such



compends are unsatisfactory, some will find this book useful. It will be of service in guiding the student to a knowledge of what points are apt to be included in an examination and hence it will direct him in his preparation.

GENERAL SURGERY. Vol. II, of the Practical Medicine Series. Edited by John B. Murphy, A.M., M.D., LL.D., Professor of Surgery in Rush Medical College. Pp. 614, with illustrations. Cloth. Price, \$2.00. Series 1908. Chicago: The Year Book Publishers.

The author's plan is to select representative articles on the various subjects since the literature is so abundant that it is impracticable to review or to abstract it all and keep within the limits of this handbook. The volume is well arranged and presents a full account of the advances of the year in the field of surgery. Much attention is given to the details of Bier's methods of inducing hyperemia, which are daily coming into greater prominence. The book is very fully illustrated, two full-page plates being in colors. The book forms Volume II of the annual series of year-books issued by the Year Book Publishers.

THE SPECTROSCOPE. By T. Thorne Baker, F.C.S., F.R.P.S. Cloth. Pp. 130, with illustrations. Price, \$1.75. New York: William Wood & Co., 1907.

This is chiefly a technical work dealing with the construction of the spectroscope and its use by the analytic chemist, especially in inorganic chemistry. It is designed to serve as an intermediate text-book between the ordinary works treating of physics and the more elaborate works on the spectroscope.

ELEMENTS OF HUMAN PHYSIOLOGY. By Ernest H. Starling, M.D. Lond., etc., Jodrell Professor of Physiology, University College, London. Eighth Edition. Cloth. Pp. 716. Price, \$3.75 net. Chicago: W. T. Keener & Co., 1907.

This edition differs little from its predecessors. It presents briefly the essentials of physiology, and the general arrangement of the text is good. Nine pages are devoted to a general description of the ductless glands of which the author says:

"Under this title have been grouped a number of organs the sole resemblance between which lies in the fact that we know little about them."

PRACTICE OF MEDICINE FOR NURSES. By George Howard Hoxie, A.M., M.D., Professor of Internal Medicine in the University of Kansas. With a Chapter on the Technic of Nursing, by Pearl L. Laptad, Principal of the Training School for Nurses of the University of Kansas. Cloth. Pp. 284. Price, \$1.50. Philadelphia: W. B. Saunders Co., 1908.

The title of this book is misleading as the author states in the preface that he believes that the nurse should neither diagnose a case nor prescribe remedies, and that therefore little space has been given to differential diagnosis or to the dosage of drugs. On the whole, the book differs little from others on the same subject.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### DECAPSULATION TREATMENT OF ECLAMPSIA.

LOMA LINDA, CAL., June 18, 1908.

To the Editor:—Where can I find an article on the decapsulation treatment of eclampsia which describes a case in which the kidney parenchyma puffed out on incision of the capsule? Please refer me also to other articles on congestion and edema of the kidney in eclampsia and uremia as revealed by actual observation at operation.

GEORGE K. ABBOTT.

ANSWER.—The article referred to probably is one by Dr. W. T. Wiemer, "Decapsulation of Kidneys in Treatment of Eclampsia," published in *Monatschr. f. Geburtsh. u. Gynäk.*, March, 1908, and abstracted in *THE JOURNAL*, April 25, 1908, p. 1387. This appears to be the only article which describes a congestion of kidneys in eclampsia such that the kidney tissue bulged out on incision. Sippel noticed in 1902 that the kidneys were in a condition of increased tension in the body of a woman who had succumbed to eclampsia with persisting anuria two days after delivery. Franck, however, states that in none of the ten cases in which the operation has been performed were there any reports of an increased tension or bulging of the kidney after splitting the capsule.

The following recent articles on this subject may be consulted:

Sippel, A.: Decapsulation of Kidney in Treatment of Severe Eclampsia. *Berl. klin. Wchnschr.*, xliii, No. 49, abstracted in *THE JOURNAL A. M. A.*, Jan. 26, 1907, p. 373.

De Bovis, R.: Unilateral Decapsulation of Kidney in Treatment of Eclampsia. *Semaine méd.*, xxvii, No. 7; abstracted in *THE JOURNAL A. M. A.*, April 13, 1907, p. 1304.

Franck, O.: Decapsulation of Kidney in Eclampsia. *München. med. Wchnschr.*, Dec. 10, 1907.

Sippel, A.: Decapsulation or Splitting of Kidney in Eclampsia. *Zentralbl. f. Gynäk.*, Dec. 21, 1907.

### ESTIMATION OF PROTEIDS IN MILK.

PITTSBURG, PA., June 24, 1908.

To the Editor:—Please give a method of estimating proteids in milk sufficiently accurate for clinical purposes. Most methods given are so complicated that a well-equipped laboratory is necessary to carry them out.

F. S. KELLOGG.

ANSWER.—All methods for quantitative estimation of proteids in milk require a certain amount of laboratory equipment and experience—and none is easy. If accurate scales and measuring instruments are at hand the following simple, though somewhat tedious, method gives results usually sufficiently accurate for clinical purposes, although it must be admitted that it is liable to some sources of error.

Evaporate to dryness on the water bath 5 c.c. of milk, after weighing in a weighed platinum dish. This operation will take about three hours. The total solids are obtained by weighing this residue. The fat is now removed by repeatedly extracting with gasoline or ether, allowing the solvent to stand for some time over the residue without stirring and then pouring off. The residue of proteids and milk sugar is now weighed and the sugar dissolved out by boiling 50 per cent. alcohol. This leaves a residue consisting of the proteids and a part of the salts. This residue is weighed and then incinerated and the weight of the ash subtracted from the combined weight. The difference gives the weight of the proteids.

The following simple method is recommended by Austin (*Manual of Clinical Chemistry*): Place 5 c.c. of milk in a graduate and dilute with water to 25 c.c.; mix well and fill a graduated sedimentation tube to 5 c.c. with this dilute milk and to 15 c.c. with Esbach's solution; the whole is then to be centrifuged for 3 minutes. The amount of precipitate reckoned as cubic centimeters, multiplied by 5 for dilution, and divided by 2 for fat, equals the percentage of the whole protein content. For instance, if there is 1.2 c.c., we have  $1.2 \times 5 \div 2 = 3$  per cent. No claim is made to great accuracy for this process, for the percentage varies with the amount of fat; if the fat is normal, however, the results are said to correspond very closely with the calculated amount from the nitrogen found according to the Kjeldahl process. Esbach's reagent consists of 10 gm. of picric acid and 20 gm. of citric acid in a liter of water.

### BACTERIOLOGY OF MEASLES.

PITTSBURG, PA., June 19, 1908.

To the Editor:—What work has been done in the bacteriology of measles?

H. P. KOHLBERGER.

ANSWER.—After much search, the bacteriology of measles, so far as the essential cause is concerned, is still uncertain. Several recent investigators have described hemophilic bacilli in the catarrhal secretions from the involved mucous membranes, and Giarrè and Carlini have found similar bacilli in the blood. In connection with their article (*Archiv. für Kinderheilkunde*, 1907, xlii, 262), references will be found to earlier work. The bacillus described does not stain by Gram's method, and stains unevenly with carbol-fuchsin. It corresponds closely to the bacilli described in connection with influenza and whooping-cough. That this is not the real cause of measles has been rendered probable by the investigations of Hektoen (*Experimental Measles: Jour. Infect. Diseases*, vol. ii, 1905, p. 238). Pneumococci and streptococci are found as etiologic factors in most of the complications of measles.

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending June 27, 1908:

LaGarde, L. A., lieut.-col., M. C., assigned to duty as attending surgeon, Denver, in addition to duties as chief surgeon Department of Colorado.

Lewis, W. F., major, M. C., left Fort Sill, Okla., with troops for Leon Springs, Texas.

Grubbs, R. B., capt., M. C., left Fort McIntosh, Texas, for Leon Springs, Texas.

Harris, H. S. T., major, M. C., leave of absence further extended one month.



Reynolds, C. R., capt., M. C., ordered to duty as commanding officer of Co. C., H. C., Army General Hospital, Washington Barracks, D. C.

Grissinger, J. W., capt., M. C., leave of absence extended to July 24.

Morris, S. J., capt., M. C., granted leave of absence for two months, about August 15.

Wickline, W. A., capt., M. C., left Army General Hospital, San Francisco, Cal., with one-half of Company B., H. C., for duty at Leon Springs, Texas.

Heysinger, J. D., capt., M. C., ordered from Key West Barracks, Fla., to Chickamauga Park, Ga., for duty.

Campbell, G. F., Guittard, A. M., Koyle, F. T., and Langenderfer, F. V., contract surgeon, relieved from duty in Philippines Division and ordered to San Francisco, Cal., by first available transport.

Hull, A. R., contract surgeon, granted leave of absence for one month.

Whinnery, J. C., dental surgeon, left Fort Columbia, Wash., for duty at Vancouver Barracks, Wash.

Waddell, R. W., dental surgeon, relieved from duty in the Philippines Division, and ordered to Fort Slocum, N. Y., for duty.

Hammond, W. G., dental surgeon, left Fort Apache, Ariz., and arrived at Whipple Barracks, Ariz., for duty.

Voorhies, H. G., dental surgeon, ordered to Fort Crook, Nebr., for temporary duty.

### Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending June 27, 1908:

Blackwell, E. M., P. A. surgeon, ordered to the Naval Academy. Stalnaker, P. R., asst.-surgeon, ordered home and granted leave for two months.

McClurg, W. A., medical director, to be placed on the retired list, Sept. 1, 1908, on his own application, on completion of thirty years' service, in accordance with a provision of the naval appropriation act of May 13, 1908.

Taylor, J. L., asst.-surgeon, ordered to the Naval Hospital, New Fort Lyon, Colo.

Bogan, F. M., P. A. surgeon, detached from the Naval Recruiting Station, Minneapolis, Minn., and ordered to the Wisconsin.

Lando, M. E., asst.-surgeon, ordered to the Naval Recruiting Station, Minneapolis.

Trible, G. B., asst.-surgeon, detached from the Naval Hospital, Mare Island, Cal., and ordered to the *Relief*.

Clark, G. F., asst.-surgeon, ordered to the *Lancaster*.

Allen, D. G., asst.-surgeon, ordered to the Naval Medical School, Washington, D. C.

Smith, C. W., asst.-surgeon, ordered to the Naval Hospital, Portsmouth, N. H., and to additional duty at the Naval Prison at that yard.

Kerr, W. M., asst.-surgeon, ordered to the Naval Hospital, New York, N. Y.

Wheler, W. M., surgeon, detached from the Naval Station, Cavite, P. I., and ordered home.

Brown, H. L., P. A. surgeon, detached from the Naval Station, Cavite, P. I., and ordered to the *Cleveland*.

Randall, J. A., P. A. surgeon, detached from the *Denver* and ordered to the *Rainbow*.

Rodman, S. S., P. A. surgeon, detached from the *Rainbow* and ordered home.

### Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended June 24, 1908:

Williams, L. L., surgeon, granted leave of absence for 1 month, from July 15, 1908.

Gardner, C. H., P. A. surgeon, relieved from duty at San Francisco, and directed to proceed to Wilmington, N. C., assuming command of the service at that port.

Lavinder, C. H., P. A. surgeon, relieved from duty at Wilmington, N. C., and directed to proceed to Stapleton, N. Y., reporting to the medical officer in command, for duty and assignment to quarters.

White, M. J., P. A. surgeon, granted extension of leave of absence for 15 days, from July 1, 1908.

Berry, T. D., P. A. surgeon, placed on "waiting orders," from June 1, 1908.

Manning, H. M., asst.-surgeon, directed to report to the chairman of a board of examiners at the Bureau, Washington, D. C., July 6, 1908, for the purpose of determining his fitness for promotion to the grade of P. A. surgeon.

Manning, H. M., asst.-surgeon, granted leave of absence for 7 days.

Clark, E. S., acting asst.-surgeon, granted leave of absence for 10 days, from June 11, 1908.

Rush, J. O., acting asst.-surgeon, granted leave of absence for 14 days, from July 1, 1908.

Stoddard, C. S., acting asst.-surgeon, granted leave of absence for 30 days, from June 27, 1908.

### BOARD CONVENED.

A board of medical officers was convened to meet at Seattle, Wash., for the purpose of examining alien immigrants. Detail for the board: P. A. Surgeon M. W. Glover, chairman; Asst.-Surgeon C. W. Chapin; Acting Asst.-Surgeon F. R. Underwood, recorder.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the two weeks ended June 26, 1908:

#### SMALLPOX—UNITED STATES.

Alabama: Huntsville and vicinity, June 18, 2 cases; Mobile, May 23-June 6, 2 cases.

California: Los Angeles, May 23-June 6, 2 cases; San Francisco, May 23-June 6, 15 cases.

Illinois: Chicago, May 30-June 6, 1 case; Springfield, May 23-June 11, 6 cases.

Indiana: Fort Wayne, May 23-June 6, 11 cases; Jeffersonville, May 1-31, 30 cases; Indianapolis, May 18-June 7, 17 cases; Lafayette, June 8-15, 3 cases; South Bend, June 6-13, 4 cases; Terre Haute, May 30-June 13, 2 cases.

Iowa: Atlantic, vicinity, May 16, 12 cases; Emerson, June 1, 3 cases; Mason City, May 2-June 1, 19 cases; Ottumwa, May 30-June 6, 1 case.

Kansas: Kansas City, May 30-June 6, 5 cases; Topeka, May 31-June 6, 1 case.

Kentucky: Catlettsburg, May 24, 1 case; Covington, May 30-June 13, 1 case, 1 death.

Louisiana: New Orleans, Jan. 6-13, 3 cases.

Michigan: Detroit, June 6-13, 1 case; Grand Rapids, May 30-June 6, 1 case; Kalamazoo, 2 cases; Port Huron, May 23-30, 4 cases, 1 death; Saginaw, May 30-June 13, 5 cases.

Minnesota: Winona, May 30-June 6, 4 cases.

Missouri: Kansas City, May 23-June 13, 11 cases; St. Joseph, May 23-June 6, 13 cases; St. Louis, May 30-June 6, 1 case.

Nebraska: Friend, June 18, 1 case.

New York: Binghamton, June 1-8, 1 case; Niagara Falls, May 30-June 6, 1 case.

Ohio: Cincinnati, May 22-June 18, 9 cases; Dayton, May 30-June 13, 3 cases; Norwich, June 1, 4 cases; Toledo, May 16-June 13, 10 cases.

South Carolina: May 22-29, 2 cases.

Tennessee: Knoxville, May 30-June 6, 2 cases; Mingo Mountain, June 2, 25 cases; South Pittsburg, June 3-10, 1 case.

Washington: Spokane, May 23-June 6, 18 cases; Tacoma, May 23-30, 2 cases.

Wisconsin: La Crosse, May 30-June 13, 4 cases; Milwaukee, May 23-30, 6 cases; Racine, 2 cases.

#### SMALLPOX—INSULAR.

Philippine Islands: Manila, April 26-May 2, 8 cases, 3 deaths.

Porto Rico: Mayaguez, May 31-June 6, 2 cases.

#### SMALLPOX—FOREIGN.

Arabia: Aden, April 27-May 25, 14 deaths.

Belgium: Ghent, May 9-16, 1 death.

Brazil: Pernambuco, April 1-30, 65 deaths; Rio de Janeiro, May 3-10, 141 cases, 50 deaths.

Canada: Halifax, May 16-June 13, 17 cases; Hamilton, May 1-31, 13 cases; Winnipeg, May 31-June 6, 1 case.

Cape Colony: East London, April 16-25, 1 case, 1 death.

China: Foochow, April 25-May 9, present; Hongkong, April 25-May 9, 30 cases, 22 deaths; Nanking, April 25-May 1, present.

Ecuador: Guayaquil, May 9-30, 8 deaths.

Egypt: Cairo, May 13-27, 17 cases, 4 deaths.

France: Paris, May 16-23, 4 cases.

Germany, general, May 9-16, 32 cases.

Great Britain: London, May 23-30, 1 case; Southampton, May 22-30, 2 cases.

India: Bombay, May 5-19, 41 cases, 54 deaths; Calcutta, April 25-May 9, 16 cases, 15 deaths.

Italy, general, May 17-31, 57 cases; Naples, May 23-30, 2 cases; Palermo, May 9-23, 4 cases.

Japan: Osaka, May 2-23, 52 cases, 29 deaths.

Java: Batavia, April 11-May 2, 10 cases.

Manchuria: Dalny, May 9-16, 1 case.

Mexico: Aguascalientes, May 31-June 7, 1 death; Mexico City, April 16-May 9, 35 deaths.

Peru: Lima, May 2-27, 2 cases.

Portugal: Lisbon, May 9-30, 10 cases.

Russia: Batoum, March 1-31, 17 cases; Moscow, May 9-23, 55 cases, 23 deaths; Odessa, May 16-23, 3 cases; Riga, May 9-30, 14 cases; St. Petersburg, May 9-16, 52 cases, 10 deaths; Warsaw, April 18-25, 5 deaths.

Siberia: Vladivostok, April 23-May 5, 1 case.

Spain: Barcelona, May 1-31, 1 death; Valencia, May 16-30, 32 cases, 6 deaths.

Turkey: Constantinople, May 17-31, 11 deaths.

Turkey in Asia: Bagdad, April 18-May 16, 83 cases, 10 deaths; Smyrna, April 14-May 5, 7 deaths.

#### YELLOW FEVER.

Brazil: Manaus, May 9-23, 4 cases, 4 deaths; Para, May 16-30, 5 cases, 5 deaths.

Cuba: Santiago, June 11, 1 case.

Ecuador: Guayaquil, May 9-16, 2 deaths.

#### CHOLERA.

Ceylon: Colombo, May 2-21, 1 case, 1 death.

Cochin China: April 27-May 4, 54 cases, 45 deaths; Saigon, April 1-25, 47 cases, 28 deaths; May 2-9, 30 cases, 25 deaths.

India: Bombay, May 5-19, 3 deaths; Calcutta, April 25-May 9, 394 deaths; Rangoon, April 25-May 9, 11 deaths.

#### PLAGUE.

Chile: Antofagasta, May 17, 24 cases, 2 deaths; Arica, May 21, present; Valparaiso, March 21-May 14, 5 cases, 3 deaths.

China: Amoy, April 25, epidemic; Hongkong, April 25-May 9, 88 cases, 77 deaths.

Ecuador: Guayaquil, May 9-30, 27 deaths.

Egypt, General, May 13-28, 102 cases, 61 deaths; Alexandria, May 18, 1 case, 2 deaths.

India: Bombay, May 5-19, 330 deaths; Calcutta, April 25-May 9, 157 deaths; Rangoon, April 25-May 9, 61 deaths.

Japan: Nara, to May 14, 7 cases; Osaka, May 17-27, 2 cases, 2 deaths.

Peru, general, May 2-23, 60 cases, 30 deaths; Callao, May 16-23, 3 cases.

Straits Settlements: Singapore, April 25, May 9, 2 deaths.

Turkey in Asia: Jiddah, Feb. 14-May 28, 71 cases, 68 deaths; Yembo, 137 cases, 126 deaths.

Venezuela: Caracas, June 4-7, 6 cases, 2 deaths; La Guaira, May 30-June 9, 10 cases, 6 deaths.



## Marriages

RALPH MILLS, M.D., Decatur, Ill., to Miss Ethel Bumgardner of McNabb, Ill., June 1.

OLANDER E. WALD, M.D., Chicago, to Miss May Augustine of West Point, Ind., June 17.

ALBERT MICHAEL WICKSTROM, M.D., to EMMA RÜHI-MAKI, M.D., both of Chicago, June 10.

ARTHUR M. CHEETHAM, M.D., to Miss Agnes May Robinson, both of Cleveland, Ohio, June 18.

HUGH T. MORRISON, M.D., to Miss Mary Logan Coleman, both of Springfield, Ill., June 23.

F. W. McCULLOUGH, M.D., Pittsburg, to Miss Mary A. Bortz of Greensburg, Pa., June 6.

WILLIAM T. MAYNARD, M.D., to Miss Josephine Frances Mertz, both of Milwaukee, June 9.

ROBERT M. DAWSON, M.D., Wittman, Md., to Miss Agnes B. Battee at Royal Oak, Md., June 10.

WALTER W. GILL, M.D., Westfield, N. J., to Miss Mary C. Dunham of Alloway, N. J., June 16.

C. B. LESHIER, M.D., Northumberland, Pa., to S. MABLE GRIER, M.D., of Salem, N. J., June 18.

JOEL ISHAM COLLIER, M.D., Galveston, Texas, to Miss Susie Saunders of Navasota, Texas, June 9.

WALTER W. RHYAN, M.D., Goldfield, Nev., to Miss Verda A. Elliott of South Omaha, Neb., recently.

RICHARD DUTTON, M.D., Wakefield, Mass., to Miss Ethel Florence King of Brockton, Mass., June 9.

MURRAY D. COWIE, M.D., Ann Arbor, Mich., to ANNA MARION COOK, M.D., of Evansville, Ind., June 13.

OTTO H. G. ROSENKRANZ, M.D., Marietta, Ohio, to Miss Inez Adelaide Haymes of Philadelphia, June 17.

R. GRANVILLE CAMPBELL, M.D., Lexington, Va., to Miss Ellin North Moale of Baltimore, June 20.

C. M. KINGSTON, M.D., Grand Forks, B. C., to Miss Martha W. Vankleek, at Armstrong, B. C., June 3.

HENRY HONEYMAN HAZEN, M.D., Washington, D. C., to Miss Laura May Ross of Malden, Mass., June 1.

JULIAN R. BECKWITH, M.D., to Miss Louise Cameron, both of Petersburg, Va., at Anniston, Ala., June 11.

CALVIN F. McDOWELL, M.D., New Castle, Pa., to Miss Elizabeth Up De Graph of Beaver Falls, Pa., June 18.

JOSEPH LAWN THOMPSON, M.D., Washington, D. C., to Miss Anna Letitia Waters, at Rockville, Md., June 10.

J. E. McMANIS, M.D., Havensville, Kan., to Miss Jane Vare Dunlap of Leavenworth, at Emporia, Kan., June 17.

THOMAS GARRETT PRETLOW, M.D., Richmond, Va., to Miss Frances Lewellyn Ribble of Wytheville, Va., June 24.

ROBERT FRANKLIN COOPER, M.D., Centreville, Ala., to Miss Emily Lamar Gibson, at Rockbridge Baths, Va., June 16.

## Deaths

George Francis Heath, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1881; a member of the American Medical Association; resident physician at the University Hospital, Ann Arbor, from 1881 to 1884; alderman of Warrensburg, Mo., for two terms; four times mayor of Monroe, Mich.; for many years publisher of the *Numismatist*; one of the organizers, an early president and for many years treasurer of the American Numismatic Association; first president, and since 1892, secretary and treasurer of the Monroe County Medical Society; died at his home, June 16, from cerebral hemorrhage, after an illness of only a few hours, aged 57.

George Jenkin Preston, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1883; a member of the Medical and Chirurgical Faculty of Maryland; professor of physiology and nervous diseases in the College of Physicians and Surgeons, Baltimore, since 1890; secretary of the lunacy commission of Maryland since 1898; author of many changes in the lunacy laws of the state; a widely known alienist; neurologist to several hospitals, and author of a standard work on hysteria; died at his home in Baltimore, June 17, from disease of the liver, after a long illness, aged 49.

James D. Roberts, M.D. Bellevue Hospital Medical College, New York City, 1875; a member of the Medical Society of the State of North Carolina; of Mount Olive, N. C.; superintendent of the Eastern State Hospital for the Insane, Goldsboro, from 1881 to 1887; and until recently literary editor of the *North Carolina Medical Journal*; died June 14, at Memorial Hospital, Richmond, Va., from disease of the stomach, after an illness of two weeks, aged 56.

Albert Hartsuff, M.D. Castleton (Vt.) Medical College, 1861; Brigadier General, U. S. Army, retired; who entered the army as an assistant surgeon in 1861; was made captain and brevet lieutenant colonel in 1866; ten years later was promoted to major; in 1892 to lieutenant colonel; served as chief surgeon of Camp George H. Thomas, Chickamauga, Ga., during the early part of the Spanish-American War; was made colonel in 1900; and retired a year later; died suddenly from heart disease, at his home in Detroit, June 22, aged 71.

Alexander H. Young, M.D. Jefferson Medical College, Philadelphia, 1855; a member of the American Medical Association and of the Tri-State Medical Society of Tennessee, Mississippi and Arkansas; for fifty-two years a practitioner of Ripley, Tenn.; local surgeon for the Illinois Central Railroad; died in the Presbyterian Hospital, Memphis, June 14, two days after a surgical operation, aged 77.

Oliver L. Daniel, M.D. Hospital College of Medicine, Medical Department, Central University of Kentucky, Louisville, 1896; a member of the American Medical Association; surgeon to St. Andrews' Hospital, Murphysboro, Ill.; local surgeon to the Big Muddy Coal and Iron Company; and one of the most prominent practitioners of southern Illinois; died at his home, June 21, aged 43.

Alexander Marion Elmore, M.D. Missouri Medical College, St. Louis, 1861; a member of the State Medical Association of Texas; surgeon in the Confederate service throughout the Civil War; professor of proctology in Baylor College of Medicine, Dallas, Texas; died at his home in that city, June 20, from paralysis, after an invalidism of two years, aged 70.

Clifford L. De Vinny, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1876; member of the San Joaquin County (Cal.) Medical Society; a practitioner of Stockton until a few months ago, and later a resident of Santa Cruz; died from nephritis, June 16, three months after an operation for decapsulation of the kidney, aged 59.

James F. Christal, M.D. Cooper Medical College, San Francisco, 1891; a member of the Medical Society of the State of California; at one time resident physician at the State Hospital for the Insane, Agnews; a resident of Santa Cruz; died in St. Luke's Hospital, San Francisco, June 11, after an operation for cancer of the intestines, aged 54.

Royal F. Clark, M.D. Dartmouth Medical School, Hanover, N. H., 1860; a member of the Medical Society of the State of California; surgeon in the army during the Civil War; for many years a practitioner of Los Angeles; died at his home in that city, June 15, from cerebral hemorrhage, after an invalidism of several years, aged 69.

John Randolph Webster, M.D. Rush Medical College, Chicago, 1858; Jefferson Medical College, Philadelphia, 1864; a member of the American and Military Tract medical associations, who recently celebrated his fiftieth anniversary as a practicing physician of Monmouth, Ill.; died at his home in that city, June 19, aged 72.

Joseph Henry Seaton, M.D. Kentucky School of Medicine, Louisville, 1857; surgeon of the Twenty-First Missouri Volunteer Infantry during the Civil War; for many years a practitioner of San Luis Obispo County, Cal.; died at his home in San Luis Obispo, June 13, after an illness of one week, aged 71.

Joseph M. Finnell, M.D. New York University Medical College, New York City, 1887; deputy coroner of Ramsey County, Minn.; formerly assistant health commissioner of New York City; was stricken with cerebral hemorrhage, May 30, and died at St. Joseph's Hospital, St. Paul, Minn., June 13, aged 47.

Charles P. Jones, M.D. Jefferson Medical College, Philadelphia, 1849; for many years chief judge of the Orphan's Court and health officer of Worcester County, Md.; died at his home in Snow Hill, June 16, from cerebral hemorrhage, after an illness of five days, aged 83.

Henry F. Carriel, M.D. College of Physicians and Surgeons in the City of New York, 1857; superintendent of the Illinois Central Hospital for the Insane, Jacksonville, from 1870 to 1893, and thereafter a resident of Chicago; died in Jacksonville, June 23, aged 77.

Cornelius Honaker, M.D. Medical College of Ohio, Medical Department University of Cincinnati, 1884; for more than



forty years a practitioner of Scioto County, Ohio; died at his home in Pond Run, June 18, from dropsy, after an invalidism of four years, aged 76.

**Charles Oscar Murphy, M.D.** Medical School of Harvard University, Boston, 1894; a member of the American Medical Association; for five years a practitioner of New York City; died in Corey Hospital, Boston, June 13, after a lingering illness, aged 38.

**Thomas W. Small, M.D.** Jefferson Medical College, Philadelphia, 1900; surgeon of the American line steamer *St. Louis*; died in his cabin June 19, from the effects of a gunshot wound of the brain, said to have been self-inflicted, with suicidal intent.

**Michael J. Neville, M.D.** Faculty of Medicine Queen's University and Royal College of Physicians and Surgeons, Kingston, Ont., 1893; of Brooklyn, N. Y.; surgeon to St. Catherine's Hospital in that city; died in that institution, June 22, aged 48.

**James W. Purdy, M.D.** New York Medical College, New York City, 1854; surgeon of the Thirty-Seventh New York Volunteer Infantry, during the Civil War; died at his home at Brooklyn, June 20, from cerebral hemorrhage, aged 76.

**John F. Carleton, M.D.** University of Buffalo (N. Y.) Medical Department, 1886; a member of the Medical Society of the State of New York; died suddenly at his home in Waterloo, June 18, from heart disease, aged 64.

**William Adolphus Jansen, M.D.** Germany; of Miamisburg, Ohio; for many years a teacher of physical culture; died in St. Elizabeth's Hospital, Dayton, June 10, from senile debility, after an illness of four weeks, aged 84.

**Robert Lambeth, M.D.** Memphis (Tenn.) Medical College, 1853; for many years a practitioner of Mountain Grove, Mo.; died at his home in Springfield, Mo., June 7, from nephritis, after an illness of eight weeks, aged 77.

**Henry R. Garner, M.D.** Cooper Medical College, San Francisco, 1877; formerly of Douglas, Alaska; died at his old home in Chehalis, Wash., May 30, from heart disease, after an illness of two days, aged 66.

**Daniel Edward Millerick, M.D.** Medical School of Harvard University, Boston, 1881; of Boston, Mass.; a member of the Massachusetts Medical Society; died at his home in Stoneham, Mass., June 18, aged 52.

**James Robert Lockhart, M.D.** Cincinnati College of Medicine and Surgery, 1870; for 25 years a member of the school board of Freedom, Pa.; a veteran of the Civil War; died at his home, June 15, aged 66.

**Horace G. Westlake, M.D.** New York University Medical College, New York City, 1850; for 58 years a practitioner of Hillsdale, N. Y.; died at his home in that place, June 7, after a lingering illness.

**Arthur J. Buckner** (License, Missouri, 1884), for many years a practitioner of Northeastern Missouri; died at his home in Peakesville, June 17, from heart disease, after an illness of three months, aged 71.

**Daniel Madison Hurley, M.D.** Bellevue Hospital Medical College, New York City, 1892; died at his home in Norwood, Mass., May 31, from nephritis, after an illness of five months, aged 44.

**James H. Heller, M.D.** Jefferson Medical College, Philadelphia, 1898; of Wilkes-Barre, Pa.; died at the home of his parents in that city, June 20, after an illness of two years.

**Claire Sims, M.D.** Northwestern University Woman's Medical School, Chicago, 1898; formerly a practitioner of Chicago; died at her home in Citronelle, Ala., June 14, aged 31.

**Clyde R. Yoe, M.D.** Vanderbilt University, Medical Department, Nashville, Tenn., 1889; died at his home in Jefferson City, Tenn., June 17, from rheumatic endocarditis.

**Alexander A. Kunstlich, M.D.** Medical College of Indiana, Indianapolis, 1890; died at his home at Passaic, N. J., June 21, after an illness of three months, aged 63.

**Thomas W. Folger, M.D.** Atlanta (Ga.) Medical College, 1876; died suddenly, June 9, at his home in Central, S. C., from heart disease, aged 59.

**J. S. Canada, M.D.** Louisville (Ky.) Medical College, 1879; died at his home in Independence, Miss., June 14, after an illness of several weeks.

**Frederick Lacy Wheeler, M.D.** University of Minnesota, College of Medicine and Surgery, Minneapolis, 1904; of Argyle, Minn., died June 14.

**Elizabeth Uncapher, M.D.** Homeopathic College, University of Michigan, Ann Arbor, 1886; died at her home in Houston, Texas, June 18.

## Medical Education and State Boards of Registration

### COMING EXAMINATIONS.

UTAH State Board of Medical Examiners, Salt Lake City, July 6-7. Secretary, Dr. R. W. Fisher, Salt Lake City.

ARIZONA Board of Medical Examiners, Phoenix, July 6-7. Secretary, Dr. Ancil Martin, Phoenix.

KENTUCKY State Board of Health, Louisville, July 7. Secretary, Dr. J. N. McCormack, Bowling Green.

WASHINGTON State Medical Examining Board, Seattle, July 7. Secretary, Dr. C. W. Sharples, 528 Burke Bldg., Seattle.

COLORADO State Board of Medical Examiners, State Capitol Bldg., Denver, July 7. Secretary, Dr. S. D. VanMeter, 1723 Tremont St., Denver.

MAINE Board of Registration of Medicine, State House, Augusta, July 7-8. Secretary, Dr. Wm. J. Maybury, Saco.

NORTH DAKOTA State Board of Medical Examiners, Grand Forks, July 7-9. Secretary, Dr. H. M. Wheeler, Grand Forks.

OREGON State Board of Medical Examiners, Portland, July 7-9. Secretary, Dr. Byron E. Miller, "The Dekum," Portland.

SOUTH DAKOTA State Board of Medical Examiners, Deadwood, July 8. Secretary, Dr. H. E. McNutt, Aberdeen.

NEW MEXICO Board of Health and Medical Examiners, The Capitol, Santa Fe, July 13-14. Secretary, Dr. J. A. Massie, Santa Fe.

ARKANSAS Regular Board of Medical Examiners, State Capitol Bldg., Little Rock, July 14. Secretary, Dr. F. T. Murphy, Brinkley.

ARKANSAS Homeopathic Board of Medical Examiners, Little Rock, July 14. Secretary, P. C. Williams, Texarkana.

ARKANSAS Eclectic Board of Medical Examiners, Little Rock, July 14. Secretary, Dr. A. J. Widener, Little Rock.

CONNECTICUT Homeopathic Medical Examining Board, New Haven, July 14. Secretary, Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

CONNECTICUT Eclectic Medical Examining Board, Hotel Garde, New Haven, July 14. Secretary, Dr. T. S. Hodge, 16 Main St., Torrington.

CONNECTICUT Regular State Medical Examining Board, City Hall, New Haven, July 14-15. Secretary, Dr. Charles A. Tuttle, 196 York St., New Haven.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, July 14. Secretary, Dr. George C. Ober, 210 B. St., S.E., Washington.

WEST VIRGINIA State Board of Health, Charleston, July 14-16. Secretary, Dr. H. A. Barbee, Pt. Pleasant.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, July 14-16. Secretary, Dr. Edwin B. Harvey, Room 159, State House, Boston.

VERMONT State Board of Medical Registration, Burlington, July 14-16. Secretary, Dr. W. Scott Nay, Underhill.

WISCONSIN Board of Medical Examiners, Park Hotel, Madison, July 14-16. Secretary, Dr. J. V. Stevens, Jefferson.

NEW HAMPSHIRE State Board of Medical Examiners, State Library, Concord, July 15-16. Regent, Mr. H. C. Morrison, Concord.

### Ohio Board Requires Practical Tests.

At the examination held by the Ohio State Board of Medical Registration and Examination at Columbus, June 8, 9, and 10, besides the usual written examination, practical examinations in pathology, bacteriology and chemistry were required. In these practical tests each applicant was asked to identify pathologic specimens, bacteria and urinary sediments and to make a urine analysis. These tests were conducted at the same time as the written examination in one corner of the examination hall and in the presence of the entire class. An extension of time equal to that required for the practical test was granted to those who were called from their written work. There were 161 applicants at the examination and it required about fifty minutes for each applicant to complete the practical test. The results are said to have been highly satisfactory and the board will doubtless require these practical tests at all future examinations.

### Arkansas April Report.

Dr. F. T. Murphy, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, April 14, 1908. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 69, of whom 38 passed, including 33 non-graduates, and 31 failed, including 29 non-graduates. The following colleges were represented:



College.	PASSED.	Year. Grad.	Per Cent.
College of P. and S., Chicago.....	(1902)		85
Tulane University of Louisiana.....	(1901)		80
Washington University, St. Louis.....	(1897)		87
Memphis Hosp. Med. Coll.....	(1905) 87; (1906)		90

College.	Year. Grad.	Per Cent.
Louisville Nat. Med. Coll. ....	(1904)	66
University of West Tennessee.....	(1908)	73

## LICENSED WITHOUT EXAMINATION.

There were also licensed at this examination seven old practitioners, including three non-graduates, who were granted license by reason of having been registered under the old law. The following colleges were represented:

College.	Year of Grad.
Cooper Medical Coll. ....	(1887)
Baltimore University.....	(1896)
University of the South.....	(1899)
Memphis Hosp. Med. Coll. ....	(1901)

## Colorado April Report.

Dr. S. D. Van Meter, secretary of the Colorado State Board of Medical Examiners, reports the written and oral examination held at Denver, April 7, 1908. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 70. Thirty-eight applicants were licensed at this examination, five of whom passed the examination, and thirty-three were registered on presentation of satisfactory credentials, including state licenses. One of the applicants appearing for examination failed to make the required percentage. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Denver and Gross College of Medicine.....	(1907) 76, 79.3,		83.6
Northwestern University Medical School.....	(1907)		79.5
American Medical College, St. Louis.....	(1905)		76.5

## REGISTERED ON CREDENTIALS.

College.	Year Grad.	State Licenses.
Rush Medical College.....	(1903) Missouri; (1907)	Texas
Northwestern Univ. Med. School (1893) Illinois.....	(1905)	Illinois
American Medical Miss. College.....	(1903)	Illinois
Coll. of P. and S., Chicago.....	(1906) Illinois; (1907)	Idaho
University of Iowa.....	(1907)	Iowa
University of Louisville.....	(1885)	Missouri
Johns Hopkins Medical School.....	(1899)	Maryland
Boston University.....	(1885)	Mass.
Medico-Chirurgical College, Kansas City.....	(1903)	Kansas
St. Louis Medical College.....	(1889)	Missouri
University Med. Coll., Kansas City.....	(1896)	Missouri
Kansas City Medical College.....	(1894)	Nebraska
Central Medical College, St. Joseph.....	(1898)	Missouri
Omaha Medical College.....	(1888) Kansas; (1899) California; (1892)	Utah
Long Island College Hospital.....	(1901)	New York
Albany Medical College.....	(1899)	Illinois
Bellevue Hospital Medical College.....	(1892)	Illinois
Berkshire Medical College.....	(1867)	New York
University of Pennsylvania.....	(1903)	Penna
Jefferson Med. Coll.....	(1903), (1904), (1905)	Penna
Hahnemann Med. Coll., Philadelphia.....	(1895)	Maine
Medico-Chirurgical College, Philadelphia.....	(1893), (1899), (1904)	Penna
University of Nashville.....	(1905)	Tennessee
University of Vermont.....	(1905)	Vermont

College.	Year Grad.	Per Cent.
College of P. and S., Chicago.....	(1907)	61.8

## Montana April Report.

Dr. William C. Riddell, secretary of the Board of Medical Examiners of Montana, reports the written examination held at Helena, April 7-9, 1908. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 32, of whom 21 passed and 11 failed. The following colleges were represented:

College.	PASSED.	Year. Grad.	Per Cent.
University of Colorado.....	(1906)		75
American Med. Miss. Coll.....	(1907)		80.5
Rush Med. Coll.....	(1904)		84.3
College of P. and S., Chicago.....	(1905)		83.4
College of P. and S., Baltimore.....	(1906)		81.6
University of Michigan.....	(1904) 78.2; (1906)		77.1
University of Minnesota.....	(1907)		75
University Med. Coll., Kansas City.....	(1901) 77.8; (1902)		76
Creighton Med. Coll.....	(1903)		75
Bellevue Hosp. Med. Coll.....	(1888)		79.1

University of Buffalo.....	(1901)	83.2
Medical Coll. of Ohio.....	(1904)	76.7
Miami Med. Coll.....	(1906)	75.1
University of Virginia.....	(1907) 77.5, 80	
Toronto University, Ontario,...	(1900) 75.5; (1905) 81.9; (1907)	84.4.
McGill University, Quebec.....	(1903)	80.7

## FAILED.

George Washington University.....	(1907)	63.6
Rush Med. Coll.....	(1886)	58.8
College of P. and S., Chicago.....	(1905)	69.9
Chicago Homeo. Med. Coll.....	(1897)	72.1
Bennett Coll. of Eccl. Med. and Surg.....	(1879)	*47.5
Sioux City Coll. of Med.....	(1906)	*66.2
Kansas Med. Coll.....	(1904)	68.7
Minneapolis Coll. of P. and S.....	(1899)	70.3
Washington University, St. Louis.....	(1904)	53.3
University Med. Coll., Kansas City.....	(1903)	69.7
St. Louis University.....	(1904)	56.3

## Massachusetts March Report.

Dr. E. B. Harvey, secretary of the Massachusetts Board of Registration in Medicine, reports the written examination held at the State House, Boston, March 10-12, 1908. The number of subjects examined in was 13; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 64, of whom 35 passed, including one non-graduate, and 29 failed, including 8 non-graduates. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Howard College.....	(1907)		75.7
Georgetown University.....	(1906)		75.7
Yale Medical School.....	(1893) 75; (1906)		81.9
College of P. and S., Chicago.....	(1905)		76.5
Northwestern University Medical School.....	(1899)		75.7
Johns Hopkins Medical School.....	(1906) 81.5, 82.9		
Baltimore Medical College.....	(1906) 75, 79; (1907)		76.4
College of P. and S., Baltimore.....	(1893)		75
Tufts College Medical School.....	(1907) 75, 75.2, 77.2		
Harvard Medical School.....	(1906) 75.6, 82.7, 83.5; (1907) 79.6, 81.7, 82.5, 84.1, 84.2; (1908) 83.7.		
Cornell University.....	(1905)		83.5
Jefferson Medical College.....	(1901)		79.1
University of Pennsylvania.....	(1899)		75
Woman's Med. Coll. Pennsylvania.....	(1902) 75; (1906)		76.5
University of Vermont.....	(1903) 77.2; (1906) 75; (1907)		75
McGill University, Quebec.....	(1907)		81.6

## FAILED.

Howard University.....	(1907)	70.8
Baltimore University.....	(1907)	70
Maryland Medical College.....	(1906) 63.9; (1907)	70.6
Baltimore Med. Coll.....	(1902) 60.2; (1905) 67.5; (1907)	67.9
Tufts College Medical School.....	(1907)	70.9
Boston University.....	(1907)	70.7
Coll. of P. & S., Boston, (1905) 69.9; (1906) 54.7; (1907)		68.9
Barnes Medical College.....	(1900)	30.7
Jefferson Medical College.....	(1897) 71.5; (1907)	72
University of Vermont.....	(1900)	58.2
Laval University, Quebec, (1902) 65; (1904) 54.1; (1906)		56.2
University of Naples, Italy.....	(1890) 54; (1895)	65

## Rhode Island April Report.

Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, April 2, 1908. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 80. The total number of candidates examined was 12, of whom 7 passed and 5 failed. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Yale Medical School.....	(1907)		82.9
Johns Hopkins Medical School.....	(1905)		88.1
University of Maryland.....	(1902)		80.0
Maryland Medical College.....	(1907)		80.3
Tufts College Medical School.....	(1906)		80.2
Baltimore University.....	(1907)		80.1
Harvard Medical School.....	(1907)		86.1

## FAILED.

College.	Year Grad.	Per Cent.
Baltimore University.....	(1904)	71.1
Harvard Medical School.....	(1906)	71.1
University of Naples, Italy.....	(1903)	64.6
Non-Graduates.....		62, 75.4

## West Virginia April Report.

Dr. H. A. Barbee, secretary of the State Board of Health of West Virginia, reports the written examination held at Parkersburg, April 14-16, 1908. The number of subjects examined in was 9; total number of questions asked, 120; percentage



required to pass, 80. The total number of candidates examined was 20, of whom 18 passed and 2 failed. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
College of P. and S., Chicago.....	(1897)		86
Kentucky School of Medicine.....	(1906) 85; (1907)	80, 81	
Hospital College of Medicine, Louisville.....	(1906)		90
Tulane University of Louisiana.....	(1902)		91
College of P. and S., Baltimore.....	(1906)		96
Baltimore Medical College.....	(1905) 83; (1907)		83
Baltimore University.....	(1905)		83
Johns Hopkins Medical School.....	(1906)		95
University of Maryland.....	(1906) 84; (1907)		89
Maryland Medical College.....	(1904)		90
Jefferson Medical College.....	(1907)		91
Chattanooga Medical College.....	(1908)		85
Medical College of Virginia.....	(1907)		86
University of Virginia.....	(1907)		88
FAILED.			
Kentucky School of Medicine.....	(1905)		74
Baltimore University .....	(1900)		11

#### Missouri May Report.

Dr. J. A. B. Adcock, secretary of the Missouri State Board of Health, reports the written examination held at Kansas City, May 4-6, 1908. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 68, of whom 52 passed and 16 failed. The following colleges were represented:

College.	PASSED.	Year Grad.	Total No. Examined.
Howard University, Washington.....	(1906)		1
Rush Med. Coll. ....	(1904), (1906)		2
Northwestern Univ. Med. School.....	(1907)		1
University of Kansas.....	(1, 1907), (7, 1908)		8
Baltimore Med. Coll. ....	(1907)		1
Tufts Coll. Med. School.....	(1907)		1
Washington University, St. Louis.....	(1907)		2
Ensworth Medical College.....	(1908)		7
Homeopathic Med. Coll. of Missouri.....	(1908)		1
St. Louis Coll. of P. and S. ....	(1908)		5
University Med. Coll., Kansas City, (1, 1906), (1, 1907), (16, 1908) .....			18
Barnes Med. Coll. ....	(1905)		1
Kansas City Hahnemann Med. Coll. ....	(1908)		1
University of Nashville.....	(1907), (1908)		2
University of Toronto, Canada.....	(1898)		1
FAILED.			
College of P. and S., Chicago.....	(1902)		1
Ensworth Med. Coll. ....	(1908)		2
Homeopathic Med. Coll. of Missouri.....	(1908)		1
University Med. Coll., Kansas City.....	(1908)		5
Kansas City Hahnemann Med. Coll. ....	(1908)		2
St. Louis Coll. of P. and S. ....	(1908)		3
Meharry Med. Coll. ....	(1906), (1907)		2

## Society Proceedings

#### COMING MEETING.

American Ophthalmological Society, New London, Conn., July 15-16  
American Public Health Association, Winnipeg, Can., Aug. 25-28.  
American Acad. of Ophthal. and Oto-Laryng., Cleveland, Aug. 27-29.  
Medical Society of Wisconsin, Sheridan, Aug. 28.

#### AMERICAN PEDIATRIC SOCIETY.

Annual Meeting, held at Delaware Water Gap, Pa., May 25-26, 1908.

The President, CHARLES GILMORE KERLEY, M.D., New York, in the chair.

#### Officers Elected.

The following officers were elected: President, Dr. Charles B. Putnam, Boston; vice-presidents, Drs. Isaac A. Abt, Chicago, and T. S. Southworth, New York; secretary, Dr. Samuel S. Adams, Washington, D. C.; recorder, Dr. L. E. La Fetra, New York; treasurer, Dr. J. Park West, Bellaire, Ohio; member of council, Dr. Alfred Hand, Jr., Philadelphia.

The next place of meeting is to be Lenox, Mass.

#### Serotherapy of Epidemic Cerebrospinal Meningitis.

DR. SIMON FLEXNER, New York, said that he owed his ability to bring before the society a large number of figures relating to cases treated with the serum to the fact that several of the members had been very active, indeed strenuous

in subjecting it to a clinical test. It had been about one year since the serum was first used in this country. He had statistics on something less than 400 cases, all diagnosed bacteriologically as well as clinically, in which the serum had been employed. In the last year the use of the serum had been somewhat modified, larger and more frequent doses being employed. A larger percentage of recoveries were shown than in previous series. Cases were treated much earlier now, which was a point of great value. The speaker emphasized this point and compared it with the early use of the diphtheria antitoxin. The serum belonged to the class of bacteriolytic sera rather than to the antitoxic class. It exerted a deleterious effect on the micro-organisms; their viability was to a certain extent lost. It was not wholly devoid of antitoxic properties, but its chief value was in the destruction of the micro-organisms. The figures were based on 322 cases treated in this country and abroad, which he had analyzed. Of 247 in this country, 68 died and 179 recovered, a case mortality of 27 per cent. That included not a few treated very late, and some treated early but in which the conditions were desperate, and some in which death occurred within twenty-four hours after the injection. Some underwent a marvelous change after one or two injections. There were 13 under one year of age; the youngest 4 weeks; of these 5 died and 8 recovered, a case mortality of 37.5 per cent. The child 4 weeks old recovered. There were 26 between one and two; the mortality of this series being precisely the same; 45 between two and five, of which the mortality was 22 per cent.; 62 between five and ten, of which the mortality was 11 per cent.; 57 between ten and twenty, of which the mortality was 28 per cent., and finally 44 over twenty, of which the case mortality was 45 per cent.; 47 terminated by so-called crisis and 124 by so-called lysis. He emphasized that there occurred in these cases a sudden and prompt termination of the disease; 72 of the 322 cases came from Great Britain, in which the mortality was 30 per cent., the previous mortality, not treated with the serum varying from 75 to 80 per cent. He felt that as a therapeutic agent directed to such a serious disease it should not be adopted too soon, but should be given the most thorough test until such time as there could be no doubt and it should be made by those who have observed the disease before the introduction of the serum and since. Certainly the disease was apparently modified in its intensity and whether the mortality was greatly reduced or not that was of considerable importance.

#### Diagnostic Value of the Chemical and Bacteriologic Examination of Cerebrospinal Fluid.

DR. ALFRED HAND, JR., Philadelphia, referred to the importance of the exact diagnosis of the disease and said lumbar puncture furnished the means for such diagnosis. Interpretation of the fluid was sometimes easy and sometimes very difficult. If the fluid shows marked opalescence, which disappears as the fibrin forms, and the fibrinous net-work contains tubercle bacilli, diagnosis is positive. The diplococci may be found in the pus cells or in the fluid, but usually in the fluid. The fluid may be very slightly turbid so that it is difficult to recognize it. Examination should be made as soon after the fluid is obtained as possible and loopfuls transferred to slide and stained immediately. Test tube containing the fluid may be allowed to stand several hours that the fibrin net-work may be formed, which is transferred to slide with needle, spread out and fixed by heat. Chemical examination of the fluid for albumin may be made at this time. Normal amount of albumin about 0.5 per cent. Half of the fluid may be used for the phenol-hydrazin test for sugar. Examination may then be made for the pneumococcus or meningococcus. Differential count of leucocytes of great value when it can be made.

#### Hydrocephalus of Meningococcus Origin, with Remarks on the Serotherapy.

DRS. J. H. MASON KNOX, JR., and FRANK J. SLADEN, Baltimore, reviewed the literature of the subject and said that they believed the use of the serum would do much to prevent the development of hydrocephalus. They reported two cases treated with the serum; one a boy of 15, with very severe in-



fection, ill ten days when first seen; meningococci in the fluid; improved markedly in three days; developed otitis media and paracentesis of both tympanic membranes done; hearing impaired but better when he left hospital. Second case, child of 7, seen early in the disease; received but two doses; after the first symptoms markedly improved and after the second uninterrupted convalescence. Dr. Sladen had gone carefully over the cases of meningitis before the use of the serum and found of 33 cases, 21 died and 12 recovered; lowest mortality in any one year, 43 per cent. In the last four and one-half months 21 cases admitted: all treated by lumbar puncture and injections of serum; of these 3 died and 18 recovered; mortality of 14 per cent.; the three fatal cases were of unusually virulent type.

#### Serotherapy of Cerebrospinal Meningitis.

DRS. CHARLES HUNTER DUNN, Boston, and FRANK SPOONER CHURCHILL, Chicago, each read a paper on this subject, reporting cases. The articles appear in full in this issue of THE JOURNAL, on pages 15 and 21, respectively.

#### Other Methods Compared to Serotherapy of Cerebrospinal Meningitis.

DR. HENRY KOPLIK, New York, said it was often apparent in considering the therapy of any disease that we sometimes lose sight, in the presence of some favorable results, of the nature of the affection, and in no disease was this more common than in cerebrospinal meningitis. As had been pointed out by Osler this disease closely resembles pneumonia in its behavior. It occurs sporadically and epidemically. In the sporadic cases we rarely meet with the severe forms. It had to be admitted that on the whole the symptomatology of the sporadic and epidemic forms was alike, but the sporadic form runs a much milder course than the epidemic form. The sporadic form rarely reveals purulent fluid at the onset. Dr. Koplik had the records of sporadic cases treated since 1899 up to the epidemic years of 1904-5. The symptomatic treatment was begun in 1899. This consisted in careful study of the symptoms and lumbar puncture repeated as often as symptoms warranted it. During 1899 and 1900 there were 8 cases of meningococcic type; during 1901 to 1903, 13 cases, thus making 21 sporadic cases. Of these, 8 patients died, a mortality of 38 per cent. Of these 8, 6 were below one year of age. There were 2 recoveries in those below one year, and 2 between the ages of one and two.

In the epidemics of 1904-5 the history of the disease was a more virulent one; some died a few hours after admission. In the first epidemic year there were 39 cases and 21 deaths, a total mortality of 53 per cent. Of these 21 deaths 13 were below thirteen years of age; 26 above the age of two. Of these 9 died, a mortality of 34 per cent. In 1905 there were 35 cases, of which 17 died, a total mortality of 48 per cent. Of the 17 deaths, 10 were below two years of age. The mortality was practically 100 per cent. in those under one year of age. Thus in the two epidemic years there were 51 cases above two years of age with a mortality of 31 per cent. There were 23 cases in these two years below two years of age, of which 78 per cent. died outright.

In the sporadic cases simple lumbar puncture saved four children below two years; in the epidemic form none were saved. Dr. Koplik did not believe in puncture unless there was distinct indication for it. To be punctured the patient must have symptoms of pressure. The serum was introduced not by a syringe but by a funnel and an attempt made to introduce the same amount of fluid that was drawn off. In the thirteen cases treated with the serum the ages varied from 3½ to 5½ years; three were below 1 year. Of those below 1 year one was discharged at 10 months. Those over 2 years recovered. In the children below 1 year that died the youngest, 3½ months, had been ill two weeks on admission.

#### DISCUSSION ON SEROTHERAPY OF MENINGITIS.

DR. L. EMMETT HOLT, New York, said statistics were collected of 2,350 cases in the epidemic of 1904 in New York, of which the mortality, all non-serum treated, was 75 per cent., and of 350 cases in which the duration of the disease was

known, 50 per cent. lasted five weeks or longer. This was very striking in comparison with the cases reported at this meeting. During epidemic years they treated 83 cases and lost every case under one year of age. He considered the showing very encouraging.

DR. THOMAS MORGAN ROTCH, Boston, was loath to speak of epidemic and sporadic cases; the organism ruled the disease; it did not differ in any essential way. Ward trial showed that the injections did no harm and he considered this a very important point as there was no time to wait; the injections should be given at once. He believed that sometimes life might be saved by injecting twice in the twenty-four hours. If the treatment were pushed many of the distressing sequelæ might be avoided.

DR. FRANK J. SLADEN, Baltimore, said that in 21 cases in Dr. Barker's clinic the effect had been just about as described by Dr. Churchill and Dr. Dunn—a rapid drop in temperature within twenty-four hours. There was increase in polymorphonuclear leucocytes after one injection. Extracellular organisms found in the first specimens were intracellular in subsequent ones. The bacteria were destroyed—lost their staining characteristics and viability, suggesting a bacteriolytic property. The rapidity with which the symptoms disappeared also suggested an antitoxic property.

DR. A. JACOBI, New York, thought that where subnormal temperature was noted it was due to a complication not yet understood and might be treated with something in addition to the serum, as alcohol was used in the treatment of diphtheria sometimes where the antitoxin did not benefit. He considered the results shown very encouraging.

DR. JOHN LOVETT MORSE, Boston, said that when the organisms were found in the cells and outside the cells and a culture was obtained and then the next day after giving the serum no organisms were found outside the cells and a diminished number within the cells, and no cultures, there could be no doubt. He thought lumbar puncture should be done on suspicion of the disease; one should not wait for signs of increased pressure. He thought the serum should be used early and often, at least once a day and sometimes oftener.

DR. W. W. WILKINSON, Washington, D. C., said that of ten cases treated at the Garfield Hospital there were seven recoveries and three deaths, and of the three patients that died one had chronic hydrocephalus on admission, one was not given large enough doses at first, and the other was in a comatose condition when treatment was begun.

DR. SAMUEL S. ADAMS, Washington D. C., emphasized the fact that by this treatment the distressing sequelæ of the disease were lessened. He had had one case in a child of seven months in which the pressure was so great that it burst through the fontanelle; improved markedly after the first injection. In a boy of thirteen with most intense symptoms, opisthotonos and convulsions, there was complete recovery. He thought the treatment offered better results than any other method of the past three decades.

(To be continued.)

#### NEBRASKA STATE MEDICAL ASSOCIATION.

Fortieth Annual Meeting, held in Lincoln, May 19-21, 1908.

#### Governor's Address of Welcome.

GOVERNOR SHELDON spoke of the gratitude of the state as a whole and of himself personally for the work done and the advancement made in medical legislation since the organization of the State Medical Association. He urged physicians to take a more active part during the next legislature. They better than any other class of citizens know the true cause of so many degenerates. Coming in contact as they do with the home life they know the causes of degeneracy and realize that it is high time in this country that steps should be taken to regulate the marriage laws. Governor Sheldon said it was well enough to pay attention to the divorce laws, but that it would be much better to regulate the marriage laws and thus



strike at the root of the trouble. He expressed himself as heartily in favor of a law that would allow no one to marry without a certificate from a physician of good standing, stating that they are capable of bearing healthy offspring and urged the men of the medical profession to be present at the next session of the legislature with some ideas, if not a bill prepared, along these lines.

Dr. F. A. LONG, Madison, responded to the address of welcome.

At 7:30 p. m. Tuesday the President's reception was held and the President delivered his address.

#### Officers Elected.

The following officers were elected: President, Dr. L. M. Shaw, Osceola; vice-presidents, Drs. F. J. Rosenberg, Lexington, and F. E. Coulter, Omaha; secretary, Dr. A. D. Wilkinson, Lincoln; treasurer, Dr. V. S. von Mansfelde, Ashland; corresponding secretary and librarian, Dr. H. W. Orr, Lincoln; delegates to the American Medical Association, Dr. H. Gifford, Omaha; alternate Dr. R. A. Mitchell, Lincoln.

The officers for the various sections were chosen as follows: Section on Surgery—Chairman, Dr. J. P. Lord, Omaha; secretary, Dr. R. R. Hollister, Omaha. Section on Medicine—Chairman, Dr. A. Dunn, Omaha; secretary, Dr. H. J. Lehnhoff, Lincoln. Section on Gynecology and Obstetrics—Chairman, Dr. Palmer Findley, Omaha; secretary, Dr. Georgiana Grothan, Kearney.

The next meeting will be held in Omaha.

Dr. E. J. C. SWARD, Oakland, secretary of the State Board of Health, made an exhaustive report of the recent work done by the State Board of Health and made important recommendations as to legislation affecting the collection of vital statistics and the regulation of matters of state sanitation.

#### Use of Plaster of Paris in the Treatment of Deformities.

Dr. H. WINNETT ORR, Lincoln, directed attention to the fact that the popular belief in curative influence in mechanical appliances in the treatment of deformities is usually erroneous. The usual method of applying to a brace maker for treatment of all kinds of deformities leads to unfortunate delay of proper surgical and other orthopedic measures. The necessity of adequate preliminary treatment before the application of apparatus or plaster of Paris was pointed out. The points which characterize the modern treatment of deformities are the use of the open method in dividing resistant structures before attempting correction and the use of muscle and nerve transplantation to restore destroyed functions and to do away with the overaction of contracted muscles. The great usefulness of proper application of plaster of Paris and other mechanical devices in the subsequent treatment after operation was shown. Three patients were presented to illustrate the use of plaster of Paris in postoperative treatment for torticollis, hip-joint operations and also in the treatment of lateral curvature.

#### Acute Glaucoma.

Dr. D. C. BRYANT, Omaha, read a paper covering the etiology, diagnosis, pathology and treatment of acute glaucoma and the facts on which a prognosis may be based.

#### Blastomycosis of the Skin.

Dr. C. L. MULLINS, Broken Bow, reported a case of cutaneous blastomycosis with a complete account of the patient's symptoms and a consideration of the differential diagnosis. In addition to the clinical report and details of treatment the microscopic findings were given. He also reviewed briefly the literature of the subject and the laboratory methods for the examination of material suspected to be of this character.

#### Dilatation of the Stomach.

Dr. H. L. AKIN, Omaha, classified dilation of the stomach into three groups: 1, the physiologically dilated stomach; 2, dilation produced by gastroparesis; 3, true dilatation. The last he selected as his subject for discussion. He discussed the factors which enter into production of dilated stomach and

pointed out the conditions in which a dilatation may be brought about where either the motility was diminished or the total of contents plus resistance were disproportionately increased. As factors in the etiology he listed the various forms of indigestion and the means to be used in making a diagnosis. Under the head of treatment lavage was urged. He recommended dietetic treatment, which while necessarily variable must be accorded most careful consideration. Supporting bandages are often of assistance to the overtaxed stomach muscles. Of medicines nux vomica and strychnin are the most important therapeutic agents at our command.

#### Pulmonary Tuberculosis.

Dr. W. H. MICK, Denver, reported a series of twelve patients in whom a microscopic diagnosis of pulmonary tuberculosis had been made. He argued in favor of proper exercise and massage, outdoor treatment, the use of x-rays, which he claimed have a beneficial effect on all tuberculosis conditions, arguing that if patient did not improve in from 60 to 90 days a change in climate should be insisted on. He says that too many patients have been kept at home so long that they fail to be benefited by a change in climate or tent life. He stated that patients who improve from tuberculosis in high altitudes must remain permanently. Patients should be taught to control the cough and he asserted that tuberculin does more harm than good and argued in favor of streptolytic serum.

#### Conservatism in the Treatment of Appendicitis.

Dr. O. GROTHAN, Kearney, asserted that at the present time the manner of performing an appendectomy was not so important a topic for discussion as whether it should be performed at all. He argued that those who have operated in every case had encouraged a great deal of untimely surgery. Dr. Grothan lamented the fact that the profession could not agree on a method of treatment advocated some years ago by Ochsner, Robinson and others and argued in favor of expectant treatment with the use of opiates, relieving flatulence by rectal irrigation and complete restriction of nourishment by the mouth. The operative treatment was severely criticized and it was urged that it be used only in exceptional and very urgent cases.

#### Appendicitis.

Dr. H. W. QUIRK, Crete, read a paper on appendicitis in which he reviews very carefully the embryology and anatomy of the abdominal cavity, especially as relating to the changes which take place in the cecum and appendix. He also reviewed the diagnosis and treatment of appendicitis from a historical standpoint and quoted extensively from literature in regard to the changes which have taken place in ideas regarding these points. He argued for the discontinuance of the opium treatment and is in favor of controlling the pain by the application of ice. He claimed that by such means he was able greatly to relieve his patients and carry many through an acute attack.

#### Purin Autointoxication Due to the Non-Use of Meat.

Dr. R. J. MIDGLEY, Omaha, directed attention to the views of modern clinicians with regard to uric acid diathesis. He particularly quoted Osler and von Noorden as to their views on these questions. He pointed out that the methods of formation of uric acid in the body would be a question of only ordinary interest except that when it is present in excessive amounts we must have means at hand for promoting its combustion and elimination. Purin on the other hand must be estimated indirectly in as much as any quantity present in the body at any given time depends on the presence or absence of their destroying the enzymes. Some patients take an excess of purin-containing food while in others there has been no abnormal intake, but on account of faulty metabolism purins have accumulated. The therapeutics of these two classes of patients must necessarily therefore be quite different. He concludes that if there is a purin autointoxication it can arise from defects of meat in diet, also that this form of purin poisoning can be cured by the use of meat. Hyperacid urine is



not always due to meat eating, but meat may be used as an antacid. Meat is not to be prominent in the diet except for good cause and dietetics should have more general attention.

#### Acute Dilatation of the Stomach.

DR. A. S. MCKINNON, Lincoln, said that this condition seems to occur most frequently following laparotomy. After a review of the literature Dr. McKinnon reported two cases in which the patients presented the classical symptoms. The first patient, aged 17, died the fourth day following operation, while the second improved without the stomach having been made the subject of operative treatment.

#### First Aid in Fractures.

DR. A. B. ANDERSON, Pawnee City, quoted the remark of the late Dr. Senn that bad results following fractures have been the tombstone of an otherwise brilliant career of many ill-fated practitioners. The treatment of fractures is often undertaken by absolutely inexperienced physicians. He pointed out the dangers of the improperly applied fixed dressings and emphasized the importance of a careful consideration of the patient's general condition as well as of the local injury in making a diagnosis and applying treatment. He also emphasizes the importance for careful consideration of injury to soft parts associated with the fractured bone and reported cases illustrating some of the bad results that may follow inadequate diagnosis and improperly applied dressings. In conclusion he outlined some of the methods to be used in the treatment of ordinary fracture.

#### Fractures: Symptoms and Diagnosis.

DR. S. C. BEEDE, David City, discussed the general symptoms of fractures and pointed out the subjects of error in diagnosis. He emphasized crepitus as a positive sign of fracture. He emphasized the necessity for taking into careful consideration the history of the injury and took the position that an examination should not be made except in an emergency until this had been done. The value of *x*-ray was pointed out, but it was emphasized that careful interpretation of the findings based on thorough anatomic knowledge was absolutely necessary.

#### X-Ray in the Diagnosis and Treatment of Fractures.

DR. JOHN PRENTISS LORD, Omaha, pointed out that the use of the *x*-ray has disclosed the frequency with which imperfect apposition of the fragments has been obtained by the ordinary method of treatment of fractures. *X*-ray illuminations have rendered necessary not only great care in diagnosis and treatment but we must now explain to our patients the fact that exact apposition and perfect union are the exception rather than the rule. The *x*-ray has solved many of the problems of diagnosis and treatment and has eliminated a large part of the guess work in this branch of surgery. The medico-legal phase of the subject was dismissed with a suggestion that we should be more careful in our statements to patients when they think that the *x*-ray picture shows a bad result even when the functional use of the extremity is unimpaired. One radiograph of a fractured bone is inadequate to establish a conclusion in regard to these injuries.

#### Open Treatment of Fractures.

DR. A. C. STOKES, Omaha, took the position that while most fractures fall under the care of the general practitioner they, as a rule, require the most advanced surgical skill. He pointed out the fact that operative treatment under proper precautions would produce more ideal results in fractures but emphasized the fact that in his own experience the most careful observance of surgical technic did not always protect him from having infections after operating on recent fractures. He discussed in some detail the technic of open operation for fractures of the end of the femur and spiral fractures of the shaft. He concludes that recent literature points to conservatism in operative treatment. Many bad results are the result of inadequate diagnosis and imperfect reduction. The *x*-ray

must be used. Fractures treated by operation heal more slowly than by the usual treatment. The callus formed is larger after operation. Fracture operations are very liable to infection. The use of wires, screws, nails, etc., is to be avoided.

#### The Lower Femoral Epiphysis.

DR. B. F. LORANCE, Auburn, reported a case of severe injury in a boy of nine to the soft parts of the thigh just above the knee, associated with separation of the epiphysis from the femur. The lower end of the shaft protruded through the wound a distance of about four inches. Although there was extended sloughing the patient obtained a good result.

#### Fractures of Condyles of the Humerus.

DR. D. J. REID, Crab Orchard, asserted that fractures into the joint would not result in ankylosis if they were uncomplicated and properly handled in the matter of a change in dressings, etc. He urged that the deformity in many of these fractures should be remedied by open operation. He recommended that the arm be dressed in complete flexion with a change in dressings on the seventh or eighth day in a new position. He emphasized the importance of dressing the arm in flexion so that in case of ankylosis an arm useful for all ordinary uses could be obtained.

#### Other Papers Read.

The following papers were also read:

"Deviation of the Septum," W. R. Hobbs, Omaha; "Bier's Hyperemia," C. W. M. Poynter, Lincoln; "Diagnosis," F. W. Conwell, Nellgh; "Ruts—Fads—Improvements," F. A. Weir, Hastings; "Static Electricity," F. A. Wells, Strang; "Adding a Grain of Salt to Professional Ethics," C. J. Alger, Leigh; "Puerperal Infection with Special Reference to Prevention and Treatment," Georgiana Grothman, Kearney; "Treatment of Pneumonia," J. M. Mayhew, Lincoln; "Retroflexion of Uterus," W. O. Henry, Omaha; "Foreign Bodies in the Abdomen," Palmer Findley, Omaha; "Operative Treatment of Cancer, with Special Reference to Cancer of the Breast," J. E. Summers, Omaha; "Malnutrition and Society," F. C. Philbrick, Lincoln; "Nutritional Diseases in Infants," H. M. McClanahan, Omaha; "Drug Therapeutics," B. X. Corbin, Schuyler; "Congenital Disease of the Heart," J. Stanley Welch, Lincoln.

### AMERICAN NEUROLOGICAL ASSOCIATION.

*Thirty-fourth Annual Meeting, held at Philadelphia,  
May 20-22, 1908.*

(Continued from page 2106.)

#### The Weight of the Brain as Influenced by Nutrition or Disease.

DR. H. H. DONALDSON, Philadelphia, reported his experiments with the brains of white rats and compared these results with those observed in men. It was found that the normal brain weight begins to decrease early in life, in man in the eighteenth or twentieth year. In disease the loss of weight is greater in chronic than in acute diseases. While the loss in weight of the other tissues of man in disease amounts to 24 per cent. that of the brain is only 3 per cent. As a result of improper nutrition in otherwise healthy subjects the brain weight is reduced 4 per cent. There is no loss in the spinal cord in either case.

#### DISCUSSION.

DR. J. J. PUTNAM, Boston, asked on what structures in the brain the loss chiefly falls, whether on the nerve elements or the myelin sheath.

DR. B. SACHS, New York, asked if the loss in brain weight is greater or less than that of other organs or whether the brain simply partakes in the general deterioration of nutrition.

DR. DONALDSON said that the only element of loss studied was the amount of water which was found to be greater in amount in the diseased or poorly nourished brain. He said the whole reason for the inquiry was to show the truth or falsity of the general belief that the brain is unaffected by general disturbance of the body. The loss is more than in the skeleton but less than in the muscles. No comparisons had been made with other viscera.

DR. E. C. SPITZKA, New York, said that in the study of brains of distinguished men allowance had repeatedly been made for a decrease in weight up to 150 grams.



**A Brain Tumor Localized and Completely Removed, With Symptomatology of Lesions Variousely Distributed in the Parietal Lobes.**

DRS. CHARLES K. MILLS and CHARLES H. FRAZIER, Philadelphia, reported the case of a woman 45 years of age, in whom the dominating focal symptoms were left lateral homonymous hemianopsia and hemiataxia, the latter especially in the upper extremities. There were slight hypesthesia, hypastereognosis and hemiparesis. The general symptoms were double optic neuritis, headache, occasional vertigo, nausea and vomiting. Some mental apathy and marked depression were present. A large parietal osteoplastic flap was raised and at the upper back part of the opening a large cyst was revealed. This was emptied and the entire sac removed. The patient made a good recovery from the operation. All focal symptoms disappeared but the hemianopsia which is gradually improving. The optic neuritis subsided slowly.

DISCUSSION.

DR. B. SACHS, New York, said that in four cases of his in which the tumor could not be located as there were no localizing symptoms, the optic neuritis was improved very much by exploratory operation. He believes in exploratory operation in such cases, where the tumor can not be localized.

DR. CHARLES E. BEEVOR, London, said that he had had a patient very much like this one on whom Victor Horsley operated. There was improvement but the hemianopsia persisted. The difference he thinks is due to the depth to which the tumor extends. If it extends deeply and destroys the optic radiations there will be no improvement in the hemianopsia.

DR. J. J. PUTNAM, Boston, reported the case of a patient with endothelioma of the cerebellum operated on with removal of the tumor and who continued to do well five years after the operation. In a case of hemianopsia in which the tumor was at the base of the brain involving the fifth nerve on both sides a decompression operation gave excellent results.

DR. M. ALLEN STARR said that he is in favor of decompression operation. He has had excellent results in two cases recently. There are cases which result in large hernias and death, but if one in ten can be saved the operation is justifiable. He agreed that brain operations should be done in one stage and that the surgeon should do everything to hasten the operation and diminish shock.

DR. THEODORE DILLER, Pittsburg, said that he also is in favor of the decompression operation. He had a patient recently who showed 7 diopters of optic neuritis. Ten days after operation the patient was completely relieved of headache and although his vision was only 5/200 before the operation, he could afterward read a typewritten page.

DR. MILLS said that he is in favor of the decompression operation, but that this case was presented, not as one of decompression but of radical enre.

DR. CHARLES H. FRAZIER, Philadelphia, said, in closing, that he quoted the statistics which place the operable tumors at 6 per cent. because he thought that the opinion of the medical profession, but that in his own case the operable tumors were from 15 to 20 per cent. He believes that if we would explore more routinely we would find the tumor oftener than we do and that we would find them earlier and thus get a greater percentage of operability.

**Hysterical Insanity, With Report of Illustrative Cases.**

DR. THEODORE DILLER and DR. GEORGE J. WRIGHT, Pittsburg, stated that hysteria may express itself chiefly by mental symptoms constituting a psychosis which may counterfeit the various other psychoses more or less closely; and this occurs more frequently than is commonly supposed. The recognition of hysterical insanity is important both from the prognostic and the therapeutic points of view. Inconsequential answers to which Ganser directed attention have done much to aid in the diagnosis and to create interest in the subject of hysterical insanity. Inconsequential and paradoxical conduct are often seen and are of great diagnostic value. On the negative side hysteria presents a psychosis which does not conform to the pattern of any of the ordinary insanities. The theatrical and

dramatic features seen in hysteria generally are to be observed in the hysterical psychoses.

DISCUSSION.

DR. CHARLES L. DANA, New York, said that every writer has a different conception of hysteria, so that the subject is very puzzling. We could get along better if the term hysteria were dropped entirely. He does not think we will ever get a clear idea of psychoses so long as we try to establish an hysterical psychosis. He has never seen any clear-cut picture which he could qualify as belonging to this group although he has seen hysteria combined with some form of insanity.

DR. HENRY R. STEDMAN, Boston, said that if there is such a thing as hysterical psychosis, it must be based on physical stigmata. He has seen few cases of that type and thinks the term hysterical insanity is disappearing from our nomenclature.

DR. DILLER said that it is hard to define insanity and that he is unable to define hysteria. He thinks hysterical insanity is hysteria which presents such profound, prolonged exaggerated mental symptoms as to constitute the person in the ordinary practical way an insane person.

(To be continued.)

**AMERICAN GYNECOLOGICAL SOCIETY.**

*Thirty-first Annual Meeting, held at Philadelphia, May 26-28, 1908.*

(Continued from page 2102.)

**The Heart in Shock.**

DR. EUGENE BOISE, Grand Rapids, Mich., said it is generally conceded that the element of danger in shock is the very low blood pressure. It is also generally believed that the cause of this low blood pressure is vaso-motor paralysis. Dr. George W. Crile adopts this theory as the result of a large number of experiments. The author thinks that the conclusion of Dr. Crile is erroneous. Dr. Howell speaks of a cardiac shock in which the low blood pressure is due to cardioinhibitory exhaustion. Dr. Yandell Henderson thinks that shock is due to a deficiency of carbon dioxide in the blood, and that when death occurs suddenly in shock the heart is tetanically contracted. A series of experiments have apparently demonstrated that in shock the heart is in a state of tonic contraction, the degree of which varies with the degree of shock, and that treatment directed to the relief of this condition is the correct treatment for shock.

**Pernicious Anemia in Pregnancy.**

DR. PALMER FINBLEY, Omaha, reviewed the literature and then presented a clinical report of a case with the postmortem findings in both mother and child. As the result of his observations, he presented the following summary: (1) Pregnancy and the puerperium exercise a favorable influence on the development of pernicious anemia. (2) Women are more liable to pernicious anemia during pregnancy and the puerperium than at any other time. (3) There is no satisfactory explanation for the effect of pregnancy on the development of pernicious anemia. Frequent child-bearing, prolonged lactation, overwork, and malnutrition are predisposing factors. (4) There is a remarkable uniformity in the clinical phenomena and postmortem findings. (5) The onset of anemia is usually in the latter half of pregnancy. (6) The diagnosis is not possible at the onset, but is later determined by exclusion of other possible forms of anemia by blood examination, fatal termination, and finally by postmortem examination. (7) The child usually dies in utero or shortly after birth and has never been observed to show pernicious anemia. Spontaneous interruption of pregnancy is the rule. (8) In all well-established cases the disease has proved fatal.

DISCUSSION.

DR. RICHARD C. NORRIS, Philadelphia, has seen only one case of pernicious anemia in over 3,000 deliveries. The patient in this case entered the hospital shortly before she was delivered with only 12 per cent. hemoglobin. A characteristic of labor was a refusal of the patient's blood to clot. There



was considerable oozing from the uterine cavity which persisted so as to require intrauterine packing and the use of adrenalin to control hemorrhage. The woman, however, finally died from this persistent oozing from the uterine cavity.

#### Suggestions in Teaching Gynecology.

DR. JOHN A. SAMPSON, Albany, N. Y., demonstrated special mechanical charts as an aid in this work, and said that three phases in the study of any of the clinical branches of medicine naturally suggested themselves: (1) The study of each disease as a science, namely, its cause, the changes in anatomy in its different stages, and, particularly important, the explanation of its symptomatology; (2) the classification of symptoms and the study of the various causes of each symptom and how these causes may be differentiated; (3) the art or technic of the clinical branch of medicine, namely, taking of the history, physical examination, diagnosis and treatment, and importance of clinical experience on the part of the student in the dispensaries, wards and hospitals or in private practice.

#### Hospital Gynecology.

DR. ROBERT L. DICKINSON, Brooklyn, N. Y., spoke of gynecology as a separate department, and described the character of hospital as affecting this. He spoke of the working adjustments between surgery and gynecology, and of the relations between assistants and house staff. He believes that there should be uniformity in technic where the operators are numerous, and thinks there should also be standard schedules of preparation, of outfit, of after-care, etc. He spoke of the methods of exhibiting or guarding the histories of cases in wards, and also discussed the question of files, indexing, the inter-relation of hospital and dispensary.

DR. I. S. STONE, Washington, D. C., read a paper on "Surgical Treatment of Prolapse of the Uterus and Bladder."

DR. HUGO EHRENFEST, St. Louis, Mo., contributed a paper with the title "Endometritis Exfoliativa."

#### Operations for Relief of Pelvic Diseases in Insane Women.

DR. LEROY BROWN, New York, described the operations performed during the last five years at the Manhattan State Hospital.

The pathologic conditions existing were alone considered; no account was taken of the mental state of the patients. The character of the mental disturbance was in the majority of instances unfavorable, in that the chance of a mental recovery was not good. Such patients, however, have an equal right to be given physical relief when needed. The patients receiving marked stimulus to mental recovery are those suffering from the form of insanity known as manic depression. The best results are obtained when operations are undertaken before the psychosis becomes a fixed habit. The character of the operation does not appear to have any relation to the mental benefit resulting.

#### Symposium on Intrapelvic vs. Abdominal Method of Dealing With Mechanical Obstruction to Delivery.

DR. RICHARD C. NORRIS, Philadelphia, referred to the factors to be studied before or during labor that promise spontaneous delivery or safe operative assistance. The actual test of labor should not be abandoned. He spoke of the methods and value of fetometry, of pelvimetry and of studies to determine the character of membranes, of cervix and of uterine energy. The status and methods of induction of premature labor for minor degrees of relative disproportion were described and personal statistics given. He spoke of the value and limitations of forceps and version. He referred to the circumstances which justify section of the pubic bone. Pubiotomy is preferable to symphyseotomy. The accidents of pubiotomy are best avoided by the most approved technic and by skilled operative delivery which includes complete preliminary dilatation of the birth canal.

DR. EDWARD REYNOLDS, Boston, said that: (1) In the absence of mechanical difficulties, intrapelvic methods are always preferable. (2) Throughout obstetrics a low maternal mortality is the most important of all considerations, and this should

determine the choice whenever it is markedly variable as between the two methods. (3) Comparison should be made of maternal mortalities under differing conditions. (4) Similar comparison of the fetal mortalities and the maternal and fetal morbidities should also be made whenever the maternal mortalities are equal. (5) In difficult cases in which the necessity for some form of operative procedure can be safely predicted in advance the patient should be submitted to primary Cesarean section. (6) Limitations of the possibility of such prediction.

DR. EGBERT H. GRANDIN, New York, said that the operation of election in hospital practice and the ideal operation in both hospital and private practice is the elective Cesarean section by the abdomen. Careful consideration of these instances from every standpoint shows that such section, other things being equal, carries less risk to the woman. Symphyseotomy and pubiotomy, from the standpoint of the child, were considered. Under absolute indications the choice lies between embryotomy of the living fetus and abdominal Cesarean section. Both the Dürrsen operation and the vaginal operation are of the emergency type, and concern not so much dystocia as conditions calling for rapid delivery, such as the acute toxemias, and very rarely placenta prævia. The Dürrsen operation is alone allowable where the vaginal portion of the cervix has emerged into the lower uterine zone. The vaginal Cesarean section is alone allowable where the vaginal portion of the cervix is intact. It stands to reason that where the pelvis is too small for the given child or the child is too large for the given pelvis, both the Dürrsen and the vaginal section are contraindicated, except as measures precedent to embryotomy.

DR. BARTON COOKE HIRST, Philadelphia, made a plea for conservatism in restoring Cesarean section. A large number of these operations are only justifiable in clinics to which the patients are transported without previous medical observation. The indication of labor two or four weeks before term obviates the necessity for the majority of Cesarean sections and should be resorted to more frequently.

DR. A. LAPHORN SMITH, Montreal, said that the operation of Cesarean section has been so perfected that when performed by an experienced abdominal surgeon it has now hardly any higher death rate for mother and child than normal labor. This can not be said of prolonged application of forceps nor of even the best of the subpubic methods.

#### Development of the Technic of Gynecologic Operations.

DR. AUGUST MARTIN, Berlin, Germany, reviewed the work done by gynecologists in the past fifty years, and said the basis of the increasing value of gynecologic operations is the advance in anatomy, normal and pathologic, and in diagnosis. Asepsis insures surgical results. He said there are two routes discussed to-day, the abdominal and the vaginal; and he described the indications and limitations of each.

#### Abdominal and Vaginal Celiotomy; Their Indications and Technics.

DR. F. PFANNENSTIEL, Kiel, Germany, pointed out that either method is available for the majority of gynecologic operations. The route which gives primarily and secondarily the best chances of life and health for the patient is to be preferred. In all intraperitoneal procedures the best chances are given by abdominal celiotomy, as it affords the better opportunity for either radical or conservative work. In aseptic cases, tumors, extrauterine pregnancy, chronic inflammations, malformations, etc., the abdominal route is preferable. In septic cases, when the indications are that the infectious matter can be completely removed, the vaginal route is preferred, unless a complete view of the whole operative field and its surroundings is necessary. Except in early invasion of the cervix, all cases of cancer are better treated by the abdominal route; also when involvement of the appendix is suspected. Vaginal operation accomplishes most in all cases of prolapsus or descensus (genitoptosis) and movable retrouterine displacements. Here neither suspension nor the Alexander operation with or without colporrhaphy is permanent. Anterior and



posterior vaginal celiotomy are used, sometimes the one, sometimes the other, and, if necessary, both. The author then pointed out the advantages of the Pfannenstiel transverse abdominal incision.

#### Vertical and Horizontal Amputation of the Uterus.

DR. HOWARD A. KELLY, Baltimore, said that supravaginal hysterectomy in women under forty is too radical if it can be avoided. He spoke of subsection of the body of the uterus as being a better plan, retaining the uterine mucosa, cutting the flow down to normal, and preserving the function of menstruation. He then described the methods of vertical and horizontal subsection of the uterus.

#### Cesarean Section Necessitated by Previous Ventrofixation.

DR. EDWIN B. CRAGIN, New York, said that for dystocia following ventrofixation to occur six times in the experience of one man, and to be so marked as absolutely to indicate Cesarean section, is sufficient evidence of the frequency of this sequel to the operation. As these fixation operations were all performed by different operators, the personal equation is eliminated. In spite of attention being called to the possibility of this unfortunate sequel to two ventrofixations, ventrosuspension is still quite frequently performed. An intended ventrosuspension may become a ventrofixation by accidental wound infection. A ventrosuspension which allowed an easy labor with a febrile puerperium in the first postoperative confinement, may become a ventrofixation and demand a Cesarean section for the next delivery, as occurred in the last of this series. During the child-bearing age, ventrofixation is not a safe operation for posterior displacement of the uterus.

#### Is Pubiotomy a Justifiable Operation?

DR. J. WHITRIDGE WILLIAMS, Baltimore, stated that in thirteen operations performed by the author or his assistants there were no maternal deaths, only one woman being seriously sick. All began to walk by the end of the third week and were dismissed in good condition less than one week later. In one-third of the cases there was permanent mobility between the cut ends of the bone. This did not interfere with locomotion, and possibly played a part in permitting subsequent spontaneous delivery in one patient. The operation is contraindicated when the true conjugate measures 7 cm. or less, and consequently does not enter into competition with Cesarean section. It is particularly applicable to the "border line" cases, as it affords a safe method of delivery after subjecting the patient to the test of several hours in the second stage, whereas the mortality of Cesarean section rises steadily with each hour elapsing after the onset of labor. If pubiotomy fulfills its present promise, it should entirely do away with the induction of premature labor in the treatment of contracted pelvis.

#### Experimental Study of Hemorrhage and Its Possible Bearing on Ruptured Ectopic Pregnancy.

DR. HUNTER ROBB, Cleveland, said that attempts were made to cause lesions in dogs which would correspond in severity to those present in cases of ruptured ectopic pregnancies in women. Assuming that in these experiments conditions were produced similar to those occurring in ruptured ectopic pregnancies in women, the results suggested the following conclusions, as being worthy of consideration: 1. A woman suffering from a ruptured ectopic pregnancy does not die from the hemorrhage itself. Death was caused by hemorrhage and shock which might be increased by various procedures. 2. An immediate operation might add shock to shock and so prevent recovery. 3. The hemorrhage ceases in from 15 to 20 minutes. The fact that the hemoglobin remained stationary showed that clotting had taken place. A hemorrhage that had ceased might be started up by manipulation of the tissues, and might thus be mistaken for a continuing hemorrhage. 4. The subcutaneous injection of salt improves the pulse and respiration and did not start the hemorrhage up again. 5. The use of bandages or proper weights by which the abdominal walls were approximated was likely to improve the condition of these patients.

### PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting held April 22, 1908.

The President, DR. ALBERT M. EATON, in the Chair.

#### Demonstration of the Method of Taking the Opsonic Index.

DR. HARRY A. DUNCAN said that the theory of immunity as advocated by Wright puts most of the emphasis on the blood serum as the active protective substance of the body, especially that element of the blood which prepares the bacteria so that the leucocytes may ingest and destroy them. To measure the degree of resistance or susceptibility possessed by some patient to any disease caused by germs all that is necessary is to compare the action of the patient's blood serum on the bacteria in question with the action of the blood serum of some healthy individual. The influence of the serum on the germ is noted by observing the number of the germs which the polymorphonuclear leucocytes find suitable for ingestion. To take the opsonic index of a patient there is needed for the test, blood serum from the patient, blood serum from a healthy individual with which to compare it, an emulsion of the bacteria in question, and leucocytes washed free of all adhering serum. The blood serums are secured by centrifuging a few drops of blood which have been collected in a small pipette known as Wright's pipette. The bacterial emulsion is obtained by rubbing up in salt solution a culture of the germ in question grown on an agar slant. The corpuscles are cleaned of all their own serum by washing them repeatedly in salt solution and a 5 per cent. solution sodium citrate. The sodium citrate prevents clotting and the centrifuge separates the corpuscles from the washing fluids. Equal quantities of the patient's serum, washed corpuscles, and bacterial emulsion are drawn up into an opsonizing pipette, mixed and incubated for fifteen minutes at blood heat to give the serum an opportunity to act on the bacteria and the corpuscles a chance to ingest them. Equal quantities of the healthy serum, washed corpuscles, and bacterial emulsion are treated likewise in another opsonizing pipette. At the end of the fifteen minutes the contents of these pipettes are expelled on clean glass slides, smeared and stained. The number of bacteria ingested in 50 corpuscles acted on by the patient's serum are counted and compared with the number ingested by 50 corpuscles influenced by the healthy serum.

#### DISCUSSION.

DR. NATHANIEL BOWDITCH POTTER, New York, quoted some figures illustrating the difficulty in relying on the opsonic index. In opposition to this, however, he admits that it has some value. He believes the bacterial inoculations are useful in many instances.

DR. NATHANIEL GILDERSLEEVE regards the opsonic index of very moderate value for diagnostic purposes, but of more value in determining the size of the dose of vaccine and in interspersing the dose.

DR. G. MORTON ILLMAN's experience with taking the opsonic index leads him to feel that it is fairly consistent. The greatest success clinically is observed in cases of tuberculosis and in staphylococic and streptococic conditions.

#### The Microscopic Diagnosis of Diseases by Blood Smears.

DR. L. NAPOLEON BOSTON outlined the clinical evidences of unquestionable value obtained through a microscopic study of the blood after it has been smeared on cover glasses or slides.

Given a blood smear without any further knowledge of the patient from whom it has been obtained, it is possible to make a diagnosis in but a small number of diseases, i. e., malaria, filariasis, chronic plumbism, trypanosomiasis, leukemia, chlorotic anemia, and anemias. The diseases in which such blood examination may support the further clinical study of the case in question are given as anemia with reference to the particular type, pneumonia, sepsis, trichinosis, infection with intestinal parasites, and all diseases where leukocytosis is present. It is further of service in connection with acute mania, melancholia, poisoning from both mineral and gaseous substances, and conditions resulting from malnutrition, e. g., syphilis, glandular tuberculosis, etc. A full consideration is



given to those diseases where living animal parasites are to be found in the circulating blood with an outline of the laboratory study.

DR. GEORGE W. NORRIS demonstrated the Jaquet cardio-sphygmograph, an elaboration of the old clinical sphygmograph, capable of attachment to the wrist in the usual manner.

### Medicolegal

#### Another Court's View of Power to Require Allowance of Physical Examination.

The Court of Appeals of Maryland says, on the appeal of United Railways and Electric Co. of Baltimore City vs. Cloman, a personal injury case brought by the latter party, that the defendant company moved the court to direct the plaintiff to permit the physicians of the defendant to make a physical examination of her, and also made another motion asking the court to direct her to submit to such examination by a physician to be appointed by the court. The authorities are conflicting on the subject. It is said that there is no record in the English reports of such an order, or even of such a motion. In the federal courts it is held that the court has no power to compel a plaintiff in an action for personal injuries to submit his person to a physical examination, and it was so decided in *Union Pacific R. R. Co. vs. Botsford*, 141 U. S. 250. The weight of authority seems to be to the contrary in the state courts of this country, although, while the power is admitted, many cautions and limitations are suggested, and the general rule is that it can not be demanded as a matter of right by a defendant, but the application is addressed to the sound discretion of the trial court, which will not be interfered with by an appellate court unless such discretion was manifestly abused. That seems to this court to be the correct view.

This court can not admit that the trial court has no such power in any case, for some times it may be apparent that a plaintiff is feigning, and has not suffered such injuries as he pretends he has sustained. Instances are not unknown to courts and counsel, who have had experience in such cases, in which jurors have been imposed on, and sometimes even reputable physicians, who have been called on to testify on behalf of plaintiffs, have been deceived. When, therefore, the ends of justice seem to require it, there can be no valid reason why an examination should not be permitted, if reasonable application is made, and the court is satisfied that no serious physical or mental injury is likely to be done the plaintiff.

Unless consent is given by the plaintiff to have the examination made by physicians of the defendant, the safe course is for the court to name some disinterested physician or physicians to make such examination; but the court and jury ought not to be required to rely on the testimony of experts employed or produced by the plaintiff, or that of the plaintiff himself, when there is any real question about the correctness of the evidence offered by a plaintiff in reference to the extent of his injuries. The practice of permitting such an examination would have a tendency to prevent frauds, which are sometimes perpetrated by dishonest plaintiffs in actions for personal injuries.

As to what is a reasonable time for such an application may depend on circumstances, but it ought ordinarily to be made before the plaintiff's case is closed, and, if allowed after that, the privilege should be given him to introduce further testimony on the subject. Generally it should be done in time to avoid unnecessary delay in the trial, unless the court is satisfied by affidavits or otherwise that the defendant is taken by surprise, and the delay is necessary for the ends of justice. It might be well to adopt the practice of requiring affidavits of counsel as to the necessity for such applications, and, of course, the court should be satisfied that the application is made in good faith, and not merely to affect the jury, in case of refusal to submit to the examination.

#### Competency as Witness of Physician Disclaiming to be an Expert.—Care of Viscera.

The Supreme Court of Missouri says that it was insisted in the homicide case of *State vs. Daly*, that a physician, who testified as an expert witness on the part of the state, and who subjected the viscera of the deceased to a chemical analysis, was incompetent to testify as such expert because he failed in his preliminary examination, and protested against being so denominated. But the court does not agree with the contention. It says that, while the witness did not claim to be an expert, and protested against being denominated such, the court thinks it was more because of modesty than lack of knowledge respecting the matters to which he testified as an expert, for he showed himself to be quite familiar with the subject then under consideration, and his testimony bore the stamp of truth and honesty. Besides, the question of whether he possessed the necessary qualifications to render him competent to testify in the character of an expert was a preliminary one to be passed on by the court after the examination of the witness. The weight of the testimony of this witness, like that of any other, was for the consideration of the jury.

#### What Constitutes "Serious Illness."

The United States Circuit Court says, in the case of *Keiper vs. Equitable Life Assurance Society of United States*, that the term, "serious illness," has been construed to mean such an illness as has, or ordinarily does have, a permanent detrimental effect on the system, or renders the risk unusually hazardous. What is to be understood by "serious illness"? If any sickness which may terminate in death, then it must embrace almost every distemper in the entire catalogue of diseases. The true construction of the language must be that the applicant has never been so seriously ill as to permanently impair his constitution, and render the risk unusually hazardous.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Boston Medical and Surgical Journal.

June 11.

- 1 Modern Medicine and Surgery in the Orient. (To be continued.) J. E. Mears, Philadelphia.
- 2 \*Modes of Infection in Tuberculosis. S. Von Ruck, Asheville, N. C.
- 4 Composition of Large Curds in Infants' Stools. F. B. Talbot, Boston.
- 5 Camphoric Acid, Its Action and Uses. M. V. Tyrode, Boston.

June 18.

- 6 \*An Account of Dr. Louis-Daniel Beaupérthuy, a Pioneer in Yellow Fever Research. A. Agramonte, Havana, Cuba.
- 7 Suture of the Patellar Tendon. C. F. Painter, Boston.
- 8 Notes on X-Light: The Resistance of an X-Light Tube is not an Accurate Indication of the Degree of the Vacuum. W. Rollins, Boston.
- 9 Modern Medicine and Surgery in the Orient. (Concluded.) J. E. Mears, Philadelphia.

2. Infection in Tuberculosis.—Von Ruck holds that the tubercle bacillus is liable to be inhaled with air contaminated by infectious dust or minute sputum droplets; also that primary infection by the digestive tract undoubtedly occurs, though its frequency can not be even approximately estimated, and is more frequent in children than in adults, while the origin of tuberculosis in the abdominal cavity is less frequent than it is in the chest. He says: "It is fortunate for practical prophylaxis or treatment that the relative frequency of the different modes of infection is not of great importance."

6. Dr. Beaupérthuy and Yellow Fever Research.—Agramonte presents documentary evidence to show that, so far back as 1854, Dr. Louis Daniel Beaupérthuy attributed the propagation of yellow fever to the "striped-legged mosquito." His views were published in the *Official Gazette* of Camuna, and were investigated by Dr. de Brassac on behalf of the French colonial office, who reported adversely on them. Beaupér-



they supposed that the mosquitoes obtained the poison from putrefying organic matter; but he recognized that they were the distributors of it, and fixed the guilt mainly on the domestic habits of the striped-legged variety.

#### New York Medical Journal.

June 20.

- 10 \*New Method of Estimating the Permeability of the Pylorus and an Attempt at Testing the Pancreatic Function Directly. M. Einhorn, New York.
- 11 Favus, with Reports of Two Indigenous Cases. E. J. Stout, Philadelphia.
- 12 \*Treatment of Infantile Paralysis. C. R. Keppler, New York.
- 13 Bothriocephalus Latus. F. Huber, New York.
- 14 \*Cholera Infantum. L. K. Hirshberg, Baltimore.
- 15 Common Conjunctival and Corneal Diseases. A. J. Herzog, New York.
- 16 \*Cause of Premature Separation of the Placenta. L. Rosenberg, Brooklyn, N. Y.
- 17 \*Is Idopathic Epilepsy with Associated Paralysis Due to the Action of a Germ? B. R. Le Roy, Athens, Ohio.

10. **Permeability of Pylorus.**—Einhorn describes a small bucket (resembling the beads used in testing the condition of the stomach) tied to a long string of braided silk with a mark at 75 cm. It is enclosed in a gelatine capsule and swallowed about an hour after a small meal and remains in the digestive tract about three hours, the patient fasting meanwhile. The thread is tied to the ear or otherwise fastened so that it can not go beyond the 75 cm. mark. It is then drawn slowly up, usually meeting with slight resistance on passing the pylorus. The patient swallows once when the bucket has reached the entrance of the esophagus, and it is then easily withdrawn; or the bucket may be swallowed at bedtime and withdrawn in the morning. Usually it returns filled, and its contents are withdrawn with a pipette and placed in a small porcelain dish. They are usually yellowish (from bile), neutral or faintly acid, with no free hydrochloric acid. That the bucket really gets into the duodenum may be told not only by the contents, but by x-ray photographs.

12. **Infantile Paralysis.**—Keppler says that during the first six weeks all these patients should be left alone in the recumbent posture. The subsequent treatment he divides into: 1, Active treatment, (a) by the use of pendulum machines, (b) by the use of massage and electricity, (c) by the use of hydrotherapy; 2, brace treatment; 3, operative treatment, comprising tenotomy, tendon transplantation, nerve transplantation, and arthrodesis.

14. **Cholera Infantum.**—Hirshberg says that while this term is used to cover various conditions, the most virulent and dangerous form is caused by *Bacillus dysenteriae*, which enters the body through the stomach. The scheme of treatment is to remove bacilli and their toxin by intestinal irrigation and to combat exhaustion by stimulants, and otherwise treat symptoms. Half an ounce of old brandy can be taken by a child ten months old in 24 hours. Calomel and castor oil are the cathartics of choice, but stomach lavage and colon irrigation may be needed. Drugs, except opium, resorcin, and bismuth, have been overestimated. Lime water, sodium bicarbonate, and magnesia help the vomiting. Astringents usually do harm. A dilute acid may help in the later stages. In severe prostration, mustard baths, hot packs and saline infusions may be used. Hirshberg inveighs against popular superstitions that keep up the liability, the idea that it helps a child to pass from milk diet to other food, to accustom it to "taste" every dish taken by the mother, breaking down its digestion and constitutional resistance; and the superstition that children must have something to exercise their gums on. Such a desire is merely an acquired habit. Babies begin to acquire habits within ten days after birth. The remedy lies in maternal tact and judgment.

16. **Premature Separation of Placenta.**—Rosenberg says that in the cases that have come under his notice, he has found metritis due to gonorrheal infection to be a predisposing cause, the exciting cause being some slight trauma caused by the midwife or the physician. He reports a case in support of this theory.

17. **Epilepsy.**—Le Roy has settled on one germ, a spore-bearing bacillus, normally from 1 to 3 microns in length and from

one-half to two-thirds of a micron in width, as a cause of the paralysis associated with epilepsy. The micro-organism is acid-fast, motile, intensely so—in certain media—is killed when grown on agar at 194 degrees F., but when grown in media, which have a small content of the silicates of calcium and magnesium, it can not be killed with prolonged boiling of the media; specimens lived that had undergone fractional boiling of the media for over two hundred hours. Growths from this specimen, grown as follows, give peculiar results: In a faintly alkaline gelatin bouillon at 98.6 degrees F. the organism resembles, when full grown, the *Bacillus typhosus*; transplanted to agar made less alkaline, and grown at 98.6 degrees F., it resembles the *B. tetani*; transferred to a faintly acid, lime, silicate, magnesia medium, it grows to full size. The medium is then boiled and set aside for a few weeks and the germ resembles the tubercle bacillus. Washed off and placed in faintly acid gelatin medium and grown for several weeks the germ will resemble the *B. diphtheriae*. Throughout all these changes the germ will take the stain of the micro-organism, which it simulates and can be distinguished with difficulty. Under certain conditions of growth the germ becomes ultramicroscopic in form and after weeks of culture at 98.6 degrees F. it reappears. Clinically, the author has prepared an opsonin from it which has been tested in the Ohio State Insane Asylum with good results. He promises further communications on the subject.

#### Medical Record.

June 20.

- 18 \*Milk-Free Fluid Diet and Rectal Irrigations in Typhoid. A. Seibert, New York.
- 19 \*A Milk-Free Diet in Typhoid. C. J. Strong, New York.
- 20 \*Milk-free Fluid Diet and Rectal Irrigations in Typhoid. R. C. Kemp, New York.
- 21 Clinical Charts of a Case of Quartan Malaria Observed in West Africa. F. C. Wellman, Benguela, West Africa.
- 22 The Relation of Tuberculous Cows to Tuberculosis in Children. W. L. Stowell, New York.
- 23 Treatment of Diseases Due to Respiratory Catarrh. W. M. Richards, New York.
- 24 Injurious Habits and Practices of Childhood: Their Detection and Correction. K. H. Goldstone, Jersey City, N. J.

18. **Milk-Free Diet in Typhoid.**—Seibert has tested the following plan of treatment in St. Francis' Hospital: The stomach is washed out and two doses of calomel, 2 grains each, were given within two hours. Rectal irrigations with warm water were given, except when contraindicated by bowel hemorrhage, appendicitis, or peritonitis. Cold water only was given during first day, then strained rice, oatmeal, or barley soup, with extract of meat and egg yolk spiced. Other broths, and in case of great hunger, zwieback, were next given. Before each meal from fifteen to twenty-five drops of hydrochloric acid were given in half an ounce of water. Under this treatment, general symptoms improve, temperature falls, complications disappear or fail of development, the attack is shortened and the mortality reduced. In all, 338 cases have given a mortality of 3.1 per cent.

19. **Idem.**—Strong has tested in 17 cases, the method of Seibert, mentioned in the preceding article, and endorses Seibert's conclusions.

20. **Idem.**—Kemp discusses the milk-free treatment of typhoid of Seibert, which he considers based on sound scientific principles, and which he predicts will, in time to come, be generally recognized as the proper method.

#### Archives of Internal Medicine, Chicago.

May.

- 25 \*Relation of Iodin to Structure of the Thyroid Gland. D. Marine and W. W. Williams, Cleveland, Ohio.
- 26 \*Lymphangitis and perilymphangitis of the Liver in Their Relations to Inflammations of the Organ. H. Oertel, New York.
- 27 \*Recent Advances in Our Knowledge of the Underlying Chemical Principles of Diabetic Acidosis. E. H. Goodman, Philadelphia.
- 28 Infection with *Schistosoma Japonicum* in a Filipino. E. R. Whitmore, Manila, P. I.
- 29 \*Treatment of Gonococcus Arthritis by Injections of Dead Gonococci, and the Clinical Reaction which Follows the Injections. E. E. Irons, Chicago.

25. **Iodin and Thyroid.**—Marine and Williams summarize the results of their investigations as follows: 1



Iodin is necessary for normal thyroid activity. 2. Iodin is the main index to the physiologic value of the thyroid secretion (thyreoglobulin) to the body. 3. The percentage of iodine varies with the amount of colloid in the several degrees of hyperplasia; the colloid varies inversely with the degree of thyroid hyperplasia; the iodine varies inversely with the degree of thyroid hyperplasia. 4. The colloid gland (goiter) is the quiescent or normal state of a gland which has previously been a glandular hyperplasia and obeys all the biologic laws of a normal gland. 5. In the classification of thyroid changes (excluding infections and neoplasms) four major groups must be recognized, viz.: (a) Normal glands, (b) colloid glands, (c) hyperplastic glands (all grades), (d) complications engrafted on any of the three preceding groups. 6. The ability of the thyroid glands to store iodine depends on the degree of glandular hyperplasia rather than on the form or mode of administration of iodine. 7. The optimum therapeutic effects of iodine on the thyroid gland are only obtained with doses vastly smaller than those usually employed. 8. The percentage of iodine which a thyroid may contain is variable, but the minimal percentage necessary for the maintenance of normal gland structure is constant. (9) Commercially desiccated thyroid has a constant iodine content and, therefore, has a variable physiologic activity and therapeutic value. 10. The problem of human goiter, both anatomically and chemically, should be investigated along lines similar to those adopted for the dog.

**26. Lymphangitis of Liver.**—Oertel confines himself to a consideration of the condition of the lymphatics in what are now termed "acute," "subacute," and "chronic" inflammations of the liver. He says that inflammatory conditions of the liver are associated with an exudative lymphangitis and perilymphangitis. If, in the subsidence of the inflammatory irritation, the lymphatics are cleared, and nothing stands in the way of resorption of inflammatory irritants and products, a change to the normal may take place. If, on the other hand, the lymphatics are not cleared, they form an essential factor in the establishment of a progressing inflammation in the form of an exudative and productive or pure cirrhosis of the liver. He suggests the following very broad classification for diffuse inflammations of the liver:

1. Degenerative exudative hepatitis, now called acute hepatitis, in cases which are characterized in varying degrees and in varying combinations by cellular exudation taking origin from the portal spaces, by lymphangitis, perilymphangitis and cholangitis, by diffuse parenchymatous and fatty degenerations of the liver cells, and by cytotoxicity and bile imbibition.

2. Degenerative productive hepatitis in cases which are now grouped as subacute hepatitis, and divide them into two forms: the first with a more rapid loss of substance, grossly appears more or less granular, the second with a much more gradual loss of substance has consequently a more uniform, even distribution of connective tissue and is, therefore, smooth. Both of these may be associated with either enlargement or diminution in size of the liver. They are characterized, microscopically, by a productive cellular inflammation proceeding from the portal spaces, which is perinsular and diffuse: a productive lymphangitis and a productive pericholangitis. It is further characterized in varying degree, and more or less accentuated by, more slowly progressing, irregular, parenchymatous and fatty degenerations and fatty infiltration, cytotoxicity, bile imbibition, and the formation of new, mature and embryonic liver cells (bile ducts).

3. Productive hepatitis, or sclerosis of the liver (which is to be preferred to cirrhosis of the liver), and this is characterized essentially by the formation of mature, peri-insular, or diffuse connective tissue formation; depending on the loss of liver substance and the distribution of connective tissue, it is either granular or smooth and goes along with enlargement or diminution in size of the organ. It further presents very slowly progressing, irregular, parenchymatous and fatty degenerations, and fatty infiltration, cytotoxicity, little or moderate bile imbibition, and the formation of mature and embryonic liver cells (bile ducts).

**27. Diabetic Acidosis.**—Goodman's review of recent advances in our knowledge of the underlying chemical principles of diabetic acidosis leads him to the conclusion that of the three acetone bodies, beta-oxybutyric acid, diacetic acid, and acetone, the first-named seems at present to be the cause of acidosis, not on account, however, of any specific toxic properties, but simply on account of its excess robbing the body of its alkaline supply. Any other acid present in similar excess might have the same result. Fat, especially that containing fatty acids, is the principal source of the acetone bodies, though they may be derived from protein. The place of formation is probably the liver.

**29. Gonococcus Arthritis.**—Irons studies this subject and describes the results of injections of dead gonococci. He concludes that systemic infections by the gonococcus tend to spontaneous recovery—some cases are acute, recovery being rapid, some more chronic, lasting months or even years. His results so far seem to indicate that in certain cases of gonococcus arthritis recovery can be hastened by the injection of dead gonococci, which should be used, however, rather in conjunction with other general measures, e. g., rest, aspiration of distended joints, massage of prostate, etc. The reliability of the clinical gonococcus reaction as a diagnostic procedure can be determined only after many tests.

#### Annals of Surgery, Philadelphia.

May.

- 30 Subtemporal Decompressive Operations for the Intracranial Complications Associated with Bursting Fractures of the Skull. H. Cushing, Baltimore.
- 31 Osteoplastic Resection of the Skull. A. C. Wood, Philadelphia.
- 32 \*Atlo-Occipital Dislocation. N. J. Blackwood, U. S. Navy.
- 33 \*Fracture Through Anatomic Neck of the Humerus with Dislocation of the Head. J. B. Buchanan, Pittsburg.
- 34 \*Treatment of Dislocation of the Shoulder Joint Complicated by Fracture of the Upper Extremity of the Humerus. J. M. Mason, Birmingham, Ala.
- 35 \*Treatment of Epiphyseal Displacements and Fractures of the Upper Extremity of the Humerus Designed to Assure Definite Adjustment and Fixation of the Fragments. R. Whitman, New York.
- 36 Traumatic Subluxation of the Uterus. F. P. Vale, Washington, D. C.
- 37 \*Occluding Pulmonary Embolism. W. Bartlett and R. L. Thompson, St. Louis.
- 38 \*Operative Treatment of Intractable Vomiting, not Due to Pyloric Obstruction; Neuroses of the Stomach. W. Meyer, New York.
- 39 \*Value of Enterostomy and Conservative Operative Methods in the Surgical Treatment of Acute Intestinal Obstruction. C. A. Elsberg, New York.
- 40 Non-absorbable Suture and Ligature. O. H. Allis, Philadelphia.

32. See Abstract No. 49.

**33. Fracture of Neck of Humerus and Dislocation of Head.**—Buchanan reports this case and arrives at the following conclusions as to the mechanism involved: "It is probable that a fall on the outstretched arm or hand may cause, (1) a dislocation; that, if the body pitches forward with the hand or arm still on the ground, the force is applied in a new direction—along the line of the shaft, (2) an indentation of the neck occurs, or (3) a partial or complete separation of the head; if the body is projected further forward the force is applied in still another direction—compressing the elbow to the side, and (4) the partial cleavage of the neck is completed by a strong leverage of the arm. The treatment is: (1) Restoration of the dislocated head to the glenoid cavity by external manipulation; (2) restoration by open incision; (3) excision of the dislocated head, which seems to be the operation of choice, having been performed in 14 cases, with 2 results excellent, 6 good, 1 moderately good, and 2 deaths. That was the course adopted with success in the present case.

34. Abstracted in THE JOURNAL, Jan. 25, 1908, p. 310. The present article contains in addition some good illustrations and a tabular analysis of reported cases.

**35. Epiphyseal Displacement.**—Whitman describes the following methods based on the principle of reducing the displacement by leverage of the extremity and opposing the fragments by adjusting the attitude of the limb to conform to the separated head, or essentially in full abduction, the alignment being aided by manipulation of the inner fragment and by tension on the capsule and the surrounding muscles. The patient having been anesthetized, the adherent fragments are separated by forcible manipulation. The head is then grasped, as well as may be, by the fingers, and under traction the arm is abducted gradually to the extreme limit, the acromion serving as a fulcrum to direct the extremity of the diaphysis downward toward the epiphysis. When the fragments are in apposition the abducted arm may be drawn somewhat forward, if necessary, to assure proper adjustment. A shoulder spica is then applied, the extended arm being raised over the head by rotation of the scapula, so that one may better utilize muscular tension and the force of gravity to



fix the fragments. Two methods of bandaging are illustrated. Union is prompt.

37. Abstracted in *THE JOURNAL*, Jan. 18, 1908, p. 233.

38. **Intractable Vomiting.**—Meyer's article is written, first, to recall to the mind of the general practitioner the fact that cases like those described clearly belong to the borderland, and that, after he has exhausted all means at his disposal, a mere abdominal incision which, as a matter of course, will reveal some kinking or adhesions, is apt permanently to cure the patient; second, to impress on the surgeon that it is unwise to refuse operation; third, that gastroenterostomy in these cases is clearly contraindicated, in fact may result fatally. It is indicated only in cases of pyloric stenosis and for the purpose of putting at rest recurrent gastric ulcers that may have developed in the distal part of the stomach.

39. **Enterostomy in Intestinal Obstruction.**—Elsberg draws the following conclusions:

1. Operative interference for acute intestinal obstruction should very often be divided into two stages.

2. Enterostomy and drainage should be the operation of choice, not only in the desperate cases, but also in many patients whose condition is still a fair one.

3. Prolonged search for the obstruction and its relief, in all patients excepting those in very good condition, should be delayed until the acute symptoms have been relieved by the opening and drainage of the bowel.

4. The danger of leaving behind gangrenous intestines is a small one, it is smaller than the danger from prolonged manipulations.

5. When gangrenous intestine is present it is preferable to bring it outside of the abdomen and deal with it later; the obstructive symptoms being meanwhile relieved by enterostomy.

6. Enterostomy, thus done, is not an "extreme, irrational and blindly advised" operation, but one that embodies a distinct therapeutic principle—alleviation of acute symptoms as the first step in the relief of a pathologic condition.

7. The operation of enterostomy may permanently relieve acute intestinal obstruction.

8. Fecal fistula will remain in only a small proportion of the cases in which enterostomy has been done, if the opening and drainage is made according to the Kader principle.

#### American Journal of Obstetrics, New York.

May.

41 \*The Crime of Gynecology. C. W. Barrett, Chicago.

42 \*Preservation of the Ovaries Entire or in Part in Supravaginal or Panhysterectomy. R. Peterson, Ann Arbor, Mich.

43 \*Rupture of the Uterus Through the Cesarean Cicatrix. G. L. Brodhead, New York.

44 Myxosarcoma of the Round Ligament. W. Krusen, Philadelphia.

45 Fibroma of the Anterior Abdominal Wall. Id.

46 \*Necessity for the Artificial Feeding of Infants. L. Johnson, Washington, D. C.

47 \*Menorrhagia and Metrorrhagia. T. Kubo, Tokio, Japan.

41. This article was published in the *Chicago Medical Recorder*, April, and was abstracted in *THE JOURNAL*, June 6, 1908, p. 1942.

42. **Preservation of Ovaries in Hysterectomy.**—Peterson has tabulated the results in 173 cases of hysterectomy in which both ovaries were also removed in 146, and in the remaining 27 cases, part of one ovary, one ovary, or both ovaries were retained. He examines the analysis under the following heads in relation to postoperative troubles: 1, Frequency; 2, severity; 3, age; 4, kind of operation; 5, disease; 6, duration of symptoms; 7, amount of ovarian tissue retained. His conclusions are as follows: At least 10 per cent. of all women regularly menstruating at the time of operation will be free from the troublesome symptoms of the artificial menopause after hysterectomy with removal of the ovaries. The percentage of women with no symptoms after similar operations will be slightly more than doubled if some ovarian tissue be retained. The severity of the symptoms of the artificial menopause is much less when the ovaries are retained after hysterectomy. It is not necessarily true that the younger the woman the more she will suffer from the symptoms of the menopause after hysterectomy with removal of the ovaries. The greatest percentage of suffering occurs in women operated on between the ages of 40 and 44; therefore, the rule that ovaries should be removed from patients over 40 when hysterectomy is performed should not be followed. The frequency and severity of the artificial menopause is not influenced in any way by the kind of hysterectomy performed, whether the ovaries be removed or retained. The severity of the symptoms of the menopause is practically the same after hysterectomies with removal of the ovaries for fibroid disease of the uterus and inflammatory disease of the appendages. Retention of

ovarian tissue after hysterectomy cuts short the period from which patients usually suffer from the symptoms of the artificial menopause. The greater the amount of ovarian tissue conserved, the more will the symptoms of the artificial menopause be mitigated.

43. **Rupture of Uterus Through Cesarean Cicatrix.**—Brodhead tabulates and abstracts the reports of twenty cases, including one of his own, in which rupture of the uterus has occurred through the Cesarean scar. He summarizes the results of his investigations as follows: Rupture of the uterus through the Cesarean cicatrix is of rare occurrence. With prompt operative methods the mortality is comparatively low. When pregnancy follows Cesarean section, the patient may be safely delivered again by a section in a large percentage of cases. In repeating a section, labor should be anticipated by a week or fourteen days. If section is to be repeated and labor sets in prior to the time elected for operation, Cesarean section should be performed as soon as possible after the onset of labor pains. Sterilization may be done at the time of section, if the patient so desires. Suture of the laceration has proved successful, but in some instances hysterectomy will be the method of choice.

46. **Artificial Feeding of Infants.**—Johnson considers that the increasing prevalence of artificial feeding is because every year fewer women either can or will nurse their infants. The principal factors in inability to do so are (1) heredity—alcoholism in the grandparents or inability of the maternal grandmother to nurse the present mother in infancy; (2) the artificial life of the modern women. To these Johnson adds as at least a contributory, and one that physicians can help to control, the strenuous school life of girls to-day. He reminds us that in rearing a girl we are contending with a deeper and more mysterious problem than in raising a boy, and suggests the inadvisability of continuing a parallel curriculum for boys and girls from early school days through college.

47. **Menorrhagia and Metrorrhagia.**—Kubo's elaborate article hardly lends itself to abstracting. He discusses the present idea concerning the causes of "uterine hemorrhage," enumerates the causes—general or remote, and local or direct—as described by various authors, and analyzes 97 cases from his own material, the striking feature of which is a finding of normal endometrium in 56 on histologic examination. He then discusses the material furnished by hysterectomy, partial hysterectomy, or panhysterectomy, with the result that examination of 9 cases of extirpation or partial resection of the uterus did not disclose any definite point common to all to which the uterine hemorrhage could be attributed in each case.

#### United States Naval Medical Bulletin, Washington, D. C. April.

48 \*Treatment of Tuberculosis by the Administration of Mercury. B. L. Wright, U. S. Navy.

49 \*Atlo-Occipital Dislocation. N. J. Blackwood, U. S. Navy.

48. **Mercurial Treatment of Tuberculosis.**—Wright, observing that the pulmonary tuberculosis of syphilitics improved while they were undergoing antisiphilitic treatment, placed ten tuberculous patients on mixed treatment:

R. Hydrargyri chloridi corrosivi..... 0|00325 gr. 1/20  
Potassii iodidi ..... 0|324 gr. v

Sig.: t. i. d. in water.

The men all improved to the point where the medicine deranged the gastrointestinal tract, when it had to be discontinued. Later, Wright and Bucher used hydrargyrum succinum in deep muscular injections. Two cases are fully reported. Thirty-three cases are reserved for future publication, but of the entire number 30 patients are showing improvement by reduced pulse rate and temperature, increased appetite, lessened cough, and a gain in weight, while the other five are holding their own. Most are well advanced cases. Wright concludes that they have shown: (1) The almost immediate improvement in the general condition of the patient, following the administration of mercury; the slowing of the pulse, the reduction of temperature and the gain in weight. (2) That it will cure extremely advanced tuberculous ulceration of the larynx and pharynx in a re-



markedly short period of time. (3) That it produced marked improvement in advanced pulmonary lesions, and that it has also a decided beneficial action on tuberculous glands. The patients were most carefully questioned and examined and no history or trace of syphilitic infection could be discovered. Wright, therefore, believes them to be cases of unimixed tuberculous disease.

49. **Fracture Dislocation of Atlas and Axis.**—Blackwood reports this case as unique in that the patient was kept alive for 34½ hours by artificial respiration. He has examined the literature of the subject exhaustively, but could find but one case similar to this as to location and character of fracture. In that case life was sustained for 3½ hours only by artificial respiration.

*Archives of Pediatrics, New York.*

*April.*

- 50 Relation of the Bacilli Belonging to the So-called Dysentery Group to the Diarrheal Affections of Infants. J. H. M. Knox, Jr., Baltimore.
- 51 Need of Greater Accuracy in Prescribing Starch in Infant Feeding. M. Ladd, Boston.
- 52 Specimens and Photographs of Resected Ribs. F. Huber, New York.
- 53 Articular Rheumatism in an Infant. J. P. C. Griffith, Philadelphia.
- 54 Case of Congenital Malformation of the Esophagus. J. Phillips, Cleveland.
- 55 Sarcoma of the Kidney in Infancy. W. F. Cheney, San Francisco.
- 56 \*Pathology of Tuberculosis in Children. J. McCrae, Montreal.
- 57 Laboratory Aids to the Diagnosis of Tuberculosis in Infants and Children. T. H. Coffin, New York.
- 58 \*Channels of Communication in Tuberculosis. S. M. Hamill, Philadelphia.

56. **Tuberculosis in Children.**—McCrae's experience in regard to generalized tuberculosis in children has been that the most frequent site of involvement is the lungs, which were affected in 95 per cent. In more than half the cases the following organs were affected in the stated order of frequency: lymph nodes, spleen, liver, intestines, meninges and kidneys. Tuberculoma in the brain in the author's series, was about one-fourth as frequent as meningeal involvement.

58. **Tuberculosis.**—Hamill discusses the various forms of infection with tuberculosis: Infection through the skin, respiratory infection and alimentary infection. As a result of his study he draws the following conclusions:

1. It is impossible to gain any knowledge as to the point of entry from either the location or the degree of development of the tuberculous lesions.
2. Fetal infection is proved but not common.
3. Infection through the mouth, tonsils and pharynx is of frequent occurrence and may be produced by inhalation or ingestion.
4. Primary Inhalation Infection through the lungs does occur.
5. Infection through the intestinal tract is definitely proved.
6. The bronchial glands and lungs may be infected through the intestinal tract as well as through the lower respiratory tract.
7. The relative significance of the various modes of infection is difficult to determine on the basis of our present knowledge, since it has been clearly shown that it matters not from what point the tubercle bacillus is introduced, it can eventually reach the bronchial glands and lungs without leaving any evidence of its mode of entrance. It is probable, however, on account of the greater exposure of these portions of the body, that infection through the upper respiratory and alimentary tracts is the most common, and next to this, for similar reason, through the lower respiratory and intestinal tracts. As to which of the latter two constitutes the more frequent channel it would seem that the nature of the exposure should prove a determining factor. If infection occurs when the bacillus is introduced with the food or carried to the lips or mouth in kissing, or by infected hands, nipples, toys, drinking cups, or the various feeding utensils, it must also certainly be by the alimentary tract. If, on the other hand, the bacilli-laden dust or droplets are inspired they may be conveyed directly to the lungs and there produce pulmonary and bronchial gland infections.

*Illinois Medical Journal, Springfield.*

*April.*

- 59 Modern Treatment of Pulmonary Tuberculosis; the Sanatorium: Its Function and Value. J. W. Pettit, Ottawa, Ill.
- 60 \*New Method of Diagnosis and Treatment of Fistulous Tracts, Tuberculous Sinuses and Abscess Cavities. E. G. Back, Chicago.
- 61 Important Points in the Treatment of Syphilis. J. Zeisler, Chicago.
- 62 Memoir of Columbus Barlow. M. Barlow, Robinson, Ill.
- 63 Acute Otitis Media, "Earache;" a Plea for Its Earlier Recognition. E. R. Ogden, Chicago.
- 64 Acute Bronchitis and Some of Its Peculiar Phases. S. W. Schneck, Mt. Carmel, Ill.
- 65 Duty of the City Toward Insanitary Municipal Plague Spots. A. H. Revell, Chicago.
- 66 \*Therapeutics of Influenza. J. C. Gill, Chicago.

60. This article was published in THE JOURNAL, March 14, 1908, p. 868.

66. **Influenza.**—Gill combats statements made by some medical men that no treatment is necessary or is of any special value. Besides the usual measures of ventilation, avoidance of overcrowding, proper care of colds and bronchial inflammations, nursing, etc., he begins treatment with calomel followed by a saline, then by a warm bath for diaphoresis and small quantities of cold water to relieve thirst and produce diuresis. For pain he gives antipyretics. Temperature above 105 F. is best combated by hydrotherapy; a tub bath, if possible, the wet pack if a trained nurse is available, and cold sponging under other circumstances. For sleeplessness a warm sponge bath at night and warm applications to the spine are indicated, with hypnotics if necessary. For cough and bronchial irritation small doses of codein may be given; in the marked prostration that follows, supporting measures are indicated, such as strychnin, caffeine, alcohol. As to diet, food is in the beginning always repugnant, and care, therefore, should be exercised in its administration lest from lack of assimilation distressing symptoms be aroused. Cold or acidulated water, fermented milk foods, properly prepared broths, etc. Convalescence is usually prolonged and discouraging and demands an abundance of easily digested foods and tonics, such as iron, arsenic, nux vomica, and quinin with mineral acid; also carefully regulated exercise to avoid fatigue. Massage and electricity may be useful.

*Lancet-Clinic, Cincinnati.*

*June 6.*

- 67 Physiotherapeutic Methods in Chronic Diseases. C. Pope.
- 68 \*Neuroses of the Bladder. R. C. M. Lewis.
- 69 Splint for Holding Club Foot in Position After Operation. E. G. Abbott, Portland, Maine.

*June 13.*

- 70 \*Tobacco and the Eyes. F. Dowling, Cincinnati.
- 71 \*Tobacco and the Heart. E. W. Mitchell, Cincinnati.
- 72 Tobacco and the Nerves. P. Zenner, Cincinnati.
- 73 Trauma in Relation to Abnormal Mentality. I. O. Allen, Centerville, Ind.
- 74 Excision of the Tongue for Carcinoma. C. E. Ruth, Keokuk, Iowa.

*June 20.*

- 75 Proteid Metabolism. O. Berghansen, Cincinnati.
- 76 Radical and Palliative Operations for Cerebral Hemorrhage. A. E. Sterne, Indianapolis, Ind.
- 77 Instantaneous Rigor Mortis. E. S. McKee, Cincinnati.
- 78 When Should Physiology be Taught at College? G. W. Spencer, Cleveland, Ohio.

68. Abstracted in THE JOURNAL, Oct. 26, 1907, p. 1468.

70. **Tobacco Amblyopia.**—Dowling, as the result of investigations among tobacco users employed in tobacco factories considers tobacco amblyopia the most common of all toxic amblyopias. He thinks the negroes enjoy immunity in this regard. Those chiefly affected are males between 35 and 68. There is gradual but progressive loss of visual acuteness. Luminous objects dazzle the sight. These patients see better in the evening than in the bright daylight. They complain of a glimmering mist. Persistent contraction of both pupils is a common symptom. Ophthalmoscopically, first redness of the optic papilla, later anemia, and finally atrophy, is found. He discusses the properties of nicotine and its action on the red blood corpuscles and the oxyhemoglobin. The prognosis is good if the patient comes early under treatment—chief of which is absolute prohibition of tobacco in any form. From six to twelve weeks is necessary to effect a cure. Strychnin, the physiologic antagonist of nicotine, is useful.

71. **Tobacco and the Heart.**—Mitchell's conclusions are as follows:

1. Many men can smoke moderately for a lifetime without manifest injury.
2. Excessive smoking is always injurious sooner or later.
3. What constitutes "excess" differs with the individual; some men bear tobacco so badly that they should avoid it altogether. Two cigars a day may be excess for one man while another observes no special effects from several.
4. In some individuals, ill effects from smoking are not observed until many years of indulgence, when gradually, or sometimes suddenly, they realize that the customary smoke produces some irregularity, palpitation, angina or other disturbance.
5. In the immature, the use of tobacco in any form is highly injurious, interfering with the normal development of the mental powers, producing various nervous disturbances especially nervous disturbance of the heart as manifested in palpitation, arrhythmia and weakness.
6. Cigarette smoking, as seen in this country, is more injurious than either pipe or cigar and more difficult for the victim to abandon. No doubt the principal reason for this is found in the



common habit of inhaling the smoke. The nasal cavities present an enormous surface of mucous membrane, so that in the practice of inhalation more nicotine is absorbed. In addition there is the fact that from the short, loosely packed cigarette practically all the nicotine is taken hot into the respiratory passages. In the tightly rolled cigar the smoke has more time to cool down and much of its alkaloid is deposited in the butt of the cigar. In the pipe the smoke is cooled and the nicotine deposited in the stem. Another reason why we more frequently see pernicious effects from cigarette smoking, is the fact that it is the common form of smoking in the early years of life.

7. The characteristic symptoms of tobacco heart are palpitation, irregularity, irritability, anginal pains, absence of organic murmurs, prompt recovery on abandonment of the habit. Pseudoangina pectoris is not infrequent.

#### Interstate Medical Journal, St. Louis.

May.

- 79 Roentgen Ray in the Diagnosis of Renal and Ureteral Calculi. R. D. Carman, St. Louis, Mo.
- 80 A Roentgenologic Discussion of Bone Lesions. E. H. Skinner, Kansas City, Mo.
- 81 Roentgen Ray Treatment of Leukemia. A. E. Taussig, St. Louis.
- 82 Use of the Roentgen Ray in Gastric Diagnosis. H. W. Soper, St. Louis.
- 83 Moulages or Wax Models. J. J. Houwlnk, St. Louis.

#### Bulletin of Johns Hopkins Hospital, Baltimore.

April.

- 84 Ophthalmovascular Choke. G. M. Gould, Philadelphia.
- 85 Excretion of Hexamethylenamin (Urotropin) in Bile and Pancreatic Juice. S. J. Crowe, Baltimore.
- 86 Satisfactory Pressure Bandage for the Leg. J. S. Davis, Baltimore.
- 87 Effect of Injected Leucocytes on the Development of a Tuberculous Lesion. E. L. Ople, New York.

#### Journal of the Kansas Medical Society, Kansas City.

May.

- 88 \*Pathology, Symptoms and Treatment of Chronic Myocarditis. F. A. Carmichael, Goodland, Kan.
- 89 Surgical Treatment of Detached Retina. G. W. Maser, Parsons.
- 90 Rational Treatment of Pneumonia. J. D. Walthall, Paola.
- 91 Recent Prevalence of Smallpox in Atchison County. E. B. Knerr, Atchison.

88. **Chronic Myocarditis.**—Carmichael concludes that while many diseases, age, sex and habit, are possible, they are not essentially etiologic factors of the fibroid type. The mechanism of the changes in heart muscle is not clearly defined. Arteriosclerosis of the peripheral trunks in heart lesions may not be accepted as presumptive evidence of myocardial affection, save in cases in which endocardial complication is absolutely excluded. Even there its value is only presumptive. The mechanism of sudden death (exclusive of rupture) must be due to sudden and absolute inhibition of contractile impulse resulting in asystole. The analogy with the Stokes-Adams syndrome suggests that the same pathologic process governs both phenomena and is supported by the pathologic findings. The fibrotic changes may be considered a result of a cycle of three events: (a) Sclerosis of the coronary arteries resulting in deficient blood supply, i. e., anemia of the heart; (b) dilatation the direct result of anemia from weakening of the heart muscle; (c) fibrotic change due in part to the primary coronary arteritis and in part to the dilatation which lengthens the course and diminishes the caliber of the cardiac vessels. Fibrotic changes once established are permanent, with a tendency toward progression, uninfluenced by any known therapy, but in the earlier stages the tendency to progression may be overcome by hygiene. The symptoms are so vague that diagnosis can be merely presumptive. The use of cardinals, especially digitalis, to stimulate contraction, without lessening resistance, is irrational and tends to favor progress of the lesion. Opium, as advocated by Musser, is a most valuable remedy when disturbed compensation gives rise to nervousness and apprehension. It acts as a cardiac tonic, reduces peripheral resistance, quiets nervous tendencies, steadies respiration, allays dyspnea, and gives rest, mental and physical. Cardiac depressants, e. g., aconite and veratrum, may be used with caution in small doses if carefully watched. In some cases they give distinct benefit.

#### Chicago Medical Recorder.

May.

- 92 \*Death of the Mature Fetus in Labor. H. M. Stow, Chicago.
- 93 Medicine of the Future. W. Parsons, Chicago.
- 94 Supplemental Report of a Case of Xanthoma. J. E. Rhodes, Chicago.

- 95 \*Treatment of Gonorrheal Epididymitis. L. W. Bremnerman, Chicago.

- 96 History of Vulvovaginitis in Children. J. D. Merrill.

92. Abstracted in THE JOURNAL, May 23, 1908, p. 1756.

95. **Gonorrheal Epididymitis.**—Bremnerman applies a compound iodine ointment on gauze to the scrotum and elevates the scrotum with a bandage. The ointment is left till burning occurs when it is removed and the part cleansed with olive oil and lead ointment applied abundantly. If the prostate is also affected, he passes a metal instrument similar in size and shape to a perfect cigar with an inlet and outlet tube at one end. This is connected with a fountain syringe so that a stream of hot or cold water can be made to pass. Internally he administers methylene blue.

#### American Journal of Orthopedic Surgery, Philadelphia.

April.

- 97 \*Operation for Paralytic Calcaneo-Cavus. R. Jones, Liverpool, England.
- 98 Simple Method of Dealing with Volkmann's Ischemic Paralysis. Id.
- 99 \*Fracture of the Head and Neck of the Radius. W. G. Erving, Washington, D. C.
- 100 Treatment of Some Types of Rheumatoid Disease by Physical Therapeutics. F. E. Peckham, Providence, R. I.
- 101 Place of Operative Surgery in the Treatment of Chronic Arthritis. C. F. Painter, Boston.
- 102 Hyperemia as a Therapeutic Agent. W. G. Turner, Montreal.
- 103 Simple Methods in Recording Scoliosis. E. H. Bradford, Boston.
- 104 Treatment of Scoliosis. Id.
- 105 Regeneration of Bone from Periosteum. A. Thorndike, Boston.
- 106 Greater Tendency to Spontaneous Correction in Bow-Leg than in Knock-Knee, and the Anatomic Reasons. J. T. Rugh, Philadelphia.
- 107 Cause of Flexion in Hip Disease. Id.
- 108 Chronic Dislocation of the Lower Jaw, with a Simple Device for Maintaining Reduction. C. Riely, Baltimore.

97. **Volkmann's Ischemic Paralysis.**—Jones has discontinued all operative measures and now uses the following simple procedure: He cuts out of zinc or sheet iron five splints, which will fit the patient's fingers when extended. An assistant flexes the wrist fully and holds it forcibly and steadily in that position; then the fingers are relaxed and each must be separately splinted. The wrist is then released and the patient is directed systematically to attempt to extend the now very contracted metacarpophalangeal range, which can be done after a few days sufficiently to admit of the application of a splint from the finger tips to the wrist joint, the wrist being fully flexed to admit of this. The fingers are therefore bound in five splints and over them the hand is fixed in a splint which reaches to the wrist. For several days the hand is exercised in the direction of extension and a splint is applied, over the other splints, extending from finger tips to elbow, and is at intervals altered so that by degrees the wrist is fully extended. For some weeks this position is maintained until all contractile elasticity is lost. The splints are then removed and the hand is massaged. By this method every structure is stretched in the order of its tension. The results are satisfactory.

99. **Fracture of Radius.**—Erving summarizes his article as follows: Fracture of the radial head and neck, occurring alone, although formerly considered a rare curiosity, is not uncommon, is being observed with increasing frequency, and should always be considered in injuries of the elbow joint. The chief cause of the fracture is a fall on the outstretched hand, with the elbow extended, direct lateral blows occurring much less frequently. In uncomplicated cases without displacement diagnosis is often very difficult, as severe pain on pressure over the radial head, increased on attempted supination, is the only constant sign and is not peculiar to this condition, but occurs also in severe sprains of the lateral ligament. The differential diagnosis from partial dislocation of the radius by elongation in children, fractures of the capitulum humeri and external condyle, and sprain of the lateral ligament is especially difficult. The assistance of radiograms is of great value in cases without displacement of fragments, and in complicated lesions in which the condition is masked by much swelling, often furnishes the only means of diagnosis. The treatment in fractures without displacement is mobilization, massage, and passive movements; in the more severe



types, fixation for two weeks at a right angle, followed by massage and passive movements at once; in fractures with marked or irreducible displacements and in old cases with loss of function, excision of the radial head, followed by active treatment. In long-standing cases the prognosis of excision is influenced largely by the secondary changes in the joint consequent on disuse. The fracture should always be considered of a serious nature and a grave prognosis as to future perfect function should be given in all cases with displacement, especially when treated by conservative measures alone.

#### St. Paul Medical Journal.

May.

- 109 Eleven Cases of Trichinosis; Clinical History, Prognosis and Treatment. F. C. Schuldt and L. C. Bacon, St. Paul.
- 110 \*Pathology and Diagnosis of Trichinosis, with Special Reference to Eosinophilia. S. M. White, Minneapolis.
- 111 Treatment of Acute Diffuse Peritonitis Following Appendicitis. O. W. Holcomb, St. Paul.
- 112 The Cystoscope and Its Efficiency in Diagnosis. H. P. Ritchie, St. Paul.

110. *Trichinosis*.—White describes the invasion by the parasites and the changes produced by them in man—gastroenteritis and eosinophilia. He discusses mixed infection and describes the changes in the muscle fibers and in the interstitial tissues. In diagnosis the following are of direct moment: Gastrointestinal symptoms, beginning from a few hours to two to four days after ingestion of the infected meat, early and persistent fever, myositis, edema and cutaneous phenomena, and eosinophilia, which is very characteristic. He describes the differential diagnosis between trichinosis and typhoid, influenza, subacute disseminated polymyositis, acute rheumatism and meningitis. The results of an autopsy in a fatal case are given.

#### Buffalo Medical Journal.

May.

- 113 Case of Epilepsy Caused by Eyestrain. G. M. Gould, Philadelphia.
- 114 \*Relation of Weight of Placenta to Weight of Newborn Child. W. P. Manton, Detroit.

114. *The Placenta and the Child*.—Manton publishes some investigations into the relation existing between the weight of the placenta and that of the new-born child, which lead him to the conclusion that, as a rule, the development of the placenta goes forward with that of the child, and that its size (weight) may be taken ordinarily as an index to the weight development of the latter. While there may be variations in individual cases, these will not be sufficiently numerous greatly to influence the normal weight ratio between child and placenta, viz., as 6 + : 1.

#### Northwest Medicine, Seattle.

May.

- 115 Cancer of the Gastrointestinal Tract. R. C. Coffey, Portland, Ore.
- 116 \*What Should be the Attitude of the Physician Toward the Tuberculous Patient? F. M. Pottenger, Monrovia, Cal.
- 117 Why the Pierce County Medical Society Should Abolish the Fee Bill. J. J. McKone, Tacoma, Wash.

116. Abstracted in THE JOURNAL, Dec. 7, 1907, p. 1947.

#### Providence Medical Journal.

May.

- 118 Malpositions of the Ulna in Colles' Fracture. F. C. Clark, Providence.
- 119 Treatment of Fractures of the Upper Extremity. S. N. Smith, Providence.
- 120 Coloproctitis. V. L. Fitzgerald, Providence.
- 121 Specific Therapy in Tuberculosis. J. Perkins, Providence.
- 122 Diagnosis and Treatment of Tuberculosis. M. J. O'Neill, Providence.

#### Indiana Medical Journal, Indianapolis.

May.

- 123 Rupture of the Urethra. J. W. Sluss, Indianapolis.
- 124 Common Errors in the Differentiation of Rheumatism. J. A. McDonald, Indianapolis.
- 125 Spirochaeta Pallida. B. Erdman, Indianapolis.
- 126 In Memoriam—Dr. Joseph Goodwin Rogers. S. E. Smith, Richmond.

#### Montreal Medical Journal.

April.

- 127 Origin of the Blood Cells. O. Klotz, Montreal.
- 128 Excessive Length of the Sigmoid and Its Surgical Significance. J. Bell, Montreal.

- 129 Melanosarcoma of the Common Bile Duct Causing Complete Obstruction. C. W. Duval, Montreal.
- 130 Ocular Tuberculin Reaction. R. P. Campbell, H. McKee and P. G. White, Montreal.

#### Laryngoscope, St. Louis.

April.

- 131 Laryngostomy. J. Baratoux, Paris, France.
- 132 Fibroma of the Trachea. W. E. Sauer, St. Louis.
- 133 \*Do We Hear Ourselves as Others Hear Us? G. Hudson-Makuen, Philadelphia.
- 134 Intranasal Method for Opening the Frontal Sinus Establishing the Largest Possible Drainage. R. H. Good, Chicago.
- 135 Plea for Conservatism in Treatment of Chronic Empyema of the Maxillary Sinus. T. W. Moore, Huntington, W. Va.
- 136 Dilated Veinlets on the External Nose and Septum; Their Permanent Closure with the Positive Galvanic Needle. O. T. Freer, Chicago.
- 137 Submucous Turbinectomy. H. V. Würdemann, Milwaukee.
- 138 Tongue Cases. R. H. Johnston, Baltimore.
- 139 Accessory Thyroid at Base of Tongue. C. E. Perkins, New York.
- 140 Case of Tuberculosis of the Tonsil and Administration of Potassium Iodid in Tuberculosis. N. L. Wilson, Elizabeth, N. J.
- 141 Cleft Palate. W. W. Carter, New York.
- 142 Hare-Lip Operation by New Method. Id.

133. This article was published in the *Pennsylvania Medical Journal*, April, and was abstracted in THE JOURNAL, June 6, 1908, p. 1943.

#### Medical Library and Historical Journal, Brooklyn, N. Y.

September, 1907.

- 143 Brief History of Antiseptic Surgery. F. C. Clark, Providence, R. I.
- 144 Charles Linnaeus, M. D. J. H. Hunt, Newton, N. J.
- 145 Doctors of Samuel Johnson and His Court. J. P. Warbasse, Brooklyn, N. Y.
- 146 Medical Departments in Public Libraries. S. H. Ranck, Grand Rapids, Mich.

#### Medical Fortnightly, St. Louis.

May 25.

- 147 Glimpses of Early St. Louis Medical History. W. B. Outten, St. Louis.

#### Alabama Medical Journal, Birmingham.

April.

- 148 Historical Sketches of Organizers of the Medical Association of the State of Alabama. E. H. Sholl, Birmingham.
- 149 Shock; Cause and Treatment. W. W. Harper, Selma.
- 150 Diagnosis and Prognosis of Pulmonary Tuberculosis. J. M. Lowrey, Birmingham.
- 151 Home Care and Feeding of Phthisical Patients. W. C. Gewin, Birmingham.
- 152 State and Municipal Control of Tuberculosis. R. B. Harkness, Birmingham.
- 153 Management of Normal Puerperium. R. H. Hamrick, Pratt City.
- 154 Rectal Anesthesia. W. T. Berry, Birmingham.

May.

- 155 Essentials and Non-Essentials of Physical Diagnosis. R. C. Cabot, Boston.
- 156 Epidemic of Jaundice in Talladega. D. P. Dixon, Talladega.
- 157 Infection of the Prostate. A. F. Toole, Birmingham.
- 158 Treatment of Deep-Seated Gonorrheal Infections with Gonococcic Vaccines. C. W. Shropshire, Birmingham.
- 159 Surgical Treatment of Gastric and Duodenal Ulcers, with Report of Cases. G. Torrance, Birmingham.
- 160 President's Address Medical Association of State of Alabama. S. W. Welch, Talladega, Ala.
- 161 Importance of the Study of Physiology by the General Practitioner. W. P. McAdory, Birmingham.

#### FOREIGN.

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

#### Lancet, London.

June 6.

- 1 Dangers and Treatment of Myoma of the Uterus. C. Martin.
- 2 Present Knowledge Regarding Functions of Suprarenal Capsules. E. A. Schäfer.
- 3 \*Preparation and Use of Antirabic Serum, and Rabicidal Properties of Serum of Patients After Antirabic Treatment; Blood of Hydrophobia Patient. D. Semple.
- 4 Recent Cases of Cesarean Section. J. B. Hellier.
- 5 Protracted Use of Digitalis. R. E. Achert.
- 6 Suprarenal Hemorrhage in Infant; Relation to Hemophilia. B. G. Morison.
- 7 \*Appendix Rupture During Operation; Meaning of the Symptoms. F. R. B. Blschoff and J. D. Malcolm.
- 8 \*America's Triumph in Panama: Three Years' Medical and Sanitary Record in the Canal Zone. J. G. Leigh.

3. *Antirabic Serum*.—Semple summarizes his paper as follows: By immunizing horses with fixed rabies virus it is pos-



sible to prepare a serum having well-marked rabicidal properties. Normal horse serum is devoid of these properties. The rabicidal properties of this serum can be tested by mixing it with a fixed virus and subsequently using the mixture to inoculate susceptible animals, such as rabbits, subdurally. The indications for the use of such a serum would seem to be an adjunct to the ordinary method of treatment in severely bitten patients and late cases. In severely bitten patients coming early for treatment it might also be injected into the wounds and the contiguous tissues. The serum of patients after undergoing a course of antirabic treatment also gives evidence of containing rabicidal substances and the presence of these substances can be demonstrated in a manner similar to that mentioned above. Normal serum is devoid of these properties. The rabicidal substances in the serum of a patient after antirabic treatment are a possible index of the amount of immunity conferred and the efficacy of treatment. Prolonged treatment confers a higher degree of immunity, as judged by the rabicidal effects of the serum on fixed virus, than treatment extended over a shorter period of time. The blood of a patient suffering from hydrophobia fails to infect rabbits when inoculated subdurally. The serum of a patient in the early stages of hydrophobia is capable of prolonging the incubation period for fixed virus when mixed *in vitro* and inoculated subdurally in rabbits.

**7. Ruptured Appendix.**—Malcolm reports a case in which what was held to be an emergency operation for appendicitis was done. At the time "there was nothing to indicate that the patient's condition was a serious one, but it was considered wise to operate at once. The preliminary pain, the acute collapse, the subsequent quiescent state of the intestine, the fulness of the abdomen, and the continued resistance over the cecum, together with the absence of inflammatory symptoms and of a defined swelling led us to this decision." The appendix was found gangrenous and it ruptured during operation. Malcolm comments as follows: "I have published other cases in which a similar absence of inflammation has been observed in association with gangrene formation and if we consider those cases to which the term 'explosive' or 'fulminating appendicitis' have been given, much may be said in favor of the view that the illness depends on a gangrene formation which has caused no symptoms until perforation occurred by separation of the dead part. Such cases are often characterized at first by symptoms of shock and by collapse, which are easily accounted for as the results of perforation, but not as those of an acute inflammation. The inflammatory symptoms which do arise later may often be most satisfactorily interpreted as the effects of the presence of a gangrenous patch or of the discharge of the contents of the bowel into the peritoneal sac."

**8. American Triumph in Panama.**—Commented on editorially in this issue.

#### British Medical Journal, London.

June 6.

- 9 \*Cerebral Influenza. R. Saundby.
- 10 Hemiplegia with Unilateral Optic Atrophy. R. T. Williamson.
- 11 Present Knowledge Regarding Functions of Suprarenal Capsules. E. A. Schäfer.
- 12 Case of Compound Follicular Odontoma. J. W. Cousins.
- 16 Plastic Resection of Breast and Its Bearing on Preliminary Cancer. F. T. Paul.
- 14 \*Cancer of Mouth in Southern India; Analysis of 209 Operations. A. Fells.
- 15 \*Treatment of Fracture of Femur in Newborn. R. Jones.
- 16 Plastic Resection of Breast and Its Bearing on Preliminary Incision of Breast Tumors. C. H. Whiteford.

**9. Cerebral Influenza.**—Saundby discusses exhaustively the literature of this subject and adds some cases of his own. Bacteriologic examination has revealed either no organism or streptococci, Pfeiffer's bacilli, or pneumococci. These cases represent not one but several conditions—a series of purely influenzal origin and in which influenza forms merely the soil in which other disease germs find the conditions favorable to their development. True cerebral influenza may cause a state of cerebral intoxication, which passes off without doing serious damage; or the poison may cause intense and fatal congestion with minute meningeal hemorrhages; or inflammation of the meninges; or finally acute hemorrhagic encephalitis associated

sometimes with hemorrhage or red softening. In another category are cases of streptococcal or pneumococcal meningitis occurring after influenza and other forms of focal cerebral infection. Saundby describes the symptomatology as follows: "Usually after a short period, ranging from one to four days, during which the patient shows signs only of catarrh—and in some cases even this history may be wanting—he is seized with intense headache, with or without vomiting, or neuralgia, or an epileptic or apoplectic fit or aphasia, or there may be facial paralysis, monoplegia or hemiplegia, for the cerebral symptoms may be ushered in by any one of these symptoms. There may be a preliminary period of restlessness, with or without delirium; in others stupor or unconsciousness develops gradually or suddenly. There is usually fever, varying in amount. The muscles are often rigid; stiffness of the neck, opisthotonos, and especially contraction of the masseters and trismus, have been frequently noted; there may be twitchings of the limbs or clonic spasms of the head or extremities, disturbances of vision, inequality or irregularity of the pupils, paralysis of the sphincters and *tâche cérébrale*. The reflexes are generally preserved and there has been no mention of the presence of Kernig's sign. Optic neuritis is occasionally seen: albuminuria has been generally absent, but was observed once or twice; Cheyne-Stokes breathing has been noted in a few cases." The prognosis should be guarded but not hopeless. In treatment we are comparatively powerless and must look forward hopefully to the extension of antitoxic therapy. We might try small doses of quinin as recommended by Sir William Broadbent. Feed the patient with milk or egg beaten up or with *café au lait*. Rectal enemata may be given if swallowing is difficult, or in case of relaxed sphincter, subcutaneous injection of  $\frac{1}{2}$  a pint to a pint of physiologic saline solution. Hypodermic injections of caffeine, 5 grains (0.32), in heart collapse, or camphorated oil, 10 to 15 minims of a 1 in 10 solution.

**13. Cancer of Tongue.**—Paul has operated by Butlin's method during the years 1905-1907 in 35 cases of cancer of the tongue, with 2 deaths, both from sepsis. Lately he has followed Sir James Barr's suggestion to combat this danger, viz., in patients whose condition suggests a serious risk of sepsis, a dose of polyvalent serum is given before operation. His experience of Butlin's operation is entirely favorable. In the primary operation on the tongue, however, he advocates for all but the most favorable cases, a return to Kocher's and Syme's incisions, which involve the clearance of submental and submaxillary areas at the primary operation, but leave the carotid area and what may be considered necessary of the posterior triangle, for the second operation.

**14. Cancer of the Mouth.**—Fells discusses buccal cancer on a basis of 209 operations with 6 deaths. In 58 cases the cheek was affected, in 68 the lower jaw, in 5 the upper jaw, in 18 the tongue, in 21 the lips. Of preliminary measures for lessening hemorrhage the administration of calcium chlorid for two or three days before operation appeared of distinct value. A preliminary tracheotomy is valuable, especially when help is short. The large raw surfaces left in the mouth are painted with Whitehead's varnish or zinc chlorid solution. There were no subsequent lung complications and no serious septic troubles.

**15. Fracture of Femur in Newborn.**—Jones has treated 26 cases of fracture of femora occurring during delivery. A newly born baby with a broken thigh requires a great deal of management, and a splint is all but useless, which is not easily and surely retained or does not allow the child to be moved, fed, or washed. He uses a Thomas' knee splint. Extension plasters are applied to the leg below the fracture and the limb is passed through the ring which encircles the thigh at the groin, and is padded over with felt, leather and impervious oil-skin. The thigh is pulled, and extension is maintained by the plasters which are affixed to the lower end of the splint. A bandage is placed round the limb and no further treatment is needed than now and again to extend the limb by pulling on the plasters. The infant can be carried, nursed, left to play on the floor, without displacement of fragments. It can be applied in five minutes without an anesthetic.



## Medical Press and Circular, London.

June 3.

- 17 Infantile Marasmus. G. F. Still.
- 18 The Milk Problem, or the Production and Distribution of Pure Milk. J. C. Thresh.
- 19 Ionic Medication in Obstinate Pelvic Disease in Women. S. Sloan.
- 20 The Cure Craze of To-day. R. M. Leslie.

## Clinical Journal, London.

June 3.

- 21 Spread of Malignant Disease to the Lymphatics of the Groin. C. B. Lockwood.
- 22 Prognosis and Treatment of Acute Anterior Poliomyelitis. J. S. R. Russell.

## Journal of Tropical Medicine and Hygiene, London.

June 1.

- 23 Hydatid Disease in Western Australia. J. B. Cleland and H. Cumpston.
- 24 Three Cases Treated with Antistreptococcic Serum. G. F. Campbell.

## Practitioner, London.

May.

- 25 \*Vaccine Therapy and Therapeutic Immunization. Sir A. E. Wright.
- 26 \*The Opsonic Index; Accuracy and Errors. A. Fleming.
- 27 \*Opsonic Index in Infants. J. H. Wells.
- 28 \*Experimental Error in Method of Determining Tuberculo-Opsonic Index. A. H. White.
- 29 \*Statistical Considerations Relative to Opsonic Index. M. Greenwood, Jr.
- 30 Treatment by Bacterial Vaccines. A. B. Harris.
- 31 Opsonic Index in Treatment of Pulmonary Tuberculosis. A. C. Inman.
- 32 Treatment of Pulmonary Affections by Inoculation of Vaccines Controlled by Opsonic Index. J. C. Briscoe and E. U. Williams.
- 33 \*Surgical View of the Opsonic Method. H. S. Collier.
- 34 Treatment of Skin Diseases by Inoculation After Opsonic Method. A. Whitfield.
- 35 Treatment of Lupus and Tuberculous Disease of the Ear, Nose and Throat by Inoculation. H. F. Tod and G. T. Western.
- 36 Ulcerative Endocarditis; Its Treatment by Vaccine Therapy. T. J. Horder.
- 37 Tuberculin (T. R.) Treatment of Tuberculosis of Genitourinary Organs. J. W. T. Walker.
- 38 Opsonic Method and Vaccine Therapy in Relation to Diseases of Eye. R. W. Allen.

25. **Vaccine Therapy and Immunization.**—Wright says the possibilities of vaccine therapy in the treatment of localized bacterial infections have been only very incompletely explored. After enumerating some of the problems that remain for solution in the future, Wright addresses himself to a detailed consideration of the two following questions: 1. Would it not be possible to achieve and maintain an increased output of protective substances apart from periodic measurements of the content of the blood in protective substances? Associated with this is the question as to whether the technic which we use for the determination of the opsonic index gives accurate and useful results. 2. What is the best method of directing such protective agencies as a patient may be possessed of or may acquire by immunization, to the destruction of the microbes in the focus of infection? In answer to the first question the following two suggestions have been made: 1. By clinical observations and blood testings such a knowledge of the effects of bacterial vaccines has been arrived at, as would make it possible to guarantee a good result from the inoculation of a definite quantum of a standardized vaccine. 2. The clinical symptoms of the patient will furnish to the immunizator a guide by which he may regulate the immunization procedures. The latter, again, he considers in relation to four different classes of cases, as follows: (a) Localized infections of such nature that the clinical observer can immediately either see for himself or learn of every change that occurs in the focus of infection; (b) strictly localized infections where conditions are unfavorable to observations of changes in their condition; (c) acute febrile conditions; (d) cases in which all local and general symptoms are in abeyance or have returned to the condition which prevailed previous to inoculation. He discusses these propositions in detail under the foregoing heads, and concludes that "while we can in many cases conduct our immunizations aright by relying on the experience gained in the past and on clinical investigation, there are whole classes of cases—these being cases where the only hope for the patient is to be found in the proper conduct of immunization procedures—where the clinical symptoms can not be trusted to furnish the necessary guide. In regard to the accessory question, as to the accuracy and usefulness of the index estimation, he

answers in the affirmative. With regard to the second question he considers in detail the general question of the distribution of antibacterial agents in the normal organism; the nature of the inflammatory reaction which supervenes on a bacterial invasion of the tissues, and changes in the distribution of the antibacterial agents which are effected by that reaction; cases in which microbes have survived the inflammatory reaction that has supervened on their invasion, and have established themselves in a nidus in the tissues. He then considers the therapeutic measures by which we may bring the antibacterial agencies of the circulating blood into effective operation on the microbes in a nidus of infection. These he enumerates and discusses under the following subheads: 1. Measures favoring the transfer of antibacterial agencies from the blood to the site of infection. 2. Measures opening the way for the entrance of the antibacterial element into the focus of infection. Finally he considers the organization of the profession for the work of therapeutic immunization.

26. **Accuracy of Opsonic Index.**—Fleming publishes his observations in Wright's laboratory and arrives at the following conclusions: The variation of the tuberculo-opsonic index of healthy individuals is very small, and therefore normal serum furnishes a good standard for the comparison of infected persons from day to day. With a diminution of the number of washed corpuscles in the opsonic mixture there is an increase in the amount of phagocytosis. Agglutination of the washed red corpuscles increases the amount of phagocytosis. The tuberculo-opsonic index is the same whether washed corpuscles are used from a healthy or tuberculous individual. If red corpuscles are taken up with serum the amount of phagocytosis is reduced. Serum sealed up in a capsule at room temperature retains its full power, in the case of healthy blood, for at least a week, and in the case of pathologic blood, for a day or two less. Blood capsules left widely open for several hours give very untrustworthy readings. Two practiced observers can count the same slides, and in almost all cases obtain results that do not vary 10 per cent. Duplicate estimations of the tuberculo-opsonic index of tuberculous patients can be performed, the results differing from each other by less than 20 per cent., except in rare instances (1 in 26).

27. **Opsonic Index in Infants.**—Wells, from observations on newborn babies, concludes that a low opsonic index is not diagnostic in children under 1 year old. In infants a low opsonic index is not inconsistent with health, and the child may be thriving well with a declining index. When the opsonic index is low it will rise in response to the stimulus of an inoculation with bacterial vaccine. The healthy breast-fed infant appears to possess no advantages over the healthy artificially-fed child. The anti-bacterial defense in children can not depend on the opsonic content of the serum.

28. **The Experimental Error in Opsonic Index.**—White concludes that, while imperfect mastery of details may cause a greater margin of error than will occur with one more familiar with the technic, when once these details are moderately mastered the error will be insignificant. His own experience as a beginner contrasted with his results to-day, gives a maximal experimental error ranging from 4 to 13 per cent.

29. **Statistics of Opsonics.**—Greenwood considers how far the "opsonic index" is a trustworthy guide in the diagnosis and treatment of disease, which must not be confounded with the question of therapeutic inoculations as curative or prophylactic methods. He concludes that there is no valid evidence that the limits of error do not exceed 20 per cent. of the mean value. The asymmetry of the distributions, so far examined, is so great that, in the case of low emulsions, errors in excess are more frequent than "errors" in defect of the mean. There is reason to hope (but no proof) that with high emulsions the variation may become more symmetrical. He suggests that: (a) high indices should be more closely scrutinized than low values; (b) it is better to work with tolerably thick emulsions, giving an average for the normal serum of not less than 3 bacilli to the cell.

33. **Surgical View of Opsonic Method.**—Collier considers that to do the best for their patients surgeons must be clinically associated with the opsonists.



## British Journal of Children's Diseases, London.

May.

- 39 \*Congenital Hypertrophic Stenosis of the Pylorus; Criticism of Its Pathology in Relation to Treatment. E. Cautley.  
40 \*Aural Manifestations of Inherited Syphilis. M. Yearsley.  
41 Weak Nervous Children and Arsenic. E. F. Christin.

39. Congenital Pyloric Stenosis.—Cautley holds that there is grave danger of ascribing to pyloric hyperplasia the symptoms due to spasm, with or without dilatation of the stomach; that there are mild degrees of hyperplasia compatible with life and giving rise to no serious symptoms; that some of these mild cases depend for their fatal issue on secondary complications which are curable by diet and lavage; that the majority of the cases tend to gradual contraction of the circular muscle and a degree of obstruction which is incompatible with life and only curable by surgical methods. He protests most strongly against delay in adopting surgical measures, as he is convinced that the bulk of the supposed cures of this affection by medical means are really instances of simply pyloric spasm. Great care is essential in distinguishing between spasm and hypertrophy, or many unnecessary operations will be performed.

40. Inherited Syphilis of Ear.—Yearsley agrees with Hermet and Baratoux' estimate of ear affections in inherited syphilis, viz., one-third. The most important complications are those affecting the labyrinth, which is attacked in two ways, one group having the onset without vertigo, in the other vertigo being a marked feature. In the first form the pathologic condition consists chiefly in a chronic osteitis leading to gradual, more or less complete, occlusion of the cavities of the internal auditory meatus and bony labyrinth. The symptoms and pathologic findings resemble those met with in the tertiary form of acquired disease. The second group is uncommon. The symptoms are best accounted for by an increase of tension due to exudation. When acute, the pressure causes immediate destruction of the labyrinthine nerve endings; when more chronic there is a constantly recurring increase of tension. This group resembles the manifestations of secondary acquired disease. The labyrinth is usually attacked between the ages of 8 and 25. Usually ear troubles follow eye troubles. The ordinary treatment of inherited syphilis does not appear to have much effect on the eye troubles. The author has found pilocarpin, given by injection in labyrinthine deafness due to both acquired and inherited syphilis a very valuable agent if used early. In a girl 11 years old, 1/12 grain, (.005) gradually increased to 1/5 grain (.012) daily, resulted in 50 per cent. gain in bone conduction in a fortnight.

## Intercolonial Medical Journal of Australasia, Melbourne.

April.

- 42 Constipation and Its Treatment. J. Jamieson.  
43 Hereditary Cerebellar Ataxia. J. N. Morris.  
44 Melbourne Milk Supply. T. Cherry.

## Journal of Laryngology, Rhinology and Otology, London.

June.

- 45 Hemorrhage Following Quinsy; Ligation of the Common Carotid Artery; Recovery. J. E. Newcomb.  
46 Clinical Pathology of Aural Discharges. W. Wingrave.  
47 Keratosis Laryngis Circumscripta, with Notes of a Case. W. G. Porter.

## Obstétrique, Paris.

April, N. S. 1, No. 2, pp. 129-288.

- 48 Collargol in Puerperal Infection. E. Bonnaire and C. Jeannin.  
49 Retrouterine Sensory Corpuscles in Human Fetus. H. Keiffer.  
50 Bronchiectasis in the Fetus. (Poumon polykystique.) M. de Kervilly.  
51 \*Suprarenal Capsules in Puerperal Eclampsia and Pregnancy Nephritis. J. L. Chirié.  
52. \*Prolonged Decalcification of Pregnancy. (Décalcification gravidique prolongée.) Marquis.

51. The Suprarenal Capsules in Eclampsia and Nephritis.—Chirié tabulates in detail the findings in respect to the suprarenals in 12 cases of puerperal eclampsia, 1 of retroplacental hemorrhage, 4 of pregnancy nephritis, 1 of pyelonephritis, 3 of pneumonia, 2 of puerperal infection, 4 of tuberculosis. These findings show the constancy of a notable hyperplasia of the cortex of the suprarenals in puerperal eclampsia, retroplacental hemorrhage and pregnancy nephritis, with considerable hyperplasia of the medulla in many instances. This hyper-

plasia seemed to be primary, preceding the accompanying hypertrophy of the heart and arterial hypertension.

52. Prolonged Decalcification in Pregnancy.—Marquis confirms Bar's assertions in regard to the loss of lime which occurs during pregnancy. It may assume pathologic proportions, revealed by the looseness of the pelvic articulations, the presence of osteophytes and tender spots on the bones, and the high percentage of lime in the blood, urine, and stools. He has recently observed a case of this decalcification commencing in pregnancy but continuing afterward. The painful laxness of the symphysis persisted and the patient was unable to walk. While in the maternity hospital she was given food containing large proportions of lime, and the decalcification was temporarily held in check.

## Presse Médicale, Paris.

May 20, XVI, No. 41, pp. 321-328.

- 53 Characteristics of Passive Immunity Conferred by Serum Treatment. B. Weill-Hallé and H. Lemaire.  
May 23, No. 42, pp. 329-336.  
54 Prophylaxis of Syphilis in the Army. G. H. Lemoine.  
May 27, No. 43, pp. 337-344.  
55 Spontaneous Sporotrichosis in Three Puppies. Gougerot and Caraven.  
56 Botryomycosis in Man. M. Letulle.  
57 \*Lumbar Appendicectomy. F. Leguen.  
May 30, No. 44, pp. 345-352.  
58 \*Early Syphilitic Paralysis and Neuralgia. Debove.

57. Lumbar Appendicectomy.—Leguen mentions a few cases in which movable kidney apparently caused disturbances which were not cured by operative fixation of the kidney. Appendicectomy later banished the last disturbances. In another case the appendix was removed for two mild attacks of subacute inflammation, but nothing was done for the movable kidney. The disturbances persisting, nephropexy was done and the patient was restored to health. He advocates removing the appendix whenever there is occasion to fasten a movable kidney, and gives an illustrated description of the preferable technic.

58. Early Syphilitic Paralysis and Neuralgia.—Debove reports four cases. In the first and second the paralysis affected the seventh nerve with neuralgia in the fifth; in the third case there was paralysis of the seventh nerve, and in the fourth, of the third and seventh nerves with neuralgia in the fifth. These disturbances developed early in the course of syphilis, and the resemblance is striking between them and similar symptoms in tabes. He regards the process as identical in both, a reaction on the part of the meninges, acting on the roots of the nerves. Syphilitic neuralgia and paralysis are therefore signs of incipient tabes, and require energetic treatment.

## Revue de Gynécologie, Paris.

January, XII, No. 1, pp. 1-192.

- 59 The Levator Ani and Prolapse of Genital Organs. (Le releveur pubo-vaginal et les prolapsus génitaux.) G. Piquand and R. Hue.  
60 \*Postoperative Menstrual Cyst Hematomata. L. Dartigues and J. G. Joannidis.  
61 \*Fixation of Uterus Between External and Internal Os. (Hystéropexie isthmique.) P. Delbet and J. Caraven.  
62 \*Retroperitoneal Lipomata. R. Proust and A. Trèves.  
March, No. 2, pp. 193-384.  
63 Coexistence in the Tunica Vaginalis of Uterus, Tubes and Testicles. V. Cornil and Brossard.  
64 \*Nature of Hydatidiform Mole. L. Nattan-Larrier and A. Brindeau.  
65 Anatomy of Kidney Pelvis and Surgical Exploration of Kidney. (Anatomie du bassinet et exploration sanglante du rein.) J. Albarran and E. Papin.  
66 \*Primary Sarcoma of Great Omentum. (Sarcomes primitifs du grand épiploon.) E. and R. Bonamy.

60. Postoperative Menstrual Cyst Hematomata.—Dartigues applies this term to the cysts which form on the relics of adnexa. The diagnosis is based on the pains in the hypogastrium, phenomena of general congestion in the region, and a palpable tumor—all these signs recurring with the menses and partially subsiding with them. There is danger that the cyst may rupture or suppurate or induce formation of adhesions with occlusion of the intestines. A few cases are on record, and he reports another, in which prompt operative



treatment restored the patients to health. In a few other cases intervention came too late, and the patients succumbed to septicemia.

61. **Abdominal Fixation of Uterus at the Cervix.**—Delbet and Caraven have examined recently 23 patients treated by this technic between 1896 and 1906. They give an illustrated description of their technic with summaries of the case histories. A few of the women have passed through a pregnancy since without disturbances. Abortion occurred in two cases, but the hysteropexy could not be incriminated in either instance. The absence of adhesions above the internal os allows the uterus to enlarge normally and no complications of any kind were observed. Six of the eleven women who conceived later had been sterile before the operation.

62. **Retroperitoneal Lipomata.**—Proust summarizes 89 cases from the literature. The growths are not malignant, but are liable to become dangerous from their close adhesion to adjacent viscera and their size. Extirpation has given 30 per cent. mortality on account of the necessary resection of sound organs imbedded in the growth.

64. **Nature of Hydatidiform Mole.**—In about 50 per cent. of the cases of chorioepithelioma there is a history of a preceding mole, but only about 10 per cent. of the moles on record were followed by a malignant growth. There is no means of distinguishing a harmless mole from one destined to become malignant. In a number of moles examined by Brindeau all presented the characteristics ascribed exclusively to malignant moles, and yet two of the patients remained in good health and bore healthy children later. Careful medical supervision will reveal the first symptoms of recurrence of the mole, he says. The curette will confirm or exclude the possibility of chorioepithelioma, and hysterectomy then will be in plenty of time.

66. **Sarcoma of Omentum.**—Bonamy adds another to the fifteen cases on record and summarizes the details of each. Only five of the patients survived the operation for a year or more in the twelve cases in which it was attempted. Sarcoma of the omentum is always very vascular and the operative shock is liable to be unusually severe. In only one of the cases was the growth differentiated correctly. It is generally on the median line and develops downward, pushing down the genital organs. The upper limit of the area of dullness is usually concave. The effusion in the abdominal cavity is inclined to be hemorrhagic. The course averages about a year.

#### Revue de Médecine, Paris.

April, XXVIII, No. 4, pp. 305-400.

- 67 Reactions of Surface of Lung and Pleura. (Réactions pleura-corticales.) L. Malloizel. Commenced in No. 3.
- 68 \*Ocular Tuberculin Reaction in 300 Cases. (Ophthalmo-réaction.) E. Ausset.
- 69 Essential Polyuria Improved by Abstinence from Salt. (Polyurie essentielle améliorée par la déchloruration.) M. Poisot.

68. **Ocular Tuberculin Reaction.**—Ausset has applied the test in 300 cases and considers it a harmless procedure for revealing tuberculosis in process of evolution.

#### Semaine Médicale, Paris.

May 20, XXVIII, No. 21, pp. 241-252.

- 70 Suprarenal Extract and Osteomalacia. R. de Bovis.
- 71 Conditions for Admission of Foreign Students into French Medical Schools.

May 27, No. 22, pp. 253-264.

- 72 Greek Vase with Representation of Polyclinic, 500 B. C. (Un aryballe du Ve siècle avant notre ère représentant une polyclinique grecque.)
- 73 \*Mucomembranous Non-inflammatory Affections of the Colon. (Colica mucosa.) L. Cheinisse.

73. **Colica Mucosa.**—Cheinisse reviews the literature on the subject of the secretory neurosis which Nothnagel differentiated from mucomembranous enteritis, as there is no inflammatory substratum. Opinions are contradictory in respect to the presence or absence of an anatomic basis; Cheinisse concludes that only prolonged and minute study of the case will decide whether there is inflammation or not. If the trouble is merely mucous hypersecretion of nervous origin, recurring periodically, the stools will be free from mucus in the intervals between attacks.

#### Archiv für Gynäkologie, Berlin.

LXXXV, No. 2, pp. 251-482.

- 74 Duration of Pregnancy. (Wann tritt die Geburt ein?) F. Schatz.
- 75 \*Importance for Prognosis of Formed Elements of Blood in Puerperal Affections. E. Gräfenberg.
- 76 \*Endotheliomata of Ovaries and Tubes. (Endotheliom des Ovariums und der Tube.) P. Kworostansky.
- 77 \*Hemorrhage in Chronic Metritis. (Blutgen bei der sogenannten chronischen Metritis.) G. Ahreiner.
- 78 Primary Chorioepithelioma of the Ovary. Y. Iwase.
- 79 Myoma of Rectum. (Myome des Mastdarms.) P. Becker.
- 80 Combination of Ovarian Carcinoma with Other Tumors. (Multiplicität der Genitaltumoren.) E. Bircher.
- 81 \*Supernumerary Mammæ in Axillæ. (Achselhöhlenbrüste bei Wöchnerinnen.) F. Kayser.

75. **The Formed Elements in the Blood in Prognosis of Puerperal Affections.**—Gräfenberg has been conducting research in this line for some time, and thinks that it is important to take note of the leucocyte curve, the curve of the small lymphocytes, and, above all, of the number of nuclei. The findings are especially instructive in gonorrheal affections. He relates extensive experiences which show that the curve of the number of nuclei was constantly downward in the cases which ended fatally, while it was as constantly upward in the favorable cases.

76. **Origin of Endothelioma.**—Kworostansky relates the microscopic findings in cases of endothelioma of ovaries or tubes in connection with the case histories. They show that endothelioma develops in consequence of mechanical injury—pressure and rupture, or of chemical injury—necrosis of the tissues under pressure and absorption of the decaying tissue elements into the blood. When the reparatory process is once started it may continue beyond bounds and induce the formation of a neoplasm. The peritoneum is a favorable site for such a process. In one case there was considerable neoformation of endothelium in certain vessels of the peritoneum which had been compressed by a hematoma in the broad ligament causing an inflammatory reaction.

77. **Hemorrhage in Chronic Metritis.**—Ahreiner refers to the metritis of the parenchyma alone, the mucosa being intact, of which he relates five cases with the microscopic findings in the uteri removed on account of total prolapse or uncontrollable hemorrhage. The main cause of the hemorrhage must be sought outside of the uterus. The bleeding occurs more readily when the uterine vessels are sclerotic, but the latter alone is not able to induce hemorrhage without the general cause, inducing congestion in the region.

81. **Mammæ in the Axillæ.**—Kayser reported a few years ago cases of tumors observed in the axillæ of women. He here describes six more cases, all in puerperæ. The women were not much annoyed by the tumors although they increased in size during the menstrual periods and became large during the puerperium. He regards them as supernumerary mammæ, evidently an atavistic anomaly. He encountered these six cases in the course of eleven months; all but one of the patients were i-paræ. He has found nineteen similar cases in the literature.

#### Archiv für Kinderheilkunde, Stuttgart.

XLVIII, Nos. 1-2, pp. 1-160.

- 82 \*Septic Arteritis and Aneurism in Children. (Klinische Beiträge.) A. Baginsky.
- 83 \*Brain Tumors in Children. (Die radiologische Topik intrakranieller Tumoren im Kindesalter.) H. Klose.
- 84 \*Relations Between Lactation and Menstruation. (Beobachtungen an stillenden Frauen.) S. Jacobius.
- 85 \*Long Retained Capacity for Lactation in Non-nursing Mothers. Id.
- 86 Topography of Lymphatic Apparatus in Children and Its Clinical Importance. (Topographie des Lymphgefäßapparatus im kindlichen Organismus.) A. Most.
- 87 The Budapest Asylum for Friendless Children (Das Budapest staatliche Kinderasyl.) F. v. Torday.
- 88 \*Periodical Vomiting. (Das periodische Erbrechen.) J. S. Arkawin.

82. **Septic Arteritis in Children.**—Baginsky discusses the literature on aneurisms in children, and reports a case of aneurism of the abdominal aorta and subclavian artery in a girl under 8. The eye findings suggested inherited syphilis, but the symptoms indicated septic infection. Examination under chloroform revealed aneurismal enlargement of the abdominal aorta and other signs indicated streptococcus arteritis with a



tendency to enlargement in various arteries, thrombosis and obliteration of the vessels.

**83. Localization of Brain Tumors in Children.**—Klose reports a case in which a sarcoma developed in the cerebellum after two severe blows on the head. In the course of four years pronounced psychic disturbances became manifest, but there were no characteristic focal symptoms and no cerebellar ataxia. Radioscopy showed a shadow in the frontal lobe which was assumed to be cast by a tumor. No tumor was found at the operation, but the third ventricle was much enlarged, with its contents under high pressure, and this condition had been responsible for the shadow cast. He warns that this physical phenomenon in the child brain under certain conditions may simulate a tumor in the Roentgen picture. The case also teaches that internal hydrocephalus may occur early and be intense, with a tumor in the cerebellum, and may complicate the topical picture in the most deceptive manner and induce rapidly progressive mental deterioration. The trephining in the case reported did not cause any motor disturbances notwithstanding the extensive destruction of the right temporal lobe. In another case of hydrocephalus benefit was derived from repeated lumbar puncture, the boy recovering consciousness even the last time and saying that he felt better, but then he suddenly succumbed. Klose concludes his monograph with the remark that pediatricists, more than anyone else, are interested in efforts to change the present merely palliative treatment of brain tumors in children into the true causal-surgical treatment, which improved radiographic technique will immeasurably promote. Pediatricists and radiologists should work side by side in exploring this interesting borderland.

**84. Relations Between Lactation and Menstruation.**—Jacobius found 79 menstruating in 180 women examined about the sixth month after childbirth. The type of menstruation was not quite normal, but no interference with the nursing capacity was observed in any instance. The women were under constant control and prizes were given for the best "nursers." The children increased in weight, even with the most profuse menorrhagia, in nearly every instance. The majority of the children showed transient disturbance, restlessness, or a tendency to diarrhea or dyspepsia, and in a few cases they vomited the milk, but these were all transient disturbances and the children thrived.

**85. Retention of Capacity for Production of Milk by Non-Nursing Mothers.**—Jacobius has been able to have women nurse their infants, even after the child has not been nursing for several weeks, and even in women who have not nursed the infant at all after its birth, the interval ranging from three to twenty-six days. Good results were obtained with a tube fastened to an ordinary rubber nipple, which the mother could use herself, sucking the end of the tube. The infants never seemed to suffer from the composition of the milk after the long suspension.

**88. Periodical Vomiting in Children.**—Arkawin has observed four cases, in all of which the patients had neuropathic inheritance with a tendency to obstipation. The vomiting ceased when the intestinal functions were regulated.

**Berliner klinische Wochenschrift.**

June 1, XLV, No. 22, pp. 1041-1080.

- 89 \*Antitryptic Power of Human Blood Serum in Cancer, etc. (Antitryptische Kraft des menschlichen Blutserums.) L. Brieger and J. Trebing.  
90 \*Pubiotomy. P. Kroemer.  
91 Complement-Binding Substances in Urine in Syphilis. (Komplementbindende Stoffe im Harn Syphilitischer.) F. Blumenthal and U. J. Wile.  
92 Edestin Test for Pepsin. W. Wolff and Z. v. Tomaszewski.  
93 Bisystole—Interrupted Contraction of Left Ventricle, and Phenomena in Arteries with Aortic Valvular Insufficiency. (Ueber die diskontinuierliche, in zwei Absätze geteilte Kontraktion des linken Ventrikels des Herzens, etc.) W. Obrastzow.  
94 Essential Ingredients of Breast Milk. (Zur Frage natürlichen Nutstoffe in der Frauenmilch.) E. Müller.  
95 Elimination of Pepsin in Urine. G. G. Wilenko.  
96 Bacteriology and Prognosis. W. Liepmann.

**89. Antitryptic Power of Human Blood Serum.**—Brieger and Trebing found that normal blood serum contains sufficient antibodies to inhibit the digesting action of a 1 per cent.

solution of trypsin on the Loeffler plate in the proportion of 1 to 3. A distinct reaction still occurs in a strength of 1 to 4, in a few cases 1 to 6. Twelve patients with diabetes examined showed a loss of inhibiting power in 7, and normal conditions in the others; about the same findings were obtained in 4 patients with tuberculosis, in 8 with non-malignant stomach affections, 6 with various other affections, and in 4 with syphilis. On the other hand, the inhibiting power of the serum was very much increased in each of 35 patients with cancer, as much as from 1 to 10 and 1 to 20 in the majority. The same findings were obtained in 8 cases suspicious of carcinoma. In 3 cases in which a cancer had been removed a year or more before, the antitryptic action approximated the normal type, as also in 6 cases of non-malignant tumors. This trypsin reaction may aid in the differentiation of carcinoma, although the reaction is not specific for cancer but merely denotes considerable inhibiting power in regard to trypsin, which is observed also in severe blood affections. The authors are now engaged in research as to the possible influence on this reaction of ingestion of trypsin.

**90. Pubiotomy.**—Kroemer reports the experiences with pubiotomy in Bumm's service at the Charité, Berlin—a total of 53 cases. Nine of the women have passed through a second pregnancy since. The results confirm the advantages of the operation; the great difficulty is the selection of the proper cases for this technic. The sawing of the bone is not the danger for the woman, but the too rapid passage of the head. Every effort must be made to have the birth proceed spontaneously, and pubiotomy should be applied only when vigorous uterine contractions give prospect of spontaneous delivery. Complications, such as prolapse of the cord, stricture of the soft parts, infection and eclampsia, contraindicate pubiotomy. Recent examination of 34 of the women shows them free from disturbances in gait, and with unimpaired earning capacity. The cicatrix in the bone seems to be permanently flexible in all but five women. This allowed the pelvis to enlarge spontaneously in all but one of the 9 childbirths later. He thinks that these pelvis-enlarging operations will tend to reduce the number of obstetric operations. Relying on pubiotomy, the natural forces can be utilized to their last possibility.

**Centralblatt für die Grenzgebiete der Med. und Chir., Jena.**

May 7, XI, No. 8, pp. 289-320.

- 97 \*Occult Blood in Stools and Stomach Content and Its Importance for the Early Diagnosis of Organic Gastrointestinal Affections. (Nachweis geringer Blutmengen in den Fäces und im Mageninhalt.) L. Isler. Collective Review.

May 22, No. 9, pp. 321-368.

- 98 \*Operative Treatment of Emphysema of the Lung. L. Müller.

**97. Occult Blood in Stools and Stomach Content in Diagnosis of Cancer.**—Isler reviews forty-eight articles that have been published in Germany on this subject since Boas first called attention to the diagnostic importance of invisible blood in the feces. Invisible hemorrhage never occurs, it seems, in purely nervous stomach affections, but may be found in case of insufficiency of the stomach, due to cancer or non-malignant stenosis. The constant positive blood reaction in the stools, with still good motor functioning on the part of the stomach, no free hydrochloric acid and no lactic acid, is presumptive of the presence of cancer.

**98. Operative Treatment of Emphysema of the Lung.**—Müller has found only eleven articles on this subject, although Freund's first communication was published exactly fifty years ago. Good results have been obtained in the few cases adapted for the operation in which it has been done, as has been already mentioned in these columns.

**Deutsches Archiv für klinische Medizin, Leipsic.**

May 20, XCIII, No. 3, pp. 223-330.

- 99 Ferricyanid Method for Determining Presence of Gas in Blood for Clinical Purposes. (Ferricyanidmethode zur Blutgasbestimmung.) J. Barcroft and P. Morawitz.  
100 \*Experimental Research on Reaction to Tuberculin. H. Bahrddt.  
101 Epidemic Cerebrospinal Meningitis. (Zur Lehre von der übertragbaren Genickstarre.) W. Ebstein.  
102 Influence of Phosphorus Intoxication on Formed Elements of Blood. (Einfluss der Phosphorvergiftung auf die morphologischen Elemente des Blutes.) T. Pisarski.



- 103 Influence of Human Blood Sera on Proteolytic Leucocyte Ferment and Diagnostic Importance of Such Antiferment Action. C. Kliebeberger and H. Scholz.
- 104 Experimental Study of Blood Pressure and Influence of Food in Chronic Nephritis. (Verhalten des Blutdruckes bei chronischer Nephritis.) J. Brodzki.

100. **Experimental Research on Reaction to Tuberculin.**—Bahrdt reports among other findings that the reaction to tuberculin becomes less pronounced if part of the tuberculous process is excised. This seems to prove that the tuberculous focus is an important factor in the reaction.

Deutsche medizinische Wochenschrift, Berlin.

May 21, XXXIV, No. 21, pp. 905-952.

- 105 \*Diagnosis and Treatment of Psychoses in Children. (Kindliche Seelenstörungen.) Raacke.
- 106 Indications for Abortion on Account of Morbid Dread of Labor. (Indikationsstellung für den künstlichen Abort wegen psychischer Krankheit.) M. Friedmann. Commenced in No. 20.
- 107 \*Parabiosis and Pancreatic Diabetes. J. Forschbach.
- 108 \*Two Cases of Lung Affections Following an Accident. (Lungenerkrankung im Anschluss an einen Unfall.) W. Baumann and F. M. Groedel.
- 109 Prognosis and Treatment of Periappendicitis and Para-appendicitis. Gebele.
- 110 Acute Staphylococcus Glossitis. A. D. Pawlowsky.
- 111 \*Quinin in Syphilis. II. Napp.
- 112 Efficacy of Roentgen Treatment for Nail Affections. (Behandlung kranker Nägel mit Röntgenstrahlen.) C. Schindler.
- 113 Dosage of Roentgen Rays. (Benutzung des Milliampèremeters und der parallelen Funkenstrecke bei der Dosierung der Röntgenstrahlen.) H. E. Schmidt.

May 28, No. 22, pp. 953-992.

- 114 \*Early Operation in Severe Acute Cholecystitis. Riedel.
- 115 \*Prostatectomy at Two Sitzings Under Local Anesthesia. Lanz.
- 116 Treatment of Congenital Pseudarthrosis of Leg. (Behandlung der angeborenen Unterschenkelpseudarthrose.) L. Rauenbusch.
- 117 Shoe for Flat Foot. (Spezieller Plattfussstiefel.) C. Lengfellner.

105. **Diagnosis and Treatment of Psychoses in Children.**—Raacke discusses catatonia, melancholia and other psychoses as occurring in children. Catatonia has been observed before the age of 7, but generally does not appear until after the eleventh year. He regards it as the most important psychosis of childhood. External causes play only a subordinate rôle in its development; in most cases there is an inherited nervous taint. The preliminary stage of depression may be mistaken for melancholia at first. Treatment of all acquired psychoses in children is symptomatic. The little patient should be kept in bed with strict supervision. Serious attempts at suicide are not rare among such children. Excitement is best combated by prolonged warm baths and warm wet packs. The food should be light, nourishing and given at short intervals with the stomach tube, if necessary. It is important to keep constant control of the weight with the scales. After recovery, rest and freedom from excitement must be ensured and a healthful and non-strenuous occupation selected in later life.

107. **Pancreatic Diabetes and Parabiosis.**—Forschbach refers to Sauerbruch's recent reports on parabiosis, as he calls the union of living animals by a permanent organic joining of the abdominal cavities. He has thus united an animal with diabetes following removal of the pancreas with another healthy animal. By the parabiosis the tendency to diabetes of the pancreatectomized animal was reduced or entirely abolished.

108. **Lung Affections Following Trauma.**—Baumann and Groedel relate the history of a case of "contusion pneumonia" in a young man. In a second case the Roentgen findings indicated the same, but autopsy disclosed that there had been no pneumonia. The apex was compressed by a large epipleural hematoma, and the first rib was fractured. The injury was received while wrestling, and the young man complained that something had broken in his right shoulder. The pains were ascribed to rheumatism by a physician, and the patient returned to work for a time. The hematoma simulated infiltration of the apex in the Roentgen picture and it also concealed the fracture of the rib.

111. **Quinin in Syphilis.**—Napp first tests the tolerance of the patients for quinin for two or three days, and then makes an intravenous injection of quinin, injecting from 0.5 to 0.8 gm. (7½ to 12 grains) for two days and then every second

day. He follows Lenzmann's technic and is convinced that this treatment of syphilis has a promising future. He has applied it in twenty-two cases as he relates in detail, the results confirming the efficacy of quinin alone without specific local measures. The by-effects were slight and had all vanished in two minutes after the injection. None of the patients experienced any by-effects in the ears, although they always had them when quinin was taken by the mouth.

114. **Early Operation in Severe Acute Cholecystitis.**—Riedel calls attention to the unreliability of statistics in regard to the mortality of gallstone affections. When physicians are accustomed to refer all patients with inflammatory abdominal processes promptly to the surgeon, acute cholecystitis is seen to be a severe and threatening affection in a large proportion of cases. When the gall bladder is distended it should be removed, he says, before it bursts, or before a concrement in the neck of the bladder or in the cystic duct is forced into the common bile duct. Mild cholecystitis should be treated conservatively until the diagnosis is certain. If the general condition is good, an operation should then be proposed, as severe cholecystitis may develop any day. Out of 111 patients seen in 1905-6, not less than 6 were moribund when first seen, and 2 others were on the verge of perforation—all were suddenly developing acute cases. He thinks that the lessons learned from appendicitis apply also to cholecystitis.

115. **Prostatectomy Under Local Anesthesia.**—Lanz comments on the precarious condition of many patients with hypertrophy of the prostate. In 80 cases in his practice two of the patients died the night before the proposed operation. The slightest intervention in such cases is liable to be fatal. He regards perineal prostatectomy as altogether too severe an operation, and for two years has been using exclusively the transvesical technic, as much safer and quicker. General anesthesia is contraindicated in these old, more or less septic patients with their tendency to pneumonia. Lumbar anesthesia has rendered good service in twelve cases, but even this is liable to injure the kidneys, and he has lately found that the operation can be done with local anesthesia alone. In nine cases the suprapubic cystotomy was done under infiltration anesthesia with a 1 per cent. solution of cocain with a few drops of suprarenal extract. The prostate was easily shelled out without any further anesthetization; he was surprised at the absence of pain. Two other patients were so debilitated that he performed the operation in two sittings. The prostate was shelled out without any anesthetic, two days after the cystotomy, in one case; in the other the enucleation was not done for a week after the cystotomy. The patients complained only of the pressure of the surgeon's hand on the symphysis; there was no actual pain in the bladder or rectum. He gives a little brandy before the operation, and suggests that possibly the pronounced uremic condition may have cooperated in inducing this remarkable tolerance. In any event, the enucleation of the prostate could be rendered painless by an opium suppository in the rectum with local application of cocain, injected under control of the forefinger in the bladder. He would not advise operating at two sittings in ordinary cases, but only in the exceptional cases which are still considered as beyond relief or burden the conscience and throw discredit on the statistics of operations. He denounces in vigorous terms the use of the catheter, comparing it to probing a wound; the catheter signifies as a rule the end or the beginning of the end. Instead of using the catheter in cases of enlarged prostate he advocates transvesical prostatectomy as the routine procedure. Without general anesthesia it is no more dangerous than the use of the catheter, while it has the advantage of permanently curing the patient.

Fortschritte der Medizin, Leipsic.

May 20, XXVI, No. 14, pp. 417-446.

- 121 Treatment of Phlyctenular Ophthalmia. (Zur Phlyktänenbehandlung.) Reh.

Jahrbuch für Kinderheilkunde, Berlin.

May 1, LXVII, No. 5, pp. 513-640.

- 122 Influence of the Various Causes of Death on the Infantile Mortality in Norway. (Säuglingssterblichkeit Norwegens.) A. Johannessen.



123 \*Causes of Greater Consumption of Matter in Childhood. (Ursachen des grösseren Stoffverbrauches im Kindesalter.) M. Kassowitz.

124 Atelectasis (Lungenatelektase.) J. Peiser.

123. Causes of Greater Consumption of Matter in Childhood.—Kassowitz has been making an extensive study of metabolism and catabolism in children in comparison with adults. He shows that the consumption of matter is influenced by various causes, and that the growth of the children is not such a preponderating factor as generally assumed. Among the other causes are the thermostatic function and the fact that each organism consists of two components, which are entirely distinct: the living, assimilating protoplasm and the non-vital elements and reserve substances. In the young the protoplasm preponderates, but with advancing years the metaplasma—the cellulose, starch, wood fiber, fat, silicates and other organic and inorganic deposits in plants, connective tissue, cartilage and elastic fibers, fat, lime and other organic and inorganic deposits in animals. This fact is sufficient to explain the active metabolism in young individuals aside from other considerations.

Medizinische Klinik, Berlin.

May 24, IV, No. 21, pp. 773-816.

125 Nutrition and Metabolism of Eye. (Ernährung und Stoffwechsel des Auges.) K. Wessely.

126 \*Apparent Enlargement of Heart. (Scheinbare Vergrösserung des Herzens.) M. Herz.

127 \*Treatment of Gouty Diathesis. (Uratdiathese.) G. Rosenfeld.

128 \*Suction Hyperemia in Urology. (Anwendung der Bierschen Stauung in der Urologie.) E. R. W. Frank.

129 Vibratory Massage. Siebelt.

130 Supernumerary Bones in Wrist and Ankle and Sesamoid Bones in Roentgen Picture. (Ueberzählige Karpalia und Tarsalia, und Sesambeine im Röntgenbilde.) Taubert. Commenced in No. 19.

131 Differential Diagnosis of Pernicious Anemia. O. Stempel. Commenced in No. 19.

132 Color Photography in Medicine. (Farbenphotographie nach Lumière.) P. Essau and G. Röver.

May 31, No. 22, pp. 817-854.

133 \*Transplantation of Joints. (Gelenktransplantation.) F. Lexer.

134 \*Suprarenals and Rachitis. (Nebennieren und Rachitis.) W. Stoeltzner. Commenced in No. 18.

135 Pepsin Content in Fasting Stomach. (Pepsingehalt des nüchternen Magens.) G. Lefmann.

136 Apparatus for Application of Cold and Its Use in Mastoid Inflammation. (Kühlapparat und seine Verwendung bei akuten Warzenfortsatzentzündungen.) K. Herschel.

137 Dermatitis from Plants, etc. (Interessante Fälle von "Dermatitis venenata.") V. Pflanz.

138 Advice to Nursing Women. (Ammen- und Mutterbrustbehandlung in der Praxis.) C. Stuhl.

139 Changes in Viscosity of Blood at High Altitudes. (Veränderung der Blutviskosität im Höhenklima.) Determann.

126. Apparent Enlargement of the Heart.—Herz believes that enlargement is frequently diagnosed when in reality it does not exist. It can not be too often reiterated, he asserts, that the assumption of heart disease is an important factor in producing disease in a previously sound heart and vascular system. He reviews the conditions liable to simulate enlargement of the heart. When for any reason the heart lies more horizontally, it always slides toward the left; the area of dulness and the apex beat suggest enlargement, and a systolic murmur corroborates this. These phenomena are probably caused by the kinking of the heart in respect to the ascending aorta and the eddy in the blood at the point of the kinking. The most common cause of this horizontal attitude of the heart is the pushing up of the diaphragm. The heart slips toward the left no matter whether the right or left side of the diaphragm is lifted. Many causes may push up the diaphragm, and it may induce a number of subjective symptoms and even lead to extrasystoles. An unduly long ascending aorta or a stooping attitude may favor the sliding of the heart toward the left. The displaced apex may return to its normal place when the patient is made to stand up straight as for a military salute. Malformation in the thorax may also simulate a dilated or hypertrophied heart, especially in persons who work stooping over, copyists, dentists, draftsmen and others. The abnormal contact of surfaces in these conditions causes peculiarly marked subjective symptoms. In case the muscles are unusually well developed while the chest is deep, the area of cardiac dulness may extend beyond the maxillary line and suggest hypertrophy. In obese persons it

must not be forgotten that the dulness is the enlarged acoustic shadow of the heart, which is exceptionally far below the surface in these persons.

127. Treatment of Uric Acid Diathesis.—Rosenfeld's research and experience show that addition of sugar to a diet containing purin causes an increase in the amount of uric acid eliminated. He advises a few tests of the metabolism for each patient, to regulate the diet in accordance with the findings. In respect to medication he advocates the continuous use of urea. It limits the production of uric acid, he declares, and keeps the uric acid in the urine well dissolved. If the patient urinates in a cone of filtering paper the paper will be covered with granules of uric acid in extreme cases, but if these patients are taking daily from 10 to 15 gm. (150 to 225 grains) of urea the filter will be free from crystals. In one case the patient had clear urine under the urea treatment; it was then suspended for eight weeks, and 105 grains of uric acid crystals were collected on the filter in this period. On resumption of the urea the elimination of undissolved uric acid ceased at once. The urea causes no inconveniences of any kind, he says, not disturbing either the stomach or kidneys. Its only fault is that its action ceases with its discontinuance. He also ascribes great importance to glycerin. He does not attribute any concrement-expelling power to it, but believes that it washes out the uric acid retained in the urinary canals, not deposited, and that it arrests the pains induced by concretions in the kidneys. He prescribes it in the dose of 150 gm. for a man weighing 75 kilograms; that is, 2 gm. per kilo (about 14 grains for each pound of weight). The entire dose of 150 gm. is dissolved in tea, Seltzer water or milk, and taken in four portions at two-hour intervals. This dose is repeated on one day every fourth or sixth week, and in the intervals 10 or 15 gm. of urea are taken every day. He regards this glycerin-urea treatment as accomplishing all that can be expected until we discover some means of dissolving the concretions themselves.

128. Suction Hyperemia in Urology.—Frank has treated 60 patients with buboes by application of a cupping glass to induce suction hyperemia, and reports good results. He gives an illustration of the large cupping bell he uses; it fits over the region and can easily be applied by the patient himself. It is applied for twenty minutes every two hours, with or without incision. The pain of gonorrheal joint affections was always promptly arrested by constriction hyperemia, combined with superheated air. Several cases are described of genital tuberculosis in young men in which remarkable benefit was obtained with the cupping bell. In two of the cases no other measures except a mutilating operation could have been considered. He believes that artificially induced hyperemia, applied in time, will render the treatment of genital tuberculosis much more conservative and promising than has been the case hitherto. Small foci in the prostate, and perhaps also the seminal vesicles, are favorably influenced and heal under suction applied to the testicles. The method is also of service in hastening the healing of fistulous passages.

133. Transplantation of Joints.—Lexer's experiences with restoration of joint function by transplantation of part of a joint from an amputated limb have been previously mentioned in these columns. Even if only a hinge joint can be supplied, the functional results are excellent. One patient was a man of 38 with sarcoma of the tibia requiring resection of the upper third and of the articular cartilage. A corresponding piece from the tibia of a limb amputated from another man on account of senile gangrene was introduced in its place, and in three months the patient was using the leg almost normally, with no shortening. In another case the second toe from an amputated limb replaced a finger removed on account of chondroma. In a third, a girl of 19 had right-angled synostosis of the left knee after suppurative osteomyelitis. After resection of a wedge from the joint a gap was left of more than two inches between the tibia and femur. The knee from an amputated limb was implanted in this gap and the projecting epiphyses nailed to the bones. The patellar ligament was sutured to the periosteum and a fenestrated plaster cast applied. In the fifth week the x-rays



showed callus growing over the edges of the implanted epiphyses, and the leg was exercised. The patella grew to the bone beneath, and in the third month the flap was lifted and the patella was removed. Vital processes could be seen in the implanted tissues. Normal passive movements are possible but active movements are still defective as important muscles are lacking. Recently he raised the entire flap for the second time, and a piece of the tunica vaginalis, nearly six inches square, taken from a hydrocele being operated on at the same time, was transplanted with the raw side on that of the flap to which it was fastened. The upper edge was sutured to the periosteum over the upper epiphysis, and in such a way that a fold forms as the joint is used. The flap was then replaced without further fastening of the transplanted serosa. He thinks that this technic supplies a sufficient substitute for the capsule of the joint. A piece of omentum might be used for the serosa graft, and it might be implanted at the first operation or as a preliminary before the operation. He has never tried to implant an entire unopened joint in an adult for fear of necrosis, but he has done this on the knee of a child, transplanting the entire capsule and epiphyses, with excellent results to date. He does not approve of implanting substances foreign to the body, like celluloid, as they induce unwished-for reactions.

**134. Suprarenals and Rachitis.**—Stoeltzner presents arguments to prove that functional insufficiency of the suprarenals is the predominating factor in rachitis and osteomalacia. In animals and in man, he says, domestication, living indoors, is what paves the way for rachitis. The degeneration of the suprarenals may be the result of generations of unphysiologic minimal demands on the functioning of the striated musculature.

#### Monatsschrift für Geburtshilfe und Gynäkologie, Berlin.

May, XXVII, No. 5, pp. 554-680.

- 140 The So-called Decubitus with Prolapse. (Decubitusgeschwür beim Prolaps.) F. Kermauner.  
141 \*Successful Suggestive Treatment of So-called Uncontrollable Vomiting of Pregnancy. (Suggestiv-Behandlung der Hyperemesis gravidarum.) F. Schulte.

**141. Suggestion in Treatment of Vomiting of Pregnancy.**—Schulte states that at the clinic in Giessen, 18 cases of uncontrollable vomiting have been observed, and the patients were cured by suggestion. Various measures were used, all for the suggestive effect. In every case there was pronounced hysteria or nervousness accompanied by enhanced irritability of the sensory nerves. The patients were put to bed, on a liquid diet at first, sometimes with alimentary enemata; lavage of the stomach was done occasionally to impress the patients. One of the best measures was the suggestion of retroflexion of the gravid uterus. A sham correction of the retroflexion was then carried out and a pessary inserted for a few days. All the patients responded with prompt arrest of the hitherto incoercible vomiting. It was never found necessary to interrupt the pregnancy. In one case retroflexion actually existed and the vomiting ceased after it was corrected, but recurred when the pessary dropped out of the vagina, although the uterus was then in ante-flexion. The vomiting ceased again when the pessary was replaced. Three of the patients had recurrence of the vomiting at different pregnancies, cured each time by the same measures. One patient had a recurrence of the vomiting after her return home, but suggestion by letter that the vomiting would cease in three days, when the menstrual period was over, proved effectual. It seems evident that the hyperemesis which is observed without an appreciable affection of any internal organ is a purely psychogenic symptom induced by the pregnancy, and consequently, curable by suggestion.

#### Münchener medizinische Wochenschrift.

May 19, LV, No. 20, pp. 1057-1112.

- 142 Histogenesis of Myeloid Leukemia. H. Schröder.  
143 \*Constriction Hyperemia in Meningitis. (Verwendbarkeit der Bierschen Stauung bei Hirnhautentzündungen.) H. Stursberg.  
144 Hemolytic Complement in Human Milk. M. Pfandl and E. Moro.

- 145 Specific Complement-Binding Substances in Blood Serum in Typhoid Bacilli Carriers. (Spezifische komplementbindende Stoffe im Blutserum von Typhusbazillenträgern.) C. Schöne.  
146 New Clinical Opsonic Technic. (Opsoninbestimmung.) H. Kümmerer.  
147 Clinical Importance of Cutaneous and Percutaneous Tuberculin Reaction in Adults. E. Emmerich.  
148 Pathologic Anatomy of Relapsing Fever. M. Rablnowitsch.  
149 Serum Treatment of Puerperal Fever. A. Müller.  
150 Treatment of Acne rosacea. M. v. Zeissl.  
151 Propaganda for Breast Nursing. Its Influence on Later Development of the Child. (Stillpraxis.) M. Nagel. Id. H. Lenk.  
152 \*Clinical Importance, Diagnosis and Treatment of Chronically Inflamed Tonsil Tissue. (Klinische Bedeutung des chronisch-entzündeten nicht hypertrophischen Gaumentonsillengewebes.) O. Muek.  
153 \*Idiosyncrasy to Eggs. (Fall von Idiosynkrasie gegen Hühnerelweiss.) P. Landmann.  
154 Gelatin in Treatment of Hemorrhagic Diathesis in the Newborn. L. Grüneberg.  
155 \*Progress in Diagnosis of Brain Tumors. (Diagnostik der Gehirntumoren.) A. Knapp. Commenced in No. 19.

May 26, No. 21, pp. 1113-1160.

- 156 \*Typhoid Bacilli in Blood in Absence of Typhoid Fever. (Vorkommen von Typhusbazillen im Blut von nicht typhuskranken Personen.) O. Busse.  
157 Case of Congenital Word Blindness. A. Peters.  
158 Serious Hemorrhage During Childbirth. (Beurteilung schwerer Blutungen unter der Geburt.) Schiekel.  
159 \*Chronic Otitis Media. (Behandlung und Prognose der chronischen Mittelohreiterung.) A. v. Ruppert. Id. Suction Hyperemia. (Biersche Stauung bei Otitis media.) Stimmel.  
160 The Vaccine Test by Subcutaneous Injection. (Vakzineprobe mittels subkutaner Injektion beim Kuhpockenkranken.) W. Knoepfelmacher.  
161 Adhesions After Laparotomies. (Nachbehandlung Laparotomierter.) M. Jerusalem.  
162 Behavior of Lymph Glands in Joint Affections. (Verhalten der Lymphdrüsen bei manchen Gelenkaffektionen.) E. Plate.

**143. Constriction Hyperemia in Meningitis.**—Stursberg is assistant at Schultze's clinic at Bonn where he has been studying the influence on the cerebrospinal fluid of application of an elastic band to the neck. The results are not encouraging for use of this measure in meningitis.

**152. Clinical Importance of Inflamed Tonsils.**—Muek regards the tonsils as responsible for the recurrences of articular rheumatism, etc. In 50 cases of chronic tonsillitis, with plugs and pus in the tonsils, he found an apical affection in 27 per cent. He has devised a simple aspirating contrivance for evacuating the contents of the crypts in the tonsils. He calls it the "tonsil exhaust," and relates two cases to show its advantages for diagnosis and treatment, with an illustration of the aspirator. Recurring acute articular rheumatism vanished permanently after its application in these cases.

**153. Idiosyncrasy to Eggs and Alleged Meat Juice Preparations.**—Landmann has a patient, a man of 35, who has a marked idiosyncrasy to eggs, but is otherwise healthy. Ingestion of the slightest trace of egg albumin causes serious distress. The same distress followed the ingestion of a certain "meat juice" preparation. This experience was incomprehensible until a recent exposure of the meat juice preparation revealed that it was composed of meat extract and egg albumin.

**155. Brain Tumors.**—Knapp reviews recent progress in the diagnosis of brain tumors, citing concrete examples. He advises puncture of the brain to confirm or correct the diagnosis, repeating it at various points to determine the extent and nature of the tumor, the location, blood content and eventual secondary softening. During the operation several pathologists in the operating room itself should be constantly examining the character of the excised scraps of tissue in turn until, all around the tumor, the surgeon is working in sound tissue.

**156. Typhoid Bacilli in Blood in Non-Typhoid Affections.**—Busse was able to cultivate typhoid bacilli from the blood of four patients with a severe infectious disease, but no signs of typhoid during life or at autopsy. One was a patient with pneumonia, the others had miliary tuberculosis or phthisis. He thinks that such cases would be more numerous if sought for. The patients had probably been bacilli carriers. The cases show that typhoid does not develop in these bacilli carriers even when the bacilli get into the blood. They teach further that positive findings in respect



to typhoid bacilli in the blood are not decisive as to the presence of typhoid fever.

**159. Suction Hyperemia in Diseases of the Middle Ear.**—Stimmel has treated chronic otitis media in thirty cases with Bier's suction apparatus with marked improvement in the hearing in seven cases. The pus and fetor vanished and the mucosa healed. In fifteen other cases marked improvement was observed, but the present results are not known. In two other cases the process was evidently tuberculosis, but improvement was obtained. The ear affection had lasted for from two years to fifty, rebellious to all treatment. The suction bell was applied for from two to thirty-five times, at two or three day intervals, at first for ten minutes, and never for more than fifteen. He prefers a suction bell with a diameter of 5 cm., the suction only strong enough to cause distinct swelling of the ear, never pain in the interior of the ear. He never observed disagreeable by-effects. It is surprising, he says, the amount of pus or serum found in the ear after the suction. In very painful cases of furunculosis of the ear, a constricting band applied for six or eight hours during the day gives relief, but arteriosclerosis and enlargement of the tonsils contraindicate this measure. Caries and cholesteatoma also contraindicate suction treatment in middle ear disease.

#### Wiener klinische Wochenschrift.

May 14, XXI, No. 20, pp. 709-744.

- 163 Production of Antibodies Induced by Rectal Incorporation of Antigens, and Absorption of Antibodies Introduced into Rectum. (Erzeugung von Antikörpern durch rektale Einverleibung der Antigene und über die Resorption rektal eingebrachter Antikörper.) C. Sternberg.
- 164 Production of Toxin by Mold Fungi. (Ein in Schimmelpilzen vorkommendes Gift.) A. Sturli.
- 165 \*Typhoid Fever Complicated with Gangrene of the Extremities. S. E. Biron.
- 166 Findings in Lymph Glands in Syphilis. (Lymphdrüsenbefunde bei kongenitaler und postfötaler Lues.) J. Bartel and R. Stein.
- 167 Mode of Action of Potassium Iodid. (Wirkungsweise des Jodkaliums.) J. Zwintz.
- 168 Apparatus for Determination of Fermentation in Stools. (Bestimmung der Stuhlgärung nach Schmidt-Strassburger.) H. Delug.
- 169 The Biuret Test for Pepsin in Stomach Content. (Biurettreaktion zum Nachweis des Pepsins im Mageninhalt.) E. Palier.
- 170 Ocular Tuberculin Reaction. (Ophthalmoreaktion.) J. Mitulescu.
- 171 Complement-Binding Test in Leprosy. (Anwendung der Komplement-bindungsreaktion auf Lepra.) E. Eitner.
- 172 Law of Action of Pepsin. (Gesetz der Pepsinwirkung.) E. Schütz.
- 173 Orthostatic Albuminuria. C. R. v. Stejskal and V. Blum.

May 21, No. 21, pp. 745-782.

- 174 \*Serum Diagnosis of Syphilis. Its Practical Importance for Medicine. A. Wassermann. Id. Theoretical. H. Elias. E. Neubauer. O. Porges and S. Salomon.
- 175 Antagonism Between Sympathetic and Autonomous Nerves in Respect to Action of Certain Drugs and Their Influence on Internal Secretion. II. Eppinger, W. Falta and K. Rudinger.
- 176 Binding of Complement in Experimental Trypanosomiasis. O. Hartoch and W. Yakimoff.
- 177 Behavior of Hemotropins of Immunized Guinea-pigs and Their Young. M. Sohma.
- 178 \*Functional Kidney Tests. (Zur funktionellen Nierendiagnostik.) R. Lenk.

**165. Gangrene of the Extremities in Typhoid Fever.**—Biron has found 11 cases of this complication of typhoid in Russian literature, and adds another to the list. With two exceptions the patients were between 18 and 25. In his patient the gangrene of the right foot and thigh developed at the commencement of the third week of a mild typhoid fever. He ascribes the gangrene to thrombosis due to arteritis or spasm of the vessels. Both the typhoid bacilli and their toxins may participate in the production of the arteritis. The thrombosis may be favored by disturbance in the general circulation from myocarditis, paralysis of the vagus center, disturbance in the automatic ganglia of the heart or in the coronary arteries or by increased coagulability of the blood and lowered resistance of the tissue cells from toxic and trophic influences. He remarks in conclusion that arteritis not leading to gangrene is frequently overlooked, but undoubtedly contributes to the later development of arteriosclerosis, aneurism, etc., after typhoid and other infectious diseases.

**174. Serum Diagnosis of Syphilis.**—This communication was presented at the recent congress for internal medicine at Vienna, and in it Wassermann announced that the serum diagnosis of syphilis, by the complement-binding method with aqueous or alcoholic extracts of syphilitic organs, is reliable in the clinic, and is now ripe for general adoption.

**178. Functional Kidney Tests.**—Lenk reports from Hoehnegg's clinic at Vienna a few cases of kidney affections in which the phloridzin test gave misleading findings, sometimes indicating normal conditions when the kidney proved to be seriously diseased, while in other cases the test indicated advanced disease when the kidney proved to be functionally capable as soon as reflex disturbance subsided.

#### Zentralblatt für Chirurgie, Leipsic.

May 16, XXXV, No. 20, pp. 609-632.

- 179 \*Sensibility of Abdominal Organs. (Sensibilität der Bauchorgane.) C. Ritter.
- 180 \*Treatment of Acute Suppurating Osteomyelitis. S. Rolando.  
May 23, No. 21, pp. 633-664.
- 181 Operative Treatment of Invagination of Descending Colon. C. Longard.
- 182 \*Retention Catheterization of Ureters in Surgical Treatment of Various Bladder Affections and Hypertrophy of the Prostate. (Dauerkatheterismus der Ureteren.) L. Cardenal.  
May 30, No. 22, pp. 665-696.
- 183 Influence on Course of Chloroform Anesthesia of Covering Mask with Towel. (Welchen Einfluss hat das Ueberdecken der Maske mit einem Handtuche auf den Verlauf der Chloroformnarkose?) C. Hofmann.
- 184 \*Apparatus for Overpressure. (Einfacher Apparat zur Ueberdrucknarkose.) M. Tiegel.

**179. Sensibility of the Abdominal Organs.**—Ritter reports extensive research on dogs and rabbits, which shows that the abdominal organs are not so free from sensibility as Lennander announced. The ligation of the vessels in the abdominal cavity seems to be the touchstone for the degree of sensitiveness.

**180. Treatment of Acute Suppurative Osteomyelitis.**—Rolando has treated a number of patients between 6 and 18 with hematogenous osteomyelitis, and has obtained the best results by trephining at the lowest point of the suppuration, thus allowing free escape to the pus. A preliminary skiagraph will determine the exact location of the focus. It is unnecessary to open up the focus, he says, further than to allow its evacuation by the trephine.

**182. Retention Catheterization of Ureters in Bladder Affections, Etc.**—Cardenal writes from Madrid to endorse the advantages of leaving a retention catheter in each ureter when it is advisable to keep the bladder dry for a few days after operations, removal of stones, enucleation of the prostate, etc. His experience shows that the catheters can be left for nine days without complication, and he thinks that they might be left for two weeks. The results of intravesical intervention are much better when the bladder can thus be kept dry to permit primary healing.

**184. Apparatus for Overpressure.**—Tiegel's apparatus is illustrated as he has used it in a number of operations on the lungs, heart or esophagus. There was no collapse of the lungs. The patient kept on breathing quietly and regularly although the pleural cavity was opened for more than an hour in some cases. The apparatus consists merely of a small mask, a rubber balloon, the tank of oxygen or compressed air, and a water jar. There is nothing to interfere with the work of the anesthetist or operator.

#### Zentralblatt für Gynäkologie, Leipsic.

May 16, XXXVII, No. 20, pp. 641-688.

- 185 \*Delivery by the "Uterus-Abdominal Wall Fistula." (Entbindung durch die "Uterusbauchdeckenfistel.") H. Sellheim.
- 186 Technique and Results of Pubiotomy. (Hibostotomie.) II. Ehrlich.
- 187 \*Childbirth with Double Uterus. (Geburt bei Doppelmissbildung der weiblichen Genitalien.) O. Henrich.
- 188 \*Convolute Uterus. (Der schneckenförmige Uterus.) L. M. Bossi.
- 189 Decapsulation of Kidneys in Eclampsia. (Nierendekapsulation bei Eklampsie.) E. Haim.
- 190 \*Tonic Action of Sodium Saccharate-Salt Solution by the Rectum. (Die rektale Instillation mit Natriumsaccharat-Kochsalzlösungen.) Schücking.
- 191 Spring Curette. (Federcurette.) J. Rudolph.



185. **Delivery by the "Uterus-Abdominal Wall Fistula."**—Sellheim has been seeking for a technic of extraperitoneal incision of the uterus which would be safe even for infected cases. He thinks he has accomplished this by what he calls "*Uterusbauchdeckenfistel*," which aims to deliver the febrile parturient through a small opening in the abdominal wall, the abdominal cavity and the pelvic cellular tissue being thoroughly protected. The main point is to incise the abdominal wall and the wall of the uterus at a point where they correspond, and where this correspondence can be maintained even during involution of the uterus. This is possible with a median sagittal incision immediately above the symphysis. The parietal peritoneum is sutured carefully to the edges of the incision in the skin. The abdominal cavity is shut off by suturing the parietal and uterine peritoneum. The uterine peritoneum and the reflection over the bladder are mobilized on each side, and the edges sutured to the skin around the incision, where the parietal peritoneum is already fastened. The bladder is pushed to one side. By carefully incising the wall of the uterus the outer layers can be seized and brought up outside the cutaneous incision. After opening into the cavity of the uterus and wiping the edges of the wound, they are seized with forceps and drawn outside the abdominal wound. The edges of the uterine wound thus drawn out are pulled down over the edges of the abdominal wound on all sides and held with forceps. The tissues here are so elastic that the child can be extracted without their tearing. After the extraction of the child, the turned-over edges of the uterine wound are fastened to the skin. The fistula rapidly heals. In the case described, by the fifth day nothing was left of the opening except a hole 5 cm. in diameter, surrounded by a ring of uterus wall about 1 cm. thick. The patient was allowed to get up early, even although the uterine cavity was secreting considerably and there was slight superficial suppuration at the edge of the fistula. The uterus wall was sutured the eighteenth day, and the patient was discharged with restored working capacity the fifth week, with a healthy child.

187. **Childbirth with Double Uterus.**—A iii-para, 24 years old, was in labor for a week. Finally the contractions became more vigorous and the child was rapidly expelled. Manual loosening of the placenta led to the discovery of a double uterus: the walls were remarkably thin and the second uterus had participated in the formation of decidua; its cervix was also dilated.

188. **Convoluting Uterus.**—Bossi has found in a number of cases that dysmenorrhea, nervous disturbances and sterility are the result of the curving of the cervix of the uterus back on itself, thus presenting the shape of a convoluted seashell. The condition causes a tendency to painful menstruation, leucorrhea, hysteria and chloroanemia in the unmarried, and endometritis and sterility in the married. He treats it by cutting off the curved part of the cervix. He sometimes performs a plastic operation or uses his intrauterine pessary. Experience with 200 cases has shown, he says, that this pessary answers every purpose while it causes no disturbances even when left in place for 15 or 20 days.

190. **Stimulating Effect of Rectal Injection of an Infusion of Sodium Saccharate.**—Schüeking's favorable experiences with infusion of sodium saccharate have been mentioned in THE JOURNAL. When haste is not necessary, rectal instillation is preferable. The effect on the vascular system and intestine of rectal infusion of a 0.3 per cent. solution of sodium saccharate and 0.7 per cent. salt solution is remarkable in septic conditions. It raises the blood pressure and improves the circulation in general while putting an end to atony of the intestine in puerperal peritonitis without inducing a tendency to diarrhea. He allows only a drop at a time to enter. When designed to stimulate the vascular system, he instills the fluid an hour at a time, but in case of intestinal atony, he keeps up the instillation for 24 hours, using in this time 2 or 3 liters of the fluid. The sodium saccharate seems to have a direct influence on the metabolism and the functioning of the musculature of the bowels.

## Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

**OUTLINES OF PHYSIOLOGY.** By Edward Groves Jones, A.B., M.D., Professor of Surgery in Atlanta School of Medicine, and Robert Grier Stephens, A.B., M.D., Instructor in Physiology in the Atlanta School of Medicine. Second Edition, Revised. Pp. 383, with illustrations. Price, \$1.50. Philadelphia: P. Blakiston's Son & Co., 1908.

**A MANUAL FOR MIDWIVES.** By C. Nepean Longridge, M.D. (Vict.), F.R.C.S. (Eng.), M.R.C.P. (Lond.), Late Resident Medical Officer at Queen Charlotte's Hospital. Cloth. Pp. 309, with illustrations. Price, \$1.40. Philadelphia: P. Blakiston's Son & Co., 1908.

**A SHORT PRACTICE OF MIDWIFERY.** By Henry Jollett, B.A., M.D. (Dublin University), F.R.C.P.L., Ex-Assistant Master, Rotunda Hospital. Fifth Edition, Revised. Cloth. Pp. 645, with illustrations. Price, \$4.20. Philadelphia: P. Blakiston's Son & Co., 1908.

**THE NEWER REMEDIES.** By Virgil Coblentz, A.M., Ph.D., F.R.C.S., Professor of Chemistry in Columbia University, Department of Pharmacy. Fourth Edition, Revised and Enlarged. Cloth. Pp. 133. Boston: The Apothecary Publishing Co., 1908.

**DISEASES OF THE NERVOUS SYSTEM.** By H. Campbell Thomson, M.D. (Lond.), F.R.C.P., Dean of and Medical Tutor in the Middlesex Hospital. Cloth. Pp. 480, with illustrations. Price, \$2.75. Chicago: W. T. Keener & Co., 1908.

**MEAT AND FOOD INSPECTION.** By Wm. Robertson, M.D., D.P.H.F.P.S., Lecturer on Public Health, Royal College for Surgeons, Edinburgh. Cloth. Pp. 372, with illustrations. Price, \$3.50. Chicago: W. T. Keener & Co., 1908.

**ELECTRICAL TREATMENT.** By Wilfred Harris, M.D., F.R.C.P., Physician to the Department for Nervous Diseases, St. Mary's Hospital. Limp Cloth. Pp. 383, with illustrations. Price, \$2.25. Chicago: W. T. Keener & Co., 1908.

**INSOMNIA AND NERVE STRAIN.** By H. S. Upson, M.D., Attending Neurologist to the Lakeside Hospital, Cleveland, Ohio. Cloth. Pp. 142, with Skiagraphic Illustrations. Price, \$1.50. New York: G. P. Putnam's Sons, 1908.

**STATE CHILDREN RELIEF BOARD.** Report of the President, the Hon. C. K. Mackellar, M.B., C.M., M.L.C., Etc., for the Year Ending April 5, 1907. Paper. Pp. 55. Sidney: William Applegate Gullick, Government Printers, 1907.

**THE LAW OF PSYCHIC PHENOMENA.** By Thomas Jay Hudson, Ph.D., LL.D., Author of "A Scientific Demonstration of the Future Life," etc. Cloth. Pp. 409. Price, \$1.50. Chicago: A. C. McClurg & Co., 1908.

**LECTURES OF THE CHAUTAQUA SCHOOL OF NURSING.** Vol. 1. Studies in General Nursing. Vol. 2. Obstetrical and Surgical Nursing. Vols. 1 and 2. Cloth. Jamestown, N. Y.: Chautauqua School of Nursing.

**SUBCUTANEOUS HYDROCARBON PROTHESES.** By F. Strange Kelle, M.D., Author of "The Recent Röntgen Discovery," Etc. Cloth. Pp. 153, with illustrations. Price, \$2.50. New York: The Grafton Press.

**THE AIX-LES-BAINS THERMAL TREATMENT.** By H. Forestier, M.D., Fellow of the Royal Society of Medicine, London. Cloth. Pp. 65. Price, 60 cents. Philadelphia: P. Blakiston's Son & Co., 1908.

**PHARMACOLOGY.** By Maurice Vejux Tyrode, M.D., Instructor of Pharmacology in the Medical School of Harvard University. Cloth. Pp. 255. Price, \$1.50. Philadelphia: P. Blakiston's Son & Co., 1908.

**RELIGION AND MEDICINE.** By Elwood Worcester, D.D., Ph.D., Samuel McComb, M.A., D.D., and Isador H. Coriat, M.D. Cloth. Pp. 427. Price, \$1.50. New York: Moffat, Yard & Co., 1908.

**FOURTH ANNUAL REPORT OF THE NEW YORK STATE EDUCATION DEPARTMENT,** for the Year Ending July 31, 1907. Cloth. Pp. 674. Albany: New York State Education Department, 1908.

**DEN STRIKTURERENDE TYNDTARMTUBERKULOSE Og Dens Kirurgiske Behandling.** By Dr. Johan Nicolaysen. Paper. Pp. 65, with illustrations. Christiana: Steen'ske Bogtrykkeri, 1908.

**ANNUAL REPORT OF THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA, 1906.** Cardboard. Pp. 144. Calcutta: Superintendent of Government Printing, 1908.

**THE LAW OF MENTAL MEDICINE.** By Thomas Jay Hudson, Ph.D., LL.D. Cloth. Pp. 281. Price, \$1.50. Fourth Edition. Chicago: A. C. McClurg & Co., 1905.

**HISTORY OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.** By James F. Walsh, M.D., Ph.D., LL.D. Cloth. Pp. 207. Published by the Society, 1907.

**UEBER ARTERIOSKLEROSE.** By Dr. med. O. Burwinkel, Bad Nauheim. Paper. Pp. 23. Price, 18c. München: Verlag der Aerztlichen Rundschau, 1908.

**SEX OF OFFSPRING.** By Frank Kraft, M.D., Editor of American Physician. Cloth. Pp. 112. Price, \$2.00. Cleveland, Ohio: B. Barsuette, Publisher.

**ZUR ERNÄHRUNGSLEHRE.** By Sanitätsrat Dr. Stille, In Stade. Paper. Pp. 28. Price, 18c. München: Verlag der Aerztlichen Rundschau, 1908.

**DIE PANIK IM KRIEGE.** By Oberst a. D. Emil Pfälf. Paper. Pp. 71. Price 30 cts. München: Verlag der Aerztlichen Rundschau, 1908.

**NEUROGRAPHS.** Edited by William Browning, Ph.B., M.D. Vol. 1, No. 2. Paper. Pp. 164. Brooklyn: A. T. Huntington, 1908.

**FOOD AND DRUG LAW OF LOUISIANA.** Paper. Pp. 65. Press of Palfrey-Rodd-Pursell Co., Ltd., 1903.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOLUME LI

CHICAGO, ILLINOIS, JULY 11, 1908

NUMBER 2

## *Address*

### THE COORDINATION OF SINGLE MUSCULAR MOVEMENTS IN THE CENTRAL NERVOUS SYSTEM.\*

C. E. BEEVOR, M.D., F.R.C.P.

Physician to the National Hospital for the Paralyzed and Epileptic.  
LONDON, ENG.

It is with a deep sense of the great honor which has been bestowed on me that I come before you, and I can assure you that I appreciate very much the invitation which your chairman sent me to give an address before the Section on Nervous and Mental Diseases of the American Medical Association. I must confess to feeling somewhat disconcerted at the imposing names of professors who have preceded me, and I must crave your indulgence if I fail to attain the high standard which they have set.

In choosing a subject it seemed to me that the great value of international meetings or of the custom of inviting members of another country to give addresses consists largely in the opportunity it offers of bringing forward subjects which may not have engaged the attention of the members of the profession over here and may thus be the means of directing their thoughts into fresh channels. For this reason I have chosen the subject of the coordination of muscular movements in the central nervous system, as it is one of great importance from a practical as well as from a theoretical point of view and one which perhaps has not received the amount of attention which it merits.

First, it will be necessary to state what is meant by a muscular movement, what the different classes of muscles are which take part in any particular movement.

By the term muscular movement I mean the single movement of one joint, such as flexion of the thumb, or of several similar joints, such as flexion of all the fingers and the thumb as in grasping; I do not refer at present to such a combination of movements as are involved in the act of walking. Now what are the different classes of muscles which may take part in any particular movement, such as that of flexion of the fingers and thumb in the act of grasping? We have first the muscles which do the work, viz., the flexors of the fingers and thumb and which are called the prime or principal movers. We also have the antagonists to the movement, i. e., those muscles which produce the movement which is the opposite to the one we wish to perform, viz., the extensors of the fingers and thumb. Furthermore, we have to notice that the prime movers, the flexors of the fingers and thumb in their course from

their origin in the forearm to their insertion into the phalanges pass over the wrist joint, and it will be evident that after these muscles have flexed the thumb and fingers they will also tend to flex the wrist.

This movement of flexion of the wrist, however, is not wanted, and it would be very awkward if, whenever we grasped an object firmly, the wrist would persist in flexing. How is this difficulty to be overcome? It is done by bringing other muscles into action which will prevent the wrist being flexed, and the muscles which can do this are the extensors of the wrist; so that whenever we perform the movement of grasping, the extensors of the wrist contract and their tendons on the dorsum of the wrist can be seen and felt to become tight. These muscles are called synergic muscles because they work with the prime movers whenever these muscles pass over two joints, and they neutralize the action of the muscles which is not required.

Other muscles which take part in simple movements are those which we may call fixation muscles, as they fix and prevent any movement in the joints intervening between the joint, in which the movement required is being performed, and the trunk. Taking the movements of the fingers as an example, it is found that in flexing the fingers against resistance, when the forearm is in the position of supination, the tendency of the resistance, if strong, is to overcome and extend the wrist and the elbow, and in order to counteract this tendency the flexors of the wrist and the flexors of the elbow—the biceps, supinator longus and other muscles—contract to fix the wrist and elbow joints. We have, therefore, the following classes of muscles which may take part in a movement: 1. Prime or principal movers. 2. Synergic muscles. 3. Fixation muscles. 4. Antagonists.

#### PRIME OR PRINCIPAL MUSCLES OF MOTION.

Taking first the prime or principal movers, we have to take into account in performing a movement whether muscles forming the prime movers all contract together, or whether there is any sequence, and whether the same sequence is always preserved. It is not easy to find a group of muscles in which it can be ascertained which particular muscle is contracting first. But in supinating the forearm the two chief muscles are the supinator brevis and the biceps, and if no work is being done it is possible to supinate the forearm without producing any contraction of the biceps.

Another example of this is shown in flexing the elbow. If this joint be flexed lifting only the weight of the forearm, the biceps is seen and felt to contract without any action of the supinator longus, and the joint can thus be kept in a position of flexion with the forearm at right angles to the vertical humerus.

Another group of muscles which I have lately observed is that of the flexors of the hip. Some of the

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



muscles such as the psoas and iliacus, are too deep and can not be seen or felt to contract; but there are two, the sartorius and the rectus femoris, which are easily seen and felt. Besides flexing the thigh on the trunk, they will also flex the trunk on the thigh, if the latter be the fixed point, and it is in this movement that a differentiation can best be made out.

To show this the person should stand erect on one leg and have the other resting on a chair, with the knee and thigh flexed. The person should incline slightly forward, so as to bring the center of gravity in front of the foot on which he is standing. On then inclining backward, so as to shift the center of gravity behind the foot, the flexors of the hip of the leg resting on the chair will contract to prevent the trunk falling backward, and the only muscle which will be seen to contract is the sartorius. If then the person incline still further back the rectus femoris will be seen to act but without the vasti externus and internus. This, by the way, illustrates the point that one part of an anatomic muscle can take part in a movement and not the rest of it.

The important point is that we have no power to make the rectus contract before the sartorius. The same thing can be shown by flexing the hip when in the position of sitting down, but it is then more difficult to differentiate the muscles, as merely raising the weight of the limb is sufficient to bring out both muscles. Why the sartorius should contract first it is difficult to say, unless it be that, as it arises from the anterior superior iliac spine instead of from the anterior inferior iliac spine, it can exercise more leverage and so is more capable of fine adjustment.

These examples show that in every movement the prime movers contract in a regular orderly sequence and that the muscles successively come into action, adding to their number according to the amount of work that is required to be done.

In describing the mode of action of the prime movers which take part in any movement I raised the question some years ago<sup>1</sup> whether a muscle acting on a rotatory or a ball and socket joint ever takes part as a prime mover in two movements, which are diametrically opposed to each other.

To illustrate this point I will take, first, the action of the supinator longus as a pronator and a supinator of the radio-ulnar articulations; next the action of the upper or clavicular fibers of the pectoralis major, which were stated by Duchenne from electrical stimulation to be both elevators and depressors of the humerus; then the posterior fibers of the deltoid, which were stated by Duchenne also from electric stimulation to be both adductors and abductors of the hanging humerus; and, last, the action of the two sternomastoids in flexing and also extending the head and neck in the position of extreme extension.

As to the first of these examples, the supinator longus, I still consider that it does not take part in both supination and pronation—in fact, I do not think it takes part in either. The opinion which I expressed regarding the clavicular fibers of the pectoralis major as being elevators and never depressors of the humerus I am glad to find has received the approval of Merkel.<sup>2</sup> Next, the posterior fibers of the deltoid I consider to be adductors and never abductors of the humerus—an action about which opinions differ—and,

last, the sternomastoids also are, in my opinion, never extensors of the head and neck. The muscle which might act in two opposite ways is the latissimus dorsi, the large flat muscle which extends from the iliac crest and lower half of the spine to the humerus. This muscle has always been described in the text-books as an extraordinary muscle of inspiration, but as I showed ten years ago<sup>3</sup> it is evidently a muscle of expiration, as any one can prove for himself by putting the fingers on the posterior fold of the axilla and giving a good cough, or, if one prefers, indulging in immoderate laughter; and it is evidently one of the muscles which are affected in Milton's line from *L'Allegro*:

Sport that wrinkled care derides  
Laughter holding both his sides.

With regard to inspiration, I have found that this muscle does not take part in such severe dyspnea as occurs in pneumothorax or pneumonia, though it does act in the emotional movement of sobbing and yawning. With the exception of the latissimus dorsi, whose action as an inspiratory muscle I think is doubtful, I do not know of any muscle in the body which takes part as a prime mover in two actions diametrically opposed to each other.

#### SYNERGIC MUSCLES.

Taking next the synergic muscles, of which I have already given one example, I would say that another example is seen in the movement of extending the thumb; here the extensors of the thumb pass over the wrist joint and would abduct this joint, but to prevent this movement, which is not wanted, the ulnar adductors, the flexor carpi ulnaris and the extensor carpi ulnaris contract and thus fix the wrist joint; so that in extending the thumb we contract at the same time the ulnar carpal muscles. Another example is that of the extension of the fingers, where the principal movers are the extensors of the fingers, and the synergic muscles are the flexors of the wrist.

In the movement of supination we have also a good example. The chief supinator is the biceps, but this muscle is also a powerful flexor of the elbow, and yet it is perfectly easy to supinate strongly without flexing the elbow. The explanation is that the biceps takes part in two movements by passing over two joints, viz., flexion of the elbow and supination of the forearm, and if only supination is required the triceps contracts as a synergic muscle and counteracts the flexion of the elbow by the biceps; so that whenever we perform strong supination only, the triceps contracts.

I have recently been examining the action of the synergic muscles in the movements of the leg, which has not, I believe, been previously observed. In flexion of the hip the sartorius acts when the movement is slight and the rectus femoris comes in when the movement becomes stronger. But the sartorius also is a flexor and a rotator in of the knee joint, and the rectus femoris is an extensor of the knee and a more powerful muscle than the sartorius. Therefore, in strong flexion of the hip when the knee is bent, the knee would tend to be extended and also to be rotated in. On carefully examining the muscles at the back of the thigh I find that in this movement the biceps contracts; this muscle, it will be remembered, is the hamstring, which arises by two heads from the femur and from the ischial tuberosity and is inserted into the head of the fibula. The in-

1. Brain, 1891, p. 51.

2. Ergebnisse der Anatomie, 1905.

3. Brit. Med. Jour., Oct. 1, 1898.



interesting point is that although its tendon becomes tense in this movement, its long head arising from the ischial tuberosity can not be felt to contract. The only actions which are here required of this muscle are flexion and rotation out of the knee, to counteract the extension of the knee by the rectus and the rotation in by the sartorius; the long head does not contract presumably because extension of the hip is not required, as it would be antagonistic to the movement we wish to perform, viz., flexion of the hip.

Again, extension of the hip is performed by the hamstrings, i. e., the biceps, semimembranosus and semitendinosus, but these muscles also flex the knee, and if the latter movement is not required, as in extending the hanging lower limb against resistance applied to the back of the thigh, the vasti contract to prevent flexion of the knee, but not the rectus femoris, as this last would also tend to flex the hip, a movement which is antagonistic to the one required.

The relation between the prime movers and the synergic muscles is very close, and it seems impossible to contract one without the other. For instance, it is not possible to extend the thumb in the slightest degree without causing a contraction of the extensor and flexor carpi ulnares, and if the prime mover be paralyzed by a lesion of the peripheral nerves the synergic muscles go on contracting and produce movements which are not intended.

As Duchenne pointed out, if the extensors of the fingers be paralyzed or weakened by a peripheral neuritis and the patient be asked to extend the fingers, the only effect is to flex the wrist by the synergic muscles, the flexors of the wrist, which go on contracting as though nothing had happened. The brain sends down a message to the two sets of muscles, and if one set—the prime movers—happens to be weak, the other set—the synergics—get their full amount and produce a movement—flexion of the wrist—which is quite different to extension of the fingers, which was required.

Apparently the brain has no power to moderate the impulse sent to the synergics to make them act proportionately to the weak prime movers. The close relation is also well shown by performing the movement of clenching the fist tightly and at the same time flexing the wrist. In the first movement the flexors of the fingers and thumb contract and also the extensors of the wrist to prevent the wrist being flexed; in the other movement the flexors of the wrist contract strongly. We have, therefore, two different movements to be carried out, and I have found that in the first movement the synergics—the extensors of the wrist—are so closely connected with the prime movers that they will continue acting and will oppose and antagonize the flexors of the wrist, the prime movers in the other movement. This opposition is the cause of the strained effort which is experienced when these two movements are performed at the same time.

The intimate relation is also shown by the fact that the synergic muscles act in all positions of the joint. Duchenne thought that the function of the synergics was to put the muscles of the prime movers in the greatest elongation in order to augment their dynamic power, but this I think can not be their true use, as is shown by the following procedure: If the thumb be extended the synergic muscles, the extensor and flexor carpi ulnares contract to prevent the wrist being abducted; if, however, the wrist be first passively abducted to the radial side, and then the thumb be

extended, the synergic muscles will still contract without, however, improving the position of the joint and enabling the extensors of the wrist to work at a greater advantage.

#### FIXATION MUSCLES.

I have already mentioned the fixation muscles of the flexors of the finger, and I now wish to refer to the extensors of the fingers and their fixation muscles. If the wrist be in the position of pronation, and the fingers be extended against resistance, this resistance if strong enough will tend to overcome the wrist and cause it to flex. So to prevent the wrist from being flexed the extensors of the wrist take part in the movement, and to prevent the elbow being extended by the pressure the biceps contracts. It is to be observed that the extensors of the wrist and the biceps as fixation muscles do not come into action at once, but that a certain amount of resistance has first to be experienced; it seems, however, that as soon as the joints begin to be displaced by the extra pressure then the fixation muscles contract.

In the action of the extensors of the wrist as fixation muscles in the movement of extension of the fingers, an interesting clinical fact has long been observed in lead paralysis. In some cases of lead paralysis we see the following well-known condition: The patient has paralysis of the extensors of the fingers, but not of the extensors of the wrist, and if he be told to extend the wrist in the ordinary way with the fingers flexed he can do so and the tendons of the extensors of the carpus can be felt and be seen to stand out at the wrist. When, however, the patient is told to extend the wrist with the fingers straight, he gets the phalangeal joints straight by means of the interossei and lumbricales muscles which extend those joints, but he is unable to extend the metacarpo-phalangeal joints owing to paralysis of the extensors of the fingers, and the only thing which takes place, as Duchenne pointed out, is that the wrist is flexed owing to the synergic action of the flexors of the wrist, for, as I have already pointed out, whenever we wish to extend the fingers the flexors of the wrist contract to prevent the wrist being extended.

But the most interesting point is that the patient has absolutely no power to make his extensors of the wrist, which are not paralyzed, contract so long as he is trying to extend his wrist with the fingers kept straight, and no tightening of the tendons of the extensors of the wrist can be felt. This condition has been known for some time but had not been explained, and a few years ago I made some observations to see what occur in health. Such observations anyone who wishes can readily make on himself.

Put the left thumb on the back of the right wrist over the tendon of the extensor carpi radialis, and the left first finger over the right flexor carpi ulnaris just above the pisiform bone; let the right fingers remain flexed and extend the wrist, and at once the tendon of the carpi radialis can be felt to contract. If now one starts again and extends the right fingers fully one feels at once the tendon of the synergic muscle, the flexor carpi ulnaris, to contract. If the wrist be now extended, keeping the fingers extended, the flexor carpi ulnaris tendon is still taut, but the thumb does not feel any contraction on the tendon of the extensor carpi radialis, showing that all the work is done by the extensors of the fingers. But if the wrist be now extended, with the fingers extended, against resistance, it can be done by pressing the back of the fingers upward against the under surface of a



table, what will happen? After the pressure has reached a certain point the thumb will feel the extensor carpi radialis contracting, which shows that the extensors of the wrist are now assisting the extensors of the fingers to overcome the resistance which would otherwise cause the wrist to flex. The important point is that if the fingers be kept fully extended, the extensors of the wrist will not take part in the movement until the pressure to be overcome is considerable; in my own case it was as much as three or four pounds.

The fact that in health the extensors of the wrist will not take part in the movement of extending the wrist, until there is a fear that the resistance of the wrist will be overcome, places these muscles in the category of fixation muscles, which, as I have already mentioned, do not take part in a movement until there is a certain amount of stress on the joint. In lead paralysis the patient tries to extend his fingers and manages to extend the phalangeal joints by the interossei and lumbricales, but he has no power to contract the paralyzed extensors of the fingers and to produce the tension of three pounds which is necessary to bring into the movement the action of the extensors of the wrist.

The interesting point is that the patient has no power to make the extensors of the wrist contract so long as they are in a secondary position as fixation muscles, but they can do so at once as prime movers.

Another instance of fixation muscles is the contraction of the muscles of the upper arm, which occurs when the fingers and thumb flex in the movement of grasping an object. The flexors of the fingers, arising as they do from the internal condyle of the humerus, have a slight action of flexing the elbow and, especially when the elbow is at a right angle, to prevent this flexion and to steady the elbow joint the triceps contracts, but, like other fixation muscles, it does not contract until a certain amount of displacement takes place. In my own case I can not feel the triceps contract until the dynamometer has registered a grasp of from six to ten pound (3-5 kgs.).

In describing the action of the prime movers I have made mention of the muscles which produce exactly the opposite movement, viz., their antagonists.

For instance, in the movement of flexion of the fingers the antagonists are the extensors of the fingers (but not the extensors of the wrist which are synergic muscles), and in the movement of flexion of the elbow the antagonists are the triceps and anconeus. I do not propose to give you the history of the action of the antagonists and the antagonism which they have given rise to among authors. I would merely say that I think Galen was right and that Winslow and Duchenne were wrong in their ideas of the subject.

Beaunis<sup>4</sup> and Demy,<sup>5</sup> by means of Marey's myographs, showed that the antagonists relax when any resistance is made to a movement, but that in natural movements (when there is no resistance) and which are at a slow and uniform rate, there occurs a simultaneous action of the antagonists. According to Winslow, who thought that "to move any part . . . all the muscles belonging to it must cooperate," the want of action of the antagonists is in many cases supplied by the weight of the part to which they are fixed or by additional weight. This would mean that when gravity is acting on a limb or a weight is being lifted the antag-

onists do not act. Therefore, the only time that the antagonists might act is in unopposed movements when gravity is not acting. I have pointed out in a previous communication<sup>6</sup> that the movements of rotation of the head in the erect position are particularly adapted to determine this point, as they are unopposed and not acted on by gravity, and that in rotation of the head by one sternomastoid no contraction can be felt or seen in its antagonist, the other sternomastoid.

In some unopposed movements, which are required to be suddenly stopped, the antagonists certainly do act, but not in opposed movements, as every one experiences when he makes a great effort to lift an empty can which he thinks is full of water, with the result that he lifts it suddenly much higher than was intended.

Professor Sherrington<sup>7</sup> has shown by numerous experiments that electric stimulation of the excitable cerebral cortex not only produces a definite movement by causing contraction of the muscles directly taking part in the movement, but also produces corresponding relaxation of the antagonists by inhibiting their tone, and this occurs with even minimal stimulation.

But perhaps some may say, what does it matter whether the antagonists contract or relax, and does any practical use come from the knowledge? Apart from the dictum that every observation which is correct is worth recording, I do consider that this question of the relaxation of the antagonists is even of practical use to us. It is sometimes very difficult to get a patient to relax certain muscles which we wish to examine, as, for instance, the deltoid muscle—an abductor of the shoulder—when we may wish to know whether the patient is able to abduct the humerus or not, or whether the inability to move the shoulder is due to a rheumatic joint. For this purpose it is only necessary to ask the patient to put the adductor muscles into action, and to strongly adduct the humerus against resistance, when the deltoid will be relaxed. The muscle can then be freely moved between the finger and thumb, and on then telling the patient to abduct his humerus it will be possible to tell at once whether the muscle is capable of contraction or not.

Another use of this knowledge of the relaxation of the antagonists is that in a certain class of cases this relaxation of the antagonists which should normally occur does not do so. About five years ago I described the following condition which occurred in a case of functional paralysis in a girl: She had partial hemiplegia, and when she was told to extend the affected elbow against resistance, in place of the extensor muscles contracting, and the antagonists—biceps, brachialis anticus and supinator longus—relaxing, the antagonists actually contracted first, and the first movement took place in the biceps and supinator longus. This was followed by contraction of the triceps and again by the biceps, giving rise to the to-and-fro hesitating movement which is so characteristic of attempted movements in functional cases.

Since seeing this first case I have come across many cases of functional paralysis showing the same inability to inhibit the antagonists. This condition can also be well seen in the knee; for this purpose the patient lies with the face downward and the leg is put at right angles to the thigh and the patient is directed to extend the knee against resistance. Normally the hamstrings

4. Arch. de Physiol., 5th series, I, 1889.  
5. Arch. de Physiol., 5th series, II, 1890

6. Croonian Lectures, 1904, p. 54.  
7. Proc. Roy. Soc., vol. lxxvi, B., 1905.



should be relaxed at once, but in these cases these muscles can be seen and felt to contract along with the extensors.

In the ankle joint the same thing can be seen, by telling the patient to dorso-flex the ankle against resistance. In a normal person the antagonists—the calf muscles—would be relaxed, but in these cases the Achilles tendon can be felt to tighten in place of being relaxed. In all these cases it is necessary for the observer to fix the limb and prevent it moving; otherwise, as the joint is extended or flexed, the antagonists may be passively drawn on and give the impression that their muscles are actively contracting.

What, then, is the significance of this action of the antagonists? The first time that I observed this contraction of the antagonists was seven years ago, in the case to which I have already referred, and which I considered to be hysterical or functional and in which there were no signs of organic disease of the nervous system. It has been considered by some observers, notably by Buzzard, that some of these cases of functional paralysis may be the first stages of disseminated sclerosis, and I have been waiting to see if any of these cases should eventually show signs of this disease. I have lately had the opportunity of seeing again my first patient, and I find that she does not show after seven years any symptom of sclerosis. There is no nystagmus, no intention tremor, no increase of the deep reflexes and the plantar reflex is of the flexor type.

As I have never seen this condition in disseminated sclerosis or in any other organic disease of the nervous system I consider it to be a symptom of functional disease as opposed to organic. Moreover, I look on this condition as probably the first stage of what is known as hysterical contracture. In hysterical contracture all the muscles—the flexors as well as the extensors—are in a state of tonic contraction, so that the limb is rigid and resists any movement either by flexion or extension. It seems probable that if this intermittent contraction of the prime movers and the antagonists were to become permanent we should have the condition of tonic contraction of all the muscles which goes to produce a general contracture. I have observed that under appropriate treatment, isolation and faradization, this undue action of the antagonists gradually passes off and the muscles return to their natural condition with relaxation of the antagonists when any voluntary movement is performed.

In relation to this condition of the contraction of the antagonists I would call attention to some observations of Sherrington,<sup>8</sup> who, as I stated above, has found that when any particular movement, such as flexion of the elbow, is produced by electrical stimulation of the motor area in the cortex of the monkey, the antagonists are not only relaxed, but their tone is diminished. Recently, however, he has found that under the action of strychnin or of tetanus toxin the antagonists are not relaxed, but, on the contrary, the inhibition which usually takes place is converted into an excitation. We thus have synchronous excitation of antagonistic muscles, and this explains the simultaneous contraction of large inharmonious groups of muscles in strychnin convulsions.

Another point of interest is that in both strychnin and tetanus-toxin poisoning, and as also in functional conditions, the character of the convulsive attacks which are liable to occur is that of overaction of the extensors

producing the well-known symptom of opisthotonus and forming in the latter condition the hysterical *arc en cercle* of Charcot and his school. I do not wish to push the analogy too far, but I would merely point out that it is curious that the two conditions in which we obtain the absence of the inhibition of the antagonists and also the presence of convulsive attacks in which the extensors of the spine are strongly involved, are obtained in functional (i. e., hysterical) cases, and also in poisoning by tetanus toxin and strychnin. I suppose that in each case the cause is a loss of control.

According to Sherrington, tetanus and strychnin poisoning "work havoc with the coordinating mechanisms of the central nervous system because in regard to certain great groups of musculature they change the reciprocal inhibitions, normally assured by the central nervous mechanism, into excitations." Sherrington thinks that the reactions elicitable from the cortex cerebri under strychnin are due not to the action of this agent on the cortex but by alterations produced in the spinal and bulbar centers on which the cortex acts. He also states that in other fields of action, as in the arcs of purely sensual and perceptual level, one cortical element may inhibit another cortical element. It seems more probable that in so-called hysterical paralysis the loss of control takes place in the cerebral cortex rather than in the spinal cord and that this loss of control transforms the inhibition of the antagonists into excitation of these muscles.

We have now to sum up the various muscles taking part in a movement and to consider where in the nervous system these muscles are linked together.

We may have, therefore, in any single movement such as the closure of the hand the following classes of muscles taking part: The prime or principal movers, the flexors of the fingers and thumb; the synergic muscles, the extensors of the wrist; and the fixation muscles, the triceps and biceps. The principal movers frequently consist of two or more muscles, and these muscles, as in the case of the flexors of the elbow and of the extensors of the hip, come into action in a definite order according to the amount of work required to be performed, and, further, it seems that the will has no power to alter this order or to make a muscle act out of its turn (except perhaps by trained exercises). Again, in those muscles which have two or more movements by passing over two or more joints, the synergic muscles come into action at the same time as the principal movers, and here again the will has no power to prevent these muscles acting or to leave them out of the list. Lastly we have the fixation muscles, which fix the joint or joints intervening between the joint under examination and the trunk and which do not come into action until a certain pressure and displacement has been brought to bear on the joint.

The question which we have now to consider is in what part of the nervous system are these groups of muscles linked together as to form a movement? There are two places where this may take place—in the spinal cord and in the motor cortex. Now, if we start from the muscles and follow up the motor nerves, where in the nervous system is the first station where such an arrangement of cells exists by which the ultimate component muscles can be combined to form one movement?

It has been shown by the experiments of Sherrington and of May that in the spinal cord coordinated movements can be obtained reflexly in the monkey by stimu-



lating the posterior roots, or the different areas of skin supplied by these roots. According to Sherrington,<sup>7</sup> the inhibition of the antagonists which occurs on stimulation of a peripheral nerve or by excitation of the cortex cerebri, appears in both cases with some likelihood to lie in an internuncial mechanism—synapse or neurone—between the afferent and efferent neurones. He, therefore, thinks with Exner<sup>9</sup> that in the cortical movements the inhibitory phenomena have their chief seat in the spinal mechanisms though elicited from the cortex. Sherrington and Hering also found on stimulating the cut across the internal capsule that the spot where the triceps was inhibited corresponded exactly to the place where the biceps was stimulated to contract.

In favor of the lowest station for cortical movements being in the spinal cord and not in the cortex are the following considerations: There is a mechanism in the cord by which muscles can be coordinated to produce definite movements and by which their antagonists can be inhibited. Coordinated movements with inhibition of the antagonists can be obtained from stimulating the internal capsule similar to those from the cortex cerebri. It is not possible to produce contraction of single muscles by stimulation of the cortex or internal capsule.

Also in a previous communication<sup>10</sup> I have described a case of hemiplegia in which the patient had the power of grasping but had no power to extend the wrist or to extend the elbow in prime movements. When, however, he grasped an object the extensors of the wrist and the extensor of the elbow were put into action, as synergic and fixation muscles, although they could not be made to contract as prime movers. In this case all the muscles taking part in the movement of grasping, even the fixation muscles, were coordinated into action, but these same muscles were paralyzed, when they took part in another movement, where they were prime movers. This showed that these muscles were coordinated at some point below the internal apex.

Further it was found by Ferrier that the coordinated movement of clenching the fist, in which the flexors of the fingers and thumb and the extensors of the wrist took part, could be obtained from stimulation of the motor cortex in the monkey, and Sir Victor Horsley and myself also found the same movement from stimulation of the internal capsule in the monkey.

It has been considered by some observers—among others by O. Foerster—that this linkage of the ultimate components of a movement takes place in the motor cerebral cortex and that single muscles and not movements are represented in the cortex. This is a doctrine with which I can not agree, as I hold fast to the opinions of John Hunter and Duchenne and particularly of Hughlings Jackson, that “nervous centers know nothing of muscles; they only know of movements.”

If the motor cortex were the lowest station, where these muscles are linked together to produce one movement, it would hardly be possible to get the simultaneous action of the flexors of the thumb and fingers together with the synergic action of the extensors of the wrist from stimulation of the internal capsule; and if every combination between different muscles had to be arranged in the cortex and impulses had to be sent from the cortex to each separate muscle the number of fibers required to transmit the various combinations would

be much more than is provided for by the internal capsule and the pyramidal tracts.

It seems to me that all the evidence is in favor of the linkage of the ultimate constituents of a movement being in the spinal cord. It has been shown by von Monakow<sup>11</sup> and by Schafer<sup>12</sup> that the pyramidal fibers end in the gray matter at the base of the posterior horns and not in the anterior horns, as was formerly thought, and that probably there exist intermediate cells between the ending of the pyramidal fiber and the anterior cornual cell, and that these have the power to bring about associated movements. A clinical fact which throws light on this subject is mentioned by Foerster<sup>13</sup> as occurring in locomotor ataxia, and it is a condition which I can corroborate. In cases in which there is loss of the sense of position in the upper limbs, if the patient be asked to clench the fist with the eyes open he can do so in a normal manner, but if he tries to do it with the eyes closed the wrist will be flexed at the same time, owing to the want of action of the synergic extensors of the wrist. The reason of this seems to be that the proper combination of the principal movers and of the synergic muscles can not take place if the posterior cornua are affected as they are in some cases of tabes, and the faulty position has to be rectified when the patient has his eyes open by a voluntary extension of the wrist. This, I think, is evidence that the lowest station where these muscles are linked together for a voluntary movement is in the spinal cord. Whether the mechanism by which these voluntary movements are produced is identical with that used for reflex movements is, I think, uncertain.

It therefore seems probable that the mechanism by which the muscles taking part in a single movement are linked together, is situated in the cells of the posterior cornua of the spinal cord, which cells are acted on by impulses from the excitable cerebral cortex. Take, for instance, the action of supination of the forearm. If only a weak action is required as in simply moving the limb, the impulse coming to the posterior cornual cells is weak, and these cells send a message to the anterior cornual cells of the supinator brevis only. If stronger action is required, a stronger impulse is sent to the posterior cornual cells which stimulate the anterior cornual cells of the biceps, and at the same time those of the triceps which act synergically to prevent the elbow from being flexed by the biceps. If a stronger movement still is required the fixation muscles, viz.: the adductors of the shoulder are brought into action by the posterior cornual cells to prevent the humerus being drawn away from the trunk by the very strong pressure to be overcome.

A very good simile is that of an engine room on board an ocean liner. The captain on the bridge sends down messages to the engine room and his orders are put into action by the engineer, but the captain has nothing to do with the mechanism of turning on the particular steam coeks, etc. The captain also gives messages to the man at the wheel, who puts in action the steam steering gear. The captain on the bridge represents the cerebral mechanism, including the motor area, and the engineer represents the posterior cornual cells and turns on the proper amount of steam. The captain does not know what is going on in the engine room, except by his orders being properly carried out,

9. Pflüger's Arch., xxviii.

10. Croonian Lectures, 1903.

11. Arch. für Psych., 1895, Bd. xxvii.

12. Proc. Physiol. Soc., Jour. of Phys., 1899, xxiv.

13. Die Physiologie und Pathologie der Coordination, 1902.



and likewise the brain knows nothing about how the movements are done. If the ship have twin-screws and be driven by turbines, then the engines for going astern will constitute the antagonists to the prime movers for going ahead. The rudder will represent the synergic muscles, and if it be required to turn the ship to the right the rudder will be used to counteract the action of the right screw, which is not required. If the rudder does not act the ship performs a movement, which the captain did not intend, and if the synergic muscle be paralyzed the movement, which the brain ordered, is wrongly carried out, and neither the captain nor the brain knows that it will happen, as the block takes place either in the engine room or at the periphery from the breaking of a screw shaft, i. e., in the anterior horns or in peripheral nerves.

On the other hand, if the mechanism for coordinating the muscles took place entirely in the brain, it would mean that the captain would have to manage all the machinery of the engine room—which would have to be on deck—and would himself have to turn on the necessary steam cocks, and at the same time he would have to steer the ship himself.

135 Harley Street, Cavendish Square, W.

#### DISCUSSION.

DR. CHARLES K. MILLS, Philadelphia: Dr. Beevor's illustration of the manner in which movements occur and are coordinated is an appealing one, but at the same time (as in all our efforts to illustrate problems of philosophy or biology) by comparison there may be present some little source of fallacy. The cerebral cortex, I think, at least takes part in the regulation of the manner in which the movements which are co-ordinated and are arranged for outward expression in the spinal cord occur. Dr. Beevor has by his presentation of the subject of the non-relaxation, or action contrary to intention, of antagonistic muscles in hysterical subjects, given us a valuable addition to our methods of making a diagnosis of hysteria from organic disease.

DR. F. X. DERCUM, Philadelphia: While familiar in a way with Sherrington's results, I was not prepared for the beautiful exposition of muscular movements to which we have just listened. The fact that in a hysterical palsy or hysterical contracture the opponent muscles do not relax is of great practical value—a sign which, like the Babinski sign, will prove useful in differentiating between functional and organic palsies. In regard to the localization of the co-ordinating function. I am inclined to accept Dr. Beevor's view, that the cortex represents the motion only and has nothing to do with the muscles.

What rôle does Dr. Beevor assign to the cerebellum in this beautiful play of action between the cortex and the associations in the spinal cord?

DR. HUGH T. PATRICK, Chicago: There is one muscular sign which Dr. Beevor was the first to observe and describe, that is, the excursion upward of the umbilicus in some cases of paraplegia. Within a week I have had opportunity to observe it in two cases. In one case the sign was not particularly useful because the sensory symptoms made the spinal localization easy; but in the other case there were no sensory symptoms, and the only means of ascertaining the level of the cord where this lesion was, causing complete paraplegia, was what, I believe, Dr. Beevor calls the umbilicus sign. In a severe lesion of the cord at about the tenth dorsal segment, of course the muscles of the abdomen above that level are not paralyzed, and those below that level are. Consequently, with the patient recumbent, if the arms are folded across the chest, and the patient raises the head off the pillow, or perhaps a little better attempts to raise the shoulders, the recti muscles above the umbilicus contract, the recti muscles below can not contract and the umbilicus moves upward one-half an inch, three-fourths of an inch, even an inch. In a case in which the sensory symptoms

are not so distinct as to make the level apparent, this sign practically settles the localization. For instance, in a case of spinal tumor with sufficient pressure on the cord to cause paraplegia, with no marked anesthesia, but with imminent danger of destruction of the cord, and with no deformity whatsoever, this Beevor's umbilicus sign tells us just where the tumor is, where the incision should be made, which laminæ are to be removed to expose the tumor.

DR. MORTON PRINCE, Boston: I recall a number of facts of which Dr. Beevor has not spoken, which are entirely in accord with his main proposition, that is, that this linking together, this association at least, of these movements, is to be found in the spinal cord rather than in the brain. This association, this co-ordination of movements in a certain part of the nervous system, reduced to its simplest terms, is in the final analysis memory.

Since the great classical work of Herring we all know that memory is not simply a conscious attribute, but an attribute of all living matter, of a cell, and the spinal cord as well as of the brain; and therefore, when Dr. Beevor points out that this linking together may be in the spinal cord in such a way as to be reproduced on a certain stimulus from the brain, all he means to say, of course, is that the spinal cord possesses memory, which is well known. The memory of these primary movements and these synergic movements, and of these movements which are a part of all organic matter, is particularly within the function of the spinal cord. Witness the classical experiment of the movements obtained by stimuli applied to a decapitated frog, which is nothing more than the reproduction of these primary and synergic movements; also the experiments of Charington and another on the brainless dog, in which they obtained movements of running, jumping and leaping, all representing these movements which Dr. Beevor has explained, and which, therefore, must be organized and linked together as memories in the spinal cord or in other ganglia. We have a mechanism by which this all can take place in the center below that of the brain; and this fact seems in harmony with the fact that so very few fibers coming down through the foraminal tract can produce this vast variety of movements which we know emanates from below, from the cord. Dr. Beevor's theory of that particular phenomenon which he found in hysteria, namely, the contraction of the antagonistic muscle from lack of inhibition of that antagonistic muscle in hysteria, is entirely in accord with the entire lack of inhibition observed in hysteria.

DR. WILLIAM G. SPILLER, Philadelphia: I think that in associated movements in another sense, conclusions confirming Dr. Beevor's findings might be drawn. Where, for example, the left upper limb is paralyzed and the man has little control of it, yet there is occasionally seen an associated movement of the right and left upper limbs; as, for example, when the patient closes the right hand, the left closes involuntarily. It is reasonable to believe that associated movements, especially those of a reflex character, at least in part, depend on centers below the cortex, as it is produced even when the right side is cut off from the brain. Goltz's dog ran after the cerebrum was removed. Babinski has stated that it is common in hysteria for the antagonistic muscles to be contracted. Does Dr. Beevor regard that contraction of the antagonistic muscles which he says occurs in hysteria, as the result of suggestion? Babinski holds that all hysterical phenomena are produced by suggestion.

DR. D. I. WOLFSTEIN, Cincinnati: I once saw Oppenheim differentiate a case of multiple sclerosis from hysteria by the suspected ankle clonus which resulted. The other physicians had considered the movements that they got on the plantar portion of the foot as a distinct dorsal ankle clonus, whereas Oppenheim showed that the movement was upward instead of downward. It would be interesting to know whether that has anything to do with the innervation from the cortex. It seems to me that we must invest the cortex cerebri with an intelligent controlling influence.

In the case of the decapitated frog, when we take a piece of paper and wet it with acid and put it on the back, and see the frog make apparently intelligent motions—just as



intelligent probably as if it had a cortex left—what we do see is that there is an excess of somewhat uncontrolled motion resulting in the frog's efforts to liberate itself from the irritation; and it seems to me that the rôle of the cerebrum would be the proper gradation of the exact amount of movement, and the exact amount of force, that is required in stimulating the antagonists and protagonists to produce the proper action.

DR. H. A. TOMLINSON, St. Peter: In my study of the reflexes in newborn babies, I made some observations that tend to confirm the conclusions of Dr. Beevor. In the newborn child the muscles of prehension and locomotion are flexed, and the extremities are flexed and adducted, while the trunk muscles are relaxed. Combinations of reflexes are begun by bringing into play the synergic muscles, then the fixation muscles, and finally the extension or antagonistic muscles. In all coordinate combinations of the reflexes it is fixation and extension that accomplish the movement; so that what I have described as the sequence in the building up of a compound reflex, Dr. Beevor has observed as the sequence in the carrying out of single muscular movements in the adult.

DR. M. ALLEN STARR, New York: I consider the matter of differentiation between the organic and the functional type of movement a very valuable point in connection with Dr. Beevor's observation. Possibly his observations have a tendency to confirm a position advanced in 1904 by Lapinsky in the *Deutsche Zeitschrift für Nervenheilkunde*. We have always been taught that each group of cells in the cord is related to a muscle, and that when that muscle moves that one group of cells is called into play. Lapinsky took the position that each group of cells in the spinal cord is not related to a muscle, but to a movement; and that therefore, when I flex my fist I do so by sending a cortical impulse down through the pyramidal tract to a group of cells, which group of cells is thrown into activity and innervates the various muscles; and he substantiated this position by citing the well-known fact that a single group of cells sends out its motor neurons to the anterior motor nerve roots; those motor nerve roots split up in the various plexuses, consequently a given group of cells of the spinal cord sends out impulses to a great number of different muscles. I have seen no reference to this interesting theory, opposed, as you see, to all our doctrines of the relations of spinal functions, and the relations of groups of cells to groups of muscles; but it seems to me important in connection with these observations of Dr. Beevor, for it supplies us immediately with the spinal mechanism which will explain the action of these various muscles without forming a connection between the pyramidal tract and the group of cells in the cord—a hypothetical group of cells in the posterior horns of the cord which he brings in—hypothetical, because we do not know of groups of cells in that portion of the tract. Therefore, this theory of Lapinsky would substantiate in that way Dr. Beevor's conclusion, giving us a physio-anatomic basis for the findings that Dr. Beevor has made from the physiologic side.

DR. CHARLES K. MILLS, Philadelphia: Taking Dr. Beevor's illustration of the captain and the engineer and the machinery; has not a given region of the cerebral cortex the power, so to speak, to elect that a simple movement, a movement less simple, a complicated and a more and more complicated movement, shall be performed by the machinery, whatever it is, in the lower levels of the nervous system; and if this be the case in the sense in which we ordinarily use our words in describing cerebral localization, do not given regions of the cerebral cortex even represent the prime and synergic and antagonistic and all of these coordinated movements? That seems to me the crucial question in this discussion.

DR. JULIUS GRINKER, Chicago: Has Dr. Beevor included in his beautiful experiments the involuntary contractions of single muscles and the disorders of associated movements which are regular phenomena of Sydenham's chorea? Most writers on chorea place the disease either in the cerebellar cortex or in the cerebrum. Otto Foerster, who has made an

extensive study of the motor phenomena of chorea, places the disorder in the cerebellum. He says that whenever a movement is conceived in the cortex, two impulses are sent out, one through the pyramidal tract (this neuron arborizes around the anterior horn of the cell) and another impulse is sent by way of the cerebellum, to which organ he assigns the rôle of coordinating the movement conceived in the motor cortex. Both movements reach the same cell, one from the cortex of the cerebral motor area, the other somewhere from the frontal lobe by way of the cerebellum and into the antero-lateral region, eventually arborizing around the motor cell. He explains chorea as a disorder of the cerebellum which frustrates the plans of the voluntary impulse by either producing a useless movement, namely, contracting the antagonists rather than the so-called agonists or the synergists; the result being just exactly the opposite of what was intended; or, he thinks possibly, the impulse is side-tracked and some other muscles than those intended, contract. Of course he is unable to substantiate the opinion by pathologic proof.

DR. ARCHIBALD CHURCH, Chicago: I believe that the so-called spurious foot clonus of hysteria may bear on the conclusions in Dr. Beevor's paper. In such cases there is always a contraction of muscles on the front of the leg when developing the clonus. In organic clonus, as from a spinal or cerebral lesion, I have failed to see the participation of the muscles on the front of the leg; and Dr. Beevor's exposition seems to substantiate my observation as to the participation of antagonists in this particular hysterical condition. I have noticed that the primary attempt of children in grasping an object is one of extension of the wrist, and I have thought this a reversionary element, that extension must precede prehension, but Dr. Beevor's wonderfully lucid and clear exposition would indicate another application of this idea of the orderly arrangement of muscular action in the simplest movement.

DR. ALBERT E. STERNE, Indianapolis: We have always been, I believe rightly, accustomed to consider the cerebral cortical centers as those which originate impulses. The centers lower down in the spinal axis are in their functions probably wholly inhibitive and guiding. We must not forget that in the scale of evolution the centers high up are those which gain in dignity, and that the centers which we commonly look on as being the lower centers are those which in the lower type of animals come into greater prominence. It seems to me that it is but natural in the process of evolution that much of the function which is present in lower animals (practically an automatic function) should exist to a very great degree in human beings. I believe that the theory and the application of the theory which Dr. Beevor has placed before us may well embrace the mass of known facts that we have before us, and I feel as nearly sure as possible, that most known phenomena will fit in with the ideas presented in Dr. Beevor's most interesting and remarkable paper.

DR. CHARLES E. BEEVOR: I do not want to bring in the subject of cerebral movements, but to consider exclusively one single movement; therefore, I have not taken up the consideration of the combination or coordination of several movements, such for instance, as we find in the act of walking. Considering one movement only, the question is where the muscles are joined together and combined to form this movement, whether it is in the spinal cord, or whether it is in the cortex. I always considered it in the spinal cord until I read that matter up and found that some people thought it might be in the brain. If it is in the brain or cortex you ought to get a single movement of the single muscle by itself, that is a movement of the biceps without the movement of any other muscle; but I have never seen that occur.

Then the question is with reference to a single movement. Messages are sent down from the cortex. I agree with Dr. Mills that the cortex has the power of combining movements; but it seems to me that in a single movement like extension of the thumb, the muscles are all combined together in the spinal cord, and especially in the posterior horns, and that a message sent down is not sent to every individual muscle,



but to a set of the cells of the posterior horn, which has the power of bringing in muscles one after another, according to the amount of stimulation sent down; but any combination of movements would necessarily take place in the cortex to start with. It would otherwise be necessary to send down a vast multitude of fibers; you would want to send down a fiber to the flexors of the finger, and another to the extensors to the wrist and to the fixation muscles; if you consider the various combinations, a pyramidal tract and internal capsule of immense size would really be necessary. The captain sends down one message, "Go ahead;" he does not tell the engineer how much steam power to use, nor does he attend to any of the details; and all the details are attended to in the engine-room and elsewhere.

Of course I have not taken the cerebellum into account, because I have only taken a single muscle and not a combination. The cerebellum is the center where movements of balance take place, but you can not balance with only one muscle.

I do not know anything about the corpus striatum. As to whether it is excitable or not, people differ. In some work I did with Victor Horsley some years ago, we stimulated the corpus striatum with negative results. We found that if we got near to the internal capsule we got movements, and the movements were precisely the same as we got from the internal capsule only less in degree, and weaker and weaker the further from the internal capsule we got.

Therefore we concluded that there is no evidence that the corpus is excitable, and the result was really due to the stimulation of the internal capsule. Dr. Prince and I agree that it may be a question of memory. I agree also that want of inhibition is the great point in hysteria.

At a meeting in Berne I saw a dog without any cerebrum running about, but that can not occur with a monkey. Goltz used a dog and Fourier used a monkey, and of course they could not agree. I think the monkey is nearer to man than he is to the dog. I think that want of control not suggestion is concerned with hysteria. The movements of the frog trying to rub off an irritating substance is a matter of the co-ordination of several muscles—a matter which I have not been considering.

I studied a number of newborn children to see whether in the youngest child coordination took place—that is, whether when the child grasps, the hand goes round or not, and I think in about half the cases the arm muscle went around, and in the other half it did not. Dr. Robinson showed years ago that you can hang up a newborn child by the hands and it will hold on to a rail.

I once thought that coordination of muscular movement takes place in the anterior horns, but I have come to the conclusion that probably it takes place in the posterior horns.

In regard to chorea I have not induced the antagonist to act in the same way. But there again it is a question of combined movements and not one single movement. No doubt the patient performs the wrong movement, but it is a wrong movement as a rule, and not an antagonistic movement.

I have observed that the muscles in front of the leg contract in ankle clonus, as Dr. Church observes.

---

**Serum Sickness from Antitoxin Treatment of Tetanus.**—Savariaud reports in the *Tribune Médicale*, June 13, the case of a girl of 8 who scraped her knee in falling on the gravel and three days later began to limp and was brought to him. Besides rest and simple local measures he advised an injection of antitetanus serum, assuring the family that it was absolutely harmless. Five days after a second injection, at the tenth day, severe pains developed in the joints and the child could scarcely move her neck and limbs, while especially on the forearms and in the inguinal and axillary regions erythematous patches suggested an eruptive disease. The eruption subsided in fifteen hours, but fever persisted for six days and the pains in the joints for four or five. He cites a few cases of similar disturbances from serum treatment, observed in France, remarking that these accidents are neither frequent nor serious, but that their possibility must be borne in mind.

## Original Articles

### INSANITIES CAUSED BY ACUTE AND CHRONIC INTOXICATIONS WITH OPIUM AND COCAIN.

A STUDY OF 171 CASES. SUGGESTIONS FOR LEGISLATIVE AND OTHER MEASURES. THE QUESTION OF RESPONSIBILITY.\*

ALFRED GORDON, M.D.

Associate in Nervous and Mental Diseases, Jefferson Medical College;  
Neurologist to Mount Sinai Hospital, Douglass Memorial  
Hospital and Northwestern General Hospital.

PHILADELPHIA.

During the last seven years I have been collecting cases of intoxication with morphin and cocain. The majority are cases observed in hospitals. Confining myself to the effect of the drugs on the cerebral functions, and especially on the mentality, I am able to divide the 171 cases into two groups, viz.: 80 of acute and 91 of chronic poisoning. The first group comprises 60 cases of morphin, 15 of cocain and 5 of mixed intoxication. The second group is composed of 70 morphin habitués, 10 cocain habitués and 11 patients with mixed intoxication.

The permanent effect of the poison did not depend altogether on the mode of its administration or amount absorbed. For a normal adult 6 or 7 cgm. hypodermically constitute a toxic dose, but individual susceptibility should be taken into consideration. Cases of recovery have been reported even with doses of 75 cgm. of morphin.

Habit is very rapidly established.

FIRST GROUP.—A. ACUTE INTOXICATION WITH OPIUM OR MORPHIN (SIXTY CASES).

In this category are placed patients who showed signs of intoxication even after one dose of the drug. When the dose is not immediately fatal, there is at first some agitation without delirium. The patient is loquacious. The mental faculties are stimulated. There is a feeling of beatitude, of euphoria. Soon heaviness of the head and vertigo make their appearance. The latter is followed by somnolence. The general sensations and special sensorium become obtunded, the patient enters into a profound sleep during which death may ensue. In grave cases the respiration is slow, viz., five or six respiratory movements a minute. The pulse is small, irregular; the face is congested, the temperature is lowered. Urine decreases in quantity. Convulsions occur during the last period. In five cases somnolence was absent and the agitation of the first period persisted and was accompanied by a delirium with terrifying hallucinations of sight and hearing.

In seven cases the terminal coma gradually disappeared. The patients regained consciousness and apparently recovered, when at the end of 12, 24 and 36 hours a new attack of coma supervened with rapid death. It is probable that a new absorption of the poison occurred which during a number of hours remained inactive in some portion of the digestive tract.

Recovery may follow even after long hours of coma. During convalescence are observed vertigo, mental hebetude, temporary aphasia or blindness, and many

---

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



other physical manifestations, including such as constipation, vomiting, retention of urine, albuminuria and myosis.

Fifty-two patients in my series of acute intoxication recovered. Thirty-five presented for weeks mental disturbances deserving special attention. They showed slowness of thought and difficulty of grasping complicated subjects. Questions had to be repeated a number of times before they could comprehend them. There was striking mental fatigue. All these patients were particularly annoyed by dreams, which in the majority of cases were of a pleasant nature.

These thirty-five patients used about the same amount of opium or morphin as the seventeen who did not present prolonged mental disturbances. Some of them had only one dose, others two or three doses, and still others a daily dose for a week. There was no direct relation between the amount taken and the symptoms. For example, some of the thirty-five patients who presented prolonged mental disturbances used a smaller amount of morphin than those who recovered promptly. The question is, therefore, one of individual susceptibility. Nevertheless, it is well to remember that even one large dose is likely to disturb the mental functions for a period of several weeks.

#### FIRST GROUP.—B. ACUTE COCAIN INTOXICATION (FIFTEEN CASES).

As soon as cocain enters the general circulation it acts on the brain and spinal cord.

Precordial pain, rapid and filiform pulse, lividity of the face, cold extremities, cold perspiration, Cheyne-Stokes respiration and anuria are the immediate symptoms. The mental manifestations in nine of my cases were mainly excitation, restlessness, loquacity, crying or anger.

In six cases there was a state of depression and a semistuporous condition, accompanied by nausea, tachycardia, mydriasis and abundant perspiration. In all there was a certain degree of vertigo with ataxia in gait and peculiar hallucinations. The latter were visual and tactile. The visual consisted of black insects and rats. The tactile hallucinations were a tingling, pinching and the sense of holding imaginable objects in the hands.

Four of my patients had generalized convulsive seizures without a previous history of epilepsy. The seizures were followed by a semicomatose state, lasting from one to three days.

Nine patients recovered completely. Two died at the end of twenty-four hours and four days, respectively. The first swallowed, with suicidal intent, eight grains of cocain. His cerebral symptoms were stupor and hallucinations. He died in syncope. The other patient, also suicidal, lived four days with symptoms of extreme agitation, delirium and hallucinations. He died from exhaustion.

The four patients who presented epileptiform attacks, although they eventually recovered, nevertheless for six subsequent weeks suffered from insomnia, anorexia, diarrhea, vertigo and attacks of delirium. One was unable to resume his occupation of office clerk for six months; his memory was deficient and he could not solve the simplest mathematical problems without making mistakes. His intoxication followed two injections of cocain into the gum for some alveolar operation. The dose could not be determined.

#### FIRST GROUP.—C. ACUTE MIXED INTOXICATION (FIVE CASES).

The intoxication followed external application of cocain (snuff) and internal administration of laudanum (two cases), also a hypodermic injection of morphin (one case) (for relief of an attack of *tic douloureux*), together with an external application of 10 per cent. cocain to the cheek, which had erosions. Two medical students, suffering from a severe coryza, used a 15 per cent. cocain solution as a spray and  $\frac{1}{2}$  grain of morphin internally.

The most prominent symptoms in all five cases was a very marked stuporous state with paroxysms of delirium and visual hallucinations. The tactile hallucinations characteristic of cocain intoxication were absent. Myosis, constipation, anuria, coldness of the extremities and difficult respiration were also present.

When the acute symptoms disappeared, a mental dullness, apathy, remained for two weeks in one case and for seven weeks in four cases. Eventually all the patients recovered.

#### SECOND GROUP.—A. CHRONIC INTOXICATION WITH MORPHIN AND OPIUM (SEVENTY CASES).

In considering the manifestations of morphinism I made a comparative study of cases of months' and years' duration.

Twenty cases ranged between two and eight months, and fifty cases between two and twenty-two years of chronic intoxication.

The majority of the patients used morphin; some, however, took opium. Among the latter I had eleven men, of whom six took internally and five smoked opium, with five women who smoked opium and six women who drank laudanum daily.

Morphin was used mostly hypodermically, but in some cases also by the mouth. The amount varied from eight grains to fifty grains of morphin, internally or hypodermically, or from three to twelve drams of laudanum. The amount of smoked opium could not be determined.

The effect of morphinism is somewhat different from abstention from morphin or opium. I had the opportunity to study twenty-six cases during the period of abstention. Speaking generally, the ultimate effect of chronic abuse of opium and morphin is practically the same.

The twenty cases in which the intoxication lasted only months and the fifty cases in which the intoxication lasted years presented but slight differences. In the main, the symptoms were identical.

*Description.*—With each new administration of opium or morphin there is at first a muscular weakness, languor, an imperative necessity for rest; the pulse is diminished in frequency, and the respiration becomes somewhat difficult. Soon, however, the condition changes. A cerebral excitation takes place, the intellectual functions become exalted. In the intervals between individual doses, such patients exhibit the following important symptoms: Intelligence is lowered. Memory is decidedly impaired. The mental energy is weakened. The aptitude for work is lessened. There is a sort of apathy in the patient's thoughts and acts. The moral sense suffers profoundly. The patient loses the sense of obligation to his family, he loses affection for his children, becomes egotistic. His will power is decidedly deficient. One of the patients, a married woman,



frequented a disreputable house, not for sexual reasons, but for the purpose of procuring money for morphin. Another woman became a kleptomaniac for the same reason. Not infrequently these individuals commit excesses of all sorts and even crimes. Deception and lies are common. These general symptoms were present in ten cases. In the remaining sixty there were special mental manifestations characteristic of certain psychoses.

**Melancholia:** The morbid phenomena of melancholia were observed in eight cases. Here the depression with a tendency to suicide was very marked. However, there were also incoherence, some confusion and a mild degree of dementia. The latter symptoms are not characteristic of typical melancholia. It is true that they are found in the period of terminal dementia, but then the suicidal tendency is usually absent.

**Mania:** Maniacal agitation with apparent lucidity, alternating with periods of depression, was observed in nine cases. Again the condition simulated the manic depressive form of insanity, but the evolution of the symptoms was not characteristic of it.

**Delusions:** Systematized delusions of a persecutory nature were noticed in only five cases.

**Unclassifiable Symptoms:** The remaining thirty-eight cases presented symptoms of an unclassifiable nature. Some of them would reveal delusions of an unsystematized nature, fragmentary, fleeting, changing from day to day, from one examination to another. They were mostly of a persecutory type; some of them presented the expansive form. Delusions of erotic nature figured in many cases. Hypochondriacal delusive ideas were absent. Hallucinations were auditory or visual, more of the latter than of the former. Incoherence and confusion were present in all the cases.

**Dementia:** This was the prominent feature, especially in cases that were free from delusions and hallucinations. There was a childishness in actions and words and demeanor. The general attitude and appearance were those of dementia due to other causes. To illustrate, the patient smiles and laughs without cause or on the least provocation. When spoken to, he looks up astonished; if an answer follows, it has either no relation to the questions asked or it will be considerably delayed. In some cases the patients are extremely talkative and one question is sufficient to start a conversation which does not cease unless you interrupt it. Two patients of my series in very advanced periods of their morphinism (10 and 14 years of continuous use) could talk at least for a half an hour without pausing. The sentences they used had no connection with one another. The dementia in the majority of my cases was mild, especially in those with the unsystematized delusions and hallucinations, but was marked in cases in which the latter were absent.

**Physical Signs:** The psychic disorder is usually accompanied by physical signs of chronic poisoning, viz.: muscular asthenia, tremor, anesthesia or hyperesthesia, obstinate constipation, impotence, disturbance of micturition, diminution of salivary, sebaceous, gastric, menstrual and spermatic secretions but increase of perspiration, loss of reflexes and, finally, an especial facies. The last appears to be old and wrinkled.

#### SECOND GROUP.—B. CHRONIC INTOXICATION WITH COCAIN (TEN CASES).

In six of these cases the habit was acquired while under treatment for nasal affections. They used the

drug for from three to eight years. Four patients used cocain for a period of from six to ten years. They acquired the pernicious habit by being advised to use at first the snuff and later internally to get relief from migraine and gastralgia.

**Psychic Disturbances.**—Besides the physical signs, such as tachycardia, pallor of the face and impotence, the patients presented interesting psychic disturbances. Insomnia was a constant symptom in my cases. In such patients there is restlessness and craving for muscular and intellectual activity. The hallucinations seen in acute poisoning are still more marked in the chronic form. They affect the general sensibility, also sight, hearing and touch. The patient feels that the skin is filled with insects, microbes, crystals of cocain. Sometimes he feels electric shocks, cramps or shooting pains. He sees animals, human beings, shadows, colors, change in the size of objects. He hears voices, sounds, noises. When the muscular sense is altered, the patient feels that he is lifted up in space, carried and abandoned. The hallucinations lead to the formation of delusive ideas which are mostly of a persecutory nature. Systematization of these ideas is very rare (one case); they are mostly unsystematized and vague. Alongside of hallucinations and delusions, there is a gradual and progressive decrease of intellectual force and moral sense. The patient becomes indifferent. His instinct predominates. He is filthy. Dementia is the final outcome.

#### SECOND GROUP.—C. CHRONIC MIXED INTOXICATION (ELEVEN CASES).

All my eleven cases acquired the habit at first in attempts of substituting cocain for morphin and later by using both drugs simultaneously. Morphin was used hypodermically and cocain by the mouth.

The special hallucinatory images mentioned above in connection with cocainism are all present here, in addition to insomnia and delusive ideas, but what characterizes the mixed intoxications is the more rapid development of the intellectual and moral reduction. The dementia appears early when compared with the date of its appearance in isolated intoxications. In one of the eleven cases the patient, a young physician, presented during a period of four years a systematized persecutory delusion concerning his mother and two brothers who conspired against him. Later he included another physician and myself in his delusive idea. The latter was intensified by terrifying hallucinations. He attempted to kill his mother on two occasions. The previous history of the patient did not warrant the diagnosis of paranoia. However, the paranoid delusion rendered him dangerous. He had to be confined in an asylum. There he was entirely deprived of cocain and morphin and he gradually recovered. Six months later he resumed his old habit and again the same persecutory delusion made its appearance. Again he was committed. A sojourn of four months in an asylum removed all the symptoms. At present he is showing evidences of mild dementia, although there is no return to the drugs.

#### MORBID MANIFESTATIONS OF ABSTENTION.

Several (26) of the morphin and a few (5) of the cocain habitués were kept under observation, while the drugs were entirely and suddenly withdrawn. The following symptoms could be noticed: Both categories of



patients presented a picture of extreme suffering; they were restless, full of anxiety, agitated and incapable of listening to others, following a conversation, of reasoning or of reflecting. Delirium and hallucinations were present in some cases, especially in those of mixed intoxication. Some patients would be taken suddenly with chills, accompanied by twitchings. Others showed a tendency to faint. Insomnia was common and persistent. A few of the morphin habitués had morbid impulses. They would suddenly jump out of bed and attack their nurses and relatives or throw objects at them. The cocain habitués continued having the tactile hallucinations, but to a lesser degree than when the drug was used.

The delusional ideas diminished in intensity, but those who presented signs of dementia did not show any improvement in the mental condition. Besides, the physical condition in the majority of the patients became so alarming that occasionally a return to the drugs was absolutely necessary.

In cases of gradual withdrawal there are symptoms of general malaise, of anxiety, of depression. Photophobia and hyperacusis are present; loss of appetite, diarrhea and neuralgia are frequent.

#### CONCLUSIONS FROM THESE OBSERVATIONS.

A careful analysis of the cases shows that if an attempt is made to find in acute or chronic morphinism and cocainism any of the well-known forms of psychosis, a total failure follows. Some cases may simulate melancholia, mania, manic-depressive insanity and even paranoia, but in none of them can be found the typical pictures of these psychoses.

Outside of the special tactile hallucinations of cocainism, we find in the acute form sometimes a delirious or a stuporous state. An element of confusion always accompanies them. Hallucinations of sight and hearing are frequently present.

In the chronic form, the most important part of the present study, the part which gives us the most concern, we do not find any of the above-mentioned psychoses in their typical forms, but we do find vague manifestations, as delusions of a transient, fleeting and fragmentary character. It is true that at certain periods of their evolution the latter assume the form of systematized ideas and conceptions, reinforced by hallucinatory images, and thus may present a picture of paranoia or other forms of insanity, but the *ensemble* of the condition does not permit us to consider them as such.

A characteristic symptom is the gradually oncoming dementia, which develops very insidiously in the inveterate habitués and increases with years until a complete psychic decrepitude is established. It is this threatening progressive quantitative diminution of mental power that presents the alarming problem for us when we are called on to counsel and render assistance to the community.

When we compare intoxications from other sources with that of our present study we do not find any essential difference. Each agent may add a new special symptom, as, for example, the tactile hallucinations of cocainism, but the fundamental clinical picture in all remains invariably identical. In the acute forms there is a confusion of all sorts of mobile and contradictory conceptions, a dissociation of all elements of normal psychic life. Hebetude, stupor and amnesia follow. These manifestations may be accompanied by halluci-

natory images and sometimes superimposed by incidental delirious states. Not infrequently is observed the "*rêve onirique*" on which Régis lays so much stress. That is to say, a dreamy state which is the continuation of dreams occurring during the night. The images seen by the patient in his dreams are confused with the impressions of real life and thus increase the contradiction of conceptions.

In the chronic form all varieties of intoxications invariably lead to the gradual enfeeblement of mentality, viz., dementia.

#### SUGGESTIONS FOR LEGISLATIVE AND OTHER MEASURES.

The disastrous effect of chronic absorption of morphin and cocain is well known not only to physicians, but also to the laity. The physical and intellectual disintegration to which the pernicious habit leads is a menace to society. The unfortunate characteristic feature of the condition is that when morphin or cocain have been taken for a certain time, they become an imperative necessity to the organism, inasmuch as when being withdrawn the function of each organ is disturbed. The patient seeks then instinctively to supply the want by repeating the initial dose, at first only in small amounts, but later in larger doses. When the habit is established, it is by far more difficult to overcome than that of alcohol. De Quincey, in his "Confessions," states that he used opium for fifty-two years. Four times he attempted to give it up, but only for a short while. Finally he broke himself off forever. "I triumphed," he says, "but infer not, reader, from this word triumphed a condition of joy; think of me as one, even when four months had passed, still agitated, writhing, throbbing, palpitating, shattered."

We can not ignore the fact that while morphinomania or cocainomania used to be known mainly among physicians (according to Lacassagne's statistics over 50 per cent.) and persons coming in contact with drugs by virtue of their occupations, are now spreading to all classes of society. Daily reports of newspapers and statistics prove conclusively the truth of this observation.

In attempting to remedy the growing menace, it should be borne in mind that morphin is a precious remedy in certain incurable affections (cancer, for example), accompanied by atrocious and intolerable pain. In such cases the patient must be supplied with the drug *ad libitum*.

The struggle, therefore, will be confined to those cases in which the passion for morphin or cocain is acquired outside of painful conditions. In such cases, as is well known, the craving and longing for the drugs develop only after a more or less prolonged period of use. Interference at the proper time, therefore, may be of great utility in the majority of cases.

As prophylaxis is the most efficient measure, some legislative acts rigidly enforced will prevent at least the extraordinary propagation of one of the most pernicious habits—which eventually leads to physical and especially mental decrepitude as depicted in the histories of my cases.

In my judgment, no pharmacist or chemical house should dispense the drugs to any person without a physician's prescription. The latter must be written plainly and the order given only once. When a renewal of the drug is necessary, another prescription must be given by the physician. Of course, no attempt should be made by legislature to limit the prescribing physician



to a certain dose of the drug or to a certain number of renewals, as it may interfere with the administration of the drugs in cases in which human suffering is intense. This matter should be left entirely to the physician's moral responsibility.

Heavy penalty with imprisonment should be imposed on those who will sell or give away the drugs without regular prescriptions. Heavy penalty with imprisonment should be imposed on those who will forge a physician's prescription.

Besides a legislative prophylaxis there is a medical prophylaxis. Morphinism usually occurs in individuals with a special make-up of their nervous system. Such persons present deficiency of the intellectual and moral faculties. In them the deficient inhibitory power becomes an easy prey for all abnormal tendencies, particularly for morphinism or cocaineism. The latter are the result of a neuropathic constitution, the fruit of hereditary tendencies.

In handling such individuals, one should remember Ball's dictum, to wit: "Morphinomania is entered by the door of pain, of sexual passion, of sorrow, also by the door of contagion, viz., imitation."

#### THE QUESTION OF RESPONSIBILITY.

We have seen above what order of mental disturbances are present in acute and chronic intoxication.

In the *acute* form, mental excitement, delirium and hallucinations with incoherence are the usual psychic manifestations. They resemble, therefore, the symptoms of acute alcoholic intoxication. When a criminal act is committed by an individual who is in a delirious state and has hallucinations, who is then incapable of distinguishing between right and wrong, whose cerebral functions are then in a state of dissociation, such an individual can not be considered responsible for his acts from a medical standpoint.

When the patient is only in a state of mild agitation, without a delirious or hallucinatory state, or in a mildly stuporous condition, the responsibility is complete. Partial responsibility should be admitted when the patient has recovered from the immediate effects of acute intoxication, but remains for weeks, as we have seen in some of my cases, mentally dull, apathetic, with lack of sustained attention and difficulty of comprehension.

In the *chronic* form of morphinism and cocaineism the impairment or disappearance of the moral sense, deficiency of the will power and even a mild diminution of intellectual faculties do not entirely exempt a morphin habitué from responsibility; the latter is only partial. When delusive ideas or hallucinations are present, the irresponsibility is total.

When the patient reaches the stage of dementia, even in the absence of delusions, he can not be held responsible for any of his acts.

---

**Sweat Secretion in High Altitudes.**—H. Sewall, in *Colorado Medicine*, states that the technical difficulties in the way of determining the relation of altitude to secretion of perspiration are very great. It is commonly stated by those who guess at facts that the circulation in the skin and the activity of the sweat glands increase with the elevation above sea level. Mosso found, on the contrary, that a resting man loses weight more slowly from the skin on the mountains than at sea level. Zuntz found that exercise at a moderately high elevation—1,740 feet—produced more abundant sweating than in Berlin.

## REMARKS ON THE FEEDING OF THE HEALTHY INFANT.

JOSEPH BRENNEMANN, M.D.

Assistant Professor of Clinical Pediatrics, Northwestern University Medical School.

CHICAGO.

During the last decade the problem of infant feeding has been a peculiarly interesting one in this country. While European writers are fairly well agreed on fundamental methods, there has grown up a system of infant feeding in this country that in its elaboration is unique. This so-called percentage, or American, system has received such universal and unqualified approval among our pediatricians that it seems almost like heresy to doubt its tenets, and yet an overwhelming mass of evidence has appeared in the last few years that to my mind discredits the fundamental principles of that system.

I shall first outline what I believe to be a rational dietary for the first year of life and will then advance briefly some objections to the percentage method. It is important at the start to define the term "healthy" baby, because there is an essential difference between a healthy and a sick baby in its reaction to food. This difference centers in one fact—a normal, healthy infant has a broad tolerance for widely different food mixtures and for varying amounts and strengths of the different food elements, fats, proteids and carbohydrates. On the other hand, a baby that is congenitally below par, or that has been damaged by unwise feeding, or that has a temporary nutritional or digestive disturbance due to some intercurrent infection such as pneumonia, has a narrow range of tolerance for food. The sick baby requires careful dosage of food both as to quantity and composition. The moment a healthy baby is upset it is no longer a healthy baby but a sick one and must be treated as such. A food of a certain quantity and composition that yesterday was adapted to a healthy infant to-day may act as so much poison to the same baby that in the meantime has had an acute digestive or nutritional or constitutional disturbance.

#### THE QUESTION OF ARTIFICIAL FEEDING.

The most serious question that confronts the physician in the feeding of healthy infants is what to feed a new-born baby that is unable to get mother's milk. Budin, who was second to none in the value of his experience in infant feeding, says: "We, ourselves, and we say it in all sincerity, can not as yet indicate from our personal experience what is the best method of procedure in artificial feeding from the start." In practice he answered the question by making sure that nearly every baby in his care had mother's milk for a time. The value of the latter, even if used only for a short time, can hardly be overestimated.

Practically, it will be found that the great majority of new-born babies will bear well after the second day of life—and no baby should be fed artificially before that time—a dilution of one part of milk with two parts of water, with the addition of a small amount of milk sugar, say one-quarter to one-half an ounce in the twenty-four hours' food. This dilution can be strengthened gradually till the baby takes equal parts of milk and water with one-half to one ounce of milk sugar daily during the second and third months. The proportion of milk is gradually increased, that of water and sugar diminished till toward the end of the first year the child is on whole milk. The total twenty-four hours' food should



rarely exceed one quart. After the fifth or sixth month the ability to digest starch is so well established that the diluent of water is replaced by one of the cereal waters, or gruels. In the latter months of the first year additional food is given in the form of broths, strained vegetable soups, beef juice, fruit juice, zwieback, cracker, cereals, etc.

#### FREQUENCY OF FEEDING.

At no time during infancy is it desirable to feed the baby more often than five or six times in the twenty-four hours, and toward the end of the first year the number should not exceed four. This gives approximately a four-hour interval between feedings, and I believe that this interval, in the great majority of cases, should obtain from the start. It is a well-established fact that the stomach of a baby fed on cow's milk is not emptied till at least three hours after feeding. To feed a child oftener than, say, every three hours necessarily favors retention and the formation of fatty acids and is the cause of much of the indigestion that goes with early artificial feeding. Observation on any normal infant for the first few months of life that is digesting its food well will demonstrate the fact that naturally it will go as long as from three to five hours between feedings. It is a common experience that a baby fed at the breast every two hours will nurse well only every second time, while it can hardly be roused from its sleep the other time. The custom of feeding a bottle baby every two hours, that is still the rule for the first few months, has certainly no foundation in theory, and it can be demonstrated practically in nearly every baby that it is unwise to refill a stomach at the end of two hours when it is only partly empty. It is my experience that babies fed every four hours cry less than those that are fed every two or three hours, for the simple reason that babies cry far more from digestive and nutritional disturbances than from hunger.

#### THE QUANTITY OF FOOD.

The question of how to feed a baby is only partly solved when we have decided what it shall get and how often; there still remains the great factor of how much the child shall get. Our text-books, unfortunately, give us but little help in this, because they lay every stress on the strength or percentage and not on the total amount of food. A number of continental writers, notably Biedert, Heubner and Budin, have emphasized the great danger of overfeeding and each has attempted to show how to avoid it. It remained, however, for Czerny and Keller to show us just what happens when a healthy baby gets too much milk, and why it happens. This clinical picture of milk overfeeding is not an occasional occurrence—it is the rule. Nearly every baby that is fed milk without some check on the amount given during the twenty-four hours shows it in greater or less degree.

#### RESULTS OF OVERFEEDING.

When a healthy infant gets more milk than it ought to have it commonly gains for a time at an abnormal rate, say, from eight to twelve ounces a week. This gain in weight is quite regularly followed by a stationary weight unless the amount of food is reduced or changed in a certain way. If the amount of the same food is still further increased there may be another gain, but the child will finally begin to lose. If unchecked the ultimate outcome of this overfeeding is marasmus. This paradoxical loss in weight with an increase in food is accompanied by other signs of a fundamental nutri-

tional disturbance. The child becomes restless, its sleep is broken and it cries a great deal. It becomes pale, flabby and inactive, often rachitic. It has a marked tendency to itching eruptions that vary from the small, rough reddish spots on each cheek to the most extensive universal infantile eczema. It very commonly becomes peculiarly indifferent to its bottle, requiring much coaxing to take it, or in severe cases finally taking only an ounce or two at a time.

This condition of milk overfeeding is always accompanied by a characteristic appearance of the bowel movements which in itself shows that the child has had too much milk. The stools lose their normal yellow color, become pale yellow, or in severe cases have the color and consistency of putty. They are no longer normally moist and soft, but become hard and brittle, so that they will roll from the diaper without leaving it soiled. This condition naturally produces very marked constipation.

#### TOO MUCH FAT.

Whenever such bowel movements appear it means that the child has had too much milk, or, more properly, too much milk fat, because it has been shown that these bowel movements are composed largely of insoluble fatty acid salts. The resulting acidosis Czerny and Keller consider the cause of the nutritional disturbance that has just been outlined. That the fat alone is the cause of this condition is further shown by the fact that increasing the milk, or the fat alone by adding cream, will heighten the whole clinical picture, while diminishing the fat or eliminating it will produce a return to normal. The proteids and sugar have no part in this clinical picture. This is clearly shown by the fact that these cases improve most rapidly on malt soup, or skim milk, or buttermilk mixtures in which the fat is the lowest, while the proteid and sugar are the highest ever used in infant feeding.

At any time in this chronic process of milk overfeeding the whole clinical picture may suddenly change to one of an acute catastrophe. In many infants these sudden upheavals occur regularly whenever milk is added up to a certain amount. This upsetting, that is so frequent an occurrence in artificial feeding, is manifested clinically by vomiting, indigestion, diarrhea, loss in weight, fever, inability to stand food, especially milk, stupor or restlessness. If the disturbance is severe there are all the evidences of intoxication, including leucocytosis, albuminuria, glycosuria, dyspnea, collapse and especially psychic depression. This condition may vary from a mild indigestion to an intoxication so intense that it is rapidly fatal. The more serious cases occur more commonly during hot weather because the child is already debilitated by the heat, but more especially because it is relatively more overfed because it needs so much less food to maintain its heat and energy.

#### A METABOLIC DISTURBANCE.

This acute calamity has commonly received the name of gastrointestinal disturbance, summer complaint, summer diarrhea, enterocataarrh, gastroenteritis, gastroenteric intoxication, cholera infantum, etc., and has always been assumed to be due to an intercurrent infection along the gastrointestinal tract. In a series of classical papers appearing in the *Jahrbuch für Kinderheilkunde* during the past six months Finkelstein of Berlin has demonstrated very convincingly that the intoxications that occur in these cases are not due to an infection but to a metabolic intoxication more akin to



uremia or diabetic coma, caused by the ingestion of more food than the baby can assimilate. That this theory is a correct one is evidenced by the fact that any degree of indigestion and intoxication can be produced at will in these cases by increasing the food to a sufficient degree, and a return to normal will follow just as certainly when all food is withdrawn for twenty-four or forty-eight hours. Finkelstein has increased the food in several cases without a qualm of conscience, because he knew that a day or two of water diet would restore the child to its former condition.

It seems to me that in this idea of a metabolic disturbance rather than in a simple infective process we have the only satisfactory explanation for the greater prevalence during the summer months of these digestive and nutritional disturbances that are accompanied by intoxication and have in this a most valuable indication that any infant food must be materially lessened during the hot weather.

This metabolic intoxication follows most naturally and most frequently in the cases of milk overfeeding. Theoretically, then, one would expect the fat to play the chief rôle here as there. These patients, we know from every-day experience, can not take cream nor even whole milk in small quantities for some time, and yet will take skimmed milk almost from the start. A child that is well convalescent can be given a relapse to its former condition by the addition of only a small amount of fat. Finkelstein has shown conclusively that sugar when given in excess, as in buttermilk and malt soup preparations, can produce the same intoxications and, even in small amount, the same relapse, while proteid, whether albumin or casein, can produce neither.

I have dwelt rather at length on these results of overfeeding, because the artificial feeding of healthy infants is a negative as well as a positive procedure. We must see not only that the baby gets enough of each of the food elements, but also that no harm comes to it from unwise feeding. If overfeeding is as important a factor in the causation of digestive and nutritional disturbances as I have indicated, then the prophylaxis of overfeeding is of the greatest importance in the feeding of a healthy baby.

In those babies that one has under satisfactory observation it is a simple enough matter to tell when they are thriving as they should, and almost equally simple to tell when disturbances are arising that are due to overfeeding. A healthy child is a "good baby" unless it is spoiled; it sleeps well, it is contented and active, has a good pink color, its tissues are firm, its bowel movements are yellow, moist, not excessively offensive and well digested; its temperature is remarkably uniform at all times; its gain in weight conforms to what we recognize as a norm, a steady gain of about four ounces a week throughout the year, a little more during the first few months, a little less during the last few months. If too little food is given the gain is insufficient, if it is increased to the proper amount the gain becomes normal. Milk overfeeding is easily recognized by the symptom-complex outlined above.

#### THE EVIDENCES OF INTOXICATION.

The acute catastrophes or intoxications likewise give their warnings. The prodromata that are always present may be of very short duration, or they may extend over weeks and months and should always be heeded. There is evidence of indigestion shown by the general condition of discomfort and by the character of the bowel

movements; the weight curve shows wide variations with a general tendency to remain about level or to go down. Still more important, there is an abnormally variable temperature curve with occasional spurts of fever and an increasingly narrow tolerance for certain food elements, notably the fat and the sugar. If these warnings are heeded and all food is withheld for twenty-four or forty-eight hours while the child is on a water or tea or cereal water diet with saccharin (gr. i to the quart) to sweeten its food the danger is avoided. If unheeded, and especially if the food is increased because the child is losing, the intoxication is almost inevitable.

Fortunately we have certain numerical standards as to the amount of food that the normal infant should get. These figures are the result of observations on large numbers of thriving breast-fed and bottle-fed babies. These standards are of immense practical value in every case, but especially in those cases in which one can not see the patient constantly, not so much to tell us how much to give a baby as how much not to give. They should be considered, therefore, rather as a check on overfeeding and underfeeding than as a guide.

#### BODYWEIGHT VERSUS AGE.

If simple milk dilutions with the addition of carbohydrates are used the simplest and most natural standard would be one that would tell us about how much milk per pound or kilogram a baby should get. That it is more important, as a general proposition, to vary the amount of milk according to weight rather than according to age is, I think, a self-evident fact. Budin gave us a valuable rule of this kind. He prescribed for every baby after the fifth or sixth month and weighing from thirteen to fifteen pounds one-tenth of its body weight of undiluted milk. This would be the equivalent of about one and one-half ounces to the pound. This standard, if a proper one when straight whole milk is used, is manifestly too high when milk dilutions with the addition of sugar or gruels are given, because here a considerable quantity of food is given outside of the milk itself in the form of sugar or starch.

In such dilutions as I have indicated it has been found that one ounce of milk to the pound of body-weight is about a minimum on which a healthy baby will thrive as it should; that an ounce and a quarter is the more usual amount, and that we commonly have distinct evidence of overfeeding when we approach one and one-half ounces to the pound. A healthy baby of twelve pounds, therefore, would have at least twelve ounces of whole milk in its twenty-four hour food, more commonly fifteen ounces, and rarely if ever as much as eighteen ounces. It must be distinctly understood that this is not a definite rule applicable to every healthy baby. The important point is that it has been found empirically that the milk requirement of the great majority of healthy babies who are thriving on milk dilutions such as the above lies between one and one and a half ounces to the pound of body-weight. To my mind this simple guide is one of the most useful in infant feeding. It is, of course, of no value in feeding a sick baby, because here the limit of food tolerance is very quickly reached and we can give only as much as the baby can digest and assimilate in its present condition.

#### THE ENERGY QUOTIENT.

A still more useful standard, because it can be applied to all kinds of food combinations, is the calorimetric



standard, according to which the food requirements are expressed in calories per pound, or per kilogram of body-weight of baby. To Heubner belongs the credit of having accurately determined the number of calories per kilogram of body-weight used daily by the healthy, thriving infant. This so-called "energy quotient" he placed at a maximum of one hundred for the first six months, the amount gradually lessening after that to about eighty or eighty-five at the end of the first year. He considered seventy as the approximate energy quotient on which weight equilibrium would be maintained. For several years I have determined the energy quotient in every feeding I have given and I am still daily impressed with the practical value and accuracy of the figures laid down by Heubner.

Only very exceptionally, if ever, is it necessary in healthy babies to exceed these figures. It must be emphasized that one should never determine in advance how many calories to feed a baby of a certain age and weight, but that we feed a baby a food of proper composition, and at proper intervals for that baby, and keep tab on its energy quotient to prevent overfeeding and underfeeding and to give one that sense of security that comes from knowing that the baby is getting about the amount of food it ought to have. Often a very satisfactory gain is made on energy quotients much lower than those determined by Heubner; the amount on which that child is thriving should not be increased no matter how low the energy quotient.

It is not at all uncommon, on the other hand, to find a baby fed on whey, or skimmed milk, or barley water, or condensed milk mixtures, for a long time, with an energy quotient of only thirty or forty, while the baby needs at least seventy to hold its weight. It is impossible to tell in such cases how much food a child is really getting as compared with what it ought to get unless one uses this calorimetric standard.

The process of determining the energy quotient in any given case is a very simple one. It is necessary to remember only a few figures that represent the calorie value of one ounce of each different food used in infant feeding. Thus cream (16 per cent.) has a calorie value of about fifty-four to the ounce; milk, twenty-one; fat-free milk, ten; sugar, one hundred and twenty; flour or cereal, one hundred; cereal water, two or three, etc. To calculate the energy quotient it is only necessary to multiply the number of ounces of each ingredient of the food mixture by its calorie value, to add the products and to divide the sum by the number of kilograms the baby weighs. If we divide the total number of calories by the number of pounds it will be necessary to multiply this by 2.2 to get the number of calories per kilogram. After a little practice the energy quotient of a somewhat complex food can be calculated in a few seconds even without the use of paper and pencil.

#### THE PERCENTAGE METHOD.

Nearly all that has been said has been so at variance with what is taught in our text-books, and what is commonly practiced in this country, that the subject can hardly be dismissed without some reference to the percentage method. The percentage method is practically based on the idea that the proteid of cow's milk is the one food element that is difficult to digest, and, on the other hand, that the fat is comparatively harmless and easy to digest. It further assumes that in feeding a baby the important thing in modifying the food is to give the baby a certain percentage of each food element

rather than to give it a certain amount of food. As a logical sequence to this certain tables are set forth that indicate what strength of food a healthy baby should have at different months, the percentages gradually increasing as the infant grows older.

That the proteid of cow's milk is difficult to digest by infants it seems to me has no longer any positive evidence to support it and is discredited by nearly all Continental writers. For a number of years some of us have looked in vain for any clinical picture that we could designate as proteid indigestion. There is a purely theoretical consideration that casein must be hard to digest, because relatively so abundant in cow's milk, because it curdles in large firm masses instead of the finer ones of mother's milk, and because curds that are assumed to be casein are found in the bowel movements as evidence of indigestion. This theoretical consideration has no standing when it can be demonstrated practically that nearly any baby can digest a high percentage of pure casein in suspension, or skimmed milk, provided it can stand that much sugar, and that curds never appear in the stools no matter how great the percentage of proteid, provided the food is fat free, and lastly that curds regularly appear in the stools of babies to whose food whole milk is added even in small quantities after they have been on a fat-free milk. The very curds that have been assumed to be casein, we are now told on the highest authority, are chiefly fat derivatives.

On account of the complexity of proteid metabolism it would seem, theoretically, that an excessive amount of proteid would make a greater demand on both the digestive and metabolic powers of the child than the other food elements. To what extent this is true can not be told at the present time. There is very little if any evidence at the present time that there is any harm in feeding a large amount of proteid, although the fact that Nature provides for so little in mother's milk would make us hesitate to use an excessive amount. It is certainly an interesting fact in this connection that in the cases of severe intoxication, where digestion is nil, and where there is a state of "metabolic bankruptcy" (Finkelstein), proteid alone can be fed, in what would usually be considered excessive amounts even in health, without any detrimental effect, while the administration of small amounts of fat or sugar would surely produce serious results. In two cases of summer diarrhea with profound intoxication, and the patients seemingly moribund, each was given, after one day of water diet during the next twenty-four hours, the pure washed casein in suspension of sixteen ounces of milk. This was followed by an uninterrupted convalescence and curdless bowel movements. Formerly I would not have dared give them even one ounce of milk for a number of days on account of the fear of "proteid indigestion," and I feel positive that both babies would have died if they had been put on barley water with sugar, or on whey, or on milk containing fat.

That fat is relatively easy to digest and metabolize seems equally doubtful. It is certainly the one cause of milk overfeeding and plays the leading rôle in the intoxications, and these two conditions are much the most frequent and serious nutritional disturbances in infancy. We all know from every-day experience that cream is not well borne by sick babies, especially those that have a digestive disturbance, nor is whole milk so well taken as skimmed milk, and if this is true, then there is every reason to believe that the fat is compara-



tively difficult to digest in health as well. All through our literature we see more and more evidence of the fact that fat is no longer considered so easily digested and assimilated as was formerly thought. The following case is instructive in this connection:

## AN ILLUSTRATIVE CASE.

*History.*—Baby B., aged nine months; weight, eighteen pounds; healthy and thriving on equal parts of milk and barley, water and sugar. The proteid was increased to 4 per cent. within four days; the fat remaining the same (2 per cent.) and the caloric value approximately the same (energy quotient=90). No deviation from the normal gain, digestion and well-being during the following week. During the following ten days the fat was increased to 4 per cent., the proteid lowered to 2 per cent. and the same caloric value maintained. Within a few days practically every symptom of overfeeding was produced, including a universal eczema—which the mother interpreted as measles—anorrexia, restlessness, pallor, loss of twelve ounces in two weeks, hard gray bowel movements, and finally the fever, frequently cheesy bowel movements, etc., of a beginning intoxication. The fat was then at once lowered to 2 per cent., the proteid increased to 4 per cent., the caloric value remaining the same. Within a few days the child was normal again in every way. Such an experiment is justifiable only because we have a positive assurance that a rational therapy based on our knowledge of the pathogenesis of overfeeding will quickly restore the child to its former condition unharmed.

The assumption that the percentage of different food elements is of prime significance is equally untenable. If the child can only retain and digest it, it makes little difference what the strength of the food is, but it does make all the difference between failure and success whether the child gets a proper or an excessive amount of food. One can as easily overfeed a baby on a large amount of a low percentage of everything as on a much smaller amount of a stronger food. In other words, the percentage of food elements *per se* has no bearing on overfeeding or underfeeding. With the high percentages of fat commonly advocated by those who use the percentage method we have, furthermore, the use of a maximum amount of the one food element that is the important factor in producing the nutritional disturbances that result from overfeeding, i. e., the fat.

Moreover, a study of the tables given in our leading text-books will show that from a calorimetric standpoint they uniformly recommend or permit excessive amounts, especially during the latter part of the first year. For a baby of six months weighing, say, fifteen or sixteen pounds, Holt's table permits an energy quotient varying from 95 to 150, while a proper amount would be 80 to 90 or 95.

It is interesting in this connection, too, to bear in mind the simple fact that mother's milk varies but little in composition or percentage after the first few weeks, but that its amount varies directly in proportion to the needs of the nursling.

It is claimed for the percentage method that it is unique in its flexibility, permitting us to increase or diminish individual food elements at will. With the proteid as a practically negligible quantity in therapeutic amounts it is evident that the other food elements, the fat and the carbohydrates, can be varied just as freely in the use of simple milk dilutions.

Finally, it must be admitted that the percentage system has always seemed a peculiarly complicated one to the great majority of physicians and that most of them ultimately did not use it as taught by those most conversant with it. If not used as intended it permits of a

wide range of error. Frequently cream is added in excessive amounts without calculation of either the amount or the percentage and the inevitable bad results follow. It is little wonder, then, that a majority of physicians finally use the simple modifications recommended by the "baby food" men, and this alone is a serious arraignment of that system.

In conclusion, I wish to express my indebtedness to Dr. F. X. Walls for his very kind assistance in many ways.

4549 Indiana Avenue.

## CLINICAL OBSERVATIONS ON ANTIGONOCOCCIC SERUM.

ALEXANDER A. UHLE, M.D.

Instructor in Genitourinary Diseases, University of Pennsylvania.  
Assistant Genitourinary Surgeon, Philadelphia General Hospital. Special Assistant, Surgical Dispensary, German Hospital.

AND

WILLIAM H. MACKINNEY, M.D.

Assistant Surgeon, Genitourinary Dispensary, University Hospital.  
PHILADELPHIA.

In October, 1907, a quantity of antigenococcic serum was placed in our hands by Parke, Davis & Co. for experimental use in the treatment of gonorrhea and its complications. This serum is prepared according to the directions of Dr. Torrey and consists of serum obtained from the sheep, immunized against several strains or varieties of gonococci. For an account of the experimental work and the technique employed in the manufacture of the serum we refer the reader to articles by Drs. Torrey and Rogers<sup>1</sup> and a further communication by Dr. Rogers and Dr. Torrey.<sup>2</sup>

The serum is supplied in sealed bulbs of 2 c.c. capacity, and this quantity is recommended as a dose, to be injected hypodermically into the loose cellular tissue of the back, buttock or arm. In our experiments we have never used, except in one case, a larger single dose than 2 c.c., the intervals between injections varying from one to three days. The injections were given deeply into the buttock, as a rule, but in a few cases the interseapular region or the loose tissue on the back of the arm was selected. Our experiments were carried out on a series of twenty-three cases, twelve of which were confined to the hospital and therefore under better supervision than the remaining number which, with one exception, were ambulant cases. The following is a brief report of the history and course of each case:

CASE 1.—The patient, C. L., had gonorrhea two years ago, with recurrences at intervals and acute exacerbation two weeks before admission. There was a mucopurulent discharge in which gonococci were found. The first glass was cloudy, second glass clear. The prostate was enlarged, soft and tender, but not nodular. Gonococci were found in the expressed secretion after irrigation of the anterior urethra. The first injection was made Oct. 16, 1907, consisting of 2 c.c. of serum into the buttock. The injection was repeated in four days and all other treatment discontinued except massage of the prostate. The third and last injection was given three days later. There was less discharge, but gonococci were still present in the expressed secretion of the prostate. On Oct. 24, 1907, the patient refused to remain for further treatment. There was less discharge, but otherwise the condition was the same as on admission.

1. THE JOURNAL A. M. A., Jan. 27, 1906, xlv, 261, 263.  
2. THE JOURNAL A. M. A., Sept. 14, 1907, xlix, 918.



CASE 2.—The patient, R. E., had gonorrhea twenty years ago and again five years ago. Since this time he frequently observed a mucoid discharge especially after drinking and intercourse. Examination revealed a slight mucoid discharge and many shreds in the first glass of the two-glass test. Many large shreds were present in the third glass after massage of the prostate. No stricture was present. The right lobe of the prostate was large and tender; the left lobe was not markedly enlarged, but tender. Gonococci were found after several examinations of the expressed secretion. The patient had been treated for three months with but slight improvement before the first injection, which was given on Oct. 16, 1907. All other treatment was then discontinued except massage of the prostate twice weekly. He received nine injections in all, given every other day. There was no improvement in his condition and gonococci were present when this treatment was discontinued.

CASE 3.—The patient, M. P., had a negative past history. The duration of his condition before admission was three months. The patient developed a left epididymitis in the tenth week. Examination revealed a large, painful and tender epididymis, slight mucopurulent discharge, both urines cloudy, and gonococci present. On date of admission, Oct. 28, 1907, the patient was put to bed, the scrotum elevated and an injection of serum given into the buttock. The injections were repeated daily until November 9, with a gradual improvement in the condition. The pain and tenderness had subsided, a discharge was still present and both glasses of the two-glass test were cloudy. The injections were discontinued and other treatment instituted.

CASE 4.—The patient, W. S., had a negative past history. The duration of his condition was seven days before admission, Oct. 31, 1907. There was a profuse purulent discharge; first glass cloudy and second glass clear, gonococci present. Six days after the patient's admission there developed a painful and tender swelling in the calf of the right leg, extending from a few inches above the ankle almost to the popliteal space. The patient could not walk on account of the pain. A probable gonorrheal myositis was diagnosed and serum treatment instituted, the injections being repeated every third day. On the day after the second injection there was less swelling, but considerable pain and tenderness persisted. After five injections had been given the swelling had almost disappeared, but pain and tenderness were still present. Bier's hyperemic treatment was then applied every day, and the injections continued every third day until November 30, when all local evidence of inflammation had disappeared. During the treatment the urethral discharge ceased, and only a few shreds were present in the urine. An astringent injection was given and caused a reaction, and gonococci were demonstrated in the discharge.

CASE 5.—The patient, L. L., had gonorrhea two years ago. The present attack was of five weeks' duration. There was a purulent discharge; gonococci were present. There was frequent, imperative mriation and both glasses were cloudy. The left ankle began to swell two weeks after the onset of the acute attack. The joint was swollen, very tender and painful. The first injection was given the day after admission, Nov. 6, 1907. Bier's treatment was used in conjunction with rest and elevation. Patient received six injections in all, every third day. The day following the third injection the joint was but slightly swollen; there was no pain or tenderness, and the acute urethral symptoms had ceased. After the sixth injection there was no evidence of local inflammation. The urethral discharge, however, persisted.

CASE 6.—The patient, J. D., had gonorrhea five years ago. He was admitted Nov. 19, 1907, suffering from acute gonorrhea of four days' duration. There was a marked purulent discharge, and gonococci were present. The first glass was cloudy and second glass clear. Patient received first injection on the day after admission. Three injections were given during a period of one week. There was no improvement in his condition and he was referred to the dispensary, but failed to report.

CASE 7.—The patient, C. C., had gonorrhea five years ago. The present attack was of four days' duration. There was a purulent discharge; the first glass was cloudy and second glass

clear; gonococci were present. The patient was given an injection every day for one week, at which time there was no improvement and he refused further hypodermic medication.

CASE 8.—The patient, J. D., had gonorrhea ten years ago and several recurrences since. The duration of the present attack was three weeks. There was a purulent discharge; the first glass was cloudy and the second glass clear; gonococci were present. The patient was referred from the medical wards, where he had received treatment for supposed rheumatism confined to the back and right hip. Patient complained of severe pain in the back and right hip and walked with difficulty, but there was no local evidence of inflammation. Injections were given every other day, six in all. There was less discharge; the urine remained the same and gonococci were present. There was no relief from pain. Serum treatment was discontinued.

CASE 9.—The patient, W. J., had a negative past history. The duration of the present attack was two weeks. There was a moderate purulent discharge; both glasses were cloudy, and there was frequent imperative urination. There was a right epididymitis of six days' duration and a left epididymitis of three days' duration. Gonococci were present in the discharge. On Nov. 13, 1907, the patient received the first injection. There was no other treatment except rest in bed and elevation of the scrotum. On November 16 the patient complained of slight pain and tenderness. The swelling rapidly disappeared on both sides; the discharge remained the same. The patient received a second injection November 19. There was no pain or tenderness; a slight swelling remained; the discharge was the same. A third injection was given on November 22. A small nodule was present on each side. A fourth injection was given on November 26. All symptoms of posterior urethritis having disappeared, serum treatment was discontinued and the patient was referred to the dispensary for further treatment.

CASE 10.—The patient, M. M., had a negative past history. The duration of his present attack was three weeks. The patient was admitted to the hospital Oct. 29, 1907, with a purulent urethral discharge, in which gonococci were present. There was frequent, imperative urination and both glasses were cloudy. Daily irrigations, together with internal balsamic treatment, were given until Nov. 21, 1907, with but slight improvement. On this date the first injection was given and all other treatment was discontinued. Two days later another injection was given and injections were repeated every second day until five injections had been given. In this patient there was a marked improvement from the beginning of the serum treatment. The discharge became less, and, after the third injection, ceased entirely. After the fifth injection the urine was perfectly clear.

CASE 11.—The patient, A. E., had a negative past history, and a gonorrhea of three weeks' duration. He developed a right epididymitis two weeks after the urethral discharge was first noted. At the time of admission to the hospital there was a slight mucopurulent discharge in which gonococci were found; the first urine was cloudy and the second slightly cloudy. The epididymis was very large, painful and tender. On Nov. 25, 1907, the date of admission, the patient was put to bed, the testicles were elevated and an injection of 2 c.c. was given into the buttock. In three days there was no pain, slight tenderness and the epididymis was almost normal size. Another injection was given, and repeated in three days. At this time only a small nodule remained. There was no return of the discharge, and the first glass of the two-glass test contained only shreds. The serum treatment was discontinued.

CASE 12.—The patient, J. S., had no previous history of venereal disease. The patient first noted a discharge Nov. 4, 1907, and developed a right epididymitis Nov. 13, 1907. He was admitted to the hospital on November 20 with a purulent discharge, frequent urination and a large, painful swelling of the right epididymis. Both glasses were cloudy. He was given an injection on day of admission, and the treatment was repeated daily for four days, without making the slightest improvement in his condition. It was necessary to give him anodynes every night on account of the pain. The serum treatment was discontinued, and wet dressing of a saturated



solution of magnesium sulphate applied. All pain disappeared in four hours.

CASE 13.—The patient, J. G., had gonorrhea six years ago and came to the dispensary of the German Hospital with gonorrhea of three weeks' duration. He complained of frequent imperative urination and both glasses were cloudy. He was given five injections, each of 2 c.c. serum on every second day. No other treatment was given. As there was no improvement in his condition, and as he objected to further hypodermic medication, other treatment was instituted.

CASE 14.—The patient, C. R., had gonorrhea of seven weeks' duration, and left epididymitis of five weeks' duration. He had a slight discharge containing gonococci. The epididymis was not painful, but large, hard and indurated. The first glass was cloudy, the second clear. He received four injections at intervals of three days. No improvement was noted. He objected to further hypodermic medication.

CASE 15.—The patient, E. K., had a gonorrhea of three months' duration and a left epididymitis of one month's duration. When first seen in the dispensary there was a slight purulent discharge; the epididymis was slightly tender, large and indurated. Both urines were cloudy. The patient complained of marked pain in the left ankle, which was not swollen, but tender to pressure. The left wrist joint was very painful, tender and slightly swollen. The pain in the joints was noted three days before coming to the dispensary. The patient received the first injection Dec. 16, 1907. On December 20 his condition was the same and he received his second injection. On December 23 his urethral condition was the same; there was no pain in ankle, but a slight tenderness; the epididymis was somewhat smaller. Another injection was given. On December 27 there was no pain or tenderness in ankle; a slight tenderness only on pressure in wrist joint. Otherwise the patient's condition was the same. On December 30 there was no evidence of articular involvement. On January 3 there was a slight mucopurulent discharge containing gonococci; the first glass was cloudy and the second clear. The epididymis was still large and indurated.

CASE 16.—The patient, J. T., had a negative past history. He came to the dispensary November 18 with a profuse purulent discharge of four days' duration; the first glass was cloudy, the second clear. An injection of 2 c.c. serum was given. On November 20 no improvement was seen and a second injection was given. On November 23 there was a profuse purulent discharge, with edema of prepuce and chordee. The patient requested other treatment, refusing further hypodermic medication.

CASE 17.—The patient, J. L., had gonorrhea eight years ago. The duration of his present condition was two weeks. There was a profuse purulent discharge, chordee, and left epididymitis of one days' duration. A suspensory bandage was applied and an injection of serum given. On November 24 the patient's condition was the same, and a second injection was given. The patient was not observed again for six weeks. He then returned to the dispensary for treatment of urethritis. In the interim he had sought treatment elsewhere and the left testicle had been removed.

CASE 18.—The patient, F. S., had a negative past history. The duration of his present condition was eight months. The meatus was small; there was a purulent discharge, no urinary frequency; both glasses were cloudy. On November 18 an injection of 4 c.c. serum was given. The patient did not return to the dispensary until December 2. There was no discharge, and both glasses were clear. The patient denied taking any other treatment. On December 16 there was no discharge; the first glass contained a few shreds. No gonococci were found. The patient did not return for further observation.

CASE 19.—The patient had a gonorrhea of three weeks' duration. There was a profuse purulent discharge and marked local symptoms; gonococci were present. There was no urinary frequency; the first glass was cloudy, the second clear. On December 16 an injection of 2 c.c. was given and the treatment repeated every day until five injections had been given. On December 22 there was no improvement; the disease had extended to the posterior urethra. The serum treatment was discontinued.

CASE 20.—The patient, G. E., had gonorrhea eight years ago and again four years ago. The duration of his present condition was one month. There was a purulent discharge containing gonococci and frequent imperative urination. The prostate was large, tender and soft. Both ankles and the right knee were acutely inflamed. On December 14 an injection of 2 c.c. of serum was given, and the treatment repeated daily for six days. There was then an entire absence of articular involvement. The urethral and prostatic condition remained the same.

CASE 21.—The patient, W. W., had had gonorrhea for seven months. There was a mucoid discharge and the urine was full of shreds. Gonococci were present in the prostatic secretion obtained by massage. On November 21 the patient received the first injection, and all other treatment was discontinued except massage of the prostate per rectum. Nine injections in all were given in the following fifteen days. There was no improvement and the serum treatment was discontinued.

CASES 22 and 23.—These were dispensary patients suffering with subsiding urethritis, presenting a mucopurulent discharge and shreds in the first urine voided. Each received two injections at intervals of three days, but neither reported for further observation.

Of the twenty-three patients treated, patients 1 to 12 inclusive were confined in the hospital; all the others, with the exception of patient 20, were ambulant cases. All of the patients suffering with acute inflammatory complications who were treated in the hospital, and patient 20 as well, were confined to bed. Regarding the action of the serum on the urethral infection, it appears that it has little if any curative action. The improvement in the urethral condition in some patients may be attributed more to rest and hygienic treatment than to any specific action of the serum.

None of the patients suffering with gonorrheal prostatitis was cured. Of the seven cases of epididymitis, improvement was observed in three, no improvement in four. These three patients were confined to bed, with elevation of the scrotum, and it is doubtful if the improvement can be attributed to the serum alone. As is well known, many patients suffering with epididymitis are relieved of acute symptoms when confined to bed and receiving no treatment other than elevation of the scrotum.

If conclusions can be drawn from this limited number of cases, it appears that neither the number of injections nor the time elapsing between injections has any influence on the results of the treatment, as in no case was there what might be termed a prompt improvement, which is to be expected from an antitoxin treatment. Possibly better results would have followed the administration of larger doses.

The best results were obtained in the patients suffering with arthritis. Three were promptly relieved and all local evidences of inflammation had subsided in less than two weeks. In one of these Bier's treatment was used in conjunction. As is well known, gonorrheal arthritis is one of the most obstinate conditions to cure, and such prompt relief as was obtained is encouraging. With no other treatment excepting opsonotherapy and Bier's treatment have such gratifying results been obtained. In the case of the patient complaining of pain in the hip and back it is questionable whether the pain was gonorrheal in origin, there being no evidence of articular inflammation.

The patient with gonorrheal myositis showed but little improvement after two weeks' treatment with serum alone, but responded promptly when Bier's treatment was used in addition.



Following the use of the serum injections a general urticarial eruption was observed in seven patients. Other than slight pain at the site of the injection and the urticarial eruption, accompanied by the most intense itching, no local or general toxic manifestations were observed.

1831 Chestnut Street.

## ELEMENTS OF PSYCHIATRIC PROGNOSIS\*

F. X. DERCUM, M.D.

Professor of Nervous and Mental Diseases, Jefferson Medical College; Neurologist to the Philadelphia Hospital.  
PHILADELPHIA.

The prognosis of mental disease offers, as is well known, peculiar difficulties. These difficulties are due to our lack of knowledge of the morbid agents at work, of their mode of action, of the physical make-up of the patient, and in a still greater degree to imperfect clinical data.

### THE ELEMENTS OF THE PROBLEM.

Our knowledge of the first group of facts, namely, of the morbid agents, is in itself most imperfect and is limited to a few of the agents concerned in the insanities of intoxication, to a few concerned in the insanities resulting from infection, and to a still smaller number concerned in the insanities of autointoxication, such as the diathetic insanities and the insanities dependent on thyroid derangement.

Our knowledge of the second class of facts, namely, those dealing with the structural peculiarities of the patient, is still more unsatisfactory; it is embraced in the rather vague conceptions conveyed by the term neuropathy. We can express our ideas concerning the latter only in a general way. A neuropathy means departures in morphology, arrests, deviations affecting the skull, the limbs, the nervous system, the vascular apparatus and other structures; in other words, it means departures from the normal of the organism as a whole. It follows that the ductless and other glands and the tissues generally, each of which contributes its modicum to the various fluids of the body, the blood, the lymph, the cerebrospinal fluid, as the case may be, are involved in the imperfect and aberrant development. It would seem that in neuropathy the conditions present are such as to imply a diminished resistance on the part of the nervous system on the one hand, and a toxic metabolism on the other. Further than such a general expression it is as yet impossible to go, however, and the difficulty of prognosis is still further increased by the great range of variation in individual cases both as to symptoms and course. In individual cases, in consequence, it is usually possible to make only general statements as to probability of outcome and none but the coarsest approximations as to duration.

Of necessity we are compelled to rely on factors purely clinical in their nature. Our clinical knowledge has made great and increasing advances. Since the epoch-making studies of Kahlbaum and Hecker, and especially since the more recent recognition of dementia præcox by Pick and its subsequent expansion by Kraepelin, our conceptions have become more and more clear. This is true not only of the dementia præcox group,

but also of the manic-depressive group. Notwithstanding our knowledge, from the very nature of the subject, must continue to lack precision. No measure of exactitude can apply. As a rule, a general statement only as to the outcome may be hazarded and then only as to the outcome from an existing attack. None but very coarse estimations can be made as to duration, and none whatever as to possible recurrences or as to the extent of intervals of mental health. Owing to numerous and complex factors, at present indeterminate and indeterminable, such as the facts of causation and the facts embodied in the neuropathy of the patient, the degree of his resistance and his power of repair, the problem of prognosis must unquestionably remain in given cases very difficult.

The points which enter into the problem are: First, the clinical form assumed by the mental disorder; second, the presence or absence of actual quantitative mental loss; third, the systematization of delusions; fourth, the fixation of symptoms; fifth, age; sixth, sex; seventh, the presence of morphologic or somatic stigmata; eighth, the significance of heredity; ninth, the bearing of social status.

### APPLICATION OF DATA TO PROGNOSIS.

Mental diseases can be roughly divided into two classes. The first class consists of those which are essentially neuropathic—that is, autogenetic. This class includes dementia præcox, paranoia, the manic-depressive group and the neurasthenic insanities or psychasthenias. The second class includes those dependent on infection, intoxication, trauma or other extraneous causes—that is, affections which are exogenetic. This class includes many forms of delirium, confusion and stupor.

Obviously these two classes present primarily widely differing factors in prognosis. It goes without saying that the prognosis of the first class is in general terms far less favorable than that of the second and it will serve our purpose best to begin with a consideration of one of the groups of the latter—for instance, the heboid-paranoid group, the groups to which the general term of dementia præcox has of late years been applied. We are all familiar with the statements made by the great exponent of the modern view of dementia præcox, Kraepelin, regarding the probabilities of recovery in hebephrenia, catatonia and in dementia paranoides. The proportion of recoveries given by him for hebephrenia, namely, 8 per cent., and for catatonia, 20 per cent., I believe to be too low. There can be no doubt that if the milder extramural cases were included the proportion of recoveries would be higher. However, even if we had definitely determined the average proportion of cases of recovery, this of itself would be of but little value in the prognosis of individual cases. Unfortunately also the attitude of physicians in regard to dementia præcox is such as to negative a consideration of individual prognosis, for the very name of the affections implies an unfavorable outcome. Nevertheless, the remarkable improvements, not to speak of the complete recoveries now and then observed, both in hebephrenia and catatonia and even in paranoid forms, make it imperative that each individual case be studied for itself. The question arises as to the principles that should here be applied.

The members of the heboid-paranoid group, hebephrenia, catatonia and paranoid dementia, are so closely related that they can safely be considered together.

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



If the first of the list of factors, namely, the form assumed by the mental disorder, be now applied, it is noted, of course, that the presence of catatonic symptoms lends a more favorable aspect to the prognosis than does hebephrenia, while dementia paranoides is the least favorable form of all. This result is, however, of general value only.

On the other hand, the second factor, namely, that as to the presence or absence of quantitative mental loss, that is, of true dementia, furnishes a test which, when it can be applied, is of very great value. Its application is often very difficult, and yet if certain elementary facts be borne in mind the application frequently becomes possible. As I pointed out some two years ago in a paper read in Baltimore, in both hebephrenia and catatonia, it is confusion and not dementia which dominates the clinical picture. All of the elements of confusion are present, hallucinations and illusions, associated with fugitive, changing, unsystematized delusions. In periods of excitement this confusion may attain the intensity of delirious episodes, or, on the other hand, it may deepen, as it habitually does in catatonia, into stupor. Delirium, confusion and stupor are, of course, closely related states, and that they may occur in varying degrees in hebephrenia and catatonia, is, of course, a matter of common experience. The element of confusion in dementia præcox is habitually lost sight of in the discussion of the subject.

Because of the name we habitually think of dementia præcox as a disease which is a dementia primarily and of which the dementia is the most prominent feature. Let us see whether the facts really justify such a position. If we compare the symptoms presented by a case of unquestionable dementia, such as a senile dementia, with the symptoms presented by a case of dementia præcox, we note striking differences. The use of the term "dementia" should be limited to a quantitative change of mind, that is, to the loss of faculty and not to a mere change of quality or change in the mode of action. In a case of simple senile dementia, that is, a case uncomplicated with hallucinations or delusions, we find in the very beginning an impairment of memory, an impairment which makes itself evident at first in the failure to remember how the daily tasks that make up the life of the individual are to be performed, in forgetfulness of the daily duties, obligations and proprieties. As is well known further, this loss of memory involves at first recent events, those which have made the least profound impression upon the mind. It is hardly necessary to dwell here on the characteristics of this impairment. We need only recall the loss of names of common objects, the names of intimate friends and relatives, of the needless repetition of statements, of the garrulousness of old age. No comment is necessary to illustrate these well-recognized inroads into the mental integrity. Professional attainments, languages, the whole of the acquired knowledge of the middle and finally the adolescent periods of life are lost, leaving nothing but the acquisitions of earliest age and sometimes not even these. Compared with this condition of memory, that which obtains in dementia præcox is strikingly different. Disorders of memory are not, to say the least, the initial features of dementia præcox. Indeed, as is well known, memory is, in the beginning and for a long time after the affection has become established, well preserved. It is only after the disease has persisted for a relatively long time that actual loss of memory becomes evident.

Further, in dementia præcox, the consciousness of the patient—stuporous states, of course, excepted—usually remains remarkably clear. In true dementia, such as is seen in senile dementia, consciousness, on the other hand, is usually more or less clouded. Still further, in dementia præcox, orientation, a function dependent on the integrity of a great group of complex faculties, is well preserved, the patient being usually in correct relation with his environment—of course, again excepting stuporous states. In dementia, as illustrated by senile dementia, there is frequently gross impairment of orientation, the degree of this impairment being in direct relation to the degree of quantitative mental loss. It is only at a relatively late period that dementia præcox presents changes alike in memory and in orientation. In keeping with this view Regis, Christian, Anglade, Macpherson, Knapp and others classify dementia præcox under confusional insanity.

Many facts also suggest that dementia præcox is due to a toxin or toxins and if so this would bring dementia præcox within the range of the toxic confusions.

The first problem, therefore, presented by a given case of hebephrenia or of catatonia, is to determine the presence of actual mental loss. If such mental loss can not be demonstrated, and if the symptoms of confusion alone are present, the case should be regarded as one in which improvement or recovery is still possible. Under these circumstances we have certainly no right to predicate a necessarily unfavorable outcome.

The determination of the question of mental loss may under given circumstances—that is, in stuporous or deeply confused states—be one of extreme difficulty. However, the mere fact that confusion and stupor are the dominant features lends presumption to the view that they and not dementia are present.

The next point that presents itself is that of the systematization of delusions. Systematization must be considered as a feature apart from fixation, because systematization and fixation do not necessarily go hand in hand. As is well known, systematized delusions that are not fixed constantly occur and, on the other hand, many mental phenomena are met that are fixed and yet do not consist of systematized delusions. The systematization of delusions embraces primarily two distinct factors:

First, in order that delusive ideas should be coherently and logically arranged it is to be presupposed that the mind must have attained a certain degree of development. It is a well-known fact, pointed out statistically years ago by Pickett, that the paranoid cases are found among patients distinctly older than in catatonia or hebephrenia. While in the hebephrenic and catatonic the hallucinatory states are associated with and perhaps give birth to painful delusive ideas, these ideas are not arranged, the suffering of the patient is not logically reasoned out and systematization does not result, although the patient in a vague way presents the paranoid attitude of mind in so far as he projects the causes of his sufferings to sources that are outside of himself. Painful ideas characterized by suffering, torture, poisoning, burning, mutilation inflicted on him, are usually present in such number and such prominence as to dominate the picture and to indicate clearly the reference by the patient of his sufferings to agencies in the external world, and yet systematization is not present. On the other hand, cases are met, both of hebephrenia and catatonia, in which, especially in the older hebe-



phrenics, the delusions are more clearly paranoid: so much so, indeed, that one is sometimes in doubt whether to classify the case among the hebephrenics or among the paranoid dementias.

It has been the habit to regard cases presenting paranoid delusions as cases in which an unfavorable outcome is foreshadowed. However, it is also a matter of experience that the existence of systematized delusions does not necessarily mean permanency. Time and again it is noted that delusions, though systematized, are poorly systematized and again that they are changeable, manifold and shifting. Time and again improvement and actual disappearance of delusions are noted in such cases. Indeed, even patients in whom a paranoid system of well-defined delusions has been observed may recover. Such a case has been reported by Dewey, and I have myself observed two such instances, one of them during the past year. The patient was a man in the early forties in whom a series of persecutory ideas, associated and possibly based on hallucinations, made their appearance. They persisted for many months, and yet along with an improvement in the general health they disappeared just as completely as do the symptoms of confusion in other cases, the man making a complete recovery.

Another factor to be considered in the systematization of delusions is the intensity of the symptoms. If the mental disturbance be attended by marked excitement and the rapidity of the elimination of ideas be greatly increased, confusion dominates the picture; if the intensity of the disturbance be less pronounced, if, in other words, the confusion is mild in degree, systematization or—perhaps better—pseudo-systematization may be present. Thus the same case of hebephrenia or paranoid dementia may present a varying picture.

In answer to the question whether systematization of itself negatives recovery, or whether it greatly increases the improbability of recovery, it must be admitted that in the larger number of cases systematization must be regarded as a very unfavorable sign. If the delusions lack fixation, however, if they remain ill-defined, and especially if they vary markedly from time to time, the possibility of their disappearance must at least be conceded.

The question of fixation demands special consideration. I am in the habit in my lectures of defining a delusion as a false belief concerning which the person holding it is incapable of accepting evidence—that is, such evidence as is accepted by the average or normal mind. A delusion presupposes some break in association, either temporary or permanent. If the break in association is temporary, such as would be induced by the action of a toxin, the delusions would of necessity be temporary only and we would be inclined to expect a shifting picture of delusive beliefs. It is only when a delusive belief has become fixed that we have the right to conclude that the break in the association has become permanent. It is fixation, therefore, which is the unfavorable sign and not mere systematization. Systematization and fixation, it is true, commonly go hand in hand, but they are not necessarily correlated—not necessarily associated. Fixation, as is well known, occurs in association with other mental phenomena such as those presented by the special forms of fear, by the insanity of indecision, by the defects of will and of inhibition met with in psychasthenias and of which persistence is a well-known characteristic. Fixation in association

with systematization of delusions is necessarily a factor of unfavorable prognosis. Fixation greatly lessens the probability of recovery.

The remaining points entering into the prognosis may be considered rather briefly. As regards age, a priori considerations are confirmed by clinical experience, namely, that other things being equal, the younger the individual the greater the possibility and probability of recovery. This can be distinctly claimed for the heboid-paranoid group and it is undeniably true of the manic-depressive group. Cases of hebephrenia or catatonia manifesting themselves relatively late present a greatly lessened prospect of recovery. For instance, in the earlier catatonics, the percentage of recoveries is relatively large; in the late catatonics it is relatively small. As regards the manic-depressive group, it is absolutely true that the prognosis of the individual attacks is infinitely more favorable, especially as regards duration in the younger patients, that is, those of the third decade as compared with those of the fourth and fifth decades of life. How much more prolonged a middle-age melancholia is than a melancholia of early life need not be dwelt on. In general terms, the psychoses met in middle life and old age are far more serious in their outlook both as to duration and eventual outcome than are those of early life.

The sixth point, that of sex, is so extensive as to preclude extended consideration here. Suffice it to say that the relation of the menstrual function to fluctuations in the psychoses must be borne in mind, as must also the unfavorable influence of a prolonged menopause on duration.

The seventh point, the significance of morphologic or somatic stigmata, that is, stigmata indicative of imperfect evolution, next claims attention. Briefly, it may be stated that when markedly present or when present in large number, they are in keeping with defective or aberrant mental development. Again, unless present in marked degree, they have none but indirect bearings on the problem of prognosis, as they are sometimes found associated with entire mental health.

What significance should be attached to the eighth point, namely, that of heredity? That a history of insanity in the ancestry has a profound significance in all cases of mental disease goes, of course, without saying. Sometimes, indeed, it has a special significance as, for example, in melancholia, a disease which occasionally repeats itself with fatal similarity in successive generations. A neuropathic heredity explains in a sense the occurrence of an insanity, but it influences the prognosis of a given attack in only a general way; it can not give us a definite clue as to either outcome or duration. However, it always influences unfavorably the prognosis as to permanency of recovery. Further, it may also influence the prognosis as to the course of an attack. Thus, if neuropathic heredity be pronounced, the course will probably be wave-like, or the symptoms may in other ways indicate a periodic or cyclic course.

The remaining point, that of the social status of the patient, is in given cases of considerable importance. A higher social status implies, other things equal, an ability on the part of the patient to provide himself with better surroundings than those which he can secure in institution life. There can be no question that the prognosis of a given case of hebephrenia or of catatonia is greatly enhanced by circumstances which permit the carrying out of elaborate methods of inducing hyper-



nutrition, that is, methods embodied in absolute rest, full feeding, massage, bathing and the other physiologic methods found so useful in the treatment of exhausted states. The great importance of trained nursing and individual nursing must also be recognized. There can be no doubt, for instance, that the percentage of recoveries and of improvement in hebephrenics is greater under such methods of treatment. Unfortunately, elaborate methods, such as are necessary in a properly conducted rest cure, are expensive and are beyond the reach of the great mass of patients in mental cases.

As regards the class of cases which comprises those not essentially neuropathic, that is, those whose mental disturbance is dependent on infection, intoxication, trauma or other extraneous causes, they present, as is well known, other things equal, a favorable prognosis. Of course, the most favorable are the simple toxic deliriums and confusions. If elements of neuropathy are present these proportionately diminish the favorable outlook.

#### SUMMARY.

In summarizing the considerations contained in the above paper, I would lay stress especially as of importance in the prognosis of mental diseases on: First, the presence or the absence of actual dementia; second, the presence of systematization of delusions; third, the presence of fixation; and, fourth, the social status of the patient.

The limits of this paper will not permit me to discuss the prognosis of the various clinical forms or even special questions that play an important part in the prognosis. Among the latter may be mentioned the influence of the bodily condition and the significance of visceral complications. In a general way only it may be said that if there be marked physical improvement without corresponding mental improvement, the prognosis becomes proportionately unfavorable. Equally true is the converse, that is, the less frequent condition in which there is mental improvement without physical improvement; such cases should always be regarded with suspicion. Again the marked persistence of hypochondriacal ideas, especially of ideas of somatic and psychic negation, that is, belief in the absence or destruction of viscera, of psychic non-existence, or psychic perpetuity (the belief that the patient is dead or, on the other hand, that he can not die) are not infrequently found associated with chronic and non-recoverable cases.

Special factors, such as interruption and cessation of progress also influence the prognosis unfavorably. Similarly, an incomplete recovery renders recurrence not improbable. Further, one attack presenting a wave-like course raises the presumption of other attacks in the future.

Among favorable features may be mentioned regularity of course, concomitant physical and mental improvement, and, finally, the realization on the part of the patient that he has been ill.

1719 Walnut Street.

#### DISCUSSION.

DR. W. T. WILLIAMSON, Portland, Ore.: Dr. Dercum is disposed to deprive dementia præcox of the element usually considered the basic fact, that is "dementia," and supply in its stead simply "confusion." It has been rather difficult to separate one form of it, the paranoidal variety, from true paranoia, and the method by which we could, if at all, keep them apart, was by the recognition of dementia of a true type as a feature of the dementia præcox, and the dementia of paranoia, when present, as being simply a pseudo form. The

fixity of a delusion depends on the strength of the mind in which it rests. If there is a great degree of dementia present it would appear to be impossible for a delusion to maintain itself as one of fixity; and therein I think we would find a difference between the paranoidal form of dementia præcox and true paranoia. The paranoiac must have strength to cling to a belief, especially if it be surrounded with systematized delusions that give it an air of possibility. I would like Dr. Dercum's opinion as to whether it is not true that one of the distinctive features of difference between dementia præcox and paranoia would be the existence of true dementia in the former and only of a pseudo-dementia in the latter; and whether also it is not true that in those hebephrenic forms which have such a comparatively favorable prognosis as to recovery, there is not foreshadowed and threatened the same terminal dementia that characterizes cases which do not recover, or which because of the removal of the toxic or other agencies which tend to the perpetuation of the condition, simply escape before this change has taken place.

DR. ALBERT E. STERNE, Indianapolis: We should take out of the group of dementias what does not belong there; we should reserve our conception of dementia for that which goes hand in hand with an organic decay, an actually destructive lesion of the brain cell, a practically incurable condition—a true dementia. Dr. Dercum mentions the quantitative loss, but means no doubt to include the qualitative loss also in mental acuity. I have frequently been deeply impressed with this feature of the prognostic aspect of the various insanities. It has seemed to me that most physicians are not sufficiently ready to regard those mentally ill as sick people. This is especially true, it seems to me, of the acuter conditions. I have through a long term of years come to the belief that mental conditions do not rise out of the surrounding ether, but have a distinct basis; that these patients are sick. I have never been, in meeting mental conditions, more deeply impressed with the truth of this than in those cases to which Dr. Dercum refers, namely the confusional type, especially in the hebephrenic class. It has been my invariable custom to treat these patients as seriously sick and to keep them in bed. Temperature and heart action should be carefully watched. I have been surprised innumerable times to find a rise in temperature sometimes up to 102, possibly a little higher—with a disturbance of the heart action—a marked irregularity in several cases. I have been imbued with the feeling that these cases are of cerebral character—a true inflammation of the cerebral tissue. I have not been able to believe that we are dealing merely with toxic conditions because the heart action does not simulate that which we see in those cases which we term toxic insanities ordinarily. The prognosis in these confusional cases is not so bad. I agree with Dr. Dercum that the relative number of recoveries in this class of cases is much higher than is commonly believed; and I believe it is the fault of the treatment rather than the condition itself which makes the number of recoveries low. By this I mean that we are inclined to neglect the truly serious physical aspect of such cases on account of the prominence of those symptoms commonly designated as mental.

DR. F. X. DERCUM: It is easy to differentiate between dementia præcox and simple dementia. In an ordinary case of senile dementia, among the early symptoms are failure of memory, of orientation, and gradually the faculties generally. Preservation of memory, even in cases which become finally demented, and full preservation of orientation exist in dementia præcox. The term *démence précoce* is unfortunate and has given rise to an unfortunate mental attitude with regard to these cases. Dementia præcox occurs in a very large number of cases in persons who are neuropathic—who are organically and structurally defective. There are in them some disturbances of development, arrests or deviations involving the organism as a whole, the nervous system, bones and muscles, cardiovascular apparatus, and no doubt also the ductless glands. When puberty is reached and the organism is obliged to adapt itself to new conditions, it can not meet the demands made on it; the patients become toxic, suffer from a toxic metabolism and present the mental symptoms of toxic



confusion. A case of organic dementia certainly presents a very different picture from dementia præcox. Hebephrenia, catatonia, paranoid dementia, paranoia hallucinatoria and paranoia simplex are all closely related. They form a natural series. As practical physicians we ought to remember that many of the patients, though they are defectives, are suffering in addition from exhaustion and that frequently they can be improved and at times even cured by rest and hypernutrition, methods that are beginning to be used more and more.

### EPIDEMIC INFANTILE PARALYSIS.\*

M. ALLEN STARR, M.D., LL.D., Sc.D.  
Professor of Neurology, Columbia University.  
NEW YORK.

During the summer of 1907 an epidemic of infantile paralysis occurred in New York City and its vicinity. The number of cases (probably over 2,000) was so many, the extent of the disease in the city and along Long Island Sound into Connecticut and up the Hudson River as far as Ossining was so rapid, the severity of the cases was so intense and deaths from the disease so frequent, that the epidemic excited a great amount of interest both among the laity and the profession. It seems wise, therefore, to put on record some special account of this epidemic, to call attention to particular clinical features that were presented, to trace the course of the cases as far as possible, and also to bring together an account of other epidemics that have occurred in the past, inasmuch as a large number of records have now accumulated concerning the prevalence of this disease in epidemic form.

Through the kindness of Dr. Simon Flexner I am enabled to present the results of a biological study, made by Dr. Martha Wollstein at the Rockefeller Institute, of the cerebrospinal fluid from cases of the disease, and also the results of an autopsy on one case.

#### THE COURSE OF THE EPIDEMIC IN NEW YORK.

The epidemic of poliomyelitis occurring in the city of New York in 1907 began about May. The number of cases increased steadily during June and July, the height of the epidemic occurring in August and September. Cases continued to appear in October, and a few were reported in December. The epidemic was widespread, cases occurring not only in the city of New York, but also in Brooklyn, Long Island City and the Bronx. Some cases were also reported on Staten Island, and many cases were seen along the Hudson River as high as Ossining, which is fifty miles from New York. Cases were also reported along the sound at Mount Vernon, Stamford and Norwalk (forty miles from New York), and in some of the valleys of Connecticut within twenty miles of the sound. Cases were not observed in New Jersey or in the suburbs of Newark. It is estimated that nearly 2,000 cases of the disease occurred during this epidemic, and the mortality was probably 6 per cent. to 7 per cent.

The summer, though a hot one, was not unusually so; but it was unusually dry, the reports of the weather bureau showing that the rainfall was 1.18 inches in July and 2.48 inches in August, less than half that of previous years. Other infectious diseases were not particularly prevalent.

In but few of the cases of infantile paralysis recorded had there been any preceding infectious disease.

The onset of the disease was uniformly accompanied by a brisk febrile movement, temperature rising to 101 to 103 in the first twenty-four hours; sometimes by a slight chill (but this was the exception); usually by vomiting, malaise, general sweating, general severe pains in the limbs and in the back, sometimes attended by some rigidity of the spine and even in some cases by retraction of the head giving rise to the suspicion of a beginning meningitis. The excessive sweating which attended the fever has been observed in other epidemics, and is interesting in view of the fact that it implies an involvement of the vasomotor centers in the gray matter of the cord. Diarrhea frequently followed on the second day and continued for two or three days. Delirium was a common accompaniment of the fever on the second or third day. The febrile movement lasted from five to nine days in the majority of the cases. It was rarely attended by very high temperature, and even in the fatal cases temperatures above 104 were the exception. On the third or fourth day of the disease the paralysis was discovered. It may have developed a little earlier, perhaps on the second day in some of the cases, but the children were confined to bed; they were usually extremely tender to touch and showed such pain on movement that they were allowed to lie quiet, and hence the paralysis very often escaped notice until the third or fourth day. It usually appeared with considerable suddenness and at its maximum extent from the beginning. It remained as the chief symptom after the fever had subsided and after the pains had become less. In the vast majority of the cases the legs were chiefly affected. In some of the cases the disease affected the arms as well; in some cases the muscles of the back and even of the abdomen were affected. In a few cases paralysis extended to the neck and to the face, and in a few cases the eye muscles were also involved. The picture was, therefore, in some cases that of poliomyelitis of the ordinary recognized type; in other cases, of poliomyelitis with bulbar paralysis; in other cases, of poliomyelitis with polioencephalitis of Wernicke. In a few cases it was noticed that the children were affected by true infantile hemiplegia; and this disease appears to have been more common during last summer than usual, although by no means occurring in such frequency as poliomyelitis. The increased frequency, however, of the disease leads to the natural supposition that the infectious agent in some cases involved the motor nuclei of the lower segment, the spinal cord, the medulla, pons, and crura, and in other cases involved the motor nuclei of the cortex, producing the infantile hemiplegia or encephalitis of Strumpell.

In the cases of poliomyelitis where the legs were affected it was not at all uncommon to have retention of urine and loss of control of the bladder extending through several days, but in no case has a permanent loss of control been found. In many cases where the arms were affected the respiratory muscles were also involved, and in fatal cases death occurred from respiratory paralysis or from heart failure rather than from any febrile affection. When the face was affected a typical Bell's palsy was usually present with inability to close the eye and with a reaction of degeneration in the facial muscles. In the cases where the eyes were affected strabismus, either internal or external was observed, but this, as a rule, was temporary and in no cases that I have seen has a permanent strabismus remained. The paralysis was always of the flaccid type

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



with rapidly following atrophy in the muscles and a rapid loss of faradic reaction.

The pain, which was a very marked symptom in almost all the cases, was referred to the muscles or to the back; was greater in the part that was paralyzed, though usually felt all over the body; and in some of the cases was attended by a hypersensitiveness to heat and cold, or to one or the other. Pain is a usual symptom in anterior poliomyelitis. It is undoubtedly due to the intense congestion of the gray matter of the spinal cord through which the pain and temperature tracts pass. Anesthesias were not observed. The limbs, however, soon became cyanotic and cold and remained so. In many cases an extreme hypersensitiveness to pain, especially the pain of the electrical current, was noticed, and in many cases this persisted.

The acute onset usually subsided in the course of a week or ten days and a state of improvement was noticed beginning at the end of the second to the fourth week. This improvement in a vast majority of cases has continued up to the present time, and as a rule such improvement is likely to go on for two years.

It has also been noticed that in many cases a complete recovery has ensued. In these cases the paralysis was never very intense but still was marked; in other cases it amounted merely to a sense of great fatigue and unwillingness to use the muscles for a week or ten days, followed by entire recovery. The frequency with which such cases, which might be termed "abortive cases," was observed is rather unusual, though in other epidemics the same type of cases has been noticed. On the other hand very rapidly fatal cases were observed, and, although the mortality is somewhat indefinite, it may be stated that it amounted in this epidemic to about 7 per cent. As death is a very rare occurrence in sporadic cases, the mortality in this epidemic is remarkable.

A number of these cases were very carefully studied by Dr. Martha Wollstein in the Rockefeller Institute for Medical Research under the direction of Dr. Simon Flexner. Through their courtesy I am enabled to present their results, which will be more fully published by them later. The following statement has been prepared by Dr. Wollstein.

#### A BIOLOGIC STUDY OF THE CEREBROSPINAL FLUID IN ANTERIOR POLIOMYELITIS.<sup>1</sup>

Twenty cases were studied in children ranging from 5 months to 8 years of age; nine were over 2 years, and four were under one year. Cerebrospinal fluid was obtained by lumbar puncture from the second day to the eighth week of the disease, as follows:

2nd day, 1 case. 7th day, 2 cases. 3rd week, 6 cases.  
4th day, 2 cases. 10th day, 2 cases. 4th week, 1 case.  
5th day, 1 case. 11th day, 1 case. 5th week, 1 case.  
6th day, 1 case. 12th day, 1 case. 6th and 8th week  
(same case) 1 case.

The fluid was always clear and colorless, unless mixed with blood. Smears prepared at once, after centrifugalizing five to thirty minutes, and after twenty-four hours' incubation, were stained with methylene-blue and with Gram's method. In fourteen cases cellular elements were entirely absent; in six cases a few mononuclear leucocytes were found. Large numbers of leucocytes were never present.

Cultures were made in plain agar, ascitic-agar, and

blood-agar, and in plain and ascitic bouillon. They were incubated both aerobically and anaerobically. In fifteen cases the fluid was sterile by both methods. In one a white staphylococcus grew; in one a Gram positive bacillus and in three a large, Gram positive coccus appeared in tetrads and pairs within large groups. It grew abundantly on all ordinary culture media, and was apparently similar to the coccus described by Geirsvold. The fluids from which the coccus was cultivated in my cases were withdrawn on the fifth day, sixth day and in the fifth week after the onset. In two cases it was present in one specimen of fluid only, subsequent punctures withdrawing sterile fluid. In the third case the coccus was cultivated from a second specimen obtained three days after the first, or on the eighth day of the disease; two later fluids from the same patient proved to be sterile.

The coccus was looked on as a contamination.

An autopsy was obtained in one case only. It was that of a boy 2½ years old who died of tubercular meningitis two months after the onset of his poliomyelitis. An area of softening was found in the lumbar region of the spinal cord, 3 cm. long and affecting only the right anterior horn. There was also a general miliary tuberculosis involving the cerebrospinal meninges, pleura, lungs, spleen, liver, lymph nodes and intestines. Microscopic examination of the cord lesion showed that it was in the subacute stage and limited to the anterior horn.

The spinal cord, medulla, sciatic nerves, tibial muscles, and all the internal viscera were ground up, dried, and extracted (Levaditi and Maric's method) to be used in the complement deviation tests.

Blood was obtained from the median basilic vein in seven cases, 5 to 10 c.c. being withdrawn. Blood cultures in two acute early cases were negative.

Complement binding experiments were made in four different ways:

1. Cerebrospinal fluid from the most recent case (second day) was tested against the blood serum of cases suffering from the disease for five days, three weeks and eight weeks respectively. No binding of complement resulted; hemolysis complete.

2. Same fluid with the fluid from a late case, eighth week. Results the same.

3. Serum against cerebrospinal fluid from the same case, as well as against the fluid from more early and more recent cases. No binding of complement; hemolysis.

4. Extracts of spinal cord, medulla, sciatic nerves, tibial muscles and liver were tested with the serum from cases of poliomyelitis in the eighth week, third week and on the tenth day after the onset. No binding of complement; hemolysis complete. Controls were made with normal organ extracts and normal serum with identical results.

It was unfortunate that no uncomplicated autopsy could be obtained; but the results of the tests show that the diagnosis of poliomyelitis by means of a serum reaction is apparently not possible. No light is thrown on the etiology of the disease by this means.

#### THE BACTERIOLOGY OF THE DISEASE.

The question of the bacterial origin of this inflammatory process has excited the greatest interest during the past few years. Authorities are not as yet agreed on this question. A number of years ago Schnltze described a case of anterior poliomyelitis in which he had

1. From the Rockefeller Institute for Medical Research, New York.



found a diplococcus in the cerebrospinal fluid, and in isolated cases here and there through literature confirmation of this finding has been recorded. In the epidemic in Norway reported by Geirsvold a diplococcus was observed in a number of the cases. Harbitz and Scheel<sup>3</sup> described carefully the pathology of seventeen cases examined in this epidemic. They described the infiltration of the spinal pia with lymphocytes more marked on the anterior surface of the cord and following the sheath of the central arteries and veins. They describe a very marked condition of hyperemia, edema and exudation within the spinal cord and a marked cell infiltration in the gray matter of the anterior horns. They describe the infiltration of the vessel walls in the white substance with lymphocytes and a typical degeneration of the ganglion cells, but only in a few cases was there any evidence of the presence of micrococci. These were of the nature of diplococci, but were not uniformly found. In the careful autopsies made by Wickman in the Swedish epidemic the same conditions were observed and here again there was an absence of any uniform finding of bacteria. In eight autopsies careful cultures were taken; in four the result was negative, in one *Staphylococcus albus* was found, and in the three others *S. aureus* was discovered. These were considered as accidental infections of the test-tubes and not as causative agents of the disease. In the cases examined in the Rockefeller Institute in the epidemic in New York bacterial investigation was also negative.

While, therefore, the clinical history of the disease implies an infection, it must be admitted that up to the present time the organism responsible for the disease has not yet been discovered and that it is still a matter of uncertainty whether the causative agent is a micrococcus or is a toxin. The weight of evidence is, however, in favor of the latter hypothesis.

#### EPIDEMICS OF INFANTILE PARALYSIS.

A careful search through literature has shown that epidemics of infantile paralysis are more common than has been supposed. It has been possible for me to collect from original sources accounts of forty-four such epidemics, and as these have not hitherto been collated they are presented here in the order of their occurrence:

COLMER<sup>4</sup> saw a case of infantile hemiplegia in West Feliciana, Louisiana, in the fall of 1841 and was informed that ten other cases of infantile hemiplegia or paraplegia had occurred during the preceding three or four months within a few miles of the residence of the patient whom he saw. All the patients were under two years of age and all had recovered completely, or were improving.

In view of the accounts of subsequent epidemics here gathered, there seems to be no doubt that this was a true epidemic of infantile paralysis. Complete details are not to be found.

BERGENHOLTZ<sup>5</sup> first reported an epidemic which occurred in 1881 in the town of Umea, North Sweden. Thirteen cases were observed, but a full account was never published.

CORDIER himself<sup>6</sup> observed in June and July, 1885, in the town of Saint Foy, near Lyons, France, thirteen cases in a town whose population was fifteen hundred. Other cases were recorded and heard of in the same locality. These cases all occurred within the months of June and July; and of the thirteen cases, four died within four days of the onset, of respiratory paralysis. In all cases the onset was accompanied by fever, by severe pains and marked sweating. The incubation

period was thought to be between ten and thirty-six hours. Almost all of the patients were infants under the age of 3, the youngest being 3 months old, several of them 6 or 7 months old. One man of 27, the brother of a little girl of 9, was the only adult affected. As the majority of the patients were nursing babies, it was thought that food could not have been the source of the infection. It was noticed that retention of urine occurred in one case. In ten of the cases the legs were affected, and in six cases one or both arms.

OXHOLM<sup>7</sup> reported an epidemic in Mandel, Norway, in July, August and September, 1886. Nine cases were recorded without any deaths. The children were between six months and four years of age, and the onset was accompanied with fever in all cases.

MEDIN<sup>8</sup> observed an epidemic in Stockholm between the months of May and November, 1887. Forty-three cases were reported, in which there were three deaths. In many cases it was noticed that there was retention of urine from one to three days at the onset of the disease. Convulsions occurred in two cases. Bulbar symptoms occurred in nine cases; facial paralysis in three cases alone, and in five cases, in connection with paralysis of the limbs. In one case the muscles of the eyes were involved, and in one case a condition of hemiplegia corresponding to the poliomyelitis of Strumpell was observed. It was noticed in this epidemic that several cases occurred in one house, a brother and sister being affected together in one or two instances. Medin, who made this the subject of an important address at the Tenth International Medical Congress in 1890, was the first to call particular attention to the epidemic occurrences of infantile paralysis.

PUTNAM<sup>9</sup> observed in the summer of 1893 an unusual prevalence of cases of infantile paralysis appearing in the dispensaries of Boston. This can hardly be called an epidemic, for the patients came into Boston from several towns in the vicinity and the disease did not appear to be exceptionally prevalent in the city of Boston; but Putnam called attention to the fact that while in four of the dispensaries in the previous year the average number of patients was six or eight, in the year 1893 twenty-six cases were observed in the months of August and September. In none of the cases that he saw did a fatal result ensue, but all the children were left with some permanent paralysis.

ANDRÉ<sup>10</sup> saw four out of nine cases of infantile paralysis observed at Saint Giron, near Toulouse, in France, and in its two adjacent towns, Cescan and Seix, in July and August, 1893. These all occurred in infants under the age of 3 years, with fever and general symptoms of infection. A brother and sister were first taken, then two children in a house very near to them, then other isolated cases. Two out of the 9 cases presented cerebral symptoms. They all recovered.

CAVERLY<sup>11</sup> reported the first serious epidemic in this country, which occurred in Rutland, Vt., between July and September, 1894. Rutland lies in a valley; and it is interesting to note that in a large number of these epidemics the site of the occurrence has been near a stream in a narrow valley during a summer which has been extremely hot and rather dry, when the brooks run low and the stream is below its ordinary limits. This was the case in Rutland. Caverly records 126 cases, with eighteen deaths; 85 patients were under the age of 6, 21 between 6 and 14, and 13 over the age of 14, so far as the ages were recorded. In the majority of instances the disease began with a febrile onset; pain was noticed in many, so that for a time it was supposed that the disease might be a mild type of cerebrospinal meningitis. Convulsions occurred in many cases; in quite a number there was retention of urine; in two there were bulbar symptoms; in one the face was paralyzed and in one some of the muscles of the eye. In the course of this epidemic it was noticed that a good many individuals were affected with an acute febrile onset, great prostration and much fatigue, where the disease did not go on to a true

3. Deutsch. med. Wochenschr., 1907, No. 48; also THE JOURNAL A. M. A., Oct. 26, 1907, p. 1420.

4. Am. Jour. Med. Sc., January, 1843, p. 248.

5. Bergenholtz, reported by Medin: Verhandl. d. x. internat. med. Cong., Berlin, 1890.

6. Lyon méd., Jan. 1, 1888.

7. Oxholm, reported by Leegard: Nenrol. Centralbl., 1890, 760. S. Nord. med. Ark., 1896, No. 1.

9. Putnam, J. J.: Boston Med. Jour., Nov. 23, 1893.

10. Comp. rend. du Cong. de méd. de Bordeaux, 1895, 352.

11. Caverly: New York Med. Record, Dec. 1, 1894; also MacPhail, Brit. Med. Jour., 1895.



or permanent paralysis, and in a great many cases an entire recovery occurred. The legs were affected to a very much greater extent than the arms. It was noticed that in this epidemic animals—horses, dogs and chickens—were also affected.

PIERACCINI<sup>12</sup> observed a small epidemic in Monte Spertoli, a small village not far from Florence, Italy, lying on the side of a mountain in quite a high altitude and a dry locality. This epidemic occurred between June 23 and August 10, 1895. There were but 7 cases, all the patients being under the age of 5. In 6 of the cases the legs were affected, in one case an arm, and in one patient internal strabismus was noticed. These patients all recovered.

BUCCELLI<sup>13</sup> saw a number of cases in the Ravicea quarter of Genoa in 1895. Other quarters of the city did not present similar cases. Two occurred in one house; two others were brothers; and during this epidemic it was noticed that several cases of cerebral palsy occurred at the same time, two of them in the same house with a case of spinal paralysis. These cases were not particularly severe. The legs were affected in the majority of instances. They all occurred with febrile movement. Buccelli adds that at the same time an epidemic prevailed in Arenzano, a small suburb of Genoa. Five cases were observed within a few days by Dr. Luciani.

MEDIN<sup>14</sup> observed an epidemic in Stockholm in the summer of 1895, which he reported with great care. There were 20 cases observed between the months of June and September. Three of these cases presented facial palsy and five of them bulbar symptoms. In all of them the onset was accompanied by fever, and in the majority the paralysis affected the legs. There were no cases of infantile hemiplegia noticed at this time, and no deaths. Medin believed that there was a specific poison causing the infection and that in several cases it was probable that the direct contagion could be traced from one patient to another. This epidemic occurred in the latter part of the summer and early fall, at a time when infantile diarrhea was quite prevalent in Stockholm. The onset in the majority of cases was sudden, with fever and somnolence, but sweating was not specially noticed. Vomiting and diarrhea were common, and, in many cases, retention of urine. Pain and sensitiveness of the body were noted in very many cases. In two cases Medin considered the condition as probably polyneuritis rather than poliomyelitis, there being first pain, then hyperesthesia of the skin, followed by anesthesia of the legs. In five cases there was an acute ataxia which he also ascribed to peripheral neuritis. The fact that in both this epidemic and that which he observed in 1887, poliomyelitis acuta was observed in a number of cases led Medin to the conclusion that this disease was produced by the same infection as poliomyelitis, the only difference being in the location of the portion of the nervous system affected.

ALTMAN<sup>15</sup> observed an epidemic of eighteen cases at Port Lincoln, South Australia, during the months of March and April, 1896, the hot and dry months in Australia. This appears to be the first epidemic on record in Australia. Port Lincoln is a small town having a population of fifteen hundred. The patients were all over the age of 3 years. In two instances two members of the same family were affected. The symptoms began with fever and pain and the paralysis developed on the third or fourth day in all the cases. In one case there was retention of urine, in one case facial palsy; and one case was hemiplegic in its type. None of the patients died.

PASTEUR<sup>16</sup> observed at Much Hadham, in England, in the month of July, 1896, seven cases of infantile paralysis in one family living in the same house, all attacked within ten days. The neighborhood was a healthy one and there were no particular circumstances indicating in any way the cause of the disease. The children ranged in age from 1½ to 11 years. The first child had a paralysis of the left arm, the second had typical right hemiplegia, which was undoubtedly cerebral in nature, as the electrical reactions remained normal. The third and the fourth had fever for several days and general

weakness, but had no paralysis. The fifth child had a typical spinal palsy of the left leg, the sixth had a febrile onset with general tremors and great prostration, with no paralysis, and the seventh child had a fever with a temporary internal strabismus. It would seem probable that in this family some poisonous agent had infected all the children who responded in different manners to the infection. There were no other cases observed in the neighborhood.

TAYLOR<sup>17</sup> saw in July and August, 1896, seven cases of infantile paralysis in Cherryfield, Me. This appeared to be infectious, as the second patient was a brother of the first, the third a cousin of the first and second, and the fourth was visiting in the house where the first three patients were affected. In all these four cases both legs were paralyzed and in three of them one arm was also affected. The fifth case was a little girl of 10 who died on the seventh day of the disease, the paralysis having ascended from the legs to the arms and affected the respiratory muscles. Two other cases were known to have occurred in the same town, but were not seen by Dr. Taylor. He also heard of two cases occurring at the same time in a neighboring town.

BONDURANT<sup>18</sup> reports fifteen cases occurring in Greene County, Ala., during the summer of 1896, both whites and negroes being affected. There were no deaths. Malaria was prevalent at the time.

BUZZARD<sup>19</sup> called attention to the fact that an unusual number of cases of infantile palsy were observed in a small district of London in September, 1897, and gives the details of eleven cases. Some of these developed subsequently to influenza. They were all children under 5, excepting one boy of 14. In two instances the patients were sisters, or a brother and sister. In one case there was retention of urine. In the majority of instances the legs were affected. In two of the patients the febrile onset was attended by great weakness, but rapid and complete recovery ensued. There were no deaths. Several other cases in addition to these eleven were heard of but not seen at the time.

TAYLOR<sup>20</sup> saw a rather unusual number of cases of infantile palsy at the Hospital for Ruptured and Crippled during July, 1897, and was under the impression that there might be an epidemic of the disease, though no other records of such an epidemic are to be found. The cases were widespread through the city of New York, and it is not certain that all had developed during the month of July, though it is quite unusual that twelve cases should appear at one hospital in one month in this city. He does not record this as an epidemic, but in a letter to the *New York Medical Journal* inquires whether it might be the beginning of an epidemic.

PLEUSS<sup>21</sup> records four cases which had been observed between June and September in Kiel. It does not appear, however, that this can be entitled to consideration as an epidemic, since the population of the city is so great. These cases might easily be accounted for as sporadic cases.

NEWMARK<sup>22</sup> of San Francisco records a small epidemic occurring in the town of Le Grand, Merced County, Cal., in June, 1898. It is a village of forty-nine people. Four children were affected, the first and second being brothers, the third a playmate of the first and second, and the son of the doctor who attended them. They were all boys from 8 to 10 years of age. The onset was with fever and the legs were paralyzed in all the cases. In one there was retention of urine for a week. None of the patients died.

PACKARD<sup>23</sup> records the fact that during the summer at Royersford, Pa., he had seen two cases of infantile paralysis developing in the same house within three days of each other in a brother and sister. This fact he considers of importance as supporting the infectious origin of the disease and also its possible contagion.

AUERBACH<sup>24</sup> records a small epidemic occurring in Frankfort-on-the-Main between May and December, 1898. There were nine

12. *Lo Sperimentale*, Sept. 21, 1895.

13. *Il Policlinico*, June 15, 1895.

14. *Nord. med. Ark.*, 1896, No. 1.

15. *Australasian Med. Gaz.*, 1897; *Lancet*, July 3, 1897.

16. *Tr. Clin. Soc.*, 1897, p. 143.

17. Taylor, J. M.: *Philadelphia Med. Jour.*, January 29, 1898.

18. Bondurant: *Philadelphia Med. News*, Aug. 18, 1901.

19. *Lancet*, March 26, 1898.

20. Taylor, H. L.: *New York Med. Jour.*, 1897, p. 192.

21. *Inaug. Diss.*, Kiel, 1898.

22. Newmark, L.: *Med. News Philadelphia*, Jan. 28, 1899.

23. Packard, F. A.: *Jour. Nerv. and Ment. Dis.*, 1899, 210.

24. *Jahrb. f. Kinderh.*, 1899; *Neurol. Centralbl.*, 1900, 466.



cases observed by him and several others were heard of. Two of these cases occurred in the same street. In one case facial palsy accompanied the paralysis of the arm and leg, but was of the peripheral type. In one case there was a recurrence of the disease in August after the first attack in June, a case which is worthy of notice as it is the only one that I can find on record of the occurrence in the same individual of two attacks.

ZAPPERT<sup>25</sup> describes an epidemic which occurred in Vienna in 1898. Two hundred and eight cases were observed during that year and these cases occurred chiefly in the summer between June and November. Infants under three were attacked and no cases were observed in which children in the same family were attacked. There was no relation to other infectious diseases.

WICKMAN<sup>26</sup> observed fifty-four cases during an extensive epidemic in Stockholm in the summer of 1899. Three patients died. The disease was attended by febrile onset and presented all of the characteristics of the epidemic type as seen in other epidemics. In three different houses two cases of the disease occurred, and in several families two or three cases were observed among cousins or brothers and sisters. The majority of the cases occurred in July, August and September, and almost all of the patients were below the age of 5. Wickman noticed that the disease was not generally spread through the city, but was particularly localized in certain parts, so that in neighboring houses in the same or in neighboring streets, groups of cases of three, five or seven were observed. In one instance there occurred a case in one dwelling-house from which the family removed on October 1. A second case developed in this same house in the family that moved into the rooms which had been vacated by the first family not long after their entrance. He considers this as a pretty good proof of the contagiousness of the infection, of which he saw many other examples in the epidemic of 1906.

LEEGARD<sup>27</sup> observed in Bratsberg, Norway, between April and November, 1899, fifty-four cases of the disease. Thirteen occurred in August, September and October. All ages were affected, but the majority were children under 11. Two patients died. The disease had the typical febrile onset, the lower extremities were affected in more cases than the upper, in one case there was facial palsy and in one case the tongue was paralyzed.

CHAPIN,<sup>28</sup> who was called to see some cases in consultation during an epidemic in Poughkeepsie, N. Y., in July and August, 1899, gives the details of seven cases, with one death. Thirty or forty cases were observed by the physicians there during the summer. The majority of the cases went on to complete recovery, a fact which has been noticed in a number of the different epidemics and has a bearing on the prognosis. Some were left with permanent paralysis. In the case of the patient who died an autopsy was performed and a diplococcus was found by cultures of the spinal cord.

McKENZIE<sup>29</sup> describes seventeen cases occurring in the small towns of Washington and Amenia during the summer and autumn of 1899. These towns lie about ten miles east of Poughkeepsie and the epidemic there coincided with the one described by Chapin. Persons of all ages were affected in this epidemic from infants of 2 to adults of 35. Of the seventeen cases three died within four days of the onset, one recovered entirely after four weeks' illness; in one case retention of urine was observed. Two of these cases presented symptoms quite similar to those of Landry's paralysis and were so described.

PAINTER<sup>30</sup> saw fifty-two cases of infantile paralysis between the months of June and September, 1900, in Gloucester, Mass.; thirty-eight of these cases were under his own care. They were in children between the ages of 13 months and 10 years, and presented all types of infantile paralysis. There were, however, no deaths. In a number of cases it appeared as if con-

tagion was possible, two members of the same family being affected.

A. M. Woods<sup>31</sup> witnessed an epidemic in San Francisco in May and June, 1901. The weather was damp and cool. Fifty-five cases were recorded, of which twenty-five were reported in detail. The majority of the cases occurred in infants. The onset was attended with fever and the paralysis affected the legs in many cases. There were no deaths.

WICKMAN<sup>32</sup> observed twenty cases in Gotteborg, Sweden, between the months of July and November, 1903. Eleven of these were under 2 years of age, five between 3 and 5 years of age, the remainder older. Three were sisters. In one instance there were two cases in the same house. One patient died. The usual history of febrile onset was observed in all the cases, and in all some slight degree of permanent paralysis was left.

A. LORENZELLI<sup>33</sup> saw twenty-six cases in Parma, Italy, between the months of March and September, 1903, chiefly in infants under the age of five. The disease began with fever and was not fatal in any case, but permanent paralysis was left in the majority of the cases.

BLACKHALL<sup>34</sup> observed six cases at Queanbergan, New South Wales, during an extensive epidemic of poliomyelitis in the months of December, 1903, and January and February, 1904, which is the hot season in New South Wales. Two of these patients were sisters, two were cousins, and one case occurred in the house next to the one in which the sisters were affected. They were all typical cases of infantile palsy. In one case there was a facial paralysis. None of the cases was fatal. Various epidemics in different places at some distance from one another were recorded by different authors.

LITCHFIELD observed twenty-five cases at Sydney. He notes that the summer was rather wetter and cooler than usual and that during the summer there was an extensive epidemic of gastrointestinal influenza. The patients affected were all under the age of 6. There was an onset with fever and general malaise with sweating in one-half of the cases. In the other cases the disease appeared to come on with some prostration, but without much fever. All the extremities were affected in one case; two legs, in ten cases; one leg, in ten cases; one arm in four cases. There were no fatal cases. Lumbar puncture was not performed in any of the cases recorded by him.

R. B. WADE observed thirty-four cases at Stanmore, near Sydney, the patients being all below the age of 7 years. In almost all of these cases there was a febrile onset with vomiting, diarrhea and severe sweating. The temperature was between 99 and 100 for two or three days, then rose on the third or fourth day to 102, with an increase of the pain and the appearance of the paralysis. Paralysis appeared from the first to the sixth day. There was retention of urine in seven of the cases. None of the cases was fatal. In some of the cases there was complete recovery in two or three weeks; in the majority, however, some permanent paralysis was left. In several cases two or three members of a family were affected. Sometimes one member would develop paralysis and the others after several days of general malaise and undue fatigue would recover without paralysis. The legs were affected much more frequently than the arm. In one case the body muscles were involved, in one case the abdominal muscles, and in one case the face. This is the second epidemic known to have occurred in Australia.

B. B. HAM<sup>35</sup> saw a severe epidemic in Brisbane, Queensland, from October to December, 1904. One hundred and eight cases being reported, almost all of the patients being under the age of 10. Four of the cases were fatal. The course was febrile, the paralysis was limited to the extremities, there being no facial or bulbar paralysis. Cerebrospinal meningitis was prevalent at the time. No lumbar punctures were made. This was the third Australian epidemic.

NANNSTAD<sup>36</sup> observed forty-one cases of the disease in Hvalen, Norway, in the summer of 1904, between June and October. The majority of the patients in these cases were

25. Jahrb. f. Kinderh., 1, III, p. 125.

26. Wickman, L.: Heine Medischer Krankheit, Berlin, 1907, p. 148.

27. Norsk. Mag. f. Lægevidensk., 1901, 377.

28. Chapin, H. D.: Arch. Pediat., 1900, 807.

29. McKenzie, D. H.: New York Med. Rec., 1902, vol. lxii, p. 528.

30. Painter, C. F.: Tr. Amer. Orthop. Assn., 1902, p. 414.

31. Woods, A. M.: Occidental Med. Times, xvii, p. 77.

32. Wickman: loc cit., p. 149.

33. Lorenzelli, A.: La Pediatria, 1904, p. 428.

34. Blackhall, P.: Australasian Med. Gaz., 1904, p. 347.

35. Ham, B. B.: Australasian Med. Gaz., xxiv, p. 193.

36. Norsk. Mag. f. Lægevidensk., 1906, lxxvii, 409.



infants, but some were adults. The epidemic was light, the degree of paralysis not extreme, and no patients died.

PLATON<sup>37</sup> observed, in the same year and in another part of Norway, a small epidemic at Aafjorden, in the month of August. There were twenty cases and of these six died. A number of these cases appeared to prove the contagiousness of the disease.

GEIRSVOLD,<sup>38</sup> in Norway, reported the most extensive epidemic hitherto recorded, which occurred in Norway and Sweden in the summer of 1905. Geirsvold made a careful study of this epidemic in Norway and observed 437 cases around the neighborhood of Trondhjem, between April and October; there were sixty-seven deaths. In a number of cases it appeared as if the disease were manifestly contagious, and Geirsvold was able to trace the extent of the disease by contact from one village to another and from one house to another. It is, however, to be remarked that in a general discussion about the epidemic among the Norway physicians,<sup>39</sup> opinions differ as to the contagiousness of the affection. Some physicians laid particular stress on the condition of the water supply in various localities and pointed out that the disease was more prevalent in damp places surrounded by swamps. In this epidemic lumbar punctures were made by Geirsvold in eleven cases. From the fluid obtained through lumbar punctures micro-organisms were found many times. These were bean-shaped diplococci or tetradocci with flat sides toward each other, often seen in chains of four to six members. This diplococcus grew well in ordinary serum, and stained with aniline dyes. A particular feature of its character was the clear dividing line between the two half-balls which lay parallel to the axis of the chain. The same microbe was found in the pharynx of a patient suffering from poliomyelitis. Cultures from this micro-organism injected subcutaneously into mice, rabbits and dogs uniformly produced paralysis of their hind legs. This micro-organism was identified by Dethloff as the same organism found by him and Looft in 1901 in two cases of poliomyelitis and as the same micro-organism described by Huebner as occurring in a case of poliomyelitis under his observation.

WICKMAN,<sup>40</sup> in a remarkably careful study described in detail 1,031 cases occurring between the months of May and October, 1905, in the southern part of Sweden. These cases were distributed through a large number of small villages adjacent to one another, and Wickman believes that the records, which he has investigated with great care, prove conclusively the contagious character of the infection. Many cases occurred in the same house; in many instances two or more members of the same family were affected. In one town it was evident that sixteen or eighteen cases originated from the same school-house. In the majority of instances some contact could be traced between one patient and another, and even the spread from one village to another could be accounted for by the passage of individuals from one town to the next town. The period of incubation appeared to be between one and four days. The poison remained in the house, so that new tenants were very often affected by the disease after old tenants had removed. In two cases an interval of one year's duration occurred between two cases in the same house. The care with which Wickman investigated the question of contagion and the mode of extension of the disease has not been equaled in the study of any other epidemic; and from his evidence it is very hard to escape the conclusion that the disease is actually contagious or that, like scarlet fever, it can be carried through the medium of another person to other individuals. Wickman calls attention to a large number of varieties in the disease. He speaks of the abortive type, in which individuals were ill for three or four days with febrile movement, followed by a condition of considerable prostration, and then a recovery with no paralysis remaining. Such cases have been recorded in many of the other epidemics, and therefore the conclusion may be accepted that there are light cases of the disease not recognized as paralysis because true paralysis does not ensue. He also calls attention to a type in which symptoms indicate the ex-

istence of polyneuritis accompanying the poliomyelitis. There is no question that the two diseases may occur together in sporadic cases of infantile paralysis; and in the other epidemics isolated cases have been reported in which the pain, the tenderness along the muscles, the hypersensitiveness of the skin, all indicate the possibility of an involvement of the peripheral nerves. It is therefore probable that this type of the disease should be recognized. The existence of bulbar symptoms, and particularly of cranial nerve symptoms, in a number of the cases is insisted on by Wickman, but these have been observed as already stated in many of the previous epidemics. It may be mentioned that in Sweden dogs and other animals were apparently affected with this disease at the same time as children. It will be recollected that Caverly called attention to this fact in connection with the epidemic in Vermont.

Lumbar puncture was performed in a number of the cases observed by Wickman and cultures made of the spinal fluid, but no trace of the diplococci described by other authors was found, and even in the cases that came to autopsy cultures of the spinal cord failed to reveal any micro-organisms. Wickman therefore places a certain amount of doubt on the observations of Geirsvold already described.

WICKMAN<sup>41</sup> saw a smaller epidemic in Sweden in 1906, only fifty cases being observed. They presented the same features noticed in the larger epidemic.

LUNDGREN<sup>42</sup> observed an epidemic of anterior poliomyelitis at Vardo in Norway in the summer of 1905. He records 403 cases, occurring chiefly between the ages of 6 and 15, though some adults were also affected. This disease apparently was contagious, as many cases were traced where the contagion seems evident. He thinks the time of incubation is from eight to ten days. This epidemic was a very fatal one, for 10 per cent. of the patients died. Many recovered, but permanent paralysis of some type was left in 25 per cent. of the cases.

TERRIBERRY,<sup>43</sup> who first called attention to the extensive epidemic occurring in New York in the summer of 1907, heard of a small epidemic at Ridgway, Pa., which occurred during July, August and September, 1907; and he visited the town in order to investigate this epidemic. He found Ridgway situated in a valley in the Allegheny Mountains about sixteen miles in length. Fifty cases developed in this little valley, the first case appearing at Elk Creek, where twelve cases were observed. Two weeks later cases appeared at Ridgway, nine miles below Elk Creek, and in that town thirty cases eventually occurred. One week after the case appeared in Ridgway, cases developed at Portland Mills, nine miles below Ridgway, and there eight cases in all developed. It was evident, therefore, that the disease extended down this valley in a definite direction, and that the incubation was in some cases one week, in others two.

Of the fifty patients four died. The patients were all children and in every instance two or three members of the same family were attacked by the disease. He mentions that in three cases bulbar symptoms developed.<sup>44</sup>

GRIFFIN<sup>45</sup> reports an epidemic occurring in Oceana County, Michigan, in the summer of 1907. There were twenty cases, chiefly in infants; the limbs were paralyzed in all cases. In one case the face was involved.

S. M. FREE<sup>46</sup> reported an epidemic observed at Dubois, Pa., in the summer of 1907. Over one hundred cases were observed in the Allegheny Mountains about Dubois. There were only a few deaths. The disease presented some meningeal symptoms and much pain and the paralysis involved the legs, chiefly. Pigs and chickens also were affected.

41. Wickman: loc. cit., 262.

42. Lundgren, H.: Hygeia, 1906, p. 1089.

43. Long Island Med. Jour., December, 1907.

44. Several authors in collecting the accounts of epidemics have included in their lists references to Brieglev, Inaugural Dissertation, Jena, 1890. The cases reported by Brieglev, however, were single cases developing in places far apart and could by no means be regarded as an epidemic. One author has mentioned Cervesato as having reported an epidemic in Padua in 1897. The article of Cervesato, Corriere de Milano, 1897, viii, No. 1, is an analysis of twenty-six cases of the disease, and calls attention to pain as the initial symptom in poliomyelitis, but is in no sense a record of an epidemic.

45. Griffin: Jour. Mich. State Med. Soc., February, 1908, p. 142.

46. Free, S. M.: Jour. Nerv. and Ment. Dis., April, 1908, p. 259.

37. Tidssk. f. d. norsk. Lægefor., 1905, 601.

38. Norsk. Mag. f. Lægevidensk., 1905, 1280; Jahrb. f. Kinderh., 1906, lxiiv, 255.

39. Tidsskr. f. d. norsk. Lægefor., 1906, 109.

40. Wickman: loc. cit., p. 150.



## PROGNOSIS.

Some interesting facts in regard to prognosis have been elicited in connection with these recent epidemics. Ordinarily the mortality of anterior poliomyelitis in sporadic cases is very low, but it will be remembered that in the epidemic types the mortality has varied from 6 to 10 per cent., which makes the disease an alarming one. It has been noticed that in the fatal cases death occurred as a rule between the fourth and tenth days, the majority of fatal cases terminating on the sixth day from the extension of the paralysis to the respiratory muscles. High fever was not often noted and there was no evidence, as a rule, of heart failure, but the paralysis extended upward, involving the respiratory muscles of the throat, and patients died of respiratory palsy. The prognosis, therefore, is always serious while the disease is advancing or while the paralysis is extending, especially as it extends upward. If a child survives the eighth or tenth day, prognosis for life is favorable.

On the other hand, epidemics have demonstrated the fact that in 25 per cent. of the cases there is complete recovery. Such complete recoveries are not often observed in the sporadic cases where, as a rule, a few muscles remain partially paralyzed for the rest of the child's life.

There remain, however, a large number of cases in which, as in the sporadic types, a permanent paralysis of some kind is left.

## TREATMENT.

During the early stage of the disease at the onset cupping of the back by dry cups applied for a short time only but repeated two or three times a day may relieve the congestion that is present. Ice-bags applied to the spine may have the same effect, and sponging of the body with cool water or with water and alcohol may keep down the fever to a certain extent. As a rule, children in this stage are in great pain and require some sedative. Acetanilid, antipyrin or phenacetin in appropriate doses for the age may be given. It is not unwise to use Dover's powders in connection with the coal-tar preparations. The children should be kept very quiet, as their limbs are exceedingly tender. A brisk purgative should be given, and the nutriment during the first two or three days should be chiefly milk. Dr. Cushing, of Baltimore, has recently proved that the administration of urotropin results in the presence of formaldehyd in the cerebrospinal fluid as demonstrated in his cases of cerebral surgery. This fact, which I can confirm, may be utilized in the treatment of nervous diseases where an infection is suspected, and hence the use of five grains of urotropin every four hours to a child of 8 years and smaller doses for infants may be tried during the onset of the disease or until fever subsides. Salicylate of soda has been given also in the early stage by some observers with apparently good effect. I prefer salicylate of strontium as less likely to irritate the stomach.

After the stage of onset is over and the pain has subsided it is wise to stop medication for two weeks and then begin the use of strychnin, which should be pushed in these cases as far as is consistent with safety. I have seen marked improvement under the use of one-fortieth of a grain of strychnin three times a day to a child of 8; a rather high dosage, to be reached only by progressive small increase over the initial dose. The condition of the muscles can certainly be markedly improved by manipulation, by massage, by rubbing the limbs with

oil or cocoa butter, or allowing the child to play daily or twice a day in a warm bath for half an hour or more, or by applications of galvanism, both constant and interrupted. It is especially important from the very beginning of the case to prevent the development of deformities, which, in the majority of instances, are simply due to the action of gravitation on the limb whose ligaments are relaxed and whose muscles no longer act on the joints as ligaments. Proper position should, therefore, be insured by carefully adjusted braces when the child is out of bed and by properly adjusted pillows and little sand-bags to hold the feet in position when the child is in bed. The numerous severe deformities which subsequently require section of the tendons, if neglected, can always be prevented by properly adjusted orthopedic apparatus, and it is never wise to delay the application of such apparatus until the deformity has been produced. The orthopedic treatment of these cases is more important than any other.

5 West Fifty-fourth Street.

## DISCUSSION.

DR. WHARTON SINKLER, Philadelphia: The epidemic of poliomyelitis in New York last year was the largest on record. No doubt a great many unrecorded epidemics have occurred. A few years ago a child suffering from poliomyelitis was brought to me from a small town in North Carolina. The parents told me that several other cases had occurred at about the same time as their child's case. There are a number of points of dissimilarity between the symptoms in the epidemic form and the sporadic form of poliomyelitis. The mortality is much greater in the epidemic form. I have seen only one case of complete recovery. The child was treated with salicylate of sodium. I have always felt that the salicylate of soda is a remedy indicated in the treatment of poliomyelitis in the early stages. In the epidemic form there is a more diffused and general involvement of the whole nervous system, involving the meninges to a great extent, which does not exist in the sporadic form. The seasonal relation is the same. A large majority of sporadic cases occur in the hot months of summer, and the same has been the case with every epidemic recorded. I saw recently a child who had had apparently two separate attacks. The right leg was first involved and the paralysis receded; fairly good recovery took place. At the end of three weeks the left leg was involved, and when the child was brought to me there was flaccid paralysis of the left leg.

DR. CHARLES K. MILLS, Philadelphia: While the disease has not prevailed in Philadelphia and vicinity as it has prevailed in New York, during the last two or more years the number of cases has increased. The disease in our own neighborhood has not received the attention that it should. One general practitioner in Philadelphia had about twenty cases. I saw two or three of these, one of most severe type and yet not fatal, in which the child was paralyzed literally from the neck down, and barely succeeded in breathing and maintaining cardiac action. At the neurologic service at the University of Pennsylvania we have had many cases brought not only from the city but from a distance, from Clearfield county, for instance, where the disease seemed to be endemic.

The probability of the occurrence of a true neuritis in these cases of poliomyelitis is worth remarking. Dr. Starr has referred to the frequency with which pain has been present. In cerebrospinal meningitis I indicated a number of years ago that multiple or diffuse neuritis occurs as part of the disease. On the edge of the epidemic, in the early months of it, I saw two cases of multiple neuritis in children, one about 13 or 14 years old, and the other younger. I have seen a few patients who have completely recovered, and several who have nearly recovered. No cases in my own experience have been fatal, but in several the disease has been of an extremely severe type. I believe in the occurrence of Strümpell's poliomyelitis or encephalitis, and I have seen cases.

F. X. DERBY, Philadelphia: I found a diplococcus in a



sporadic case of poliomyelitis some years ago. However, I did not regard the finding as of value. I am convinced that the pain in the epidemic cases which we have had in Philadelphia is much more marked than in sporadic cases. In sporadic cases the pain has, in my experience, been a negligible factor, but during the present epidemic the pain in some cases was atrocious, and was not influenced by salicylate of sodium. It would be interesting if the final conclusion were to be that there are two different affections, similar only in a few points in regard to their symptomatology. Certainly the suggestion that the cases of the present epidemic were contagious would be in keeping with such a view. I have been impressed in the cases that I have seen by the relatively high degree of recovery; the attack had in some cases swept through the nervous system like a cyclone and yet left mere traces behind.

DR. FRANK R. FRY, St. Louis: I believe that in this epidemic form older patients are often attacked, and for that reason some cases are overlooked. Three years ago we had an epidemic in St. Louis, not nearly so extensive as many in the east, of course, yet enough of an epidemic so that we noticed many cases. The general data only and no statistics were collected, showing plainly that there had been an epidemic, and among the cases a number of cases in young adults.

DR. L. H. METTLER, Chicago: In these forty-four various epidemics, particularly the last one, has there been a partial or complete repetition from year to year of other cases in the same localities? I think Oppenheim has made the statement that almost all his cases of this disease came from one particular locality, not far from Berlin; thus leaving one with the impression that there is an endemic character, at least in some respects, to the trouble. This might account for the various outbreaks at different times and of varying degrees.

DR. FRANK P. NORBURY, Jacksonville, Ill.: In central Illinois, three years ago, during the time that poliomyelitis was prevalent in St. Louis, I saw about eight cases. Two occurred in young adults, one a college student, a young man about 18, another in a young farmer of about 25. Both were cases of anterior poliomyelitis.

DR. WILLIAM G. SPILLER, Philadelphia: Meningitis has been found as a complication in cases of poliomyelitis, and the pain may be caused by the meningitis. The lesions are not always confined to the gray matter in poliomyelitis. I have seen the typical findings in the lumbar region of a spinal cord, whereas sections from the thoracic region of the same cord showed involvement of the white matter. Strümpell's form of polioencephalitis exists. I have examined the specimens from three cases in which the lesions were almost confined to the gray matter in a limited area of the cortex. One was from a case of Dr. Mills, another from a case of Dr. Moleen, and the third from a case of my own. In the late stages of poliomyelitis nerve transplantation may be of service. Often a nerve is cut and inserted into another nerve without transverse division of the second nerve. The results have not always been favorable. The best results may be expected from end-to-end anastomosis. Bikes cut certain nerves in one leg of a dog and inserted them in another nerve, without cutting the nerve across into which he made the insertion. In another leg he cut the nerves entirely across and anastomosed the central end of one nerve with the peripheral end of another nerve. He allowed the dog to live 294 days after one operation, and 210 days after the other, and then cut the nerves below the point of operation. When a nerve is cut reaction at a distance occurs in its nerve cells, and Bikes showed that no alteration of the cells of the nerve into which the insertion had been made occurred, whereas alteration followed on the side of the end to end anastomosis; indicating that on this side only had physiologic union occurred after the previous operation. From this experiment we may conclude that in operations on nerves in cases of poliomyelitis our results will be better if we partially or completely divide the healthy nerve before uniting it with the diseased nerve.

DR. CHARLES R. BALL, St. Paul: In two cases of poliomyelitis in adults, which I reported several years ago, one a boy of 16 and the other a man of 40, I had the opportunity

of seeing those cases during the acute attack. The fever never went high—not over 101—and then perhaps only for a short time—a portion of a day, and yet the paralysis following was quite severe. Is there any relation between the severity of the acute symptoms and the following paralysis? Has Dr. Starr observed whether the residual paralysis left in adults having acute poliomyelitis is apt to be greater than in children?

DR. A. R. ALLEN, Philadelphia: We have had at the disposal of the University of Pennsylvania at least two cases of typical anterior poliomyelitis which showed, for a number of weeks after the onset of the symptoms, distinct nerve pain on pressure along the nerves. In one case the tibialis anticus was extremely tender to pressure, and we thought that it was a case of neuritis in connection with anterior poliomyelitis change.

DR. HENRY W. FRAUENTHAL, New York: In the last epidemic treated in the last month, the patients over 10 years of age have recovered early as compared with those who are older. I recall the case of a patient 17 years of age, treated for deformities and joint diseases, in the hospital (which takes in no patient under 14 years of age), who has had two hours' treatment daily with electricity and massage. The boy has made comparatively little progress toward recovery compared with improvement made by patients treated for a short time three days in the week. In my experience patients over five years old do not recover as quickly or as completely as children under that age.

DR. D. I. WOLFSTEIN, Cincinnati: Dr. Buzzard in a recent article says that many cases of so-called infantile paralysis occur in early adult life, and even in later years. It would be interesting to know whether or not any of the cases diagnosed as infantile paralysis might possibly have been acute cases of this toxic form of neuritis, and whether the differential point that Dr. Buzzard makes in connection with that, the early involvement of the facial muscles, was noted.

DR. MORTON PRINCE, Boston: I noticed in Dr. Collin's collection of cases in the same epidemic that the third and sixth nerves in these cases were found to be paralyzed. His patients were all below 10 or 11 years of age.

DR. H. OSTRANDER, Kalamazoo, Mich.: There is an epidemic of this kind in western Michigan, including twenty-five cases, some of which I saw. In a number of families where children had the disease, there were adult cases presenting acute symptoms of the onset of the disease; they had the rise of temperature, the terrific pain and bowel trouble, but there was no paralysis following.

DR. M. ALLEN STARR: In answer to Dr. Sinkler's question about recurrence, there have been cases reported in other epidemics, one by Gieswold, in Norway, of the patient having an attack in one leg with apparent partial recovery, and a second attack nine weeks later in the opposite leg. Wickman records two cases of recurrence at an interval, in one case of eight weeks, and in the other three months. I have never seen a case of recurrence, but I saw a little boy who was attacked last summer with anterior poliomyelitis in the right arm; and I found he had pseudohypertrophic paralysis in both legs and back. The two diseases had naturally been confounded, but it was easy to show that the pseudohypertrophic paralysis had been of gradual onset for the past three years, while the poliomyelitis had come on in the arm as an acute attack. In answer to Dr. Mills and others, the differential diagnosis between neuritis and poliomyelitis is not always an easy one. I have been unable to find on record any cases of distinct demonstration of neuritis associated with poliomyelitis, although the pathologists who have written on this subject have detailed cases of degeneration in the anterior nerve roots and in the anterior nerves passing downward to the muscle. Anything like the acute congestive condition with exudation in the nerve sheath has not been observed, so far as my knowledge goes, and Wickman's pathologic observations and those of Harbitz and Scheel in the Norway epidemic, show a particularly careful record of the condition of the nerves. Pathologically we lack the demonstration of the coincidence of multiple neuritis with anterior poliomyelitis. That multiple neuritis does occur and that it does occur in a toxic type in children I



freely admit, because I have seen cases, but I think that they are extremely rare. That multiple neuritis is rare in connection with anterior poliomyelitis is proved by the fact that we do not find conditions of anesthesia of a permanent type or even of a glove-stocking temporary type, in cases of anterior poliomyelitis, while that is characteristic of multiple neuritis. I am unwilling to admit that the mere existence of pain is a proof of multiple neuritis in connection with anterior poliomyelitis.

In answer to Dr. Fry the vast majority of patients in New York ranged in age from 6 to 7 months up to 8 years, but cases occurred in patients aged 32. I witnessed and investigated carefully the epidemic of Rutland, Vt.—144 cases—and there saw patients as old as 54. No age is exempt.

It seems to me that the proper treatment of the chronic state of the disease is clearly orthopedic. The transplantation of tendons has been a great deal more satisfactory to me than transplantation of nerves. I have had nerves transplanted, but not with the good results that I have had in splitting the muscles and tendons, and so making practically new muscles for the children. If you have a single muscle left below the knee you can repair the paralysis of almost all muscles of the foot. There is no relation between the degree of fever and the amount of paralysis; and the residual paralysis is greater in adults than in children. There has been no examination of the excreta for the detection of the particular toxin. The recovery is slower and much less in degree in adults than in children. I have two cases in which the third nerve was paralyzed, in addition to several cases in which the sixth nerve was paralyzed. The existence of abortive cases was not recognized until Wickman made his investigations. It is important to recognize the existence of cases of extreme fatigue and malaise in children, with unwillingness to move, which do not amount to anything in the way of a true paralysis afterward.

I consider electricity applied to the central nervous system as utterly useless in every particular, and that a lesion of the brain or of the spinal cord can not be affected in any way by the passage of a galvanic, faradic or other current through the central nervous system. The muscles can be toned up very well by anything that will cause them to contract; but as for increasing the nutrition of the spinal cord or replacing one little nerve cell by the electric current, I do not believe anybody ever did it.

## THE OPTIC NERVE CHANGES IN MULTIPLE SCLEROSIS.

WITH REMARKS ON THE CAUSATION OF NON-TOXIC RETROBULBAR NEURITIS IN GENERAL.\*

WARD A. HOLDEN, M.D.  
NEW YORK.

It seems scarcely necessary to dwell on the established facts of the optic nerve changes in multiple sclerosis. These are familiar through the statistical studies of Uhthoff<sup>1</sup> and those who have followed him. We know that ophthalmoscopic changes in the optic discs are found in about half the cases of this disease, that visual disturbances are frequently early symptoms—sometimes preceding any other symptoms by months or years—that the visual disturbances are often of sudden onset, and, if slight, frequently remain long unprogressive, and if excessive usually improve, the course of the optic nerve changes thus differing radically from the slow, steadily progressive atrophy of tabes.

I shall take it for granted, also, that it is the custom to examine the fundus and determine the fields of vision

in every case in which multiple sclerosis is suspected. Optic nerve changes, if present, will help to confirm the diagnosis. Thus ophthalmoscopic changes in the discs will exclude hysteria; and since optic nerve changes are rare in early paresis, if not complicated by tabes (I found the discs normal in seventy consecutive cases of early uncomplicated paresis), one can exclude this disease, into which many cases, diagnosed as multiple sclerosis, develop after they have come into the hospitals for the insane.

It will be more to the purpose to base my remarks on a number of illustrative cases, considering them under several headings.

### A. THE PATHOLOGIC CHANGES IN THE OPTIC NERVES IN MULTIPLE SCLEROSIS.

The cause of disseminated plaques of sclerosis in the central nervous system is still unknown. It is agreed that the histologic changes consist of localized vascular disturbances, with exudation of round cells, and of degeneration of the medullary sheaths of the nerve fibers, while the axis cylinders and ganglion cells are long preserved. Hypertrophy of the neuroglia usually fills the spaces left by the disappearance of the medullary sheaths.

The degenerative changes may remain limited to the plaque or medullary degeneration may extend upward or downward. Restoration of the degenerated medullary sheaths often takes place and the fibers then resume their function.

Typical pathologic changes in the optic nerves and chiasma were found in the following case:

CASE 1.—A woman, aged 27, died at the Montefiore Home of infection after cystitis and pyonephritis, which were manifestations of multiple sclerosis.

*History.*—Seven years before her death she fell and dislocated her right hip. A year later she noticed weakness, numbness, and coldness of her right leg, which lasted for two months. Four months later the same symptoms were experienced in her left leg. These cleared up in two months.

*Eye Symptoms.*—About this time there was a sudden diminution of vision and it was said that she was "blind in one eye and color blind in the other." Vision improved, and she was comparatively well for a year and a half. Four years before her death her left leg again became weak and numb. Her gait was staggering. There was disturbance of micturition. There were diplopia, nystagmus, poor vision, slow and monotonous speech, deafness, and poor memory for recent events. Three years before her death temporal pallor of the discs was noted.

*Pathology.*—At the Pathologic Institute of the New York State Hospitals, serial vertical sections were made under the direction of Dr. Dunlap, through the optic nerves, chiasma, and tracts, and these were stained with Wolter's medullary stain and with hematoxylin-eosin. In a section through the optic nerves at the point of their emergence from the chiasma, there is seen (Fig. 1) a diffuse degeneration, particularly in the central or papillo-macular bundles of fibers in each nerve, which accounts for the temporal pallor of the optic discs seen in life. This degeneration consists of an absence of a certain number of medullary sheaths in each affected bundle. The degeneration can be followed down the optic nerves toward the eyeballs. Further back in the chiasma there is a sharply outlined oval plaque, in which the medullary sheaths are almost entirely wanting. The affected area appears to be rarified rather than sclerosed, and there is no increase in the number of neuroglia nuclei, and neuroglia fibers form a loosely meshed network (Fig. 2). The degenerations in this case are old, and no inflammatory conditions are found, as was to be expected.

Such being the characteristic pathologic changes in the optic nerves in this disease, it is obvious that they may give rise to a variety of types of visual disturbance.

\*Read in the Joint Meeting of the Section on Nervous and Mental Diseases and the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, at Chicago, June, 1908.

1. Graefes Saenger, xi, p. 337.



# B. THE TYPES OF FIELDS OF VISION, AND THE CORRESPONDING OPHTHALMOSCOPIC CHANGES IN THE OPTIC DISCS.

The visual disturbances fall chiefly into three groups: (1) Concentric contraction of the field of vision; (2) central scotoma with normal peripheral limits of the field, and (3) a combination of concentric contraction of the field and central scotoma. These types of fields are associated, to a certain extent, with characteristic ophthalmoscopic appearances of degeneration in the

the chiasma, but when it has descended to the optic disc it occupies the inferior temporal quadrant of the disc. When the papillo-macular bundle alone is involved, in cases with pure central scotoma, the inferior temporal quadrant of the optic disc alone shows a pathologic pallor.

Concentric contraction of the field of vision is well shown in the following case:

CASE 2.—A man, aged 21, four and a half years ago noticed vertigo and a staggering gait. Six months later tremor of the

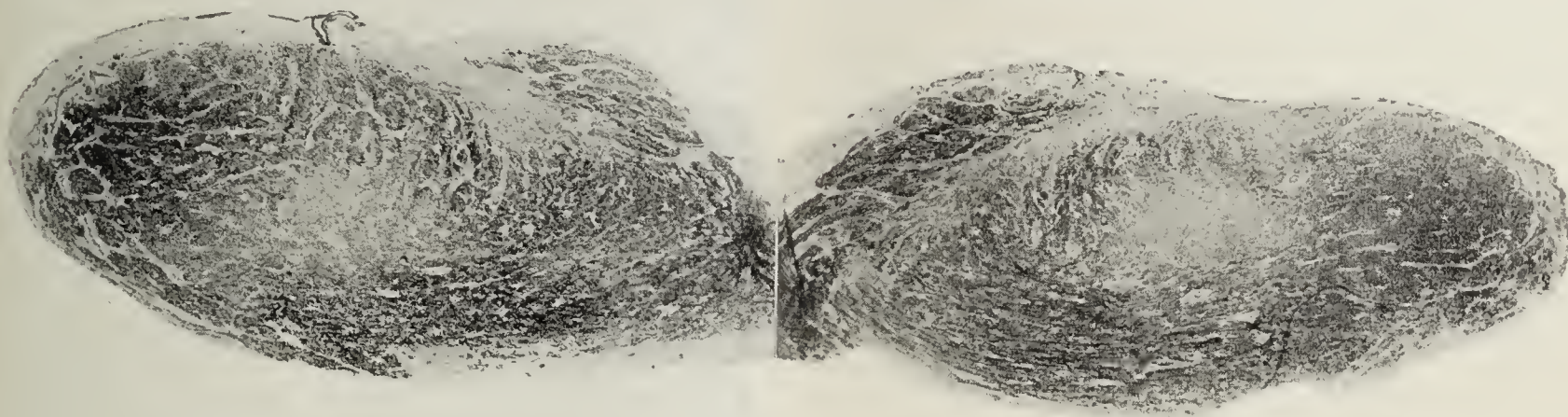


Fig. 1.—Optic nerves in cross section where they emerge from the chiasma. Wolter's medullary stain shows pale areas of degeneration, chiefly in the central bundles of each nerve.

optic discs. Discrepancies may occur, however, since in rare instances there may be some degree of papillitis, and, again, a lesion far back in the nerve may cause visual disturbances long before a descending degeneration leads to pallor of the disc, while conversely the clearing up of a lesion in the nerve may lead to improvement in vision while the disc, after once becoming pale, remains so.

Normally, the temporal portion of the disc is paler than the nasal portion, and while in diffuse degenerations of the nerve, with concentric contraction of the

head and hands came on, and there was difficulty in speaking. Now there is marked nystagmus and great difficulty in walking.

*Examination.*—Three years ago his vision failed during a period of four months and has since been stationary. O. D. = 20/50; O. S. = 20/30. There is concentric contraction of the fields. On the right side, the contracted limits of the field for

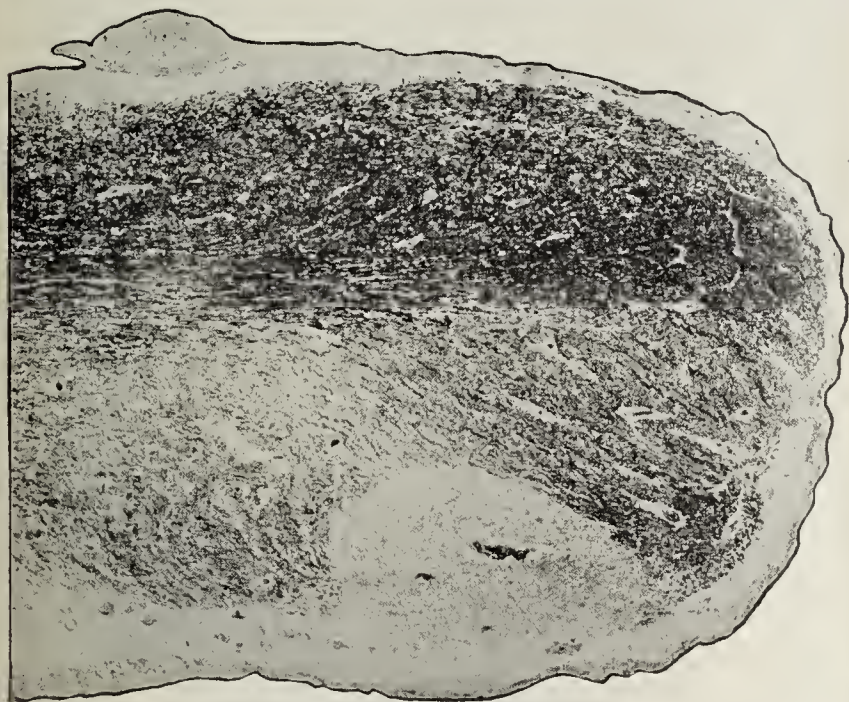


Fig. 2.—A peripheral, sharply-outlined, oval, sclerotic plaque in the chiasma, with a large vessel in its center (below and to the right). Wolter's medullary stain. The fibers which run through the plaque preserve their medullary sheaths in sections anterior to it, but posteriorly a certain degree of ascending degeneration in the optic tract can be made out.

field of vision the entire disc may become pathologically pale, this pallor is always more pronounced in the temporal portion of the disc. The axial or papillo-macular bundle of the optic nerve which is distributed to the region of the macula lutea, the center of distinct vision, lies in the center of the optic nerve as it emerges from

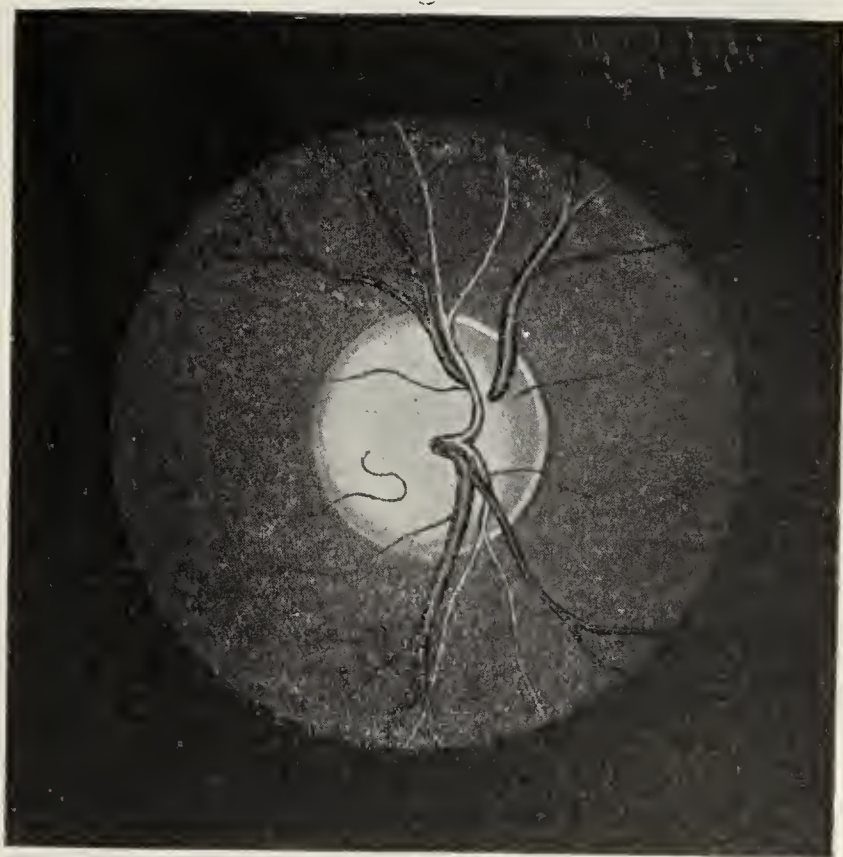


Fig. 3.—Case 2. Concentric contraction of the field for white and red, with well-marked pallor of almost the entire disc.

a 1 cm. square of white on a black ground are shown in Figure 3 by the heavy unbroken line; the contracted limits of the field for a 1 cm. red square on a gray ground are shown by the broken line. The red square can be seen as far away as five feet, and is seen more clearly at the point of fixation than to one side. The disc presents a marked pallor in its entire extent, except in a narrow crescentic zone at its nasal margin. The outlines of the disc are well defined. The arteries are small, the veins are of normal caliber (Figs. 3 and 4).

The next case exhibits a central scotoma.



CASE 3.—A man, aged 29, noticed five years ago paresthesia of the feet, then weakness and stiffness of the legs, increasing for a year, when he became unable to walk. Two years ago he lost control of his arms. For a time there was diplopia. Now there is constant nystagmus and difficulty in speaking.

*Examination.*—Five years ago his vision failed gradually for six months, and has since remained stationary. O. D. = 20/50; O. S. = 20/70. For the left eye, the limits of the fields for white, for a 3 mm. black dot and for red are normal, but the red square can not be recognized at a greater distance than eighteen inches, and it is seen at this distance obscurely in a central field 15 degrees in diameter, and more clearly on every side (Figs. 5 and 6).

There is pallor of the left optic disc limited to the inferior temporal quadrant. The outline of the disc is well-defined and the arteries and veins are of normal caliber.

The next case illustrates a combination of concentric contraction of the field and central scotoma.

CASE 4.—A woman, aged 27, met with an accident two years and a half ago. Eight months later she had pains in the head, neck, chest, hips and fingers. Her feet felt numb. Now there is constant nystagmus and great difficulty in walking. She has never had diplopia.

*Examination.*—The vision of the left eye became affected

disturbances may precede all other symptoms of this disease for years, or, possibly, since this is sometimes a monosymptomatic disease, the optic nerve disturbances may be the only symptoms.

A case of retrobulbar neuritis suggestive of multiple sclerosis, but unaccompanied by any other pronounced symptoms of the disease, is the following:

CASE 5.—A year and a half ago, I saw a man of 23, who said that the sight of his left eye had become blurred nine



Fig. 5.—Case 3. — A relative central scotoma for red: with pallor of the inferior temporal quadrant of the optic disc, in which lies the papillo-macular bundle.

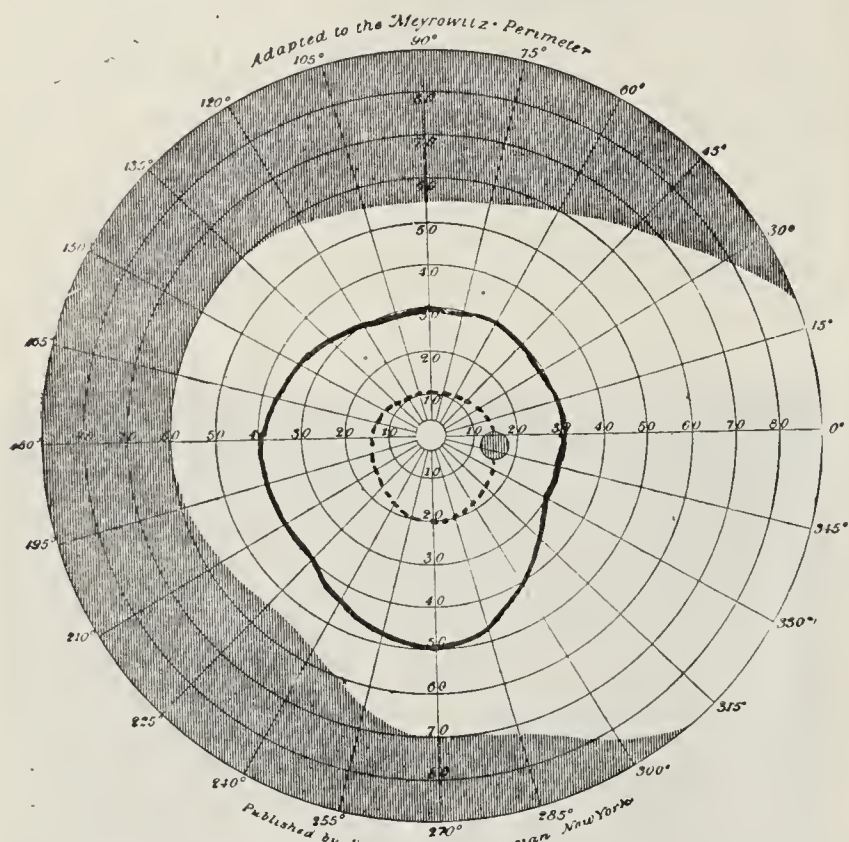


Fig. 4.—Case 2. Diagram of visual field, showing concentric contraction.

soon after the accident and while there have been fluctuations in the sight, no great change has taken place. O. D. = 20/30; O. S. = 20/100. The right optic disc and fields are normal. On the left side there is concentric contraction of the field for white (Fig. 8). In the central portion of the field red is not recognized in the area indicated in the chart by the dots. The disc is slightly pale in its entire extent and the inferior temporal quadrant is still paler. The outline of the disc is blurred and the veins are dilated.

These three hospital cases examined recently give one a fair idea of the changes in the visual fields and in the optic discs likely to be found in multiple sclerosis.

#### C. RETROBULBAR NEURITIS THAT IS PROBABLY AN EARLY SYMPTOM OF MULTIPLE SCLEROSIS.

In the cases described above the optic nerve changes clearly were due to multiple sclerosis. But when visual disturbances, suggestive of multiple sclerosis, are not accompanied by other symptoms of the disease there may be much doubt as to their nature. Furthermore, visual

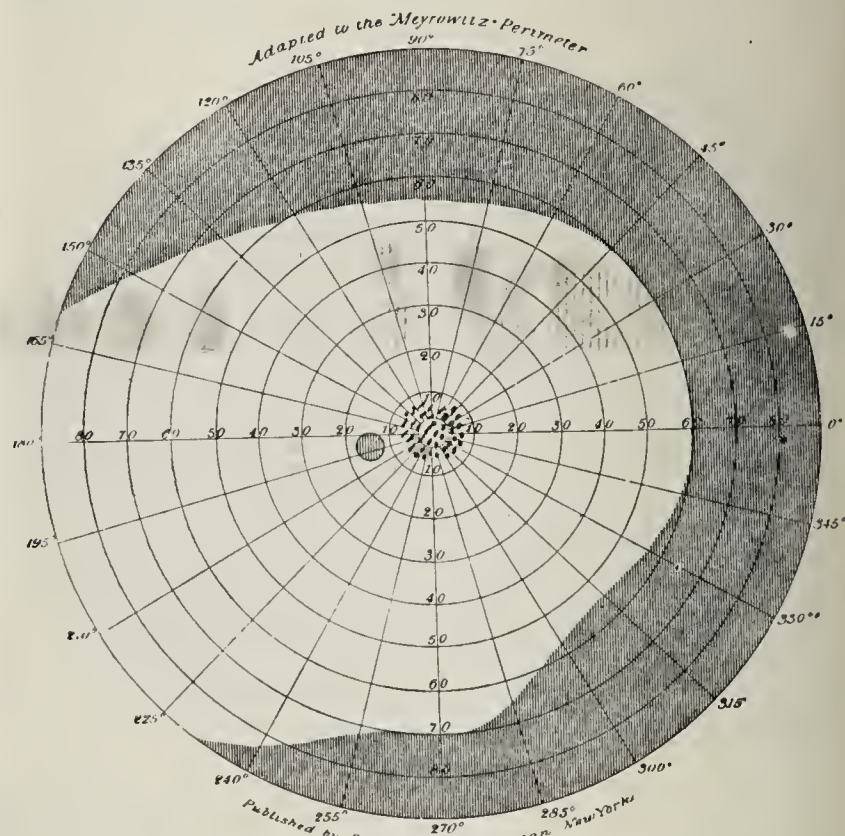


Fig. 6.—Case 3. Visual field. The dotted area represents the relative central scotoma for red.

months before, and that the sight of the right eye had become blurred three months later.

*Examination.*—His vision failed rapidly, at first, then remained stationary, and in the few weeks before I saw him, he had noticed some improvement in the vision of the eye first affected. He could count fingers with either eye at a distance of four feet with excentric fixation. The limits of the



field for white for each eye were normal. Red could be seen faintly in the periphery of the field of the right eye, but not at all in the field of the left eye. There was an absolute, circular, central scotoma for white, about 25 degrees in diameter, in the field of each eye.

The right optic disc was slightly pale in its temporal half. In the left eye, in which the visual disturbance was of longer duration, there was a slight general pallor of the entire optic disc, more marked in its temporal half. The outlines of the discs were well-defined, and the veins were slightly dilated. His vision was better in reduced illumination.

**Other Symptoms.**—An only brother, aged 30, had never had any visual disturbance, hence family retrobulbar neuritis could be excluded. The patient was not under weight, his general health was good, and he complained of no nervous symptoms. Tobacco, alcohol, lead, diabetes, and syphilis could be excluded as causative factors. There were no nasal symptoms. There was a slight tremor of the face and also of the hands, but the latter was not pronounced enough to affect his writing. There was at times a slight nystagmus in extreme lateral directions of the gaze. The knee-jerks were active, but not decidedly exaggerated.

**Course of Disease.**—Examinations by a number of physicians revealed no cause for the retrobulbar neuritis, and various

Stölting found this to be the case in 30 per cent. Marx<sup>2</sup> recently sent for all the patients with retrobulbar neuritis and tobacco-alcohol amblyopia who had been seen in recent years in the Strasburg University eye clinic. Cases of toxic retrobulbar neuritis caused by tobacco, alcohol, lead and the toxemias of pregnancy are diagnosed easily and are placed by themselves. Cases due to syphilis, diabetes and trauma also are diagnosed readily. Among sixteen patients with non-toxic retrobulbar neuritis, whom Marx examined, each at an interval of from three months to seven years after the first observation, six patients were found undoubtedly to have multiple sclerosis, or 38 per cent. In the remaining ten cases he found the most important etiologic factor to be exposure to cold and wet, followed by coryza.

What was the probable cause of the retrobulbar neuritis in these ten cases? It has long been recognized that since the wall of the sphenoidal sinus is, in part, also the wall of the optic foramen, sphenoidal suppuration may lead to blindness. In this country, more than twelve years ago, Dr. C. R. Holmes operated successfully

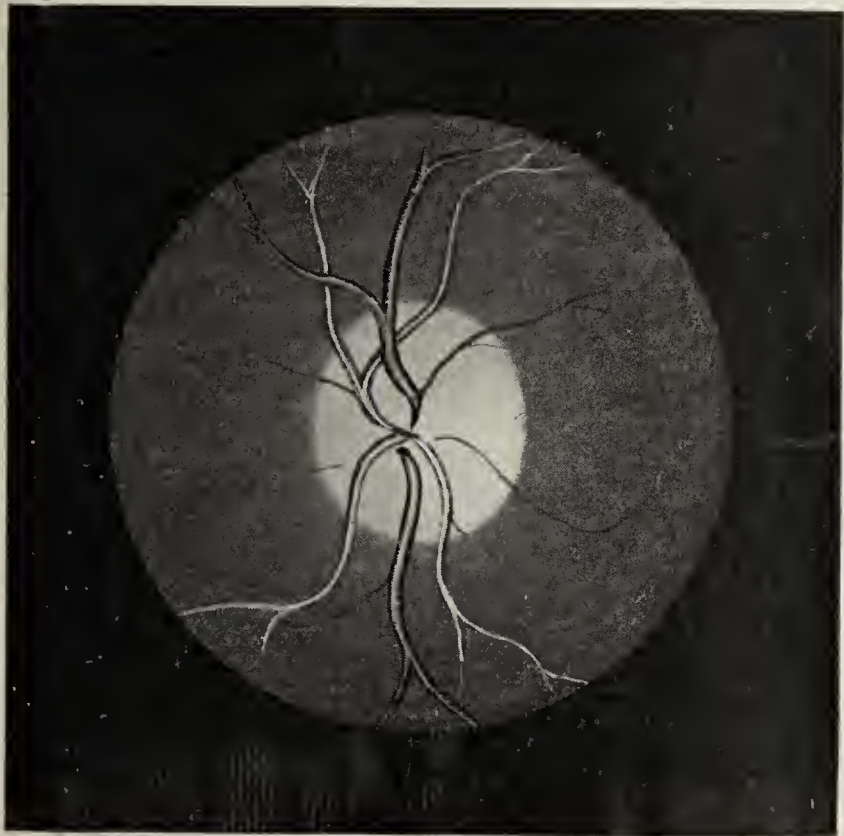


Fig. 7.—Case 4. Concentric contraction of the field for white and for red and also an absolute central scotoma for red. Slight signs of inflammation in the disc and a slight general pallor with more pronounced pallor in the inferior temporal quadrant.

forms of treatment having been of no avail, it was decided to abandon treatment altogether, and the patient went abroad to travel. A few months later, his sight improved so that he was able to read, and he then resumed his occupation. No other symptoms of multiple sclerosis have appeared up to the present time, nearly two and a half years since his vision became impaired.

In this case the optic nerve disturbances, both in character and in course, are characteristic of multiple sclerosis, but up to this time, two and a half years after their onset, no corroborating symptoms have developed. Nevertheless, this case seems to me to be one of multiple sclerosis.

#### D. THE CAUSES OF RETROBULBAR NEURITIS OTHER THAN MULTIPLE SCLEROSIS.

Frank, in Oppenheim's clinic, found that optic-nerve symptoms appeared before other symptoms in 15 per cent. of the cases of multiple sclerosis. Bruns and

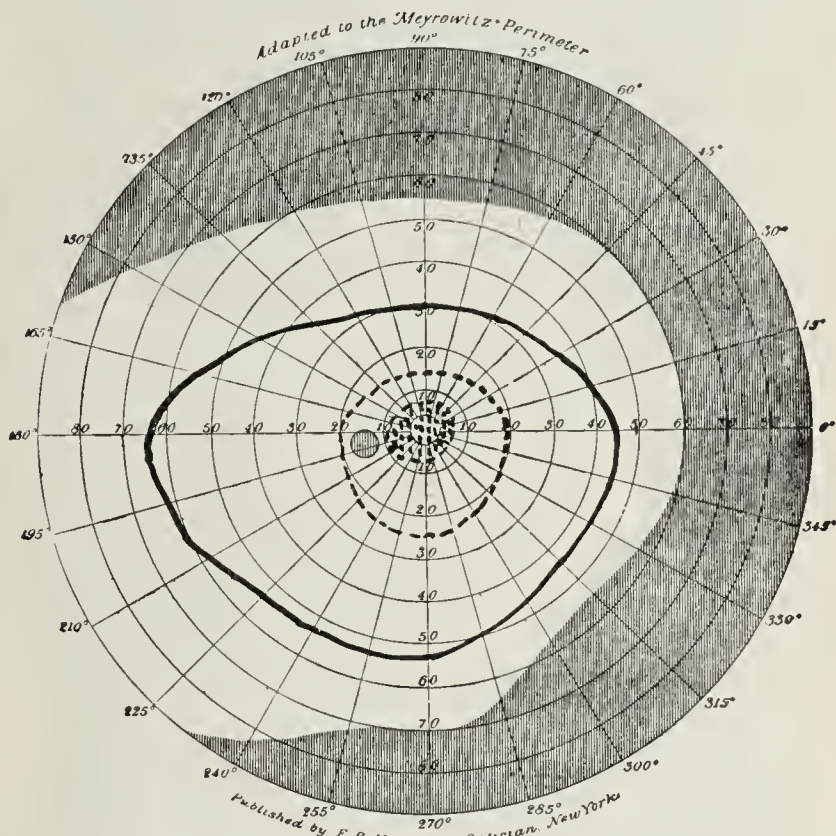


Fig. 8.—Case 4. Concentric contraction of field for white is shown by the heavy unbroken line, and of the field for red, by the broken line. The central dotted area represents the absolute central scotoma for red.

in such a case by opening the ethmoidal and the sphenoidal sinuses and restored the vision of a blind eye. He stated<sup>3</sup> that sphenoidal disease might be the cause in very many instances of obscure cases of retrobulbar neuritis.

Onodi,<sup>4</sup> working for ten years on the relations between the optic nerve and the accessory cavities of the nose, long ago found that frequently the posterior ethmoidal cells are separated from the optic nerve in the optic foramen by the thinnest possible bony wall, and, furthermore, that the distribution of the blood vessels favors an extension of inflammations from the mucous membrane of the ethmoidal cells to the periosteum of the optic foramen. Thus ethmoidal disease may give rise

2. Beitr. z. Progn. d. Neur. retrobulbaris u. d. Intoxications-amblyopia, Arch. f. Augenh., 1907, lix, 1, p. 28.

3. Arch. Ophth., 1896.

4. Der Sehnerv und die Nebenhöhlen der Nase, Hölder, Vienna and Leipzig, 1907.



to an affection of the canalicular portion of the optic nerve, which manifests itself in a central scotoma or perhaps in complete blindness. At first there may be no changes in the disc, or merely inflammatory signs, but later pallor from degeneration of the nerve fibers appears.

Dr. W. C. Posey, two years ago, described vascular changes in the optic disc and surrounding retina in cases of ethmoiditis. And Dr. Arnold Knapp has recently reported a case of retrobulbar neuritis with central scotoma in which, by removing a portion of the middle turbinate and draining the ethmoidal cells, the vision was restored to normal. He believes that the common cases of retrobulbar neuritis following influenza are of ethmoidal origin. An illustrative case is the following:

**CASE 6.**—Three months ago I saw a woman, aged 30, who, two years before, had noticed a sudden diminution of vision in the left eye, which passed off in the course of a few weeks. When I first saw her there had been a rather sudden complete loss of sight in the left eye two weeks before, and this eye had no perception of light. The pupillary reaction to light also was lost. Medicinal treatment had not improved her condition. The optic disc was swollen, and the retinal veins were dilated and tortuous.

**Examination and Treatment.**—In the right eye, acuteness of vision and the field of vision were normal, hence the lesion on the left side lay anterior to the chiasma. Since nothing could be discovered in the orbit to account for the complete blindness, a diagnosis of disturbance in the canalicular portion of the nerve was made. Examination of the nose revealed an abnormal middle turbinate on each side. A portion of the middle turbinate on the left side was removed by a rhinologist, so that drainage of the ethmoidal cells was established, and vision in the periphery of the field at once returned. The large central scotoma gradually became narrower, and three weeks after the operation vision in the left eye was 20/20, with a normal field.

**Course of Disease.**—A few days later vision in the right eye sank to 20/70, with a central scotoma and normal peripheral limits of the fields. The middle turbinate on this side showed more evidence of disease than the other had shown, and removal of a portion of it was followed by restoration of normal vision in the right eye in a few days.

As stated above, Marx reported sixteen cases of non-toxic retrobulbar neuritis, and six of these patients were found later to have multiple sclerosis. Most of the remaining patients gave each a history of coryza preceding the diminution of vision. Is one not justified, therefore, in assuming that some of these ten cases of retrobulbar neuritis were of ethmoidal or sphenoidal origin?

Non-toxic retrobulbar neuritis has long been a mysterious disease, but it would seem now that a little more study might rob it of much of its mystery and teach us that although syphilis, diabetes, neoplasms, injuries and the like may be causes, non-toxic retrobulbar optic neuritis, in the majority of cases, if it does not mean disease of the accessory sinuses of the nose, means multiple sclerosis.

#### RECAPITULATION.

Disturbances of vision are found in about half of the cases of multiple sclerosis. Usually the dimness of vision is noticed early in the course of the disease, and it may come on long before any other symptoms have attracted attention.

More than half of the patients with multiple sclerosis who complain of failing sight have central scotoma in the field of vision, and the ophthalmologic diagnosis of their condition is retrobulbar neuritis. Toxic cases of retrobulbar neuritis, due to poisoning with tobacco,

alcohol, lead, and the toxins arising in pregnancy are readily recognized and diagnosed as toxic. The causation of non-toxic retrobulbar neuritis, however, has often been obscure. We have learned recently that many of these cases are due to sphenoidal and particularly to ethmoidal disease, which involves the optic nerve in the optic foramen.

In my opinion, we shall soon come to the belief that a non-toxic retrobulbar neuritis, if not due to a sinusitis or directly to syphilis, diabetes, a neoplasm, or trauma is, as a rule, a manifestation of multiple sclerosis, although no other symptoms of the disease may be present.

#### DISCUSSION.

**DR. D. R. BROWER, Chicago:** There is probably no disease of the nervous system in which mistakes are so frequently made as in the multiple sclerosis. A few years ago there was in the Presbyterian Hospital of this city, a woman at the menopause. She had a coincidence of cerebral and spinal symptoms. She had intention tremor, disturbance of speech, spasticity of lower extremities, slight ataxia, exaggerated reflexes and disturbance of bladder. The physician in charge of the case sent the patient to her home in Iowa with the diagnosis of multiple sclerosis and the usual prognosis. The so-called Christian Science was becoming active in her town. She became interested in it and in a few days was cured. From that day she has been a most ardent propagator of the cult—a case of hysteria mistaken for multiple sclerosis. I do not think that sufficient attention was paid to the eye in this case. The concentric limitation of the field of vision in hysteria is quite different from the central scotomata or irregular contractions of the field of vision in multiple sclerosis. I believe that, if an ophthalmologist had been called in consultation, the error in diagnosis might not have been made. Nystagmus is a valuable eye symptom, especially that form developed by forced movements. Disturbances in the innervation of the muscles of the eye are also valuable aids to diagnosis. The various eye symptoms may take place very early, so that the majority of cases demand the combined action of the two specialties in the beginning to make diagnosis certain.

**DR. PETER BASSOE, Chicago** (exhibiting Weigert-Pal specimens of horizontal sections through the optic chiasm of a case, material from which he had received from Dr. J. D. Madison, Milwaukee): I call attention to the great extent of degeneration in the optic nerve, normal fibers being found at the periphery only. The patient died at the age of 24 and had been ill for four years with all the cardinal symptoms and marked optic atrophy.

### Clinical Notes

#### A CASE OF MULTIPLE ARTHRITIS DEFORMANS.

ERNEST H. MUSE, M.D.  
ROANOKE, VA.

The following is a rare and interesting case of multiple arthritis deformans. There are few such typical cases of this disease on record, and the marked deformity makes this case doubly interesting, as death usually claims such victims before this advanced stage has been reached.

**Patient.**—A mulatto boy, aged 19. He was born in Boteourt County, Virginia, in 1889; and moved to Roanoke in 1893, where he has since resided.

**History.**—He went to school in his early childhood, and was apparently in as good health as any boy of his age. During the twelfth and thirteenth years of his life he was delivery boy at a meat stall at the city market, and during these two years he was exposed to a great deal of bad weather. In the



fall of his thirteenth year he suffered slight pains in various parts of his body; especially in the joints of the extremities. These pains his physician pronounced of a rheumatic character. They grew worse at times, and then would subside entirely, only to return again at a later date; and on their return they were more severe than during the preceding attack. The pains gradually grew worse, and later a thick bloody serum began to accumulate about the knees, along with a low grade of inflammation. The disease has gradually advanced until the present condition has been reached. About three years ago both of his knees contained an edematous fluid, which pained him considerably. His attending physician aspirated and drew off a quantity of bloody serum. This sufficed to relieve the pain for a short time only; the serum re-accumulating. Another physician was called and he made incisions into the joints, and inserted rubber drainage tubes. Since this the patient has never walked. Contractions of the tendons and muscles soon left him in the condition which he now presents. The knee joints do not seem to be completely ankylosed; but the impaired mobility seems to be due to the contractions of the tendons and muscles, and to the enlargements of the ends of the bones which go to make up these joints. Some two years ago vision in the left eye began to fail, and this gradually grew more marked, until about eight months ago it became totally blind.

*Examination.*—There is marked ptosis of the left eyelid, which droops so much that it almost covers the pupil. There is only about half normal vision in the right eye. This eye is also gradually growing worse, and will eventually, if the patient lives long enough, become totally blind. The external ocular muscles of the eyes have contracted and caused diverging strabismus. Torticollis has also developed during the progress of the disease, the contraction of the sternocleidomastoid being well-marked. There are well-marked enlargements of the articular ends of the phalangeal bones; atrophy of the muscles, and binding of the skin to the bones between these joints. There are exceptionally well-marked nodules on the left hand. The disease as a whole seems to have affected the left side more than it has the right; especially the eye, hand, knee and foot. The thumb nail on the right hand dropped off about three weeks ago. The thumb nail of the left hand is loosening. The osseous tissue of the elbows and shoulders are enlarged somewhat similar to the condition of the knees, the elbows being much larger than the shoulders. I tried to get a photograph of the naked subject, but he would not submit to it. The muscles between the hips and knees, as well as those between the knees and ankles are much atrophied; in fact they have wasted almost entirely away. The arteries and veins between the hips and ankles are very prominent, and apparently are in their normal condition. The pulsation of the arteries can be felt at almost any point between these joints. Feet: The marked enlargement of the feet is one of the most interesting features of this case. The left foot weighs 12¼ pounds. This enormous weight is principally due to the edematous condition, but the osseous enlargement adds materially. The foot has turned outward and backward to an angle of 78 degrees. The right foot is at about a right angle. Almost all the toe nails on the left foot have come off, and the others are loosening, and will eventually be exfoliated. The splotches on the left foot indicate a dry form of gangrene. The skin is broken in several places, presenting exudating ulcers. The right foot is considerably enlarged, weighing seven pounds. There are no gangrenous or ulcerated areas on this foot, the skin being intact; but there is considerable edema. The nail on the great toe of this foot has been shed, and the others are loosening.

*Other Points of Interest.*—There are several interesting peculiarities about this case which are well worth emphasizing. At the time of the beginning of this disease this boy was very much darker than the average negro, in fact he was almost black. The pigmentation has made some mysterious disappearance, and he is now almost white, with the exception of about half of the right foot. His hair, before the disease started, had the characteristic nappy appearance which so distinctly marks his race. Now it is straight and black, and resembles greatly the hair of the Indian. The viscera seem

to be very little affected. The heart has a very rapid, quick pulsation, the rate per minute reaching 120 on first count and 115 on second. I could not locate any valvular lesions. The lungs are in good condition. The patient breathes freely while in a quiet attitude, but on exerting himself in talking over a considerable length of time he will take a long deep breath, and show other signs of fatigue. He has a good appetite, eating almost anything put on the family table, and assimilating his food as well as could be expected under such sedentary conditions. He keeps his bed most of the time, but gets up once or twice during the day and sits in a chair, but he has to have assistance in getting in and out of bed.

The functions of the liver and kidneys are well preserved,



the bowels moving regularly, without the aid of drugs. The urine is normal in quality and quantity, and is passed with ease and painlessly.

The patient has been treated by eight or ten of the best physicians of the city prior to coming under my care, which was about four months ago. There is practically nothing that can be done for him in his present condition that I know of in the way of a curative treatment. I am meeting the symptoms as they arise and relieving them as best I can. The principal treatment that he is getting at present is an occasional anodyne to relieve pain, which is principally in his left foot, and



the syrup of iodid of iron as a systemic tonic. He seems to be holding on with remarkable tenacity under this treatment, there being but very little change in his condition since I first saw him.

## A BODY ELEVATOR AND SUPPORT FOR OPERATIONS ON THE ABDOMEN AND TRUNK.

GEORGE W. HAWLEY, M.D.

SEATTLE, WASH.

As operative surgery has extended its attack on one organ after another within the body, and operative procedures have become more pretentious and finished,

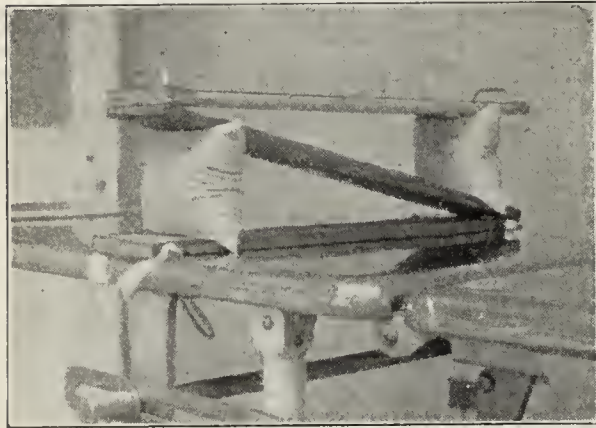


Figure 1.

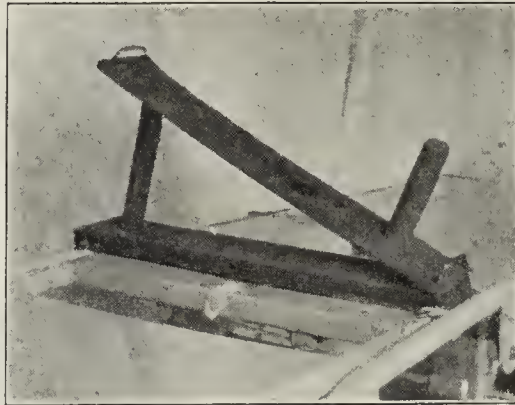


Figure 2.

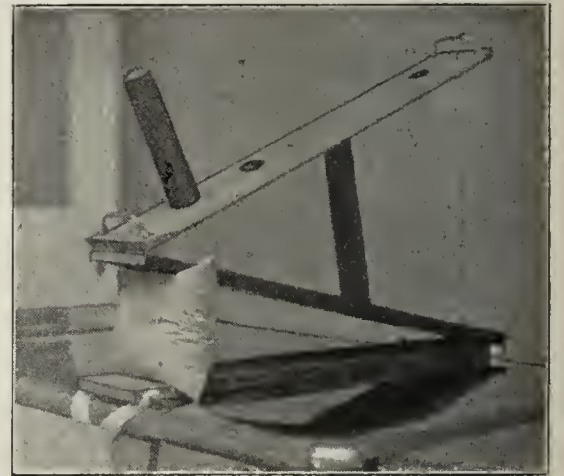


Figure 3.

Fig. 1.—Showing elevation of both ends of the bar equally, as obtained by the Lillenthal elevator. Used to raise the upper abdomen in operations on the gall bladder, stomach, etc., to support the lumbar region in operations on the kidneys and to raise the hips in applying abdominal binder, hip spica, and cleansing the patient after operation. Small sand bags are shown bracing the ends.

Fig. 2.—Shows elevation of one end only (right) with pin in opposite end to prevent the patient from sliding. Pads can be placed over the pin to soften the pressure.

Fig. 3.—Unequal elevation of both ends with pin in the down side. This is about the position and elevation obtained with Cunningham's kidney table.

there has arisen the necessity for exposing the various operative fields to better advantage.

To obtain exposure of any operative field it is customary and natural to raise and support different parts of the body in order that the different structures to be treated may be brought to prominent view and adjacent interfering ones induced to recede out of the way. The time-honored sandbag has long been used for this pur-



Fig. 4.—Elevation of the right side showing exposure and slant of the abdomen. In this position the intestines gravitate to the left side, and the right half of the abdomen is brought up into excellent position for the surgeon as he stands at the left of the table.

pose, but a few substitutes have been taking its place, notably, Edebohl's air cushion, Cunningham's kidney support, and the Lillenthal body elevator attachment on the new Baldwin, Lillenthal, and Markoe operating tables.

Many difficulties are often found in lifting and bracing a patient's limp body on the operating table. Sandbags and cushions frequently fail to maintain the

position desired and patients often roll or slip out of position. Cushions, as well as all stationary supports, require attendants to raise the patient while being put in place and provide no ready means of changing the degree of elevation when once in place. The Lillenthal body elevator is a great improvement in many respects, in that the patient's body can be raised or lowered at will without touching the patient, and the position obtained is secure. Its only disadvantages are that it is usually made a stationary part of a table and can not be moved from one part of a table to another or fitted to other tables. Also, it provides only for horizontal elevation.

Herewith is presented a simple contrivance which can be attached to any operating table and to any part of it. By it elevation of the body from the hips to the shoulders can be obtained, of one side only, of one side more than the other, or both sides equally. As with Lillenthal's elevator, elevation is produced by a thin flat bar placed transversely across the table. By raising and supporting one end of the bar, elevation of the right or left side of a patient's body can be had. By lifting both ends of the bar equally, or one more than the other, both sides are elevated alike, or one more than the other.

The elevation of one side of the body more than the other introduces positions which possess features distinctly advantageous, though but little used and difficult to obtain. In operations on one kidney this has been recognized. In abdominal operations raising one side of the body induces the intestines to gravitate away from that side, in the same way that the Trendelenburg posture induces gravitation away from the pelvis, and the Hartley position away from the upper abdomen. Ordinarily, with the patient flat on the table the operator is required to stoop over the table in order to see the structures directly beneath his incision. For this reason he usually stands on that side of the patient in which he is to make his incision. If, however, he stands on one side of the patient and elevates the opposite side the surface of the abdomen is inclined in the same manner in which one holds a book, the opposite half of the abdomen is brought toward him and into prominent view, the deeper parts are tilted and come into more direct line with his vision, and the necessity and danger of suspending his head over the wound is lessened.



The apparatus here pictured consists of three strips of stout oak three-eighths of an inch thick by four inches wide, with beveled edges and joined by two strong hinges, as shown in the accompanying cuts. The top strip or bar is supplied with a handle at each end, to facilitate lifting the patient. The lower bar is made fast to the table by strong linen straps which pass beneath it. When the ends of the bar are raised they are held in place by sandbags of different sizes or solid supports. A wooden pin pressed firmly into holes at either end of the upper bar prevents the patient from sliding when one end is raised above the other.

The contrivance here described is only a crude model. One made of three strips of rigid metal with polished surface and disjointable hinges would be more suitable. It would be simple to supply the ends with one of the common forms of ratchet with or without crank to raise and brace the ends, but the simpler any apparatus the better, and sandbags or braces which fit into notches are sufficient for all purposes.

In using this body elevator it is first securely fastened to the table and placed at the desired level. After the patient is on the table and anesthetized it is seen that his body lies on the elevator at the point to be raised. One or both ends are then lifted by the handles to the proper height and braced. Both ends can be elevated simultaneously by two attendants, or one side at a time by one person. After the patient is raised pillows are tucked under the body in order to distribute the weight and relieve the pressure of the bar. The degree of elevation can be altered at any time by raising one or both ends, and the field can be changed by lowering the bar and patient flat on the table, moving the patient, and again raising the support.

At first sight this elevator may seem to have several bad features. It might appear difficult to securely fasten it to the table. On the contrary, it is practically immovable. It has a tendency to topple over, but only when the attempt is made to pull the patient up or down on the table very far, after the support has been raised. From the photograph one might suppose that the end of the elevating bar might be in the way of the operator or assistant in certain positions. It has not proved so.

**Phlebitis and Embolism After Laparotomies.**—F. Jayle reports four cases of embolism in patients without the least edema whose convalescence was apparently progressing favorably. They succumbed suddenly the third, fifth, sixth and fourteenth days respectively. In each case the heart was fat and flabby, the venous system hypertrophied, the arterial tension low. Jayle's impression is that extreme dread of the operation predisposes to postoperative phlebitis, as also sluggish bowel functioning. When a patient comes to him from South America or from the French colonies—great meat-eating countries—he insists on a preliminary course of treatment of the digestive organs for several days or weeks before attempting an operation. The lesions most frequently followed by phlebitis are fibromas, especially those in the ligaments which press on the veins in the pelvis. The dorsal decubitus also favors phlebitis. He advocates operating on the predisposed in a position approximating the upright and on a very low table. The phlebitis made no sign in the fatal cases reported. When there are distinct symptoms of phlebitis he always feels reassured, as he has never known a case of fatal embolism with well-developed phlegmasia, and others report the same experience. The blood pressure should not be allowed to fall after the operation, and the patient should be allowed to sit up early. His communication is published in the bulletin of the Internes Society, Paris, April, 1908.

## ABSCESS OF UTERUS: HYSTERECTOMY; RECOVERY.

GASTON TORRANCE, M.D.

Surgeon to St. Vincent's and The Hillman Hospitals.  
BIRMINGHAM, ALA.

Salva Mersade<sup>1</sup> reports 41 cases of uterine abscess. Of these 22 were from puerperal infection; gonorrhea was the next most frequent cause; five cases were of tuberculous origin. He advises that laparotomy be done in all cases instead of attempting to open the abscess through the vagina. When the abscess is well isolated and the patient young, incising, curetting the cavity and drainage may be practiced. Total hysterectomy will probably be indicated in a majority of cases.

The following is the history of my case which was operated on four years ago:

*History.*—Mrs. R., age 31, of German parentage; family history negative; menstruation began at 13 years of age, was always regular and normal. She was married at 25; her first child was born fourteen months later; she had a normal labor, but has not been well since then; has had pain in back and in both ovarian regions, with considerable leucorrhea. Another pregnancy occurred two years later. This was also practically a normal labor, but since then her suffering has



Abscess of uterus. A probe is passed through the uterine canal and a glass rod is placed transversely in the mouth of the abscess cavity.

been very much greater, and she has scarcely been able to attend to household duties.

*Examination.*—Vaginal examination shows a retroverted uterus, bound down by strong adhesions, considerable enlargement of both tubes, more marked on the right side; the pain has been much more severe on this side. Very tender on palpation.

*Operation.*—Under ether a median incision was made and the appendix and right tube and ovary were removed, the adhesions were broken up and what I supposed to be a deep-seated fibroid was found on the fundus, about half way between the right tubal junction and the mid-line. An incision was made to remove the supposed fibroid and opened up an abscess down in the uterine wall, containing about half an ounce of thin yellowish pus, probably of gonorrheal origin. Unfortunately this was thrown out without being examined bacteriologically. I did a supra-vaginal hysterectomy, closing the abdomen without drainage. She made an uncomplicated recovery, and left the hospital in two weeks, and is now in perfect health.

1. Les Absces d l'Uterus, Ann. de Gyn. et d'Obst., January, 1907; also, Surg. Gyn. and Obst., iv, p. 381.



AN EXTRAORDINARY CASE OF HYDRO-  
CEPHALUS.

MILLARD KNOWLTON, M.D.

TERRE HAUTE, IND.

The following case is of interest because of the unusual size of the head. I first saw the patient about nine months ago and again April 23, 1908, while visiting near Kokomo, Ind.

*History.*—The patient, a female child, was born July 24, 1906, and weighed five pounds at birth. It was the first child of its parents. The mother and father both came of large and healthy families. The mother was slender, weighed about 114 pounds, and was 19 years old when the child was born. The birth was natural, though the mother stated that she was in labor two days and one night. The mother first noticed that the baby's head was somewhat large when it was about two months old, but others had noticed that it was not exactly



Fig. 1.—Case of hydrocephalus, showing the distended veins, elevated eyebrows and clenched fists.



Fig. 2.—Tape-measure held over patient's head to give an idea of proportionate size.

normal at birth. The head has steadily and rapidly increased in size.

*Examination.*—The head measured forty inches in circumference and twenty-nine inches from ear to ear over the crown. Distance from bridge of nose to edge of hair, eight inches. Pulse 140, respirations 40. There were tonic contractions of the muscles, giving rise to clenched fists, drawn limbs, etc. The mother claimed that this condition had prevailed during the entire life of the child. There were thirteen teeth erupted and the mouth apparently was sore. There was considerable deformity of the thorax, the anteroposterior diameter being greatly increased. There was little if any mentality.

The mother of the child has recently (about May 1) given birth to another child, which seems normal in every respect.

## LICHEN PLANUS ANNULARIS.

JEROME KINGSBURY, M.D.

NEW YORK.

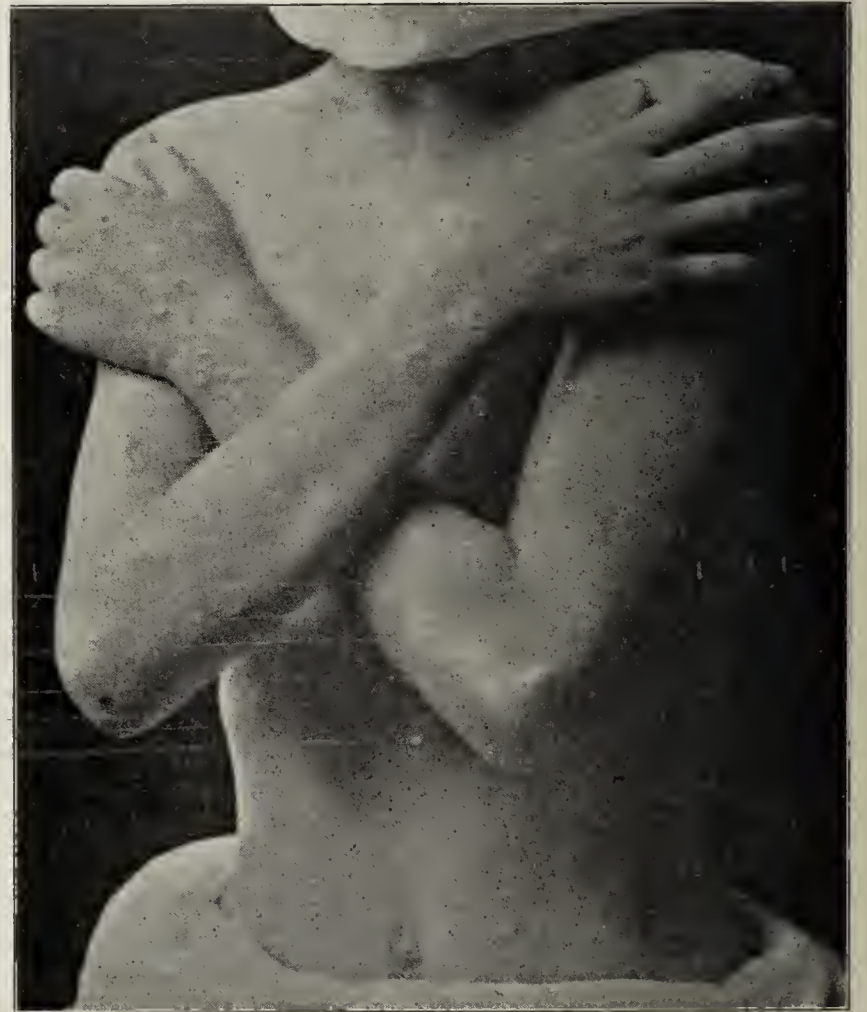
This case was presented at a clinical session of the Sixth International Dermatological Congress held at the Academy of Medicine, New York, Sept. 12, 1907:

*Patient.*—L. S., aged 9, schoolgirl, was born in this country, but of Russian parentage. She is anemic and poorly developed. Her mother states that the child's health has always been good but that she is extremely nervous and is easily fatigued.

*Family History.*—Father has had psoriasis for the past fifteen years and now presents typical lesions. Otherwise the family history seems negative.

*History of Eruption.*—The first lesion was noticed on the right arm eight weeks ago. It was then about an inch in diameter and at first was thought by the mother to be a ringworm. Soon other lesions appeared on the forearms and a little later on the chest, abdomen and legs. There is said to have been but little pruritus at any time.

*Description of Eruption.*—The annular lesions vary in diameter from half an inch to an inch and a half. The smaller



Lesion in case of lichen planus annularis.

ones are hard and present a firm border with central depression. The larger ones are on the arms and abdomen and in places show a fine grayish scaling. There are numerous discrete papules on the forearms and trunk. These have all the characteristics of the early lesions of lichen planus. White patches are to be found on the oral and vaginal mucosa.

The accompanying illustration gives a good idea of the distribution of the eruption, but fails to show the dermatologic beauty of the individual lesions.

39 West Thirty-Ninth Street.

*Position of Head in Anesthesia.*—Alexander Blain, of Detroit, in the *New York Medical Journal*, May 9, states that the idea that the patient's head should be lowered is erroneous. As a rule, he asserts, the patient's head should be raised on a pillow. This is contrary to the teaching of most text-books, but patients invariably do better by this method.



## Therapeutics

### Jalap.

Jalap is the dried, tuberous root of a climbing vine which grows on the eastern slope of the Mexican Andes, and is also cultivated in India. It is named after Jalapa, or Xalapa, a city of Mexico. It has a slight smoky odor, and a sweetish and mildly acrid taste. The root yields about 8 per cent. of a resin which consists of jalapin and a glucoside, convolvulin, or jalapurgin.

The purgative action of jalap seems to be induced by the action of the bile, hence it begins its activity in the duodenum. It causes congestion of the mucous membrane of the intestines, probably increases the secretion of the intestinal glands, peristalsis is increased, and profuse, watery discharges are the result. There is often pain, and sometimes griping and vomiting. It seems to be less of an irritant than gamboge, podophyllum or scammony, but excessive doses will produce continuous purging. It causes a movement of the bowels in from three to four hours. It does not cause congestion of the pelvic organs or of the rectum, and is perhaps the mildest of the resinous cathartics. As it can not be detected in the urine, it is probably not absorbed, and as it is difficult to detect it in the stools, it is evident that it is partly or completely oxidized.

Jalap is a very useful cathartic, especially when it is desired to cause absorption of effusions. It is especially indicated for this purpose in ascites and in general anasarca, whether from cardiac insufficiency, renal disease or cirrhosis of the liver. It is also indicated when the brain is to be relieved of a too high blood pressure, or when there is congestion of the brain, in meningitis. It is valuable in hypertension, and is especially useful when there is venous engorgement from failure of the heart in dilatation in valvular disease, or in failure of the right side of the heart from emphysema. When any of these indications are to be met by the use of jalap it should be remembered that the intake of liquids should be restricted, that the profuse watery discharges may so deplete the blood as to cause it to resorb the water that it finds in the tissues or exudates in cases of dropsy, and in cases of venous engorgement from cardiac insufficiency, that it may relieve the heart of excess of fluid so that the hypostatic congestion may be relieved.

Jalap is also often the drug selected to increase the excretion of toxins by the intestines in renal insufficiency and when uremia is present or impending. In this instance, if dropsy is not present, considerable water may perhaps be taken to aid the dilution of the toxins in the blood and to promote the excretion by the skin as well as to increase the watery evacuations by the intestines. In other words, jalap, in three or four hours produces watery stools, causing considerable excretion of toxins from the blood, does not cause much irritation of the intestines, and if the dose is not too frequent, causes but little prostration. Its taste is not unpleasant, and, therefore, it rarely disturbs the stomach, and for this reason is often selected as a purgative in connection with anthelmintics when such are needed to remove intestinal worms in children.

The preparation of jalap most frequently used is:

**PULVIS JALAPÆ COMPOSITUS**, U. S. P., the compound powder of jalap, which contains 35 per cent. of jalap and 65 per cent. of potassium bitartrate (cream of tartar). The adult dose is 2 grams (30 grains). This may be repeated in five hours if there are no results. When necessary, this preparation may be given every morning for several days without causing prostration or intestinal irritation.

**RESINA JALAPÆ**, U. S. P., the resin of jalap, occurs in yellowish-brown masses or fragments, the fresh fracture appearing glossy and semitranslucent at the edges. When pulverized it is a yellowish-gray or yellowish-brown powder. It has a slight smoky odor and a somewhat acrid taste. The dose is 0.10 gram (2 grains). This preparation is an ingredient of the compound cathartic pill and of the vegetable cathartic pill, each of which contains 0.02 gram of this resin.

The National Formulary recognizes three preparations of jalap, viz.:

**FLUIDEXTRACTUM JALAPÆ**, dose 1 c.c., or 15 minims.

**TINCTURA JALAPÆ** (20 grams of jalap in 100 c.c.), dose 5 c.c. (1 fluidram, a teaspoonful).

**TINCTURA JALAPÆ COMPOSITA** contains in each 4 c.c. (1 fluidram) 0.50 gram ( $7\frac{1}{2}$  grains) of jalap and 0.13 gram (2 grains) of scammony. The dose is a teaspoonful.

These tinctures or alcoholic extracts of jalap do not quite represent the whole activities of the drug, as part of the activities are extracted only by water. The alcoholic extracts are said to be more griping than the aqueous extracts.

℞.  
Pulveris jalapæ compositi..... gm. 10 | or 3iiss  
Fac chartulas 5.

Sig.: One powder, with water, and repeated in five hours, if needed.

Or:  
℞.  
Pulveris jalapæ compositi..... gm. 5 | or gr. lxxv  
Hydrargyri chloridi mitis..... 1 | gr. xv  
M. et fac chartulas 5.

Sig.: One powder, with water, and repeated in five hours, if needed.

Or:  
℞.  
Pulveris jalapæ compositi..... gm. 10 | or 3iiss  
Potassii et sodii tartratis..... 50 | 3ii  
M. et fac chartulas 10.

Sig.: A powder, with water, daily, before breakfast.

### Pulmonary Hemorrhage.

The question of the proper treatment of this condition or emergency constantly recurs and it seems to be necessary to reiterate the advice that the blood pressure should not be raised by such drugs as ergot, digitalis, etc., with the idea of stopping the bleeding. All hemorrhage from the lungs, unless it is from an aneurism, tends to stop, but the proper treatment for the condition is to lower the blood pressure with nitrites.

At a recent meeting of the American Therapeutic Society, in Philadelphia (May 7-9, 1908), Dr. Lawrence F. Flick, Philadelphia, stated in a paper which he read on the treatment of tuberculosis that whenever he found a pulmonary second sound accentuated or increased in force he put the patient immediately on nitroglycerin, and in this way he believed he minimized the danger and frequency of hemorrhages.

Dr. Albert P. Francine, in the *Pennsylvania Medical Journal*, January, 1908, very ably discusses the treatment of hemoptysis. He uses the official spiritus glycerylis nitratis in one-minim doses immediately on the occurrence of pulmonary hemorrhage, and repeats the dose at two-hour intervals, or oftener in severe cases, and in severe hemorrhage has given a minim (two drops) every half-hour for four or five doses. If the hemorrhage is alarming and the patient is nervous, he administers  $\frac{1}{4}$  grain of morphin with  $\frac{1}{150}$  grain of atropin, hypodermatically. It is often advisable to use morphin to quiet the patient's nervousness in pulmonary hemorrhage, but  $\frac{1}{8}$  grain, or one-half the above, is almost invariably sufficient. If this small dose is administered atropin is then not needed to stimulate the respiratory center or to prevent the overaction of the morphin, and, as it is a vasoconstrictor, it is best not to administer it.

Francine lays down the usual rules for the immediate treatment of this condition, viz., absolute rest, flat on the back with one or two pillows as the patient prefers. Talking must be forbidden. No warm drinks, alcoholic or otherwise, are allowed, and no solid food is permitted. Cracked ice in small amounts may be given to dissolve in the mouth, and perhaps a light weight, flat icebag may be put over the heart to quiet its overaction. Similar icebags may be placed over the site of the bleeding, if deemed advisable. Strapping the chest on the affected side and limiting its mobility is sometimes of service, and Francine speaks of the occasional necessity of bandaging the extremities so as to retain the blood in them until the hemorrhage ceases. If this is done the bandages should be loosened gradually and not all at once, so that too much blood will not be thrown into the lungs at one time.

It is probably rarely advisable in pulmonary hemorrhage to



do transfusion with blood, salt solution, or any other solution, or even to do hypodermoclysis.

Francine thinks that after the arrest of the hemorrhage the patient should be kept in bed at least ten days. This, of course, depends on the amount of the hemorrhage and its cause.

Francine advises the usual treatment to prevent hemorrhage, viz., the administration of calcium chlorid or lactate, and the feeding of gelatin, as a jelly. He cautions against using large doses of calcium chlorid too long, as it tends, in large doses, to interfere with the coagulation of the blood. This caution was concurred in by Dr. Meyer Solis-Cohen, of Philadelphia, in discussing Francine's paper; he stated that Dr. A. E. Wright, of London, has shown that when large doses of calcium chlorid are given for some period, the coagulation of the blood is interfered with. Therefore, after two or three days of the ordinary dose of calcium chlorid, it is well to suspend its administration.

R. gm. or c.c.  
Calcii chloridi ..... 5 | gr. lxx  
Acaciae granulatae ..... 15 | or 3iii  
Aqua cinnamomi ..... 100 | 3iii  
M. et Sig.: A teaspoonful, in plenty of water, every three hours.

Calcium chlorid, in spite of the mucilage, is irritant to the stomach and sooner or later causes considerable irritation, consequently the following tasteless preparation is the better:

R. gm.  
Calcii lactatis ..... 6 | or 3iss  
Fac chartulas 20.

Sig.: One powder, with water, every three hours.

#### Colocynth.

Colocynthis, U. S. P. (genitive, colocynthis), is the peeled, dried fruit of a climbing vine which grows in the Eastern Hemisphere. It is also called bitter apple, or bitter cucumber, as the fruit resembles a small orange or gourd. The part of the fruit used for medicinal preparations is the pulp, the seeds of the fruit being discarded. The pulp contains about 0.6 per cent. of an amorphous glucoside, colocynthin, which is the active principle. The taste of colocynth is bitter, and its active principle is soluble in water and alcohol.

In small doses it increases the flow of saliva, and may act as a stomachic, but in larger doses it is irritant to mucous membranes and may cause vomiting. It increases the intestinal secretions and stimulates peristalsis, causing copious watery movements, and if the dose is large it causes severe colic. A large dose may cause gastroenteritis, with bloody stools, and by its irritation may indirectly cause abortion, as may the other irritant cathartics. It may act as an hepatic stimulant, and has been said to have slight diuretic action, showing that some of it may be absorbed.

This drug is rarely prescribed alone on account of its irritant properties, it being better to use a small dose of it combined with other cathartics than a large dose. Colocynth in such small doses has long been used in habitual obstinate constipation, and perhaps most frequently as the compound extract. It should be avoided in all conditions of gastrointestinal inflammation, peritoneal inflammations, and in pregnancy.

There is probably no real good reason for the administration of colocynth. As previously stated in this discussion of cathartic drugs, when an active purge is needed drugs other than the drastic cathartics are better and safer. In chronic constipation even small doses of the irritant cathartics tend to make the condition worse; they are certainly not curative. If vegetable cathartics are desired to produce large watery stools, jalap or elaterium are the best drugs to use.

The dose of colocynth is 0.065 gram (1 grain).

The official preparations are:

EXTRACTUM COLOCYNTHIDIS, extract of colocynth. Dose. 0.03 gram ( $\frac{1}{2}$  grain).

EXTRACTUM COLOCYNTHIDIS COMPOSITUM, compound extract of colocynth. This is composed of 16 per cent. of extract of colocynth, 50 per cent. of purified aloes, 6 per cent. of cardamom, 14 per cent. of resin of scammony and 14 per cent. of soap. The dose is 0.50 gram ( $7\frac{1}{2}$  grains). This preparation is an ingredient of the compound cathartic pill, and of the com-

pound vegetable pill. Colocynth is also an ingredient of several National Formulary pills.

#### Cardiospasm.

This is a name applied to a spasmodic contraction of the cardiac extremity of the stomach, and is, perhaps, a more frequently undiagnosed condition than has been thought.

Dr. Charles A. Wingerter, of Wheeling, W. Va., in the *West Virginia Medical Journal*, December, 1907, describes this condition. It occurs in "two forms: as a transitory paroxysmal affection lasting a few hours or even a couple of days, or as a chronic condition which may extend over a number of years." The acute cramp is short and painful, and is difficult to diagnose. The chronic type of cardiospasm is a more serious affection, as it interferes with the general nutrition of the patient and soon makes him an invalid.

Wingerter lays stress on the order of the symptoms as diagnostic, viz., early spasmodic pain, later regurgitation, and still later, retention of food a greater length of time after the meal before the regurgitation takes place. The pain comes on suddenly, and often radiates to the back or neck. In the intervals the patient is apparently well. After some weeks this spasm of the cardia causes a dilatation of the lower end of the esophagus. From this time on the pain, distress and regurgitation are more or less continuous, and emaciation begins. Soft food may still pass through the narrowed cardia, and if enough liquid and soft food is taken, the nutrition may keep fairly good and the regurgitation from the diverticulum may even become less frequent. The reaction of this regurgitated food is always alkaline, it is not acid, showing that it did not come from the stomach.

The cause of cardiospasm may be an ulceration, a new growth, hyperchlorhydria, or hyperesthesia of the mucous membrane at the cardia. This, of course, may occur with neurasthenic and hysterical patients, but is probably often present when patients are considered neurasthenic and may be the cause of the neurasthenia. It occurs in both sexes and at any age.

In the treatment of this condition, of course, if possible all local irritation must be removed, as gastritis or hyperchlorhydria. Some patients have the spasm of this muscle as a neurosis, especially when certain articles of food are eaten, particularly when by some previous experience they have found that such and such a food was followed by this sudden pain and perhaps regurgitation. Such patients need suggestive treatment, as, if the patient can be made not to expect the attack, almost any food may be taken without harm. A spasm being present, morphin or codein will stop it. Antipyrin has been recommended, and some patients do well with bromids. In its primary stage, no tangible cause being found, the patient should be treated as a neurotic. This means institution of any rest cure, change of climate, massage, hydrotherapy or psychopathic treatment deemed advisable.

When the cardiospasm can not be relieved by any of these means and the condition has become chronic, operative dilatation of the cardia must be done, either by esophageal dilators or by opening into the stomach and dilating from below.

An article on this subject, with a report of forty cases, will shortly appear in THE JOURNAL.

#### Iritis.

Dr. Aaron Brav, Philadelphia, (*New York Medical Journal*, Feb. 22, 1908), carefully describes the treatment of this frequent inflammation of the eye. He says that it is a disease of long duration, requiring from six to twelve weeks to effect a cure, a short duration depending entirely on the prompt application of therapeutic measures. The disease is subject to "remissions, exacerbations and recurrences, and in no other ocular disease is the clinician confronted with so many problems on the prompt solution of which depends the ultimate success of the treatment." The recognized causes of iritis are "syphilis, rheumatism, tuberculosis, scrofulosis, malaria, anemia and the infectious fevers."

Dr. C. Higgins, London, senior consulting ophthalmic surgeon, Guy's Hospital (*The Lancet*, April 25, 1908) states that iritis is frequently due to the poison of gonorrhea, although



the original infection may have occurred many years before. He thinks this is very frequent in men; perhaps rare in women. The results of this gonorrheal iritis include all the serious consequences to the eye to which iritis is prone.

Brav considers the treatment of iritis under the following headings:

1. To give complete rest to the inflamed organ until all the inflammatory signs have subsided.

2. To relieve pain so as to enable the patient to sleep well and allow Nature's recuperative powers to exert their influence.

3. To prevent, so far as possible, any serious sequelæ, such as the formation of posterior synechiæ."

He says that as a routine practice, eye lotions are not needed, and that irritating eye washes are positively contra-indicated. Both eyes should have absolute rest from use, even if but one is affected. Smoked glasses should be used, so that the patient may not be confined to a dark room, although during the acute stage the patient should be in bed and bright light prevented from entering the room. When the pain subsides the patient is better out of bed and in the open air. The diet should be mild and non-stimulating, as in any other acute inflammation, and at the beginning of treatment a good purgative, best perhaps calomel, should be given. Brav gives magnesium sulphate every morning, to be repeated in the evening, if necessary, as:

R.	gm. or c.c.	
Magnesii sulphatis .....	50	3ii
Syrupi limonis .....	50	or fl3ii
Aquæ .....	ad 150	ad fl3vi

M. et Sig.: A tablespoonful, in half a glass of water, before breakfast.

The most important drug in the treatment of iritis is atropin, which should be used in sufficient doses to produce its full physiologic effect on the pupil. When used in the eye it rarely produces poisoning in the adult, but in children should be used with care. Brav uses a 1 per cent. solution, as:

R.	c.c.	
Atropinæ sulphatis .....	10	or gr. iss
Aquæ destillatæ .....	10	fl3iiss

M. et Sig.: One drop in the affected eye every hour until the pupil is dilated; then one drop every eight hours.

[All strong preparations of atropin or similar drugs should be labeled "poison."]

In children a 0.5 per cent. or 0.25 per cent. solution should be used, as deemed advisable, but when atropin causes unpleasant symptoms Brav suggests the following:

R.	c.c.	
Duboisinæ sulphatis .....	035	or gr. 1/2
Aquæ destillatæ .....	10	fl3iiss

M. et Sig.: One drop instilled into the affected eye every eight hours. Or:

R.	c.c.	
Scopolaminæ hydrobromidi .....	015	or gr. 1/4
Aquæ destillatæ .....	8	fl3ii

M. et Sig.: One drop instilled into the affected eye, three times daily.

If undesirable symptoms from the action of atropin occur, such as very uncomfortable drying of the throat, palpitation, flushing of the face, and cerebral excitation, then the stronger atropins must be discarded and homatropin used.

R.	c.c.	
Homatropinæ hydrobromidi .....	40	or gr. vi
Aquæ destillatæ .....	10	fl3iiss

M. et Sig.: One drop in the affected eye every hour.

[If both eyes are inflamed, the strength of the above preparations, in order for a drop to be used in each eye, must be reduced.]

During the course of the inflammation the tension of the eye must be carefully watched lest glaucoma develop, though a temporary increase in intraocular pressure is often seen. As soon as the eye shows increased tension, Brav thoroughly evacuates the bowels, gives absolute rest, and stops the atropin. If the tension does not then in a few hours decrease he uses eserin, as:

R.	c.c.	
Physostigminæ sulphatis .....	03	or gr. 1/2
Aquæ destillatæ .....	8	fl3ii

M. et Sig.: One drop in the affected eye every hour.

Brav says that it is not often necessary to have recourse to this treatment, and it is rarely necessary to employ surgery to prevent glaucoma from iritis.

The value of atropin in iritis is to dilate the pupil and thus to prevent posterior synechiæ. It also contracts the iris, thus reducing congestion, and paralyzes the ciliary muscles, thus giving the iris absolute rest.

If the pain from the inflammation is not stopped by the atropin, hot moist compresses, frequently changed, should be employed. Poultices are not needed. If the pain persists in spite of such treatment, leeches should be applied, one or two to the temporal region, care being taken to avoid the large blood vessels. If in spite of such treatment the deep-seated pain in the orbit continues, so as to prevent sleep, morphin must be used, and best hypodermatically.

If the iritis is due to rheumatism, salicylates are advisable, and Brav recommends the following:

R.	gm. or c.c.	
Sodii salicylatis .....	15	
Potassii iodidi .....	15	or āā, 3ss
Syrupi sarsaparillæ compositi .....	100	fl3iii

M. et Sig.: A teaspoonful, with plenty of water, every four hours.

Brav finds suprarenal solutions useless, and perhaps harmful. Cocain may be combined with atropin at times, as:

R.	c.c.	
Cocainæ hydrochloridi .....	03	
Atropinæ sulphatis .....	03	or āā, gr. ss
Aquæ destillatæ .....	8	fl3ii

M. et Sig.: One drop instilled into the affected eye, every three or four hours, if necessary.

The treatment of hypopyon or posterior synechia is a subject for a specialist.

As it is stated that at least 50 per cent. of iritis is caused by syphilis and that mostly in the secondary stage, constitutional treatment during such iritis is that of the syphilis, and mercury is the important drug. Brav thinks it is best administered in the form of an ointment, and advises the rubbing on of 4 grams (1 dram) of the unguentum hydrargyri into the skin twice daily, choosing different parts of the body at each application. If symptoms of mercurialism occur, of course the drug should be temporarily stopped, and during its administration alkaline mouth washes should be used.

When the inflammatory symptoms are declining Brav finds potassium iodid of value in promoting the absorption of the inflammatory products. Syphilis having been the cause of the iritis, of course it must be long treated else the iritis may recur, as well as other symptoms of syphilis.

If rheumatism is the cause of the iritis he would not only give salicylates, as intimated above, but during the height of the disease he would give large doses, as a gram of sodium salicylate (15 grains) every four hours, during the daytime.

After the iritis has subsided, especially after antisiphilitic or antirheumatic treatment, the patient generally needs iron.

Dr. Higgins, in the article above referred to, says that the treatment of gonorrheal iritis is most unsatisfactory. Mydriatics (atropins) irritate, and rise of tension in the eye is of frequent occurrence; consequently they must be used with caution. He believes in hot fomentations to the eye, and in the value of leeches, and he also sounds a note of warning against the use of suprarenal solutions and cocain. The first effect of their action is satisfactory, but the after-effects are harmful.

#### For Warts.

R.	gm. or c.c.	
Acidi salicyli .....	1	gr. xv
Liquoris formaldehydi .....	1	or m. xv
Petrolati albi .....	15	3ss

M. et Sig.: Rub into the part affected twice daily.

#### For Hemorrhoids.

R.	gm.	
Extracti belladonnæ fol. ....	1	
Extracti opii .....	1	āā, gr. xv
Antipyrinæ .....	3	or gr. xlv
Cerati plumbi subacetatis .....	10	3iiss
Unguenti .....	30	3i

M. et Sig.: Use externally as directed.

—New York Medical Journal, July 6, 1907.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter.]

SATURDAY, JULY 11, 1908.

## Snake Poisoning in the United States.

Under the above heading is compiled by Dr. Prentiss Willson a valuable summary of a topic which should be familiar to every practicing physician.<sup>1</sup> There are few localities in the United States in which poisonous reptiles may not be found, at least occasionally, and still more widely spread are harmless snakes that are popularly believed to be deadly. The same instinct which causes almost every man impetuously to ruin his trout rod or midiron on any innocent little reptile that strays across his path causes every mother of a snake-bitten child to believe that all snakes are deadly, and every physician is liable to be called on to determine whether or not a certain snake is poisonous. He should know, therefore, that besides the rattlesnakes there are but three species of poisonous snakes in the United States, and all are easily recognized. One, the coral snake, has but a narrow range of distribution in the southern part of the country and is distinguished by its brilliant markings; the other two, the water moccasin and the copperhead, are characterized like the rattlesnake by the presence of a deep pit between the eye and the nostril and by undivided ventral scales on the tail. All the other snakes in this country are harmless, and for the most part useful members of society, destroying insects, field mice and other pests, and entirely undeserving of the ignorant persecution they suffer on account of their wicked relatives. If this fact were universally appreciated by physicians much unnecessary anxiety and undesirable therapeutics would be spared.

Willson has collected from the literature and from private sources 740 cases of poisoning by snake bites in the United States, and his studies make it very apparent that we need more careful clinical reports of cases of snake poisoning than are at present to be found in the literature. Thorough autopsies are especially needed, there being but four recorded and these so incomplete as to be nearly worthless. Of 566 bites in which the species of snake was known there were 408 cases of rattlesnake bite, 97 cases of copperhead bite, 53 cases of water moccasin bite, and 8 cases of coral snake bite.

Credit for the earliest studies of the nature of snake venoms comes to America, the pioneers having been Bonaparte, Weir Mitchell and Reichert, and much of

the more recent work of importance has been produced in this country. Snake venoms are remarkably complex poisons, differing in different species of reptiles, among the ingredients having been found fibrin ferment and antiferment, proteolytic enzymes, cytotoxins for red corpuscles, leucocytes, endothelial cells, and, especially important, the neurotoxins. The venoms of our poisonous American snakes are characterized by producing very severe local effects at the point of injection, and hemorrhages throughout the body, while they affect the central nervous system much less than the venom of such snakes as the cobra. For equal doses the water moccasin and copperhead venoms are more toxic than rattlesnake venom, but the large size attained by some species of rattlesnakes makes them much more likely to inject a fatal dose than the smaller copperheads. Of the 740 cases collected by Willson, 78, or 10.5 per cent., were fatal, and in these statistics the water moccasin seems to be especially deadly, being surpassed in this respect only by the largest species of rattlesnakes.

It seems possible that, in some localities, the treatment of snake bite is more dangerous than the disease. Uncleanly local treatment of the wound, when the resistance of the tissues is greatly lowered by the venom, favors septic infection, while alcohol poisoning is often enough more serious than the snake poisoning. Nothing could be more irrational and dangerous than the popular notion concerning the antagonism of whisky and snake bites, and Willson reports that several of the fatalities in his series were directly due to alcohol rather than to the bite. In one case a boy of 3 years was given over a pint of whisky! Careful local treatment of the wound, directed toward lessening absorption and avoiding infection, together with logical symptomatic treatment, offer the best hope in these cases; and raising the weakened blood pressure by adrenalin, saline infusion and abdominal compression is a valuable procedure. The outlook for antitoxin therapy does not seem to be promising, for, in the first place, it is doubtful if the morbidity and mortality from snake bite in the United States will ever warrant the commercial production of antisera specific for rattlesnake and moccasin venom, which is a far more difficult task than the preparation of serum for cobra venom.

Such a thorough analysis of the subject of snake poisoning in the United States as is provided in the article quoted above has long been needed, for general information on this topic is decidedly meager and strongly tainted with local traditions and superstitions. We recommend its careful study by all physicians practicing in snake-infested communities.

## SPECIAL TRAINING FOR ATTENDANTS IN INSTITUTIONS FOR THE INSANE.

A novel and interesting educational experiment is to be inaugurated this summer by the Chicago School of Civics and Philanthropy. Under the leadership of Miss

1. Archives of Internal Medicine, June, 1908, p. 516.



Julia Lathrop, for many years a member of the Illinois State Board of Charities, and now director in this school, a summer course has been arranged for attendants in institutions for the insane and mentally defective. The course has been planned with skill and originality, the object being to show the educational value of occupation, and to afford practical training in those handicrafts which are familiar in kindergartens and manual training schools. In addition, lectures are offered on the elements of psychology, pedagogy and psychiatry and on sociologic subjects. Thus the attendant is to be given training which will fit him to undertake new and important duties in the care of the insane, making of him a teacher and not merely a custodian.

It is true that occupations of various kinds have already been introduced into many institutions, and in some there are even teachers of manual training. But these advantages are offered only to the better class of patients, and the larger number—many of whom need occupation, although they are incapable of learning a handicraft—remain unprovided for. We are all familiar with the discouraging aspects of the typical insane ward, the rows of cleanly dressed patients seated in absolute idleness for hours together, their attendants satisfied with supplying their bodily needs and making no effort to rouse and stimulate them, or with the no less discouraging “restless ward,” where so long as the patients give no serious trouble they are left quite without direction for their activities. The Chicago school aims to fit attendants to teach occupations suited to all grades of patients, from simple, childish games to skilled handicrafts. Many a patient just emerging from the depressive stage, many restless patients who for lack of occupation become “dangerous,” may be greatly helped by judiciously planned work, and, just as in the education of children games are recognized as of great value, so in the re-education of retrograded minds games can be used to bring back the capacity for muscular coordination, for self-control and cooperation with one's fellows.

The promoters of this novel scheme state that they offer the course to attendants rather than to nurses because the attendants are the constant companions of the patients and all efforts to educate the latter must succeed or fail according to the attitude of the attendants. It has been repeatedly pointed out by all who are familiar with the workings of asylums for the insane that the crux of the situation is the character of the attendant.<sup>1</sup> The sporadic efforts at reform instituted at moments of public indignation over some scandal leave little permanent result so long as they fail to strike at the root of the matter—the personnel of the attendants. In all asylums for the insane the complaint is made that it is so difficult to get a good class of attendants, and yet very little is done to train and improve the material which is at hand. The life of an attendant in an insane

asylum is strenuous, joyless and singularly isolated. Such an institution is usually a little world in itself, and the ideas and changing views of the outer world are slow in penetrating. Routine rules supreme, with all its warping and deadening influence. The standards of the attendant are satisfied when a certain modicum of physical well-being is provided for his patients, but the real purpose of the asylum—the re-education and rehabilitation of diseased minds—does not cross his horizon.

The proposed summer school in Chicago represents the first effort of this kind to transform the asylum attendant into an intelligent teacher and to substitute educational for purely custodial care. It is to be hoped that the school will achieve its purpose and that it will inaugurate a new system of training for those in charge of the insane in other states as well as Illinois.

#### REGISTRATION OF VITAL STATISTICS IN PENNSYLVANIA.

The first “Annual Report of the Commissioner of Health of Pennsylvania,” which has just appeared—we do not know why it is so belated—covers the work done by the Department of Health of that state from June 6, 1905, to Dec. 31, 1906, and represents the results of the application of recent legislation to the hygienic affairs of a great state. One of the first advances made is the addition of a number of communicable diseases to the list of those usually required. This innovation has been very successful. One of the most notable advances is the registration of vital statistics. Previous to the enactment of the law of May 1, 1905, the collection of vital statistics in Pennsylvania was in a very unsatisfactory condition. The working of the new law has enabled the state to be included in the registration area of the United States Bureau of the Census. The law is an excellent one and has been used as a guide by the Committee on Medical Legislation of the American Medical Association in drafting the model law recommended for adoption by states lacking an adequate vital statistics act. The essence of the Pennsylvania law is that the work of collecting, reporting and registering vital statistics shall be done by paid officers of the state, who shall be under the control of the state board of health. The keynote of the Pennsylvania administration is compulsory obedience of the reasonable requirements of the law and infliction of the penalties of the law in cases of its violation.

One sad feature revealed by the statistics is the increase in suicides and especially in suicides of children. The rapid increase of homicides also calls for investigation and explanation. The birth statistics indicate a slight reduction in the birth rate. The shortening of the child-bearing period by late marriages due to the entrance of women into gainful occupations, is held in part responsible for this situation.

A matter of great importance in which Pennsylvania is taking advanced ground is the prevention of the pol-

1. Beers: *The Mind that Found Itself*.



lution of streams by municipal or private action. The need of such action is only too apparent. The law makes ample provision for regulation by the board of health of the state, but in many cases a strict enforcement of the provisions of the statute would work great hardship to communities already burdened with debt to the limit, and hence unable to make the necessary alterations to prevent pollution of the stream into which their sewage is emptied. In such cases the commissioner has been considerate and has endeavored to cooperate with municipal authorities, and reasonable delay is allowed. Extensions of the sewerage system must, however, be made in compliance with plans contemplating treatment works for the purification of sewage in the future.

Much dependence is placed on education of the public in furthering the work of the state sanitary authorities. This is applied with regard to communicable diseases, disinfection, water protection, sewage disposal, the anti-tuberculosis movement and other matters within the sphere of public sanitation. The report, as a whole, indicates a new era in home and public sanitation for Pennsylvania, which, it is hoped, other states will follow.

---

#### VACATIONS AND HEALTH.

Vacations are taken mainly with the idea of improving health, yet it often happens that people return to their homes suffering from some form of ill health due to lack of care, and frequently they need additional rest after their return. Vacations during hot weather are especially likely to be followed by unfortunate consequences, for often they have to be taken in unusual surroundings, the sleeping quarters may be more cramped than at home, the food may be unusual and may be eaten irregularly, and the exposure to the sun with unaccustomed exercise may create a condition of lowered vitality which heightens the danger from toxic substances from food, so much more likely to spoil in hot weather, and from infectious bacteria, which grow so much more luxuriantly at high temperatures. In a word, there are so many dangers that the weeks of intermission from a busy occupation may prove anything but the re-creation it is hoped to be and may instead have at least annoying consequences. This is as likely to be true for physicians as for their patients, and there are certain warnings that need to be emphasized at this time.

The old Romans succeeded in conquering the world as much by their ability to maintain the health of their troops in their various campaigns as by the courage and organization of their soldiery. Some of the maxims of their army regulations would be worth keeping before the mind of the vacation tourist who wanders far from home and into unusual conditions during the summer. One of the principal of these was: "In the land of the

enemy beware of the water and certain times of the day that the inhabitants of the country deem dangerous." Another was: "Avoid countries with swamps which are sources of diseases, and deserts and mountains without trees." A third that is especially applicable at this time of the year was: "The soldier must not be without protective shelter. A man must guard against the rays of the sun, and begin the day's work very early." These wise old Romans realized just what were the special dangers of people traveling far from home. These were the water, certain times of the day, the heat of the sun, and swampy ground. We are likely to think that the ideas behind these maxims are much more modern. If tourists would take them to heart there would be much less aftermath of disease following vacations.

It was especially exposure to the heat and the sunlight that the Romans insisted on as most enervating. There is probably nothing that lowers resistive vitality and lays one open to the influence of disease like exhausting exposure to the sun. In recent years so much has been said of the benefit of sunlight that we sometimes forget that, like every other good thing in excess, it may be intensely harmful. Exposure to the sun is likely to be especially baneful if its effects are not neutralized by longer hours than usual of restful sleep. It is this especially that travelers are likely to miss. Most people do not sleep so well away from home as at home. Often the feeling that one is losing the precious hours of vacation is allowed to shorten the time spent in bed. For the very young this policy may not prove harmful, though it must not be forgotten that it is among them that we most frequently see the sad results of vacations supposed to be taken for health improvement. Among the middle aged, however, there is no doubt that unless taken with some of the Roman maxims in mind, vacations may well prove more harmful than beneficial.

---

#### EXPLOITING THE TUBERCULOUS.

The latest scheme for utilizing the physician as a decoy in a "hold-up game," in which wealthy tuberculous patients or their friends play the part of the unwilling, and apparently unconscious, victims, hails from Arizona. Located at Tucson, Ariz., there is a stock corporation which rejoices in the euphonious, if somewhat enigmatic, name of "The Southwestern Extraforaneous Company." Now extraforaneous—which is classed by the Standard Dictionary as a "rare" word—means "situated outside the door"; in other words, out-of-doors. The name, in brief, is that of a sanitarium for the tuberculous. As the circular says, to "attract moneyed consumptives" it is desirable to have physicians as agents and to secure their services "it is necessary that they be stockholders of the company." But—and here is the kernel of the nut—in addition to receiving dividends as stockholders, each "agent physician receives a liberal commission based on the receipts from the patients sent by him." "Agent physician," by the way, is a good



term—one tending to promote a feeling of self-respect! The great advantage to be derived from this system of secret commissions is the fact that the "agent physician will also be careful to send only those patients who are wealthy . . . as otherwise he would reduce his commissions and dividend on his stock." But the dividends, apparently, are but an incident—the drawing card is the commission; for the circular points out that "in view of the fact that we pay a liberal commission based on the receipts from the patients sent us, we feel that our agents should not look too much to dividends." As the company is capitalized at \$1,000,000 this suggestion to the stockholders is possibly to forestall disappointment. The pamphlet referred to is entitled "Physician's Edition." As in it the statement is made that "in the successful treatment of consumptives the patient must be kept in a . . . contented state," it is assumed that the descriptive circulars sent to prospective patients do not include a copy of the "Physician's Edition." It would hardly be conducive to "a contented state" for even the wealthiest of consumptives to know that a certain percentage of the money he was paying for board and lodging at the Southwestern Extraforaneous Company's sanitarium was surreptitiously being forwarded to his family physician in the form of commissions.

#### EXAMINATION OF THE DIASTASE FERMENTS AND THE VALUE OF THE COUNCIL'S WORK.

The report of an examination by the Council on Pharmacy and Chemistry of various diastase ferments, which appears<sup>1</sup> in this issue, calls attention to a fact too often overlooked or forgotten. We refer to the great value to physicians of an impartial examining body for determining the efficiency of the various therapeutic agencies offered them by manufacturers. There was a time when the medical profession had to get its scientific reports on the physiologic or chemical value of a proprietary product from the respective makers of such products. That in such reports, coming even from firms of the highest standing, the personal equation was likely to play an undue part was, in the nature of the case, unavoidable. It is to be expected that manufacturers marketing a preparation will naturally apply such tests for determining its value as will place their products in the most favorable light. That time is past; the medical profession is to be congratulated on having, in the Council on Pharmacy and Chemistry, a body under whose direction the various preparations put on the market may be examined scientifically and without commercial bias. Probably no class of medicinal agents has received so much commercial exploitation as that comprising the digestive ferments; and of this class the diastasic products have been the favorite. As to the questionable need or value of the digestive ferments in general this examination has nothing to do. Only this fact is considered: Do the starch converters really do the amount of work claimed for them? The examination shows that "the digestive values are all lower than claimed." Particularly was this found to

be true in the case of Taka Diastase, a product which has probably been more extensively advertised than any similar preparation that was ever offered to physicians. In its liquid form this digestant was found to lose strength very rapidly, and, whatever may be its converting power when sent from the factory, after being on the druggists' shelves for a short time it becomes practically inert. The solid preparation, also, was "far from satisfactory." The examination, in short, simply confirms the statement so often iterated and reiterated in these columns: Accept with large mental reservations the claims made by manufacturers for the various products in which they hold proprietorship.

## Medical News

### DISTRICT OF COLUMBIA.

**Must Stamp Oleomargarin.**—Secretary of Agriculture Wilson has made a ruling in which he declares the regulations recently promulgated, to become effective July 1, requiring the stamp of government inspection on oleomargarin, shall stand as made. This decision upholds the contention of the dairy interests in their controversy with the oleomargarin manufacturers.

**To Prevent Escape of Patients.**—The board of charities has forwarded a communication to the commissioners favoring more stringent rules governing the establishment and maintenance of private hospitals and asylums in the District in order to prevent the escape of patients from such institutions while under treatment. Reference is made to several fatalities due to the negligence of attendants.

**Personal.**—Dickinson College has conferred the degree of LL.D. on Dr. Hugh M. Smith, deputy commissioner of fisheries.—Dr. Joseph Tabor Johnson has been elected president of the Washington Country Club.—Dr. P. G. Smith has been appointed superintendent, and Dr. J. M. Pearson resident physician, of the new tuberculosis hospital recently erected at Georgia Avenue N. W. at a cost of \$100,000.

**Health Report.**—According to the health and mortality record for the week ended June 20, there were 116 deaths and 116 births in the District. Of the deaths, 70 were white and 46 colored. Of the births, 82 were white and 34 colored. The excessive heat resulted in doubling the infant mortality as compared with the previous week. The number of diphtheria cases was increased, there being 11 under treatment. Ten new cases of typhoid brought the list up to 79, and 8 new cases of measles and 9 chickenpox were reported.

### ILLINOIS.

**Smallpox.**—There have been three additional cases of smallpox discovered at the Rock Island County farm, but none of the patients is seriously ill.

**Society Organized.**—The physicians of LaSalle and Peru, on June 23 met and organized the Twin City Medical Society, a branch of the LaSalle County Medical Society. The following officers were elected: President, Dr. B. J. Nauman, Peru, and secretary, Dr. Frederick A. Guthrie, LaSalle.

**Personal.**—Dr. S. Walter Ransom has been appointed associate professor of anatomy in the Northwestern University Medical School, Chicago.—Dr. Don A. Vanderhoof has returned from Vienna and located with Dr. Horace M. Starkey in Rockford.—Dr. James A. Rutledge, Elgin, has been made a member of the board of directors of Modern Woodmen of America.

### Chicago.

**Election.**—At the annual meeting of the South Side Medical Society, June 19, Dr. Edwin B. Tuteur was elected president and Dr. F. Gurney Stubbs secretary.

**Personal.**—Drs. Alfred D. Kohn and Alexander L. Blackwood have been appointed members of the board of education.—Dr. John B. Murphy and family leave for Europe July 12.

**Unlicensed Practitioners Fined.**—Mrs. L. Brunswick, Mrs. F. Kantz, Hanna K. Blomberg and H. H. Hill, charged with prae-

1. Pharmacology Department, p. 140.



ting medicine without licenses, are said to have been found guilty and fined \$100 and costs each. None of the defendants appeared in court.

**New Dispensary.**—The Northwestern University Medical School is about to erect a dispensary on property on Calumet Avenue, north of Mercy Hospital, which was acquired by Dr. John B. Murphy for the institution and was conveyed by him to the university, June 26, for a consideration of \$7,801.

**Hospital News.**—Jackson Park Sanitarium was opened for the season June 27. Addresses were made by Dr. W. Augustus Evans, commissioner of health, Dr. Alfred C. Cotton, superintendent of the sanitarium, and others.—The twenty-second season of the Daily News Fresh Air Fund Sanitarium, Lincoln Park, began June 29.—Iroquois Memorial Emergency Station No. 1 is to be opened at 87 Market Street by the Iroquois Memorial Association. The association is prepared to spend \$25,000 in equipping the building, and it will be provided with everything deemed necessary. The first floor is to be an ambulance station; the second a dispensary, and on the third floor will be the operating room and beds for patients.

**Danger from Flies.**—The weekly bulletin warns that the common house fly should be kept out of homes and away from food, and the chances of avoiding diarrheal disturbances and typhoid fever this summer will be much better. All cases of typhoid fever and most cases of diarrheal disease are due to infection. The infection is present in human discharges; from these discharges it is conveyed into the mouths of others in several ways; but the common house fly is the commonest and most mischievous of all carriers. The greatest prevalence of the diarrheal diseases corresponds with the greatest prevalence of flies. Most typhoid infections also occur at this time. Flies may also be the conveyors of scarlet fever, diphtheria, tuberculosis and other infectious diseases. They walk over or feast on the infectious matter in a sick room and then go to a neighboring home and find their way to the food of other persons.

#### INDIANA.

**Personal.**—Dr. Charles C. Terry and family, South Bend, sailed for the Mediterranean June 20.—Dr. Charles K. Bruner, Greenfield, has been appointed local surgeon for the T. H., I. & E. Railway.—Dr. and Mrs. Xene Smith, Huntington, have returned from abroad.—Dr. E. Oscar Linder-muth, Indianapolis, is said to be ill with smallpox in the isolation hospital.

**State Society Meeting.**—At the fifty-ninth annual meeting of the Indiana State Medical Association, held in French Lick Springs, June 18 and 19, the following officers were elected: President, Dr. George D. Kahlo, French Lick; vice-presidents, Drs. Edward D. Freeman, Osgood; Charles H. McCully, Logansport, and Charles Chittick, Frankfort; secretary, Dr. Frederic C. Heath, Indianapolis (re-elected); treasurer, Dr. Albert E. Bulson, Jr., Fort Wayne, and delegates to the American Medical Association, Drs. William N. Wishard, Indianapolis; Edwin Walker, Evansville; Harry C. Sharp, Jeffersonville, and George W. Thompson, Winamac.

#### MARYLAND.

##### Baltimore.

**Quarantine Raised.**—The quarantine of the smallpox suspects at Poplar Heights, in the suburbs of Baltimore, has been raised.

**Woods Club.**—The members of the medical staff of the University Hospital have formed an out-of-door recreation club to be known as the "Woods Club." The requirement for membership is a "sincere love for the out of doors and old clothes."

**New Infectious Diseases Hospital Ready.**—It is announced that the new hospital for infectious diseases is completed and ready for occupancy. It is a simple one-story building, with large porches at either end. There are two wards for white and two for colored patients, accommodating thirty-two in all. There are four rooms for private cases. The building is on the ground of the City Almshouse.

**Vital Statistics for June.**—During the month there were 266 deaths of children under 5 years of age, 32.6 per cent. There were 86 deaths from intestinal diseases in children under 2 years of age. The total number of deaths was 816, and there were 735 births. Eighty persons were bitten by dogs; there were 20 fatal accidents; 11 persons attempted suicide, 2 were successful.

**Personal.**—Dr. James H. Bay, of the house staff of University Hospital, was operated on for appendicitis, June 27.—Dr. Daniel Z. Dunoth will spend the summer at White Sulphur Springs Va.—Dr. Leonard M. C. Parker has gone to Europe.—Dr. L. McLane Tiffany is at Magnolia, Mass.—Dr. H. Barton, Jr., will spend the rest of the summer at Newport.—Dr. Ira Remsen is at Prout's Neck, Maine.—Drs. Charles O'Donovan and G. Milton Linthicum have recently been added to the faculty of Baltimore Medical College.

**New Buildings for Baltimore Medical College.**—The Baltimore Medical College will shortly erect a large library and laboratory building on ground purchased last year. There are to be three lecture halls, with a seating capacity of 200 each, also chemical, physiologic, pathologic and physical laboratories and lecture and library rooms for the Baltimore law school, which will be affiliated with the college. The building will be of brick, four stories high, and will cost about \$50,000. The members of the building committee are: Profs. G. Milton Linthicum, William E. Moseley, James M. H. Rowland and Samuel K. Merrick.

#### MASSACHUSETTS.

**Hospital Acquires Property.**—The Massachusetts General Hospital has acquired 595 square feet of land adjoining the hospital grounds.

**Commencement.**—At the annual commencement of Harvard Medical School, a class of 64 was graduated, and 12 members of the class received the degree of M.D. *cum laude*. The honorary degree of D.Sc., was conferred on Col. William C. Gorgas, Medical Corps, U. S. Army.

**Medical Student Drowned.**—The body of Reginald Sears James, a senior student in Harvard Medical School, who mysteriously disappeared several days before, was found in the Charles River May 27, and it is believed that while suffering from melancholia caused by worry over his studies, he committed suicide.

**Floating Hospital.**—The first trip of the Boston Floating Hospital was made July 1. The boat will make daily trips, including Sundays, up to September 15. During last season the total number of patients on all trips was 2,639, and there were 366 permanent patients, who stayed in the hospital an average of 70 days each.

**Communicable Diseases.**—There is said to be a great increase in typhoid fever in Fitchburg, where nine cases have been reported recently.—The Board of Health, Worcester, has traced the origin of thirteen cases of diphtheria to the distribution of milk by one dealer in Quinsigamond.—Diphtheria is reported still to be prevalent in Ware.

**Reception to Revision Committee.**—On May 23, the New England Branch of the American Pharmaceutical Association and the Boston Association of Retail Druggists tendered a reception to the revision committee of the U. S. Pharmacopeia, at which a number of prominent physicians of Boston were present as guests. Mention was made at this dinner of the great friendliness now existing between the professions of medicine and pharmacy.

**Tuberculosis Camps.**—The open-air camp provided by the Springfield Society for the Prevention of Tuberculosis is now arranged and in readiness for the care of patients.—Ground has been broken for the tuberculosis camp in Cambridge, for which an appropriation of \$20,000 was recently made. The building will be one story in height, with two wings, each 25x50 feet, and the front will be made almost entirely of glass. Primarily this institution will be a day camp, in which patients will be instructed in hygiene and will receive other treatment. Later it is planned to build a hospital for the care of contagious diseases.

#### MICHIGAN.

**Communicable Diseases.**—There is said to be an epidemic of diphtheria of mild type in Holland.—At East Fremont there are said to be 10 or 12 cases of smallpox of mild type.

**Degrees Conferred.**—The University of Michigan, at its recent commencement, June 18, conferred the degree of M.A. on Dr. Walter Courtney, Brainerd, Minn., chief surgeon of the Northern Pacific Railroad; the degree of D.Sc. on Dr. Franklin P. Mall of Johns Hopkins University, and the degree of D.Sc. on Dr. William J. Mayo, Rochester, Minn. All thus honored were members of the medical class of 1883.

**Personal.**—Dr. Oscar C. Breitenbach, Escanaba, was elected president of the Lake Michigan Water Commission, May 27.—Dr. H. F. Thomas, surgeon, and J. N. Holcomb, assistant surgeon of the Soldiers' Home, Grand Rapids, have resigned.—Dr. Felix J. Przybylowski has succeeded Dr. Zigismund L.



Kadlubowski as city physician of Detroit.—Dr. James C. Johnson, city physician of Adrian, has resigned.—At the May meeting of the Gratiot County Medical Association, Dr. Stiles Kennedy, St. Louis, was the guest of honor, and was presented with a silver loving-cup, suitably inscribed.

### MISSOURI.

**Personal.**—Dr. William C. Goodwin, Odessa, the oldest practitioner of Lafayette County, was the guest of honor at the May meeting of the Lafayette County Medical Society.—Dr. Herman E. Pearse, Kansas City, has sailed from Montreal for Europe.—Dr. Osear M. Long, Harrisburg, who is alleged to have shot and seriously wounded a clergyman, December 16, after an altercation relative to the local option campaign, is said to have been found guilty at Columbia, June 23, and fined \$100 and costs.

**State Society Meeting.**—At the fifty-first annual meeting of the Missouri State Medical Association, held in Springfield May 19-21, the following officers were elected: Dr. Alonzo R. Kieffer, St. Louis, president; Drs. Dexter B. Farnsworth, Springfield; William J. Frick, Kansas City; Joseph B. Norman, California; Charles H. Dixon, Holliday, and Marshall A. Smith, Gallatin, vice-presidents; Dr. Andrew W. McAlester, Jr., Kansas City, secretary, and Dr. J. Franklin Welch, Salisbury, treasurer. Dr. Robert H. Goodier, Hannibal, was elected orator on medicine, and Dr. Frank J. Lutz, St. Louis, orator on surgery. Dr. Elisha E. Gilmore, Adrian, was selected as chairman of the medical section; Dr. Franklin E. Murphy, Kansas City, vice-chairman, and Dr. William R. Patterson, Tipton, secretary; Dr. Paul Y. Tupper, St. Louis, chairman of the surgical section, and Dr. Willard Bartlett, St. Louis, secretary. A committee composed of Drs. Thompson, Kansas City, Tipton, McLeMore, Nevada, and Mitchell C. Shelton, Joplin, was appointed to organize an eye, ear and throat section of the association.

### NEW YORK.

**Personal.**—Dr. Robert F. Sheehan, Buffalo, has been appointed a food inspector of the department of health.—Dr. De Witt Green, Buffalo, has resigned as district physician of the department of health.

**University of Buffalo Acquires Property.**—An arrangement has recently been effected by means of which the University of Buffalo has acquired from Erie County, New York, one hundred and four acres of land to be used for university purposes. The tract is splendidly located at the summit of the limestone ridge at the northern edge of the city, adjacent to the Country Club. The Medical Department of the University of Buffalo was founded in 1846, and three other professional schools have been organized since that time. The need for an academic department has long been felt and its organization now seems in a fair way to be accomplished. The land here mentioned will be devoted to that purpose.

### NORTH CAROLINA.

**State Board of Examiners Elected.**—The following were elected by the state society as the board of medical examiners of the State of North Carolina for six years: Drs. James L. Nicholson, Richlands; Henry H. Dodson, Greensboro; Lewis B. McBrayer, Asheville; William W. Mackenzie, Salisbury; Benjamin K. Hays, Oxford; John C. Rodman, Washington, and John Bynum, Winston-Salem.

**State Society Meeting.**—At the fifty-fifth annual meeting of the Medical Society of the State of North Carolina, held in Winston-Salem June 16-18, the following officers were elected: President, Dr. Jacob F. Highsmith, Fayetteville, and vice-presidents, Drs. Chalmers M. Poole, Salisbury, and Daniel A. Dees, Bayboro. The society passed a resolution advising the board of examiners to revoke the license of any practicing physician who is found violating the prohibition law by promiscuously writing prescriptions for whisky. This is the result of the petition presented by the ministerial association of several towns of the state.

### PENNSYLVANIA.

**Bequest.**—The will of the late John B. Roach bequeaths \$5,000 in trust to the Chester Hospital.

**Cocain Sellers Sentenced.**—Eugene Fairfax and Lizzie Aey, colored, who were arrested by the city police of Harrisburg as the ring leaders in the cocain traffic, were fined and sentenced to six months in jail June 15.

**Free Antitoxin.**—According to a report of State Health Commissioner Dr. Dixon, from October, 1905, to December, 1907, the state distributed antitoxin for the treatment of

8,833 cases of diphtheria. Of this number, 7,926 patients were saved, only 807 cases resulting fatally. In addition, the state furnished antitoxin to immunize 6,184 persons. Of these, all but 53 were protected against the disease, and of the 53 who did contract the disease only 5 succumbed. The total cost of the antitoxin supplied these 15,017 persons was \$40,826.25.

### Philadelphia.

**Commencement.**—The annual commencement exercises of the University of Pennsylvania Department of Medicine were held June 19. The annual address to the graduating class was delivered by Dr. Edgar Smith, vice-provost of the university. A class of 143 was graduated.

**Public Baths Opened.**—On account of the excessive heat during the past week, the city's public baths were opened June 24. One new bath has been added, making a total of 19. The baths will remain open daily from 5 a. m. to 9 p. m., except Sunday, when they will close at 9 a. m.

**Health Report.**—The total number of deaths reported for the week ended June 27 was 500, including 274 males and 226 females, an increase of 97 over the previous week and of 51 over the corresponding week of last year. The principal causes of death were: Typhoid fever, 6; measles, 8; pertussis, 6; consumption, 53; cancer, 33; apoplexy, 15; heart disease, 33; acute respiratory disease, 37; enteritis, 63; hepatic cirrhosis, 5; appendicitis, 2; Bright's disease, 31; premature birth, 14; congenital debility, 13; suicide, 4; accidents, 15, and marasmus, 21. There were 115 cases of contagious diseases reported, with 9 deaths, as compared with 139 cases and 16 deaths in the preceding week.

**Drop in Typhoid.**—The lowest typhoid fever record since 1897 was reached during the first week of June. Only 25 cases were reported in that period, and this is the smallest number reported in any week in the history of the health department. Dr. A. C. Abbott, chief, stated that the reported cases in any one week since February 22 has not reached 100, and since May 16 the number has been below 50. In previous years the early spring weekly average was from 200 to 350 new cases. From January, 1908, to the present time there has been a decrease in typhoid fever of 66 per cent. as compared with the same period of last year. The extension of the filtered water area, it is believed, has influenced this decrease, but the number of cases in the unfiltered districts also shows a proportionate decrease.

**Personal.**—Dr. G. Oram Ring has returned from Mexico.—Dr. Morris B. Miller sailed for Europe June 12.—Dr. Ward Brinton had the degree of M.A. conferred on him by Washington and Jefferson College at the annual commencement exercises June 16.—Drs. Wharton Sinkler, Horatio C. Wood, John Marshall, Benjamin F. Stahl, William S. Wadsworth and Roland G. Curtin were elected to the board of directors of the general alumni association of the University of Pennsylvania, Department of Medicine, at the annual meeting June 16.—Dr. John M. Swan has been appointed secretary for the United States of the Section in Tropical Medicine of the fifth Pan-American Medical Congress.—Drs. Peter N. K. Schwenk, David G. Metheny, Thomas S. K. Morton, Morris Longstreth and Elwood Matlack have sailed for Europe.—Dr. William L. Rodman has resigned the chair of surgery in the Woman's Medical College of Pennsylvania, the resignation to take effect at once.

### WASHINGTON.

**Garbage Collection.**—Seattle has appropriated \$65,000 for furnishing a garbage collection and incinerating system to take the place of the personal collection of garbage by private individuals.

**Communicable Diseases.**—A case of smallpox is reported on board the U. S. steamship *Kentucky* at Bremerton.—At Prosser ten families are quarantined on account of smallpox.—A large number of cases of diphtheria is reported at Rock Cut and in Stevens County. For a time it was confined to Indians, but is now spreading among the white settlers.

**Milk Statistics to Be Published.**—The daily newspapers of Seattle will be furnished with full data relative to dairies disposing of milk in the city, the product of which falls below standard of the ordinance. A list will also be published of the establishments maintaining a high standard so that the public may have information on this most important subject.

**Alleged Illegal Practitioner Discharged.**—In the case of Mrs. Linda B. Hazard, Seattle, charged with practicing medicine without a license, the charge being based on the fact that Mrs. Hazard displayed a sign, "Doctor," on her door contrary to the statute governing and defining physicians and surgeons,



the court held that section of the statute to be invalid, as it infringes on the personal liberties of the individual. There was no evidence that Mrs. Hazard wrote prescriptions or practiced medicine.

#### GENERAL.

**Medical Examiners Meet.**—At the ninth annual meeting of the American Association of Medical Examiners, Dr. Frank E. Allard, Boston, was elected president; Drs. Liston H. Montgomery, Chicago; William J. Means, Columbus, Ohio, and E. Olin Kinne, Syracuse, N. Y., vice-presidents, and J. C. Moynihan, New York City, secretary-treasurer (re-elected).

**Officers of Pension Examining Surgeons.**—At the annual meeting of the National Association of United States Pension Examining Surgeons, held in Chicago, June 1, the following officers were elected: President, Dr. Henry B. Walter, Harrisburg, Pa.; vice-presidents, Drs. Allen W. Gray, Chicago; James B. Duncan, Bedford, Ind.; Edwin Bentley, Little Rock, Ark., and Franklin R. Garlock, Racine, Wis., vice-presidents; Dr. Philip Y. Eisenberg, Norristown, Pa., secretary, and Dr. Charles H. Glidden, Little Falls, N. Y., treasurer.

**Lake Michigan Water Commission.**—The Lake Michigan Water Commission was organized recently at Grand Rapids for the purpose of the prevention of pollution of Lake Michigan by legislation prohibiting the flow of sewage into the lake. The commission is composed of surgeons from Michigan, Wisconsin, and Illinois, and the War Department, and Public Health and Marine-Hospital Service. The following plans were agreed on at the recent annual meeting of the commission to further their work: To gather further information as to the existing conditions of the water supply; to study conditions from a hygienic standpoint; to discover whether or not Lake Michigan is polluted, with special reference to conditions along the shores; to analyze the present condition of the lake water with relation to depth; to study the problem of non-sewered towns, both those using lake water and those getting their supply from wells, and, finally, the pollution of streams emptying into the lake.

**Fourth Congress of the French-Speaking Physicians of North America.**—This medical congress is to be one of the features of the widely advertised celebration of the three hundredth anniversary of the founding of the city of Quebec. The congress will convene July 20 to 22, with Prof. A. Simard in the chair. Dr. S. A. Knopf, New York, has been appointed one of the twelve honorary presidents of the congress, the only one from this side the Canada boundary, with Pozzi and Triboulet, of Paris. The subjects to be discussed are: "Hygiene in Education;" "Infection of the Biliary Passages," and "Tuberculosis of the Kidney." The *Bulletin Médical de Québec* states that the Canadian railroads and steamboat lines allow half rates between July 18 and August 3 to all who apply for a ticket to Quebec, and the railroads in Eastern New England are said to have agreed to a similar reduction. Lodgings have been reserved for members of the congress at from \$2 to \$5 a day, or in the "Tented City" for less. The St. Louis Club will also throw open its doors to the members during the anniversary festivities. Dr. W. Verge is president of the committee on accommodations. Besides the congress badge the committee expects to present each member with a souvenir plaque. The meetings will be held in the historic Laval University. Dr. Knopf is to deliver an address entitled, "Le Sanatorium, le Dispensaire et l'Hôpital Spécial pour le Traitement des Tuberculeux." A notable delegation from France will be present at the congress.

#### FOREIGN.

**Hernia Institute at Milan.**—The Bassini Institute at Milan, which is devoted exclusively to the free treatment of hernia in the poor, has recently received some comparatively large donations.

**The International Bureau of Public Health.**—The Italian government has appropriated \$3,000 as its annual share in the expenses of the central office, which the International Public Health Conference last December agreed to organize, with headquarters at Paris.

**Cannizzaro Chemistry Prize.**—The Academy of Sciences at Rome, Italy, announces the endowment of a prize of \$2,000 to be awarded perpetually every two years for the best work on pure and applied chemistry with special regard to physical and general chemistry. The prize is open to the world.

**Sixteenth International Medical Congress.**—A number of copies of the preliminary program, regulations, application blanks and various notices in regard to the Sixteenth Inter-

national Medical Congress have been received at this office and are at the disposal of those interested. As already announced, this congress is to be held at Budapest, Aug. 29, 1909, and extensive preparations are being made to insure its success. Dr. J. H. Musser, 1929 Chestnut Street, Philadelphia, is the chairman of the national committee for the United States, Landouzy for France, Waldeyer for Germany, Pavy for Great Britain and Baccelli for Italy. An international prize of \$200 has been offered by the Hungarian government for the best work on the Etiology of Trachoma, manuscript or published for the first time in 1907 or 1908, in any of the congress languages. Works sent in to compete for the prize must be in the hands of the minister of the interior by Dec. 31, 1908. (Address Belligyministerium, Budapest, Hungary.) The International Committee of Travel for Medical Study will also hold its general assembly at Budapest during the congress. There are to be 21 sections, with a subsection for orthopedics. The section for otology is practically identical with the Eighth International Congress for Otology. The congress fee of \$5 may be sent to the treasurer of the congress. (Address M. le Trésorier du XVIIe Congrès International de Médecine, Esterhazy-utca 7, Budapest VIII.) The membership of the American committee was given in THE JOURNAL, June 13, page 2008, with other details in respect to the congress.

**Plague in South America.**—Consul Manning reports that the presence of bubonic plague in La Guaira and other ports of Venezuela has caused a general awakening in Cartagena to the necessity of proper precautions to prevent introduction of the disease. With this object the authorities of Cartagena and the commercial houses have taken up the cause of sanitation and are acting as rapidly and with as much vigor as possible. Under the general direction of the sanitary inspector of ports the municipality has organized various commissions, charged with the carrying out of measures. A sanitary police corps has been organized, house-to-house inspection is being made, and all refuse and trash are carted away and destroyed. A temporary garbage crematory has been erected, where this class of waste from the city is being burned. The instructions to the sanitary police are being carried out as fully as possible. Lazarettoes will be provided outside the zone of danger from the infection reaching the city to which any suspicious cases are to be taken, should such appear, and it is the intention of the health authorities to isolate any future cases of yellow fever or smallpox. Of the former, no cases have appeared here since June, 1907, and no smallpox has been reported in the city since then. For further protection against plague a campaign against rats, mice and bats will be necessary. The latter are very plentiful, inhabiting the underground passages of the old forts Castillo de San Felipe, San Sebastian and others, as well as unoccupied houses. With a view to the destruction of rodents the use of rat traps, rat poisons and other plans are being adopted as rapidly as possible.

#### BERLIN LETTER.

(From Our Regular Correspondent.)

BERLIN, June 20, 1908.

#### Economic Position of German Physicians.

Since I gave, in my former letter, an account of the preliminary and postgraduate education of physicians in Germany, I will add some observations on the important factor, in the professional life of medical men, of their economic mode of life. For the last decade there has been much complaint over the material position of German physicians. In the first place it must be borne in mind that from various causes all of the learned professions in Germany (and possibly in many other countries) have, as the saying goes here, not been lying on beds of roses, and the medical profession is no exception. One common cause for the material depression of all the learned professions is their overcrowding. The tendency to enter the academic callings has been a strong one for decades in Germany, and as the increase of population does not keep pace with it, the prospects for adequately supporting the great mass of the members of the learned professions have been correspondingly poorer.

In order to appreciate these conditions in the medical profession, it is only necessary to point out, that in the year 1897, according to the Imperial Medical Calendar, there were in the German empire 4.75 physicians for 10,000 inhabitants. In 1907, on the other hand, there were 5.25. In absolute figures there had been added more than 6,000 to the number of physicians in Germany. Aside from the overcrowding of



the profession, two factors have been of special importance in producing a deterioration of the economic condition: social legislation, and the continuous spread of quackery. Since 1883 the great mass of the working population have been insured by an imperial law against sickness, accidents, and disability. The insurance against sickness is of most importance to the medical profession. By this law a large portion of the population of Germany is excluded from the private practice of physicians; the insured have a right to free medical treatment and the physicians are paid by the local medical insurance clubs, the *Krankenkassen*. The economic significance of this organization for the medical profession may be shown by the following figures: In 1906 there were about 23,000 such societies, which included 11,500,000 members. The number of cases of illness which involved inability to labor amounted to 4,500,000, with about 87,500,000 days of illness. The regular income of all the societies amounted to 293,000,000 marks (\$70,320,000) the regular expenses, so far as concerns the cost of disease, were 241,000,000 marks (\$57,840,000). Of these expenses of sickness 57,250,000 marks (\$8,587,500) paid the fees of physicians. From these figures it may easily be understood what a powerful factor the insurance clubs are in affecting the economic situation of German physicians and also to what extent the German physician must be dependent on the insurance organization. In fact this dependency became especially acute in the first year of the social legislation, especially from an ethical standpoint, inasmuch as the managers, being aware of their power, made their right of mastery effective and looked on the physicians as their hirelings. In their efforts to obtain positions in the lodges physicians humbled themselves in an unworthy manner. Competition developed among them, from which corruption was not lacking.

As usually happens, every extreme finally provokes a reaction, and so the evil conditions described led to a combination among the physicians for mutual assistance which had for its aim to shake off the yoke imposed on them by the managers. In Berlin an agitation took its rise which had for its aim the introduction of the so-called "free choice of physicians" for all the sick benefit societies. While formerly each had a number of permanently employed, so-called "fixed" physicians, who furnished medical treatment to the sick members for a definite yearly salary, and who were appointed by the management, it was proposed that all the physicians of a city, under certain conditions, should be permitted to participate in the treatment of all the members of the society. The funds which were at the disposal of each society for the treatment of the sick (limited in proportion to the revenue) should be divided among all the physicians who had treated the sick, according to a definite uniform tariff. This proposal, which makes the physicians independent of the management and removes the monopoly of the permanently appointed "insurance physicians" in favor of the entire medical profession, has won the sympathies of the great majority of medical men. Most German physicians are supporters of the so-called "free choice of physicians." The opponents among medical men are naturally those who are in possession of the fixed medical insurance positions, while outside the profession the opposition is greatest from the directors of the insurance societies. The latter are fighting the "free choice of physician" most vigorously under the pretext that under this régime the cost of treating the sick would be too high, both in itself and in relation to the funds set apart for the purpose. The chief objection, however, is the unacknowledged motive that under the "free choice of physicians," medical men would be less under the control of the directors of the insurance societies.

In this struggle there have been severe conflicts between the physicians and the societies. The entire medical profession of one city were excluded from all part in the treatment of the members of the society, and on the other hand, the physicians of another city struck and refused to treat the members. The government has been obliged to intervene repeatedly; lawsuits have been instituted, etc. In view of this continuous strife from which both parties have suffered, it must be the endeavor of the government to find some means of settlement. The physicians some years ago organized themselves into the so-called Leipzig League for the Protection of the Economic Interests of Physicians. This embraced in 1907 about 20,000 physicians, or two-thirds of the entire German medical profession. The members of this association have of late years at their medical meetings repeatedly passed resolutions in which the legal authorization of the "free choice of physicians" was demanded, and it seems impossible that this demand shall be ignored much longer. This demand is now being pressed the more earnestly by physicians because by the contem-

plated reform of the sick insurance legislation the number of those who belong to the *Krankenkassen* will be very considerably increased. Under the former provision of the law those must insure themselves against sickness who possess an annual income not above 2,000 marks (\$480), the proposed law will include those whose income is not above 3,000 marks (\$750). At present 36 per cent. of the inhabitants belong to the insurance societies, but it has been estimated that in the kingdom of Saxony after the innovation just mentioned goes into effect, 92 per cent. of the entire populace will be members. In this way the free private practice of the physician will be still more contracted than heretofore, and the necessity of physicians securing conditions as favorable as possible for the treatment of the sick in the *Krankenkassen* is so much the more pressing. A conference has been called by the Imperial Office of the Interior for June 11, at which the question of the free choice of physicians is to be discussed by the supporters of both views with the participation of the representatives of the government. With reference to the results of this conference I will write later.

### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, June 20, 1908.

#### Coroner Troutbeck and the Profession.

The conflict between Coroner Troutbeck and the medical profession described in the last letter is attracting widespread attention, both in medical and lay circles. In the columns of the *Times* the coroner and Sir Victor Horsley wage an acrimonious controversy. Mr. Troutbeck's view that if a patient dies during or after an operation the surgeon should be held responsible until he has cleared himself before a coroner's jury is strongly repudiated by the profession. A coroner's court is no fit tribunal to decide whether an operation should have been performed or not, or to criticize the skill of the operator. If a surgeon in the often difficult and delicate problem of deciding whether or not an operation is desirable is to have the possibility confronting him of having his action reviewed by such an incompetent tribunal his judgment would be disturbed, and in desperate cases patients would be liable to lose the possibility of benefit from operation. Mr. Troutbeck holds that if a death is accelerated by an operation that fact brings it within the scope of the Coroner's Act which requires that when a person is reasonably suspected of dying a violent or unnatural death an inquest should be held. But in the *Times* Dr. Shearer very well argues that a death from disease under treatment *secundum artem* is not *contra naturam*. Further, if an inquest should be held on a patient who dies after operation, for the same reason an inquest ought to be held on a patient who dies under medical treatment, for there is the same possibility that the treatment may have accelerated death. The whole question, which is of such fundamental importance to the profession, is under consideration by the British Medical Association.

#### A Notable Medical Centenarian.

On July 1, Sir Henry Alfred Pitman, for over thirty years registrar of the Royal College of Physicians, will attain his hundredth birthday. To mark the event some of his old professional friends will visit his residence at Enfield and present him with a piece of plate. Despite his age, Sir Henry enjoys excellent health; in fact the only defect from which he suffers is impaired eyesight. When in practice he spurned a carriage and visited his patients on foot.

#### Healthy London.

During the third week in June the death rate in London was the lowest on record. It was only 10.8 per 1,000. The rates of the previous weeks were 11, 11.6 and 11.7.

#### The Entente Médicale.

The *entente cordiale* between England and France in recent years has had as one of its manifestations more intimate relations between the medical professions of the two countries, which has taken as one of its forms visits in a body of English physicians to Paris and of French physicians to London. A short time ago Sir Dyce Duckworth delivered a lecture in Paris to the Faculty of Medicine. Now in return Professor Raymond, the successor of Charcot at the famous Salpêtrière Hospital will deliver a lecture at the Royal College of Physicians on *Les Maladies dites Familiales*. He will also hold a clinic at Guy's Hospital, where he will demonstrate in two or three nervous cases the methods he employs at the Salpêtrière.



## Pharmacology

### THE BROADER AIMS OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

TORALD SOLLMANN, M.D.

Member of the Council, Professor of Pharmacology and Materia Medica at the Medical Department of Western Reserve University.  
CLEVELAND, OHIO.

(Continued from page 52.)

#### XVI. PROPRIETARY RIGHTS.

It is almost useless to discuss the purely academic question, whether the inventor of a medicinal agent should hold his discovery as a monopoly, or whether he should follow the example of the medical profession and renounce personal pecuniary reward. We may each have our personal opinions, but the fact remains that the chemical or pharmaceutical inventor is legally entitled to this monopoly; and he is generally disposed to insist on his legal rights. Indeed, by shrewdly utilizing certain technicalities, he can and does render this monopoly more complete and more permanent than was ever contemplated in the theory of the patent laws. The protection is so far-reaching that it checks further improvement, instead of fostering it, as theoretically it should do.

If the new remedy is really unique and valuable, if it is a genuine discovery and an advance, then it would be ungracious to begrudge the discoverer a reasonable reward in the way of protection, so long as this does not place a disproportionate burden on the public. Indeed, this proprietary protection may be to the best interest of the public, in those individual cases in which the discoverer employs a fair share of his profits in further research, to enable him to exercise and extend his inventive talent.

It is a little more irritating if the extra profit goes almost entirely to some large chemical corporation, which has forced the real discoverer to "sell out" for a mere pittance. But even in this case, there may be a fair value given in return. For instance, the expense of quickly introducing a valuable therapeutic agent is considerable, and the profits must be sufficiently large to pay for the advertisement. Right here, however, we should remember that the greatest discoveries require the smallest outlay for advertising. One of the objectionable features to proprietorship is that the users of a valuable invention must pay the cost of advertising the worthless invention.

#### ORIGINAL AND PSEUDO-ORIGINAL PROPRIETARIES.

On the whole, however, no one quarrels very seriously with the protection accorded to really original and valuable discoveries. It is otherwise with products which are not essentially original—and these constitute the bulk of the proprietary stock. Many "synthetics" even, are mere imitations of other successful products, and involve little more ingenuity than the placing of quinin in capsules. In some cases, all pretext of originality is dispensed with, as in the numerous proprietary hexamethylen tetramins or phenolphthaleins. One is sometimes tempted to wish that the patent laws were a little more effective in preventing this kind of discoveries. The worst examples, however, are the "proprietary mixtures."

By what right can the exploiters of Bromidia, Listerine, Glycothymoline and all the others, claim the protection due to discoverers? What is there original about these mixtures? So little that they would have no standing in the patent office, and their promoters are obliged to resort to the subterfuge of copyrighting a coined name, or to some similar expedient; or to the favorite "patent medicine" device of secrecy, partial or complete. Secrecy, in one form or another, is almost indispensable for the effective control of these specialties, which are not "discoveries" in any sense of the word.

The only legitimate claim of proprietary mixtures to protection and professional recognition would be by pharmaceutical superiority—by quality. If they really possess this superiority, it can be protected by the same methods that are used by the manufacturers of superior official products. These

have not found it necessary to patent, copyright, or fancy-name their ether, or ergot, or quinin. A physician can prescribe any make of these official products which he believes superior, with very little fear that other makes will be substituted.

#### THE PSYCHIC VALUE OF A PROTECTED NAME.

The fact is, the manufacturers of the pharmaceutical "specialty" mixtures lay but small stress on the superior pharmaceutical quality of their goods—sometimes for good and sufficient reasons. They adopt these "protective" names for a very different reason, namely, that they may safely make illegitimate therapeutic statements. It is a puzzling psychology problem, but it appears to be a fact, that it is easy to persuade the physician that the same substance acts differently when prescribed as "antikamnia" and as "acetanilidum;" while it would take much more argument to persuade him that A's make of acetanilid is superior to B's brand.

Proprietary rights are expensive luxuries to the public; some one must pay from two to ten times the ordinary profit to the manufacturer. But this is the smallest of their evils. Proprietorship, in addition to the viciousness of secrecy, always tends to extravagant therapeutic and other false claims, dangers which can only be avoided when the proprietor himself realizes the responsibilities as well as the profits of proprietorship. Otherwise, proprietary rights are inimical to the true interests of therapeutics. Proprietorship may be condoned in really new and meritorious discoveries, as a necessary and not unmixed evil; it has no excuse in imitations and mixtures. In these it is maintained merely and solely by the tolerance of physicians, who thus foster the abuses to which it gives rise.

(To be continued.)

#### DIASTASE FERMENTS.

##### Report of an Examination of the Diastase Ferments by the Council on Pharmacy and Chemistry.

A subcommittee makes the following report to the Council with the recommendation that it be published:

Among medicinal agents which may be classed as legitimate pharmaceutical preparations few are more widely advertised than are the starch-digesting ferments, the diastases. Along with a number of very good preparations there are several for which grossly exaggerated claims are made, and which are advertised to the medical profession in such a manner as to lead to distrust. Those which have merit have not always been marketed by methods which are wholly free from criticism. In several cases the claims made are more than can be substantiated by actual tests.

There has always been some obscurity in the method of reporting the digesting value of these diastases, and just what is meant by starch conversion or sugar formation is not always clear. In other words, the claims of the manufacturers are frequently stated in terms which are too general.

To be of value statements regarding the digesting power of the diastases should be based on standard and uniform methods of testing. But manufacturers have followed different methods of examination, which naturally makes a fair comparison of products difficult, and in some cases impossible, for any one not conversant with the methods of analysis. Recognizing the importance of uniformity in such work the subcommittee has had a large number of comparative tests carried out on the more important products of this class, employing several methods of analysis. In practice the diastatic action may be measured in terms of malt sugar formed from an excess of starch in a given time, or by the conversion of the starch to a point where the test with iodine shows the disappearance of the blue color, or the disappearance of all color. Results by these three methods are not directly comparable, although there must be some relation between them. Our first experiments were directed toward the clearing up of this point. These experiments were carried out largely by Mr. W. A. Johnson and the most important of them are given in detail in a paper which appears in the May number of the *Journal of the American Chemical Society*. From his numerous tests Mr. Johnson concluded that the best practical comparison may be made by carrying each digestion to the colorless end point, and in his paper certain suggestions are made as to the best methods of conducting the tests. These will be referred to below.



The following table contains the results obtained with a number of commercial products, when examined in this way, the digestions being continued through a period of ten minutes, at a thermostat temperature of 40 C. in all cases. All the products here examined came from the manufacturers, and the results were confirmed by tests on similar products bought in wholesale drug houses. The results are expressed in four ways for comparison as follows:

- A.—Parts of 100 % starch digested to colorless endpoint in ten minutes.  
B.—Parts of 92 % starch digested to colorless endpoint in ten minutes.  
C.—Parts of 85 % starch digested to colorless end point in ten minutes.  
D.—Parts of 85 % starch digested to loss of blue iodine reaction in ten minutes.

	A.	B.	C.	D.
Holadin .....	102.1	111.0	120.0	171.0
Taka Diastase .....	16.0	17.4	18.82	26.0
Taka Diastase Liquid .....	0.38	0.41	0.45	0.61
Panase .....	113.0	123.0	133.0	203.0
Panase Essence .....	3.6	3.91	4.23	6.1
Vera Diastase Essence .....	4.2	4.55	5.0	6.7
Diazyme Essence .....	6.12	6.66	7.14	10.3
Diazyme Glycerole .....	6.12	6.66	7.14	10.3
Maltine, Plain .....	2.30	2.50	2.71	....
Maltzyme .....	2.87	3.12	3.37	....
Trommer's Extract of Malt, plain .....	0.65	0.71	0.77	....
Trommer's Extract with Cod Liver Oil .....	0.38	0.41	0.44	....

The blank spaces in the fourth column of figures indicate that no tests were satisfactorily completed here to show the conversion to loss of blue color. In fact, with highly colored mixtures this test is not as easily made as the other.

A comparison of the results given in the table with the statements which appear in the manufacturers' circulars, etc., show that the digestive values are all lower than claimed, if we base our comparison on the colorless endpoint reaction, and anhydrous starch conversion. If, however, we carry the digestion merely to the loss of blue color, which seems to be the case in some of the tests frequently cited, and employ starch with an average water content of about 15 per cent., a very different status must be reported. In this manner of reporting results five of the preparations show even more than the claimed values, but the method should not be tolerated for obvious reasons. The results actually found should always be calculated to anhydrous starch for reporting.

The discrepancies between the values claimed for Holadin, Diazyme Essence and Diazyme Glycerole and those actually found in our tests are not very great.

While one part of Holadin by the firm's method is stated to digest 135 parts of starch to the practically colorless endpoint, column C shows that by the method employed in these experiments only 120 parts of 85 per cent. starch were digested to the colorless endpoint. Similarly, while for Diazyme Essence and Diazyme Glycerole it is stated that 1 c.c. will digest 8 gm. "dry" starch to the colorless endpoint, the results given in the table above show that one part digested 6.12 parts of 100 per cent. starch to the colorless endpoint. This is equivalent to 7.14 parts 85 per cent. starch, the kind referred to by the manufacturer.

The claims made for Panase are somewhat misleading and conflicting. In a recent circular issued by the manufacturers a statement is made to the effect that one part of Panase "is capable of digesting at least 200 times its weight of starch in 10 minutes," while in another part of the same circular the complete conversion of 200 parts of starch into sugars is claimed as the work of 1 part of Panase. This claim is certainly wrong, as there is a wide difference between the two kinds of reactions. The figures in the table are sufficiently clear on this point, and suggest a proper modification of the claim to agree with the facts.

The widest discrepancy between the values as claimed by the manufacturer and those found by actual tests seems to be shown in the case of Taka Diastase. The liquid preparation has been tested a number of times in different samples and has always been found weak. Some samples, in fact, were quite inert. This ferment appears to lose strength very rapidly in solution, as the manufacturers now concede. The stability of the solid product is also far from satisfactory, and appears to be less than that of the ferment as marketed some years ago. The two samples examined recently were weak.

From a number of experiments made it appears that the stability of the diastase preparations from the pancreas is greater. In two tests of the Holadin, made some months apart, no appreciable change was noticed. The same thing is true of Panase and the earlier product of the same firm, Vera Diastase. But in the liquid form these preparations, like

the Taka Diastase, seem to undergo some alteration in converting power, as the figures above, and others, suggest. Of the samples reported here the Vera Diastase essence was obtained fresh and examined at once, while the Panase Essence was on hand some time before the tests were made. According to the statement on the label the latter should be the stronger, but the reverse is the case. The Panase Essence seems to convert less than is claimed for it, while the Vera Diastase Essence converts more, if we consider 85 per cent. starch and digestion to loss of blue color merely, as satisfactory conditions of the test. It is possible that the somewhat greater age of the Panase Essence may have some bearing on the result.

The two Diazyme preparations appear to be stable, as far as practical requirements are concerned. We have examined the contents of the same bottles of these products at periods three months apart, and found no change in the starch-converting power. The claims for the numerical value of the diastatic activity and also for the stability which are made for these liquid preparations seem to be borne out by the facts as observed.

For the other liquid preparations, Maltine, Trommer's Extract, Plain and Trommer's Extract with Cod Liver Oil, there are no exact claims as to the digestive power. For Maltzyme, it is claimed that 1 gm. has the power to produce from starch, in 30 minutes, at 37.8 degrees C., 6 gm. maltose. They contain large quantities of the products of enzyme digestion, and have relatively low residual digestive value. They should be classed among the so-called medicinal foods, rather than as agents of digestion.

In the experiments carried out by Mr. Johnson, referred to above, sugar determinations were made also, and these showed a close agreement with the starch conversion, carried to the colorless endpoint. In making the tests for the sugar formation advantage was taken of the results of the other tests, and enough ferment was weighed out in each case to effect the hydrolysis of one gram of anhydrous starch to the colorless endpoint in ten minutes. A series of tests was made on each substance with the same weight of ferment and starch paste, and at the end of 10, 30, 60, 120 and 180 minutes a flask containing the mixture was removed from the thermostat, and the amount of sugar formed, calculated as maltose, was determined. On removing each flask from the thermostat further action was always checked by immediate boiling. The amount of sugar formed at the end of ten minutes was essentially the same in all the samples tested, which included the first eight of the table above. For the gram of anhydrous starch, made up to a 2 per cent. paste, the maltose formed varied between 611 and 635 milligrams, which agrees very well with the usual findings for diastase digestion, under like conditions. There are many such results in the scientific literature.

In the longer periods, however, the amount of sugar formed by the Taka Diastase increased somewhat more rapidly than was the case with the other ferments, and the results of the determination after 180 minutes pointed to the evident conversion of some of the maltose into glucose. The mean value of the maltose formed by the other ferments in this time was about 860 milligrams, with variations from 855 to 872 milligrams, while for the Taka Diastase it was over one gram. But to secure these close results it must be remembered that very different amounts of the several ferments had to be taken at the start; that is, for the weaker digestants more, and for the stronger less was weighed out. The amounts taken varied inversely as their starch digesting activity, as shown by the first line of tests.

These relations may be illustrated by the figures in the following table, in which the first column gives the name of the substance, the second the number of milligrams actually required to convert 1 gram of starch to the colorless end-point in 10 minutes, and the third the weight of maltose formed in this time. The ferment substances were suspended in water and the proper volume was measured out to give the calculated weight. The sugar was found by titration with standard Fehling solution, and is calculated as pure maltose, proper allowance being made for the dilution of the titrated solution. The sugar amounts found under these conditions are essentially the same, but in producing the sugar 8.85 milligrams of Panase go as far as 9.79 milligrams of Holadin, 62.5 milligrams of Taka Diastase, 163.4 milligrams of the Diazyme liquids or 238.1 milligrams of the Vera Diastase Essence. In making comparisons by the table the fact must not be overlooked that the three preparations there last named are in solution, while the others are solids



TABLE OF SUGAR FORMATION IN 10 MINUTES.

Column A gives the weight of ferment required in each case.  
Column B gives the weight of sugar formed in each case.

	A.	B.
Panase .....	8.85	622 mg.
Holadin .....	9.79	634 mg.
Taka Diastase .....	62.5	611 mg.
Diazyme Essence .....	163.4	633 mg.
Diazyme Glycerole .....	163.4	635 mg.
Vera Diastase Essence.....	238.1	630 mg.

These results, which have been obtained many times in repeating the tests, show that the starch conversion to the colorless endpoint, which is more easily and quickly carried out than is the sugar determination, gives a practically useful measure of the ferment activity, and a measure which bears a close relation to that of maltose formation. We, therefore, recommend the process for all the routine examinations of this nature which have to be made in the testing of the diastase ferments. As is explained in the article by Mr. Johnson, the process here employed was first suggested by Roberts for the examination of ferments of animal origin, and was later modified by Junck and by Francis, and applied to the ferments of vegetable origin. In our laboratory it has been submitted to critical revision with the object of securing greater accuracy through a fuller specification of details of manipulation. The most important points of the process are these, which are presented as easily and practically workable:

1. A clean grade of potato starch is thoroughly washed, first by decantation and then on a Buchner funnel. It is carefully dried at a low temperature, and finally at a higher temperature to a moisture content of about 10 per cent., the exact moisture content to be determined in a separate experiment.

2. For the actual tests about 22 grams of the starch is mixed with 100 c.c. of cold distilled water to make a uniform cream and then poured into 800 c.c. of boiling distilled water. The boiling is continued through ten minutes, and then enough water is added to make the actual starch content (anhydrous) exactly 2 per cent. by weight. For each test quantities of exactly 50 grams of the paste are weighed into a series of 250 c.c. flasks, which are clamped in a large water-bath kept at a temperature of 40 degrees.

3. The iodine test solution is made by dissolving 2 grams of iodine and 4 grams of potassium iodide in 250 c.c. of distilled water; 2 c.c. of this solution is then diluted with pure water to make 1,000 c.c.

4. In making up the diastase solution the operator must be guided by the results of a few preliminary experiments in each case. For liquid malt extracts, for example, 10 c.c. diluted to 100 c.c. will generally be a proper strength, while in the examination of the dry preparations on the market 200 to 500 milligrams, dissolved or suspended in 100 c.c. of distilled water will usually answer.

5. These solutions are used in this way: Small definite volumes of the dilutions are added to the flasks containing the starch paste in the thermostat, and with the least possible loss of time. The mixtures are well shaken. The volumes added may be as follows, but all diluted to that of the largest volume before mixing: 1 c.c., 2 c.c., 3 c.c., 4 c.c., 5 c.c., 6 c.c. In about eight minutes tests are begun by removing volumes of 5 drops from each digesting mixture by a pipette and adding this to 5 c.c. of the dilute iodine solution in a clear white test-tube standing over white paper. It is best to have a row of these tubes mounted to receive the liquids to be tested. If at the end of ten minutes drops from one of the flasks fail to give the iodine reaction we are ready for a second and more accurate test. Weigh out now 100 grams of the paste into each of six flasks, and, assuming that the endpoint in the first test was found between 4 and 5 c.c., add accurately to the six flasks these volumes of the diastase solution: 8 c.c., 8.4 c.c., 8.8 c.c., 9.2 c.c., 9.6 c.c. and 10 c.c. These volumes should all stand ready and all diluted to 10 c.c. so that they may be poured into the starch and shaken up without delay. They should also have the normal thermostat temperature of 40°, which precaution should be observed with the mixtures added in the first test. The tests with the iodine solution are repeated as in the first trial, and new limits are found between which the exact value must lie. For example, at the expiration of ten minutes the paste to which 8.8 c.c. of the diastase solution is added may show a faint yellowish dextrin color, while that with 9.2 is colorless. We may go further and try a series of new dilutions, but practically it is not necessary. In fact, we can not carry our readings to a much finer degree of accuracy, because of the difficulty of distinguishing between the effects of dilutions so near together, in many

cases. In a case like the above illustration it is sufficient to take the mean of the last named dilutions, and calculate the results to the basis of one part of ferment and the starch converted by it.

6. We have recommended potato starch because it is possible to obtain it in a satisfactory condition of purity. The commercial corn starch, even after washing, does not appear to be suitable for the purpose. On microscopic examination the potato starch granules must appear clean and sharp.

The working method is seen to be simple, and if all the commercial diastase ferments are tested in this way their practical value may be easily compared. Until something better is proposed we believe the scheme as outlined may be safely followed, and that it will be perfectly fair to all concerned.

The above report was adopted by the Council, with the recommendation that before publication it should be submitted to the manufacturers whose products had been examined. The replies were reported to the Council by the subcommittee, and the following supplemental report was submitted to the Council and adopted:

This report has been submitted to the manufacturers of all of the articles described and opportunity given them to make any comment or criticism they saw fit to make. As might be expected, each firm was desirous of changing in some respect the wording of the report so far as it refers to the firm's products, but a careful consideration of these replies does not warrant the subcommittee in admitting the justness of any of the claims made.

Parke, Davis & Co. state that in testing their product, Taka Diastase, the reaction should be carried to the loss of blue color only, and claim that to digest to the loss of all color would work to their ferment "a very grave injustice." They say that "Taka-Diastase is recommended, not for the rapidity with which it converts starch into maltose and dextrose, but rather for its usefulness in carrying cooked starch through the preliminary stages of digestion or hydrolysis with remarkable rapidity." The subcommittee fails to see the force of this argument, since what is desired in a diastase is conversion of starch into sugar. Besides this, Taka Diastase does not appear to be any more rapid in the preliminary stages than are some of the others, and in the advertising literature it is praised for its power of sugar formation, as are all the others.

In the comments offered by Frederick Stearns & Co. objection is made to the passage in the report in which we point out the discrepancy between the digestion of 200 parts by weight of starch in ten minutes and the conversion of 200 parts of starch into sugars. The firm promises to correct this discrepancy, which should have been done long ago.

Fairchild Bros. & Foster object most strenuously to the position given Holadin in the table, and insist that by their method of testing, the product has a higher value than we give it. This, no doubt, is true, but the subcommittee is not concerned with the firm's method of testing, and must be allowed to employ its own, for the reasons pointed out in the report. The object is in part comparison, and for this uniformity of methods is necessary. In this connection it should be noted that in the past the firm has strongly favored the adoption of a uniform method of testing diastase products.

The manufacturers of Maltzyme write in a somewhat indefinite way of their disappointment in the findings of the report, but the letter calls for no special comment.

W. A. PUCKNER, Secretary.

## INGLUVIN.

### Report of the Council on Pharmacy and Chemistry.

A subcommittee of the Council reported that unwarranted claims and misrepresentation were made for Ingluvine by its manufacturers, William R. Warner & Co. recommended that the preparation be refused recognition and that the report be submitted to Warner & Co. for action.

The report was submitted to the firm, and after waiting one month and no acknowledgment or reply having been received, the Council directed its publication. It is as follows:

### REPORT ON INGLUVIN.

Ingluvine is manufactured by W. R. Warner & Co., chemists, Philadelphia, Pa. The printed matter contains numerous claims and representations of which the following are specimens:



"A positive specific for indigestion, dyspepsia and the most effective remedy in obstinate cases of vomiting of gestation. . . . A specific for vomiting in pregnancy in doses of from 10 to 20 grains, and a potent and reliable remedy for the cure of marasmus, cholera infantum, indigestion, dyspepsia, and sick stomach caused from debility of that organ. It is superior to the pepsin preparations since it acts with more certainty, and effects cures where they fail. . . . The natural glycocholic acid in Ingluvin is the active principle and the most efficient agent in the treatment of all stomachic and enteric disorders."

Two samples were purchased at different times in the open market and on examination found to consist essentially of powdered meat fiber mixed with what appeared to be a membranous tissue resembling the lining of a gizzard. Both samples on being tested by the method prescribed by the U. S. Pharmacopeia for estimating the strength of pepsin were found to possess little, if any, proteolytic activity. In order to determine whether or not the lining of a fowl's gizzard possesses proteolytic action, a fresh gizzard was secured, the lining washed slightly with water, then removed and on using one-half of same in place of pepsin as prescribed by the Pharmacopeial method, it was found to digest 10 grams of albumin within the time limit. Pepsin, when properly kept, does not lose its strength to any material extent.

A careful examination was made for the presence of glycocholic acid, claimed to be the active principle of ingluvin, but its presence could not be established. Furthermore, the anatomic relations of the fowl are such as to preclude its presence.

The above shows that ingluvin does not possess nearly as much proteolytic activity as ordinary saccharated pepsin recognized by the 1880 Pharmacopeia and which was prepared on the basis of digesting 300 times its weight of egg albumin. Inasmuch as no glycocholic acid is present in ingluvin it would seem that saccharated pepsin would be far more efficacious in treating the abnormal conditions for which ingluvin is recommended in the advertising circulars. Furthermore, the claims made for the preparation are grossly extravagant.

A communication from Warner & Co. has been received since the above report was adopted in which it is stated: "The reason that previous letter was not replied to was because we were desirous of securing all the information possible on the subject. Since that time we have made considerable research and also made laboratory investigation, and are enclosing the accumulated data with diagram of a part of the alimentary canal showing the esophagus, crop and gizzard."

Much of the other matter submitted is immaterial. The following, so far as it means anything seems to confirm the correctness of the report of the Council's referee that ingluvin is practically devoid of proteolytic activity: ". . . the therapeutic activity must be due to the bitter property, rather than any proteolytic activity, and it probably increases, thereby, the functional activity of the stomach, by which the normal digestive process is increased. Ingluvin in a 0.4 per cent. hydrochloric acid solution at 37 to 40 C. or if mixed with an aqueous solution of pepsin under the same conditions possesses an acrid bitter taste and increases the secretion of the saliva and as this is practically the same condition as when in the stomach, it no doubt stimulates the depressed mucosa peptic glands and increases gastric secretion."

W. A. PUCKNER, Secretary.

#### COMMENT.

The fallacies attending the use of digestive ferments in most stomach diseases have been previously noted in THE JOURNAL.<sup>1</sup> In most digestive disorders a deficiency of the digestive ferment has not been proved. In cases in which pepsin is lacking, its administration is valueless unless it is combined with large doses of hydrochloric acid, and it is doubtful whether this combination is either necessary or conspicuously useful. There is, however, something so alluring about medication by digestive ferments which are assumed to supply a physiologic need, that since their discovery they have formed a fertile field for the activity of the manufacturer of proprietaries. As by scientific laboratory tests, it is possible to determine whether a given preparation has digestive power, the manufacturers of ingluvin avoid this point by claiming that the remedy acts, not on the food, but on the stomach itself. That

remedies may exist which act as stimulants to the digestive secretions can not be denied, although at the present time this power has not been satisfactorily demonstrated. The proprietors of ingluvin finding that proteolytic activity is not to be attributed to this preparation of chickens' gizzards, announce a new therapeutic fact in the claim that "the natural glycocholic acid in ingluvin is the active principle and the most efficient agent in the treatment of all stomachic and enteric disorders." According to the report made to the Council there is no glycocholic acid in this preparation, nor is it possible, from the anatomic arrangements of the fowl's digestive apparatus, for it to get there. By all the tests which can be applied to determine its value this preparation is of much less value in digestive disorders than saccharated pepsin which was discontinued in the pharmacopeia because of its inferiority to the other forms of the ferment.

The repudiation, by the manufacturers, of the more absurd claims made for ingluvin, shows the need of maintaining an attitude of healthy skepticism toward the advertised therapeutic virtues of proprietary preparations. If a physician is disposed to use digestive ferments, he should give preference to the official preparations and ferments from other sources should be required to stand the exact tests which demonstrate the worthlessness of so many preparations on the market.

#### Religious Journals and Nostrums.

The editor of the *Gesundheitslehrer*, in commenting on the fact that a certain religious journal devotes one-third of its advertising to advertisements of unsavory "patent medicines," remarks: "What would the religious journals say if the medical journals were to devote one-third of their advertising space to announcements of things known to be directly contrary to all the teachings of the church?"

#### "Neriot Ferment."

Two handsomely dressed persons applied to a number of drug stores in Paris with a prescription calling for "Neriot ferment according to the formula of Dr. Henry (depot 129 Rue Montmartre)." The druggists sent to the depot and each bought a bottle of the ferment. It turned out that this depot had been rented for the day and a supply of bottles installed. The two swindlers decamped with the proceeds that evening, forgetting to pay the rent, but their landlord, finding the demand so lively, prepared more bottles and continued to sell the "ferment" until the police appeared. His "ferment" had the advantage of being harmless, as he used water alone.

## Correspondence

### Bacterial Therapy and Diagnosis of Gonococcus Arthritis.

CHICAGO, July 4, 1908.

To the Editor:—Referring to the editorial on Bacterial Therapy and Diagnosis of Gonococcus Arthritis, in THE JOURNAL, July 4, it would appear that the clinical reaction occasionally found following the administration of large doses of gonococcus vaccine was regarded as something recently discovered. It might prove a matter of interest, considering the importance attached to this statement, to know that such reactions are observed, at times, following the use of any vaccine. The local reaction at the site of inoculation is more common, consisting of a small nodule or indurated area beneath the skin, which is more or less sensitive to touch. The patient will frequently complain of this spot being sore or painful for several days after injection is made. If after several injections of vaccine a greatly increased dose is administered one may find a recurrence of the local reaction at all previous points of inoculation, as indicated by these tender indurated areas. Also, after an unusually large dose of vaccine, as I have observed in isolated instances, in the case of gonococcus and staphylococcus vaccines, at the time of injection the overlying skin may become red and hemorrhagic streaks may appear. A pronounced general reaction follows with exag-

1. Feb. 2, 1907, 415 and Feb. 9, 1907, 521.



geration temporarily of the symptoms and signs of the local infection. The reaction at the site of inoculation in such cases may pursue a course similar to vaccination.

Such consequences depend on the altered reaction of the organism toward the particular bacterial product. The extent of the reaction will depend on this factor, the quantity of vaccine employed and the method of administration. This holds true not only for tuberculin, but for all vaccines. I have observed pronounced clinical and stick (inoculation site) reactions, following the use of staphylococcus, streptococcus, gonococcus, etc., vaccines. The stick reaction (the tender nodule under the skin at the point of injection) is the more common and has diagnostic value. The injection of a very large dose for the patient of any vaccine, corresponding to the organism or organisms causing the disease, may give rise to a general reaction, rise of temperature, etc., as well as to a stick reaction, and is of diagnostic value, though neither is of decisive differential diagnostic value.

WILLIAM J. BUTLER, M.D.

#### New York Bovine Tuberculosis Inspection.

ALBANY, N. Y., June 27, 1908.

*To the Editor:*—I have read with interest the statements in THE JOURNAL of June 20, concerning bovine tuberculosis in New York State. Feeling sure that you wish to present the facts correctly, I submit the following:

The Allds-Lansing bill when introduced provided for an additional appropriation of \$200,000. This was cut in the senate to \$75,000, which amount finally passed. This, together with the appropriation made in regular session of our legislature, puts about \$130,000 at the disposal of the commissioner of agriculture in connection with his work against contagious and infectious diseases of animals.

Our veterinarians visit herds where contagious or infectious diseases are supposed to exist. They always make a physical examination first. If tuberculosis is believed to exist, the owners of the herd are asked if they want the tuberculin test used and almost always they request it. We now have on file about sixty such requests. We attach great value to the tuberculin test, as it is the best means known for diagnosing tuberculosis. The physical test has some value and we are using it for what it is worth. It will reveal certain advanced cases of tuberculosis and certain bad cases of tuberculosis of the udder. Our experience has shown repeatedly that some cases of generalized tuberculosis, such as would undoubtedly result in the contamination of the meat of the animal, can not be recognized by physical examination alone, but, so far as we know, they are always found when the tuberculin test is applied.

The special point which I wish to make in connection with your statement is that we have not found the tuberculin test "unreliable as well as costly and cruel." You may be interested also to know that we are now killing such reacting animals as the owners do not wish to keep in quarantine. The killing is done under federal supervision, which permits the use of such meat as is found wholesome. This, we believe, removes the greatest objection to the use of tuberculin. It should not be overlooked also that our new amendment provides for larger payments to farmers for animals condemned on account of tuberculosis.

R. A. PEARSON,

Commissioner, Department of Agriculture.

#### Dr. Hoffa Not Born in America.

MILWAUKEE, WIS., July 5, 1908.

*To the Editor:*—Your Berlin correspondent, whom you introduced to your readers as a man of high standing, writes of the late Professor Hoffa: "He was closely related to Americans, as he was born in South America." Now, all the numerous biographies of Hoffa I have read state that he was born in South Africa and was never in America until a few years ago. My criticism may seem trivial, but such statements, if allowed to stand, may reflect on the authenticity of other interesting things your correspondent is telling us.

CHESTER M. ECHOLS, M.D.

## Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

#### County Society Uses Local Newspapers.

The Jefferson County (Texas) Medical Society has begun the publication in the newspapers of popular articles on medicine. The *Beaumont Enterprise* for Sunday, June 28, contains an excellent article, signed by the Jefferson County Medical Society, on "The Progress of Medical Science," wherein the development of medicine from earlier times to the present is briefly but interestingly summarized. Such articles published impersonally by a society for the benefit of the people of the county can not fail to be of great educational advantage.

#### The Lay Press on Antivivisection.

One of the most striking results of the recent session of the American Medical Association is the widespread and general comment of the better class of newspapers regarding the work and aims of the Association. It is equally significant that the feature of the session which attracted the most attention was the recommendation for a Council for the Defense of Medical Research, in order to counteract the antivivisection agitation which has become noticeable in several states. It is particularly gratifying to note that the newspapers, without exception, condemned the attempts to restrict scientific investigation by the limitation of animal experiments as unwise and unnecessary, and recognized that the regulation of such matters could safely be entrusted to the medical profession. One of the most interesting of these comments appeared in the *Sioux City (Iowa) Journal*, in which the entire question is summarized with remarkable accuracy and clearness:

The aggressive stand in favor of vivisection taken by the American Medical Association at its Chicago meeting has renewed interest in an old debate. . . . The decision of the Association was that inasmuch as there is an organized campaign to promote sentiment against the practice a counter campaign of education be undertaken in its behalf. It would seem that not much earnest effort along this line would be needed to cut the ground from under the antivivisection propaganda. The sentiment against vivisection has been cultivated mainly by societies for the prevention of cruelty to animals. These societies do noble and useful work in protecting our animal friends from unnecessarily cruel treatment by brutal or thoughtless human beings. In the matter of vivisection, however, the advocates of humanity have taken the wrong tack and allowed their espousal of animal rights to supersede their recognition of human rights. Our whole civilization has moved on the theory that animal life must be sacrificed to preserve human life. This principle is involved in the defense of vivisection, but the prosecution refuses to look at the real merits of the case. . . . In the battle against the bacilli the only way in which victory can be won is by experiment. Shall the experiment be made with dogs and guinea-pigs, or with little children and their parents? Or shall there be no experiments, even though there be certain knowledge that a successful experiment would save annually the lives of tens of thousands of human beings during all the generations to come? The antivivisectionists seem to think that doctors do their experimenting for their own amusement, and that they take a sort of fiendish satisfaction in the suffering that attends their work. As a matter of fact, the doctors are working for humanity in a much more practical way than the sentimentalists who are criticizing the inhumanity of vivisection. There may be cruelty in the connection with animal sacrifice, but it is safe to say there is very little avoidable cruelty. The newspapers that are proposing legislation against vivisection are proposing a very poor bargain. They propose in effect to trade a great deal of human life and happiness for a very little animal life and happiness. It is a proposal that can not withstand a campaign of education.

The *Buffalo News* says editorially, speaking of the action of the Association:

The reason is that so much unwisdom is uttered, such un-



sound arguments advanced against the practice of vivisection that the progress of medical science itself is seriously threatened with hindrance and delay from that cause. This danger is recognized frankly by the Association, and it feels that nothing is left it but war or submission to the judgment of ill-informed and hopelessly prejudiced sentimentalists.

The progress of medicine and surgery . . . in the last fifty years has been due largely if not mainly to the practice of vivisection in the hands of those competent to employ that resource of study. The campaign against vivisection lacks discrimination. Its purpose is to put a ban on the practice even in the hands of the most considerate and expert of operators. It must fail because on the question of relieving human pain at the risk of comparatively little pain to animals or of no relief to humanity the animals will have to suffer the pain for the sake of the human advantage.

One of the most interesting comments appears in the *Saturday Evening Post*, in which, after stating that there are at any given time several hundreds of thousands of people in the country who are "sore at the doctor" for various reasons and ready to take up any war-cry against him, the editorial continues:

But before the Association's disturbance subsides, the anti-vivisection crusade will have been dropped in favor of some fresher crusade. We recall the able editor who conducted a brilliantly successful crusade to make the zoo people feed the big snake on bologna sausage instead of rats, and followed it by one, equally successful, for the extermination of rats. To people having human ties animal experimentation is preferable to human experimentation, and the choice lies between the two.

The *Saturday Evening Post* is quite right in stating that this crusade on the part of many of its followers will soon give way to an equally energetic and intelligent movement in support of some other fad, and that many of its followers enter into such agitation without the slightest investigation or knowledge of conditions and consequently soon drop it for some newer sensation.

But legislatures are often influenced by such appeals and bills are frequently passed and become laws with just as little knowledge of conditions, or investigation on the part of the legislators, as is possessed by the advocates of the measure. It consequently requires just as much effort to counteract a sentimental and ill-founded movement as it does to carry on a more serious and important campaign. The time and energy spent by the medical profession in the last ten years in successfully opposing legislation which would deprive physicians of opportunities for research work could far better have been spent in investigating diseases and developing improved methods of treatment and prevention for them.

If the medical profession can be entrusted with the care of the lives and health of the men, women and children of the country it can certainly be trusted with the far lesser duty of protecting dumb animals against needless and unnecessary pain and suffering. The term "vivisection," so frequently used by the advocates of legal restriction, is in itself misleading and inaccurate. Probably 80 per cent. of the animal experiments performed to-day are done with a hypodermic syringe and should be called vivipuncture rather than vivisection, since there is no cutting connected with any stage of the experiment. The suffering experienced by a thousand guinea-pigs is probably not equal to that endured by a single little child suffering from diphtheria or scarlet fever.

#### Association of State Secretaries and Editors of State Journals.

On Monday night, June 1, preceding the recent Chicago session of the Association, an important movement was inaugurated in the organization of the state secretaries and editors association. The meeting was called by a committee on organization appointed at Atlantic City of which Dr. Walter Cheyne of South Carolina was chairman. Over forty editors of state journals and secretaries of state associations met at the Victoria Hotel and sat down to dinner together, following which the meeting was called to order by Dr. Cheyne, who called Dr. George H. Simmons to the chair. Dr. E. J. Goodwin, editor of the *Journal of the Missouri State Medical Association*, was elected secretary. Dr. Cheyne detailed the correspondence he had carried on with various state secre-

taries and editors and said that a field of usefulness was open to the new organization and that he believed much benefit would follow its establishment.

DR. WISNER R. TOWNSEND, New York, secretary of the Medical Society of the State of New York, was called on to discuss "The Duties of the Secretary." He said in part that the question seemed to resolve itself into a matter of labor—how to do more work and do it well. There were efficient secretaries and inefficient secretaries, but rarely one who was absolutely inefficient. If the state secretary would watch the slothful ones, they could be displaced or encouraged to do good work. Among the important duties of the secretary was attendance at the annual session of the American Medical Association. It would be of great value to every county society if it sent its secretary. This would inspire the secretary with new determination to work for the growth of his society, for at these meetings were found so many men who were doing things that we could not fail to be enthused. This Association should advocate a uniform plan for all county societies for the collection of dues and reporting of membership lists to the American Medical Association. The state secretary should be a capable and willing officer. He should assist and guide the county secretaries in their work and encourage them to persist in keeping up interest in the county society, but should never "nag" nor publicly find fault, especially about trifling details. Each secretary may have a different method of getting the results, but if he succeeds that is all that should be asked. Dr. Townsend said it was a great pleasure to testify publicly to the good work done by the secretaries of the county societies in New York State.

DR. MELVILLE BLACK, Denver, secretary of the Colorado State Medical Society, spoke on medical organization of the present day. He said that medical organization from every standpoint was to be encouraged and fostered. This would fill an hiatus in the scheme of organization and would be productive of great good, not only to the secretaries and editors, but to the county and state societies and to the American Medical Association. Through the state journals the members could be brought into close touch with each other, and the knowledge that their papers would be published in the journal would stimulate greater interest in society work and encourage more frequent attendance at society meetings.

DR. PHILIP MILLS JONES, San Francisco, secretary of the Medical Society of the State of California, said that medical organization was as much a business as the printing of books or the running of railroad trains. We must reach out, not for the men at the top—they could take care of themselves—but for the men who were struggling along in the middle or at the bottom and even hypnotize them into the society. Medical men must be kept busy in medical work, for if they were not busy working together, they would be busy at each other. He said that he had represented medical journalism militant for the last six years. While he knew that this was not the ideal type of medical journalism, it was the only type that he conceived to be of value to the medical society. The medical association journals should be absolutely clean and free from the taint of blood money. Six years ago we had no way of telling whether the manufacturer, who sent his representatives to our offices, was telling the truth about his preparations or was lying about them. As a matter of fact, we know that there is not a manufacturer who has not misrepresented some preparation. How shall we discriminate between the true and false? Shall we appoint a nice, respectable publication committee, who will take the copy of the advertiser and look over it and finding it apparently acceptable, approve it? This would simply mean nothing in regard to an accurate solution of the problem. The Council on Pharmacy and Chemistry was the proper body to consult in these matters, and we should back up the work of this council in every possible way. It was the only institution in the world where the physician can go and ask if the constituents of products put out by advertisers were truthfully reported and receive truthful answers.

DR. A. E. BULSON, Fort Wayne, Ind., editor of the *Journal of the Indiana State Medical Association*, spoke on "The Difference Between the Dependent Journal and the State



Society Journal." Dr. Bulson said that he was in hearty sympathy with the organization of this association. He described the growth of the Indiana State Medical Association from a membership of 800 to its present membership of 2,800. He commended the work of the Council on Pharmacy and Chemistry, and said that he thought its findings should be strictly followed by all state journals and that only articles approved by it should be advertised. He said that he had edited for a number of years a journal which was dependent absolutely on its advertising income, but that he had always endeavored to keep the reading pages free from advertising. He had continued to publish a dependent journal until conditions in the state made it possible to publish a state journal which should be clean and should represent the better class of men in the profession.

DR. A. W. McALESTER, JR., Columbia, Mo., secretary of the Missouri State Medical Association, presented a draft of a constitution and by-laws for consideration. As adopted, provisions were made for an organization to be known as the Association of State Secretaries and Editors of State Association Journals, membership to be limited to the secretaries of the American Medical Association, the secretaries of state and affiliated branch associations of the American Medical Association and the editors of state journals. Annual meetings are to be held each year on the day preceding the annual session of the American Medical Association. The objects of the association are to cultivate a closer relation among the state associations, to establish improved and more uniform methods of conducting business, to promote the interests of the state journals and to develop the best method of conducting them and by cooperating with the officers of the American Medical Association to promote welfare of the profession.

The following officers were elected for the coming year: President, Dr. Walter Cheyne, South Carolina; vice-presidents, Drs. Philip Mills Jones, California, and W. R. Townsend, New York; secretary, Dr. L. H. South, Kentucky. Dr. Cheyne announced the following committees: Committee of secretaries, Dr. A. W. McAlester, Jr., chairman, Missouri; Dr. W. R. Townsend, New York; Dr. Thomas McDavitt, Minnesota; committee of editors, Dr. E. J. Goodwin, chairman, Missouri; Dr. I. C. Chase, Texas; Dr. A. W. McCormack, Kentucky.

#### Maryland Establishes a State Journal.

The first number of the *Bulletin of the Medical and Chirurgical Faculty of Maryland* was issued July 1, 1908. This is the first appearance of the eighteenth medical journal owned and published by a state association. Dr. H. O. Reik of Baltimore is the editor of the new journal, with Dr. J. A. Chatard as associate editor and Dr. John Ruhräh, secretary of the Medical and Chirurgical Faculty of Maryland, as an ex-officio member of the publication committee. In the foreword the editor states the position of the new journal plainly and positively. After emphasizing the importance of official journals as a means of communication between the different component parts of a medical organization, and the increased need of such a medium following reorganization, the alternatives and advantages of establishing such a journal are discussed. The purchase of an established journal is generally impossible on account of the expense. Considering the plan of publishing society proceedings in a journal over which the society has no control, the editor says:

Such a policy can not fail to place the society in a most embarrassing position. It is folly to expect any journal owned and controlled by laymen to respect the higher ideals of the profession. All such papers are conducted for the purpose primarily of making money and the business manager is none too particular about discriminating between the revenue tendered by the advertiser of a fraudulent proprietary medicine and that offered with the advertisement of an honestly conducted hospital or pharmacy. Consider for a moment how ridiculous it appears to read in one portion of a journal the resolutions enthusiastically adopted by the state society endorsing the work of the Council on Pharmacy and Chemistry of the American Medical Association, and then, turning to the advertising pages, to find nearly all the articles condemned

by the Council glaringly and brazenly setting forth their false or exaggerated claims to virtue. It is silly to try to delude ourselves with the notion that there is no relation between the advertising pages and those devoted to professional or scientific matters. . . . The journal that pretends to be honest and to condemn fraudulent preparations and yet makes its living from the publication of such advertisements is accepting blood money. The medical society that endorses such a journal or that continues to publish its proceedings in such a journal after having failed in an effort to correct the abuses, or, worse still, that profits by the admission of such advertisements to a journal of its own, is morally responsible for the fraud perpetrated.

The editor then reviews the recent action of the state house of delegates which instructed the council to inaugurate the publication of a monthly bulletin. To insure the cleanly character of the new publication, it was further provided by resolution that "no advertisement of any proprietary or patent medicine that has not received the endorsement of the Council on Pharmacy and Chemistry shall be accepted." The Medical and Chirurgical Faculty of Maryland is to be congratulated on the high stand taken by its house of delegates as well as the character of this, its first official publication. After Jan. 1, 1909, the *Bulletin* will publish all the important transactions of the state and county societies. It is welcome to the ranks of state journals and will without doubt prove of great value to the physicians of Maryland.

#### County Society Acts in Contract Practice.

The Jefferson County (Wis.) Medical Society has unanimously adopted resolutions providing that no member of the society shall enter into any contract or agreement with any society, lodge or association whereby an indefinite amount of services is required for a fixed fee. This is in accordance with the general principles on this subject previously suggested in this department. The evil in contract practice is not in the fact that a contract exists, but that, in practically all instances, the terms of the contracts as previously entered into have been unfair to all the parties concerned.

#### POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.  
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

#### Tenth Month.

#### FOURTH WEEKLY MEETING.

#### Carcinoma of the Liver.

##### Pathology.

Types of carcinoma, microscopic diagnosis of each. Gross appearances. (a) single tumor, with secondary deposits about it, (b) "Farre's tubercles" secondary to primary lesion. Primary or secondary cancer. Association of cancer and cirrhosis.

##### Symptoms and Diagnosis.

Symptoms: Variety and intensity of symptoms. Jaundice, pain, ascites, fever, cachexia, cerebral symptoms, metastases, the blood. Inspection, palpation, percussion.

Diagnosis: Carcinoma of pylorus or colon. Abscess, syphilis, benign tumors and hypertrophic cirrhosis of liver.

#### Cirrhosis of the Liver.

##### Atrophic.

Etiology: Alcoholism, age, sex, diet, acute infections, chronic diseases, cardiac and pulmonary lesions.

Symptoms: Prodromal symptoms. Obstruction to portal circulation. Gastrointestinal disturbances, spleen, urine, ascites. Toxic symptoms. Facies, "caput Medusæ." Inspection, palpation, percussion.

##### Hypertrophic (Hanot).

Etiology: Sex, age, catarrhal jaundice, acute infections.

Symptoms: Onset, digestive disturbances. Jaundice, fever, pain, hemorrhages. Physical examination. Termination.

##### Biliary.

Etiology: Chronic obstruction to ducts.

Symptoms: Symptoms of cholangitis, jaundice, hepatic intermittent fever. Physical examination. Terminations.



## Miscellany

**Mendelism and Disease.**—Mr. R. C. Punnett in an address before the Epidemiological Section of the Royal Society of Medicine (*Proc. Roy. Soc. Med.*, March, 1908), says that the recent work has served to confirm and extend the principles laid down by Mendel. He summarizes Mendel's law, using in illustration the possible variations between black, blue, and white, attainable by various crossings of these three colors in the Andalusian fowl, and sums up in general terms as follows: "The characters of plants and animals may in many cases be regarded as existing in alternative pairs. Corresponding to each member of such a pair is something representing it which may be carried by the gamete. These factors which the gamete carries are the channel by which the qualities of the parent are transmitted to the offspring. Every gamete contains one, and only one, of the factors corresponding to a given pair of characters, i. e., is pure for that character. For any given pair of characters, therefore, there can be two, and only two, classes of gametes: those pure for one member of the pair and those pure for the other member of the pair. But there can be three different kinds of zygote, for each zygote is formed by the union of two gametes; and since two kinds of gamete exist it is obvious that three kinds of union among them are possible. Two gametes, each pure for one member of the alternative pair of characters, may unite; or two gametes, each pure for the other member of the pair may unite; or, thirdly, two unlike gametes may unite. The zygote so formed contains representatives of each member of the pair, and is known as a *heterozygote* (hybrid), whereas zygotes containing representatives of but one member of the pair are termed *homozygotes*. Like the homozygote the heterozygote produces pure gametes; only it produces equal numbers of the two kinds instead of producing all of one kind. In this lies the explanation of the fact that hybrids mated together produce a definite proportion of the pure forms which subsequently breed true without ever giving a hint of their mixed ancestry." He discusses the results of breeding with the "dominant" and the "recessive" and catalogues a diversity of characters showing Mendelian inheritance, viz., size, structure, chemical properties, time of flowering, color, sterility and immunity (as to disease in wheat). He describes Biffen's experiment in crossing wheat, immune and susceptible to yellow rust, and considers it from the point of view of medicine probably one of the most important experiments ever made. Mendelian heredity in the human subject is illustrated by pairs of characters in eye color, brachydactyly, and certain forms of hereditary disease. Other points discussed are dihybridism, interdependence of characters and the nature of the alternative pairs, interaction of characters, gametic coupling, partial coupling, and sex limited diseases, explaining the limiting of hemophilia to males. Cases not dissimilar to those of sex limited diseases in man occur among animals, and he describes experiments by Mr. Baterson and himself in the transmission of pigmented characteristics in the silky fowl, where the unaffected male can transmit, but only to the opposite sex, which he hopes will throw light on diseases like hemophilia and peroneal atrophy. "There is little doubt but that a knowledge of Mendel's principles must be of value in the study of disease for when once Mendelian analysis has established the operation of the law and the nature of the characters concerned, we are in a position to predict always the probable, sometimes the inevitable, result of a given mating. When a brachydactylous man marries a normal woman we are certain that there is an even chance of any given child being born diseased or normal. When two normal people with night blind parents and grand parents marry we may predict with confidence that none of their children will inherit the disease."

In the hope of gaining information he suggests that diseases fall into at least three classes: "(1) Diseases which depend directly on a structural change in the gamete, by either the addition or subtraction of some character as compared with the normal, e. g., night blindness, brachydactyly,

alkaptonuria. (2) Diseases in which such structural change of the gamete is without visible effect, but renders the individual liable to invasion by bacteria, etc. The disease is not manifested unless the structural change and the external organism are both present; e. g., rust in wheat. (3) Diseases caused by external invasion, for which immunity, as implied by gametic structure, is not known to exist, e. g., syphilis, ankylostomiasis. Of these three classes we should expect (1) and (2) to exhibit the phenomenon of Mendelian heredity in one form or another. But class (3) is of an entirely different nature and can not be inherited in the biologist's sense of the term. It seems not inconceivable that Mendelian analysis may be sometimes valuable as a criterion for separating this class of disease from the others."

**Alleged Antitoxic Action of Salt.**—A group of medical students at Buenos Ayres have been studying the action of salt as an antidote for curare according to the popular conception. Curare applied to a wound is not absorbed if salt is mixed with it or applied immediately afterward. Their experimental research is related in the *Revista del Centro Estudiantes de Med.*, viii, Nos. 77-79, 1908. It demonstrates that the addition of salt delays absorption of the curare, as also of any other poison, the salt inducing an osmotic current outward which interferes with the absorption of the poison. Any other chemical substance with this property answers the same purpose as the salt. It is exclusively a physical phenomenon.

**Neutralizing Action of Cholesterin on Tetanus Toxin.**—Almagia and Mendes have been conducting research at Rome in this line, and they found that cholesterin displayed a marked neutralizing power in respect to tetanus toxin, strychnin and curare. Otherwise fatal experimental doses of either were neutralized by injection of cholesterin, and also to a lesser degree by lecithin. Pulverized animal charcoal also neutralized otherwise fatal doses of strychnin in the animals. Tetanus toxin mixed in the test-tube with the charcoal did not seem to be influenced by it. Lecithin seemed to enhance the toxic action of curare while cholesterin apparently neutralized it. Their work is briefly mentioned in the *Münch. med., Wehnschr.*, April 14.

## Book Notices

HANDBUCH DER BIOCHEMIE DER MENSCHEN UND DER TIERE. Herausgegeben von Dr. Phil. et Med. Carl Oppenheimer, Berlin. Erste Lieferung, mit 11 Abbildungen. Pp. 160. Paper. Price, \$1.25. Jena: Verlag von Gustav Fischer, 1908.

Biologic chemistry is rapidly coming into its own as a distinct branch of the biologic sciences, instead of occupying its former suppressed position as either the handmaid of physiology or an ignoble offshoot of pure chemistry; in witness whereof we have the appearance within two or three years of new journals of biologic chemistry in America, England and Germany, as well as the newly formed and flourishing Society of Biological Chemists. One of the several reasons for the tardy advance of biologic chemistry was the ineffective and unsatisfactory methods of analysis that were available for the study of the highly complex substances with which this science has to deal; consequently its rapid development in the last few years has been associated with and largely the result of improvements in analytical methods. The "Handbuch der Biochemie," therefore, has the important function of collecting these analytical methods from their scattered sources in articles on original research, and making them available for the research worker and for the clinical laboratory. This valuable enterprise will undoubtedly meet a hearty reception from the large and increasing number of chemists, biologists, and physicians who are applying chemical methods to research, diagnosis and therapeutics; and its quality is assured by the reputation of its editor and the large staff of associates. The scope of the publication is shown by the fact that it will appear in twenty separate sections, each about 160 pages in length. Such a book is much needed, and it will undoubtedly be found soon on the



shelves of every well-equipped laboratory of physiology, biology, chemistry or biologic chemistry.

**PRACTICAL TREATISE on Fractures and Dislocations** by Lewis A. Stimson, B.A., M.D., etc., Professor of Surgery in Cornell University Medical College, New York. Fifth Edition, Revised and Enlarged. Illustrated. Cloth. Pp. 847. Price, \$5.00. New York and Philadelphia: Lea Bros. & Co., 1907.

About one-third of this volume is devoted to a presentation of the etiology, pathology, diagnosis, prognosis and general principles of treatment, the remainder being given to special diagnosis and treatment of the various forms of this class of injuries.

Valuable additions have been made to this edition from the accumulation of the literature of late years based on the revelations of the Roentgen rays regarding injuries of the small bones of the wrist and foot and of the ends of the long bones. The large amount of material at the command of the author has been utilized to make this book one of the most complete from the clinical standpoint in the English language. There have also been added many new cuts and skiagrams, the latter helping to make clear the exact nature of some forms of fractures and dislocations which recently have been only partially or not at all recognized.

The entire work is authoritative and a safe guide for the practitioner as well as for the student.

We would specially commend the views of the author on the question of direct fixation of the bone fragments in fractures; he prefers temporary direct fixation or fixation by absorbable suture to direct fixation by non-absorbable suture or metallic apparatus. While admitting the value of the Roentgen rays in some obscure cases, in fractures of the small bones and in fractures near joints, Dr. Stimson points out that errors of interpretation are frequent. The skiagram should be interpreted by the aid of the clinical findings and of considerable experience in its use. He is conservative and we believe therefore correct in his views regarding treatment of fractures of the vertebra and of the patella.

**THE NEWER REMEDIES.** By Virgil Coblentz, A.M., Phar.M., Ph.D., F.C.S. Professor of Chemistry in Columbia University, Department of Pharmacy. Fourth Edition, Revised and Enlarged. Cloth. Pp. 133. Boston: The Apothecary Publishing Co., 1908.

In this book the composition of the newer remedies is given in accordance with the statements of the manufacturers, except, as the author states in the preface, in those instances in which analyses have been published by independent investigators. Coblentz calls attention to the work in this line being done by the Council on Pharmacy and Chemistry of the American Medical Association, the Pharmaceutical Laboratory of Berlin University, and by Drs. Zernik, Koch and Aufrecht, whose publications appear in the *Apotheker Zeitung*, the *Pharmaceutische Centralhalle* and the *Pharmaceutische Zeitung*. In most instances the remedies are listed and described under the proprietary name, a cross reference being made to the chemical name—for example: acetyl-salicylic acid—*aspirin*. Phenalgin is given as a synonym for *ammonol*. The analysis published by the Council on Pharmacy and Chemistry for this latter preparation is given, but there is no credit to either the Council or *THE JOURNAL*, in which it appeared June 3, 1905, the inference being, naturally, after reading the statement in the preface above referred to, that the analysis is that furnished by the manufacturers. The same criticism applies to the analysis of orangeine. No mention is made of the adverse reports of the Council on tartarilithine, uron and thialion. In some other cases, as for example Tyree's powder and oxychlorin, reference is made to the published reports of the Council.

**MEAT AND FOOD INSPECTION.** By Wm. Robertson, M.D., D.P.H., F.T.S., Lecturer on Public Health. Royal College for Surgeons, Edinburgh. Cloth. Pp. 372, with illustrations. Price, \$3.50. Chicago: W. T. Keener & Co., 1908.

While the training of a veterinarian is needed to meet the more complicated problems arising in the inspection of animals intended for food, Dr. Robertson holds that every student of medicine possesses the requisite knowledge of pathology to pronounce opinions on pathologic conditions of animals intended for food and that even the intelligent layman after close study can become a judge of the wholesome-

ness of meats. Considering the importance of the subject it is strange that so little attention has been paid to it. Where the sanitary authorities can not afford to employ a special veterinarian, the health officer should fit himself for the ordinary duties of food inspection. To assist the latter in such preparation, the author has included in the scope of his work the inspection of stables, pigstyes, milk-shops, etc., as well as the inspection of slaughter-houses and meat. These subjects occupy the first half of the book, while the second half consists of the laws relating to food inspection, those in force in the United States being given by Dr. Maximilian Herzog in an appendix. The volume, although of special value to British officers, ought also to be very serviceable to American sanitary authorities. It is well illustrated.

**THE EFFICIENT LIFE.** By Luther H. Gulick, M.D., Director of Physical Training in the New York City Schools. With Double-page Frontispiece. Cloth. Pp. 195. Price, \$1.20 net. New York: Doubleday Page & Co., 1907.

Gulick appropriately dedicates his book "to Theodore Roosevelt, who sometimes leads the simple life, who often leads the strenuous life, but who always leads the efficient life." The volume may be put into the hands of patients who wish advice about eating, sleeping, bathing, exercising and, in general, putting the body into a condition in which the greatest efficiency may be obtained. The soundness of the advice may be illustrated by the following on stimulants: "It is never safe to consent to dose a man up, unless you can get him to give you his word of honor that he will give himself a corresponding vacation as soon as the special strain is over." And this: "Pain is like a danger signal on a railroad. . . . There are times when it is perfectly right to aim at the pain. . . . Perhaps some important work must be carried through." When a man stops the pain with drugs, "from that moment on he has assumed absolute responsibility for the conditions, whatever they are, that gave rise to the pain. . . . A headache powder does not hit the cause of the headache any more than a laxative hits the cause of constipation or a spoonful of pepsin the cause of indigestion."

**LES PSEUDO-BACILLES ACIDO-RÉSISTANTS.** Critique des méthodes de coloration du bacille tuberculeux. Révision du groupe des bacilles dits acido-résistants. Par le Dr. André Philibert. Travail du Laboratoire de bactériologie de la Faculté de médecine de Paris. Paper. Pp. 144. Paris: G. Steinheil, Editeur, 1908.

This is a monograph from the laboratory of bacteriology of the University of Paris, containing a thorough consideration of the causes and significance of the acid-resisting property of *Bacillus tuberculosis* and a few other organisms. Some of the conclusions reached are of great importance for practical diagnosis, and they are probably warranted. Among them are these: True acid-resisting bacteria consist of two groups, the *B. tuberculosis* in all its varieties, and the "tuberculoïd" bacteria of milk, grains, grass, etc. There also is a third group of acid-resisting bacteria which have been found in urine, smegma, sputum, sebaceous material, fibrinous exudates, and in cadavers, in which this staining property is an acquired character, perhaps due to the character of the soil in which the organisms have been grown. It is of course important that these organisms be distinguished from the true tubercle bacilli, and this is not difficult because, though acid-resistant, they are not alcohol-resistant. Consequently, if in staining the decolorization is made with alcohol according to the regular Ziehl-Neelsen method, the forms of this third group will be decolorized.

**FORMULAIRE SYNTHÉTIQUE DE MÉDECINE.** By Dr. L. Pron. Pp. 601. Price, 6 fr. Paris: Jules Rousset, 1908.

This formulary book, suited especially to the needs of French physicians, is constructed on a somewhat different plan from other similar works. It aims to give the properties of medicines and at the same time their therapeutic indications and to analyze from the therapeutic side the indications for treatment afforded by individual symptoms. Not only are the indications for each remedy given, but the contra-indications are also pointed out. Other methods of treatment besides drugs, such as climate, mineral waters, electricity, etc., are included. The book is of a convenient size for the pocket and bound with flexible covers.



TASCHENBUCH DER PHYSIOLOGIE. By Prof. Dr. Med. H. Borutian, Berlin. Vols. I and II. Paper. Price, \$6.00 per set. Leipzig: Dr. Werner Klinkhardt, 1908.

This represents a German variety of that familiar pedagogic abomination, the "quiz compend." which seems generally to be constructed with the sole object of making thinking an unnecessary accomplishment, and of substituting the habit of mental cold storage of facts and near-facts in place of habits of observation and deduction. The quality of a medical school may be estimated as in inverse proportion to the use its students find for this sort of publication.

COMMONER DISEASES OF THE EYE. By Casey A. Wood, M.D., C.M., D.C.L., Professor of Ophthalmology, Northwestern University, Chicago, and Thomas A. Woodruff, M.D., C.M., L.R.C.P. (London), Ophthalmic Surgeon, St. Luke's Hospital and St. Anthony de Padua Hospital, Chicago. Third Edition, Enlarged and Improved. Cloth. Pp. 598. Price, \$2.50. Chicago: W. T. Keener Co., 1907.

In the new edition this excellent little volume has been enlarged and much improved, making it more than ever a practical text-book for the general practitioner who must be acquainted with all the common eye affections and yet can not give time to master all the details of volumes for specialists.

THE SANITATION OF RECREATION CAMPS AND PARKS. By Dr. Harvey B. Bashore, Medical Inspector for Pennsylvania Department of Health. First Edition. Pp. 109, with illustrations. Cloth. Price, \$1.00. New York: John Wiley & Sons. London: Chapman & Hall, 1908.

This little work details the sanitation of camps, whether military, labor, hunting or recreation, and the keynote of it all is pure water and the proper disposal of waste.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### COMPOSITION OF GOAT'S MILK.

FESLIN, EGYPT, June 14, 1908.

To the Editor:—Kindly give me the percentage of fat proteid, etc., in goat's milk as compared with cow's milk.

H. E. HANSON.

ANSWER.—According to Bunge (Text-Book of Physiologic and Pathologic Chemistry, second English edition), one hundred parts of milk contain:

	Cow.	Goat.
Casein .....	3.0	3.2
Albumin .....	0.5	1.1
Total proteins.....	3.5	4.3
Fat .....	3.7	4.8
Sugar of milk .....	4.9	4.5
Ash .....	0.7	0.8

### REPTILES DO NOT LIVE IN HUMAN STOMACH.

GREAT MILLS, MD., June 23, 1908.

To the Editor:—Is it possible for a snake or reptile to live in the human stomach?

H. A. BROOKS, M.D.

ANSWER.—No authentic case is known of the existence of a living, air-breathing animal in the human stomach. The accounts of such conditions are founded on abnormal sensations erroneously interpreted by credulous people to indicate the presence of a living animal. The cases should be treated in such a way as to remove, if possible, the morbid sensations and at the same time dispel the delusion founded on them.

### COMPRESSION THERAPY IN GYNECOLOGY.

LOUISVILLE, KY.

To the Editor:—Please refer me to some book or article that gives indications and technic in the use of the colpeurynter filled with mercury. This method, called the weighting treatment, is referred to in THE JOURNAL, Jan. 25, 1908, in an abstract on page 323.

R. R. ELMORE.

ANSWER.—This method of gynecologic treatment was evolved by Ludwig Pincus of Danzig, Germany, and described by him in a monograph entitled "*Belastungslagerung, Grundzüge einer nicht-Operative Behandlung chronisch-entzündlicher Frauenkrankheiten und deren Folgezustände*," Wiesbaden, 1905, J. F. Bergman. A description of the method is also given in the *Monatsschrift für Geburtshilfe und Gynäkologie*, xxi, 71. A short abstract was also published in THE JOURNAL, May 20, 1905, xlv, 1650.

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending July 4, 1908:

Kirkpatrick, T. J., major, M. C., ordered from Ft. Moultrie, S. C., to Chickamauga Park, Ga., for duty.

Baker, F. C., capt., M. C., ordered from Ft. Oglethorpe, Ga., to Chickamauga Park, Ga., for duty.

Wickline, W. A., capt., M. C., left Army G. H., San Francisco, with one-half of Co. B. H. C., for duty at Leon Springs, Texas.

Zinke, S. G., capt., M. C., ordered with Field Artillery from Ft. Leavenworth, Kans., to Ft. D. A. Russell, Wyo., for duty during the maneuvers.

Vose, W. E., capt., M. C., ordered from Ft. Des Moines, Iowa, to Ft. Mackenzie, Wyo., for duty in the field.

Reynolds, C. R., capt., Cowles, C. D., Jr., first lieutenant, Huber, E. G., first lieutenant, and Lambie, J. S., Jr., first lieutenant, M. C., left Gen. Hosp., Washington, D. C., with 50 men of Co. C, H. C., for Chickamauga Park, Ga., Field Hospital No. 8.

Whaley, A. M., capt., M. C., left Ft. Sam Houston, Texas, for duty at camp, Leon Springs, Texas.

Lamson, T., capt., M. C., granted leave of absence for two months, with permission to ask extension of one month.

Manly, C. J., capt., M. C., granted leave in the United States from July 12 to Sept. 15, 1908.

Clark, J. A., capt., M. C., relieved from further duty at Ft. Oglethorpe, Ga., and temporary duty at Madison Barracks, N. Y., and ordered to proceed Aug. 1 to Ft. Lisicum, Alaska, for duty.

Hanson, L. H., first lieutenant, M. C., when relieved at Ft. Lisicum, Alaska, ordered to Seattle, Wash., for orders.

Grissinger, J. W., capt., M. C., relieved from duty at Ft. Ethan Allen, Vt., and ordered to proceed Aug. 1 to Ft. Egbert, Alaska, for duty.

Schmitter, F., capt., M. C., when relieved at Ft. Egbert, Alaska, ordered to Seattle, Wash., for orders.

Wyeth, M. C., Borden, Wm. C., Crosby, W. D., Stephenson, Wm., Mearns, E. A., Gandy, C. M., Phillips, J. L., Edie, G. L., Ewing, C. B., McCaw, W. D., and Kean, J. R., majors, M. C., ordered to report at Washington, D. C., Sept. 21, 1908, for examination for promotion.

Wall, F. M., contract surgeon, ordered from Ft. Oglethorpe, Ga., to Chickamauga Park, Ga., for duty.

Cattermole, C. A., contract surgeon, ordered from San Francisco, to Manhattan, Nev., for annulment of contract.

Jones, G. B., contract surgeon, ordered from San Francisco, to Ft. George Wright, Wash., for duty.

Johnson, C. W., contract surgeon, ordered from Ft. Des Moines, Iowa, to field duty in South Dakota.

Hart, W. L., contract surgeon, ordered to temporary duty at Washington Barracks, in addition to his duties at A. G. H., Washington, D. C.

Whinnery, J. C., dental surgeon, left Vancouver Barracks, Wash., for duty at Ft. Worden, Wash.; will subsequently visit in succession Ft. Flagler, Wash., Ft. Casey, Wash., and Ft. Ward, Wash.

### Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended July 1, 1908:

Geddings, H. D., asst.-surgeon-general, directed to proceed to Philadelphia, and Reedy Island Quarantine Station, for special temporary duty, on completion of which to rejoin his station at Washington, D. C.

Gassaway, J. M., surgeon, directed to proceed to Reedy Island Quarantine Station for special temporary duty, on completion of which to rejoin his station at Philadelphia.

Wertebaker, C. P., surgeon, granted leave of absence for 3 days, from July 1, 1908.

Oakley, J. H., P. A. surgeon, granted leave of absence for 4 days.

Lavinder, C. H., P. A. surgeon, leave of absence granted for 4 days, from June 16, 1908, amended so as to grant him leave of absence for 3 days only.

Hobdy, W. C., P. A. surgeon, relieved from duty on examining board, San Francisco, July 6, 1908.

King, W. W., P. A. surgeon, detailed as recorder of examining board, San Francisco, July 6, 1908.

Goldberger, Joseph, P. A. surgeon, directed to proceed to Baltimore, Md., for special temporary duty, on completion of which to rejoin his station at the Hygienic Laboratory, Washington, D. C.

Goldberger, Joseph, P. A. surgeon, directed to proceed to Alexandria, Va., for special temporary duty, on completion of which to rejoin his station.

Roberts, Norman, asst.-surgeon, granted extension of leave of absence, for 3 days, from July 1, 1908.

Salmon, T. W., asst.-surgeon, granted leave of absence for 7 days, from June 28, 1908, under Paragraph 191, Service Regulations.

Drew, A. D., acting asst.-surgeon, granted leave of absence for 30 days, from July 3, 1908, without pay.

Friedman, H. M., acting asst.-surgeon, granted leave of absence for 28 days, from July 5, 1908.

Gray, Geo. E., acting asst.-surgeon, granted leave of absence for 5 days, from June 22, 1908.

Onuf, B., acting asst.-surgeon, granted leave of absence for 2 days, from June 20, 1908, on account of sickness.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended July 3, 1908:

#### SMALLPOX—UNITED STATES.

Alabama: Huntsville, June 5-18, 85 cases; Mobile, June 7-13, 1 case.



Arkansas: Texarkana, Dec. 1-June 15, present.  
California: Los Angeles, June 7-30, 3 cases; Oakland, May 1-31, 12 cases; San Francisco, June 6-20, 11 cases.  
District of Columbia: Washington, June 16-20, 7 cases.  
Illinois: General, May 1-31, 288 cases; Chicago, June 14-20, 4 cases.  
Indiana: General, April 1-30, 293 cases.  
Kansas: General, April 1-30, 432 cases; Kansas City, June 8-15, 3 cases; Topeka, 3 cases.  
Kentucky: Covington, June 21-27, 3 cases.  
Louisiana: New Orleans, June 14-20, 6 cases.  
Missouri: Conway, April 20-June 19, 29 cases; Kansas City, June 14-20, 2 cases; St. Louis, 1 case; St. Joseph, June 7-20, 9 cases.  
Nebraska: Friend, April 13-June 18, 13 cases; South Omaha, June 7-13, 1 case.  
New York: New York City, June 14-20, 1 case; Niagara Falls, 1 case.  
North Carolina: General, April 1-30, 161 cases.  
Ohio: Cincinnati, June 20-26, 4 cases; Dayton, June 14-20, 4 cases.  
Tennessee: Nashville, June 14-20, 1 case.  
Texas: Fort Worth, May 1-31, 9 cases; San Antonio, June 1-20, 2 cases.  
Utah: General, May 1-31, 33 cases.  
Virginia: Alexandria, June 25-27, 13 cases.  
Washington: Spokane, June 7-20, 25 cases; Tacoma, June 8-14, 1 case.  
Wisconsin: La Crosse, June 16-20, 4 cases.

## SMALLPOX—FOREIGN.

Arabia: Aden, May 28-June 1, 2 deaths.  
Austria: Galicia, May 24-30, 1 case.  
Brazil: Rio de Janeiro, May 11-24, 364 cases, 153 deaths; Santos, May 3-10, 8 cases, 1 death.  
Canada: Nova Scotia—Halifax, June 14-20, 6 cases.  
Ceylon: General, April 1-30, 2 deaths.  
China: Hong Kong, May 10-16, 3 cases, 1 death; Shanghai, May 3-24, 4 deaths.  
Egypt: General, May 4-20, 77 cases, 10 deaths; Cairo, May 30-June 3, 6 cases, 2 deaths; Suez, May 6-20, 5 cases.  
Formosa: May 2-9, 1 case.  
France: Paris, May 31-June 6, 1 case; Marseille, May 1-31, 2 deaths.  
Great Britain: Liverpool, April 30-June 6, 1 case.  
India: Bombay, May 20-26, 31 deaths; Calcutta, May 10-16, 16 deaths.  
Italy: Catania, May 22-June 11, 1 death; Naples, May 31-June 6, 2 cases; Palermo, May 24-June 6, 7 cases.  
Japan: Nagasaki, May 17-24, 1 case; Osaka, May 10-16, 20 cases, 17 deaths.  
Java: Batavia, May 10-16, 3 cases.  
Mexico: Aguas Calientes, June 8-14, 3 deaths; Mexico City, June 10-16, 10 deaths; Monterey, June 8-14, 1 death.  
Philippine Islands: Manila, May 3-June 9, 11 cases, 4 deaths.  
Russia: St. Petersburg, May 17-30, 49 cases, 12 deaths; Warsaw, April 25-May 9, 2 deaths.  
Spain: Barcelona, June 1-10, 1 death; Valencia, June 1-6, 17 cases.  
Turkey in Europe: Constantinople, June 1-7, 7 deaths.

## CHOLERA.

India: Bombay, May 20-26, 1 death; Calcutta, May 10-16, 109 deaths; Madras, May 16-22, 3 deaths.  
Straits Settlements: Singapore, May 10-16, 1 death.

## YELLOW FEVER.

Brazil: Manaus, May 26-30, 2 cases, 2 deaths; Para, May 31-June 6, 4 cases, 4 deaths.

## PLAGUE.

Brazil: Rio de Janeiro, May 11-17, 4 cases.  
China: Hong Kong, May 10-16, 88 cases, 65 deaths.  
India: General, May 9-16, 6,720 cases, 5,708 deaths; Bombay, May 9-26, 148 deaths; Calcutta, May 9-16, 69 deaths.  
Japan: Formosa, May 2-23, 357 cases, 272 deaths.  
Peru: Callao, May 23-30, 2 cases, 1 death.  
Siam: Tongkah, May 4, present.  
Trinidad: to June 11, 6 deaths.  
Turkey in Asia: Bagdad, June 7-13, 10 cases, 9 deaths.  
Venezuela: Caracas, June 10-12, 5 cases, 1 death; La Guaira, June 16-19, 5 cases, 1 death.

## Association News

## DATE OF NEXT SESSION.

Announcement of the Date of the Next Annual Session at Atlantic City Next June.

The next annual session of the American Medical Association will be held at Atlantic City, N. J., June 8 to 11, 1909.

## NEW MEMBERS.

The following is a list of new members of the American Medical Association for the month of June, 1908. Names marked with stars or daggers are of those who became members at the Chicago session; the dagger indicates that the name so marked was previously on the subscription list.

## ALABAMA.

Coleman, S. L., Uniontown.  
\*Copeland, M. A., Birmingham.  
Wilkinson, J. G., Catherline.  
†Wyman, B. L., Birmingham.

## ARIZONA.

Ayer, Ira, Cochise County.

## ARKANSAS.

\*Dickson, H. N., Paragould.  
Floyd, C. J., Harrison.  
\*Grammer, J. B., Searey.  
Isom, Alphonso, Gould.  
†Williams, F. M., Hot Springs.  
\*Wood, T. F., Uniontown.

## CALIFORNIA.

Bine, Rene, San Francisco.  
\*Briggs, C. A., Pasadena.  
\*Crabtree, H. T., San Francisco.  
Eckardt, A. O., Gualala.  
Fisher, C. V., Antioch.  
†McCarty, I. A., Los Angeles.  
Nicholls, R. J., San Francisco.

## COLORADO.

\*Herriek, J. C., Denver.  
Melvin, W. G., Ouray.  
†Pattee, J. J., Pueblo.

## CONNECTICUT.

Clifton, H. C., Hartford.  
Lowe, H. R., Putnam.  
\*Whittemore, E. R., New Haven.

## WASHINGTON, D. C.

Gannon, J. A., Washington.  
Verbrycke, Jr., J. R., Washington.  
Waring, J. H., Washington.

## FLORIDA.

†Pittman, J. H., Jacksonville.

## GEORGIA.

Burford, R. E. L., Brunswick.  
Cole, J. E., Middleton.  
Harrington, A. F., West Point.  
†Matthews, M. F., Athens.  
Respass, Herbert, Macon.  
Smith, S. S., Athens.

## ILLINOIS.

Adair, Sadie B., Chicago.  
†Albers, Anna, Chicago.  
Albright, I. N., Chicago.  
†Alford, E. T., Chicago.  
\*Allen, T. G., Chicago.  
†Armstrong, Kate E., Kewanee.  
†Bacon, J. V., Chicago.  
†Bailey, G. L., Oak Park.  
†Bailey, H. V., Pekin.  
†Baird, B. D., Galesburg.  
Baker, G. J., Marion.  
†Balderston, S. V., Evanston.  
†Baldrige, S. T., Chicago.  
†Barnard, H. S., Chicago.  
\*Baur, E. F., Chicago.  
Bentele, Elizabeth, Chicago.  
†Bergeron, J. Z., Chicago.  
\*Biehn, J. F., Chicago.  
\*Blackburn, W. R., Breeds.  
†Blakelidge, Rose M., La Grange.  
Bonhius, F. A., Chicago.  
†Booth, F. H., Chicago.  
Bonton, W. C., Waukegan.  
†Bradley, E. H., Peoria.  
†Brenner, F. T., Quincy.  
†Brener, E. J., Shalbona.  
\*Brian, J. R., St. Francisville.  
\*Brodriek, F. W., Chicago.  
Brown, W. C., Chicago.  
†Brucker, M. W., Chicago.  
Brownfield, S. T., Galesburg.  
†Bucky, W. E., Chicago.  
†Burns, P. T., Chicago.  
†Bush, Bertha E., Chicago.  
†Camp, F. K., Chicago.  
†Chancellor, P. S., Chicago.  
†Chapin, C. W., Weldon.  
\*Chapin, H. A., White Hall.  
\*Christie, Edmund, Chicago.  
†Christman, Paul, Kankakee.  
Church, Harry S., Modoc.  
†Clark, C. P., Chicago.  
Clark, T. H., Goleonda.  
†Clark, T. H., Chicago.  
\*Cloyd, F. N., Westville.  
\*Cloyd, R. A., Catlin.  
Cody, J. M., Tremont.  
\*Collins, H. O., Paloma.  
†Cook, C. E., Mendota.  
\*Corcoran, A. L., Peoria.  
Coughlin, F. J., Aurora.  
†Coveny, M. J., Spring Valley.  
Culbertson, O. J., E. St. Louis.  
†Cunningham, W. J. M., Chicago.  
†Curry, N. D., Chicago.  
†Curtis, W. P., Chicago.  
Dale, G. L. A., Chicago.  
\*Dale, H. W., McLeansboro.  
†Dahlberg, A. V., Chicago.

\*Danford, R. C., Pana.  
\*Deal, John, Riverton.  
\*DeVault, A. N., Chicago.  
\*Dicus, J. F., Streator.  
\*Dods, G. D. B., Chicago.  
†Donkle, L. B., Chicago.  
\*DuBois, W. L., Chicago.  
Duntley, G. S., Bushnell.  
†Dvorak, G. M., Chicago.  
†Dyche, G. B., Chicago.  
\*Eckard, E. M., Peoria.  
†Einarson, B., Chicago.  
†Ellingwood, C. V., Chatsworth.  
†Ellis, J. B., Chicago.  
Ennis, Matilda E., Chicago.  
\*Epperson, J. C., Kansas.  
†Erickson, C. A., Chicago.  
\*Eskey, F. W., Tuscola.  
\*Faith, Thomas, Chicago.  
†Folkemer, H. R., Bowen.  
†Ford, E. J., North Evanston.  
†Foreman, C. B., Kane.  
†Fouser, Hiram, Harvey.  
†First, F. H., Rock Island.  
\*Fisher, J. C., Decatur.  
\*Fletcher, W. R., Joliet.  
\*Fricke, G. H., Park Ridge.  
\*Gabel, H. G., Aurora.  
†Gillespie, E. S., Wenona.  
\*Gobble, H. W., Greenfield.  
†Goldberg, J. B., Chicago.  
Gorrell, T. J. H., Chicago.  
†Gowen, G. A., Chicago.  
Grant, O. P., Cantrall.  
†Grattan, W. H., Shawneetown.  
\*Gray, W. L., Champaign.  
†Green, T. S., Chicago.  
†Grimmer, C. F., Pekin.  
†Grulee, C. G., Chicago.  
Gunn, Janet, Arlington Heights.  
\*Haiselden, Harry J., Chicago.  
\*Haley, Richard, Chicago.  
†Hall, E. A., Henry.  
†Hammond, H. R., Chicago.  
Harder, H. P., Evanston.  
\*Haushus, J. W., Chicago.  
†Hayes, F. C., Camden.  
†Heflin, H. N., Kewanee.  
†Herrick, A. D., Chicago.  
†Heym, A., Chicago.  
†Hickman, J. M., Westville.  
\*Hill, J. H., Mechanicsburg.  
\*Hillemeier, W. A., Chicago.  
Hirsch, S., LaSalle.  
Hoglund, E. J., Chicago.  
Holmes, Jr. Bayard, Chicago.  
†Holmes, E. M., Chicago.  
†Holmes, P. H., Chicago.  
†Hostetter, A., Rockford.  
†Ikemire, J. A., Palestine.  
\*Illyes, L. R., Flat Rock.  
\*Jacobson, A. F., Chicago.  
†Jacque, J. L., Chicago.  
James, J. M., Henning.  
†Jarvis, E. T., Macomb.  
†Jenney, F. L. B., Chicago.  
†Johnson, J. A., Dale.  
\*Jolley, L. B., Gurnee.  
†Jones, H. O., Chicago.  
\*Just, G. H., Buckingham.  
\*Karreman, A. R., Chicago.  
†Kelly, J. W., Chicago.  
\*Kemp, C. H., Lacon.  
\*Kepner, M. E., LaCleda.  
\*Kidd, A. E., Quincy.  
King, C. B., Chicago.  
Kirkland, J. A., Cambridge.  
†Klentgen, A. C., Chicago.  
†Korb, M. C., Chicago.  
Lacey, J. H., Albion.  
†Lane, E. H., French Village.  
†Langer, Carl, Chicago.  
†Lebensohn, M. H., Chicago.  
†Lewis, C. J., Chicago.  
Lewison, M., Chicago.  
\*Limmer, G. L., Peoria.  
\*Lingle, W. E., Cobden.  
†Lipshulch, G. U., Chicago.  
†Lockie, G. D., Pontiac.  
†Lorch, G. J., Chicago.  
†Lowenthal, A. A., Kankakee.  
\*Luken, M. G., Chicago.  
Lundgren, A. E., Chicago.  
†MacCracken, W. P., Chicago.  
†MacFarlane, W. A., Chicago.  
†Maher, T. F., Chicago.  
\*Markley, G. W., Kingston.  
\*May, S. R., Mt. Zion.  
\*Mayes, W. E. G., Dawson.  
\*McCord, T. C., Paris.  
\*McFadden, L. A., Peoria.  
Mellwain, Jr. Jas., Okawville.  
†McGibbon, W. P., Chicago.  
†McHugh, Thos., Chicago.  
\*McKinley, J. F., Chicago.  
\*McLaughlin, A. W., Chicago.  
†McQuarrie, J. K., Chicago.  
†Merritt, Elsie B., Princeville.  
Meany, J. J., Chicago.  
Mesirow, E. B., Chicago.  
†Meyers, I. L., Chicago.



\*Midgett, J. E., Flat Rock.  
†Miller, A. B., Chicago.  
Miller, C. A., Macon.  
†Mock, H. E., Chicago.  
†Montgomery, James, Chicago.  
\*Moore, C. R., Chicago.  
\*Moore, F. B., Chicago.  
\*Moore, Willis, Chicago.  
†Mundt, G. H., Chicago.  
\*Musselman, J. T., Paris.  
†Myers, C. S., Chicago.  
†Myrick, A. E., Park Ridge.  
†Nauman, B. J., Peru.  
\*Newcomer, Irving, Petersburg.  
Nicholson, J. M., Chicago.  
†Noble, Thos. A., Harvey.  
Ogden, E. J., Chicago.  
†O'Neill, J. W., Chicago.  
†Packard, T. L., Lanark.  
Palmer, M. J., Beardstown.  
†Pattillo, R. S., Chicago.  
Paulson, A. T., Chicago.  
†Petersen, H. A., Dundee.  
†Pierce, G. F., Chicago.  
†Piummer, W., Farmington.  
Poehls, J., Chicago.  
†Pratz, F. D., Moweaqua.  
\*Prince, J. A., Springfield.  
Purves, A. M., Des Plaines.  
†Rabe, W. L., Dwight.  
†Ransmeier, R. E., Chicago.  
†Redman, F. E., Chicago.  
Reeder, W. G., Chicago.  
\*Reilly, Joseph, Chicago.  
†Reinhardt, H. G. W., Chicago.  
†Rembe, Reinhard, Chicago.  
†Reynolds, G. W., Chicago.  
Ricardo, D. E., Chicago.  
†Ribel, E. C., Chicago.  
†Rikli, A. R., Naperville.  
\*Reno, C. G., Streator.  
Ritter, M. M., Chicago.  
\*Roane, J. Q., Carlyle.  
Roberts, E. E., Mount Erie.  
Rogers, A. E., Bloomington.  
Rohrbach, O. H., Chicago.  
†Rudnick, Fred, Chicago.  
Rudolph, G. W., Elliott.  
\*Ryan, Lawrence, Chicago.  
†Ryman, H. D., Vernon.  
†Sahud, Moses, Chicago.  
\*Sandy, T. H., Chicago.  
†Schachter, J., Chicago.  
Schaubel, G. M., Chicago.  
Schenck, W. E., Pekin.  
Schoenberg, A. J., Chicago.  
†Schaffer, W. J., Chicago.  
†Schmitz, Henry, Chicago.  
\*Schram, A. W., Chicago.  
\*Schreiber, G. F., Chicago Heights.  
†Schroeder, G. H., Chicago.  
†Schurtz, Carl, Streator.  
\*Scott, C. C., Princeton.  
\*Selby, E. H., Chicago.  
Servoss, A. G., Havana.  
Shaw, D. Lee, Chicago.  
†Siebel, Jr., J. E., Chicago.  
†Sloo, M. G., Chicago.  
Smith, C. G., Chicago.  
\*Stearns, L. M., Oak Park.  
Stiers, F. L., East Peoria.  
Stevens, J. H., Wing.  
†Stober, A. M., Chicago.  
\*Stoeffhaas, L. C., Chicago.  
\*Stokes, W. F., Chicago.  
Stone, C. A., Belvidere.  
†Storck, Wm., Chicago.  
†Stranss, D. C., Chicago.  
Streich, E. A., Chicago.  
Sultan, George, Chicago.  
Taylor, I. H., Springfield.  
†Thornton, C. M., Elkville.  
\*Timmerman, H. E., Chicago.  
Timmerman, E. V., Chicago.  
†Titzel, W. R., Chicago.  
\*Trublood, R. R., Lawrenceville.  
†Van Dellen, R. L., Chicago.  
†Van Hoosen, Bertha, Chicago.  
\*Wade, C. A., Chicago.  
\*Walker, T. E., Gifford.  
Wallace, H. R., Chicago.  
†Waller, J. D., Oak Park.  
†Walsh, J. H., Chicago.  
†Walters, C. H., Springfield.  
Wardle, H. W., Chicago.  
†Waterman, S. A., Chicago.  
\*Waterman, W. M., Chicago.  
†Watson, J. B., Litchfield.  
†Wangh, J. F., Chicago.  
\*Wedel, Gustav, Chicago.  
†Werellus, Axel, Chicago.  
†West, W. B., Chicago.  
Whamond, A. A., Chicago.  
Wharton, J. F., Homewood.  
†Wicks, Seth, Chicago.  
White, J. C., Seatonville.  
\*Wickland, C. A., Chicago.  
\*Wikoff, C. P., Emington.  
\*Wilcox, C. A., Amboy.  
†Wissig, S. L., Chicago.  
\*Wistein, Rosina R., Chicago.

†Woods, A. W., Morgan Park.  
†Woodworth, S. A., Park Ridge.  
Woof, J. T., Chicago.  
†Wright, N. A., Manito.  
\*Wynekoop, F. E., Chicago.  
\*Yeates, W., Bonfield.  
†Zoller, C. H., Granite City.

## INDIANA

\*Austin, F. H., North Madison.  
Biddle, F. M., Battle Ground.  
†Borley, E. R., South Bend.  
Bounnell, H. M., Waynetown.  
†Bradfield, John, Logansport.  
†Brokaw, R. E., Portland.  
\*Buchanan, W. A., Hammond.  
Callane, M. D., Flora.  
\*Carnelley, J. H., Kokomo.  
Chittick, A. J., Burlington.  
†Clevenger, W. F., Indianapolis.  
†Cochran, R. W., Madison.  
Collier, T. E., Brook.  
\*Cromer, L. G., Union City.  
\*Darroch, W. P., Cayuga.  
†Dewey, F. U., Elkhart.  
†Dielman, F. C., Fulton.  
\*Dobbins, A. O., Wheeler.  
Domer, W. A., Sabash.  
Egan, B. W., Carroll.  
†Englerth, P. O., North Judson.  
Evans, H. M., Valparaiso.  
Fargher, J. H., Laporte.  
Finney, C. J., Attica.  
†Frost, R. F., Huntington.  
†Gilson, E. A., Covington.  
\*Grim, G. B., Oakland City.  
\*Hackley, R. P., Medaryville.  
†Hagenbaugh, E. J., Elkhart.  
\*Hamilton, Allen, Fort Wayne.  
†Hays, Woodward, Albion.  
Hill, H. B., Logansport.  
†Hobbs, Alice L., Indianapolis.  
Hunn, M. F., Shipshewana.  
\*Hunter, T. E., Versailles.  
Ingalls, A. T., Elkhart.  
\*Jones, J. F., Hammond.  
†Jones, J. J., Medaryville.  
Jones, M. C., Converse.  
\*Kremer, N. A., Madison.  
Leiter, W. S., Claypool.  
†Lent, E. J., South Bend.  
Levering, G. P., Lafayette.  
\*Loomis, Chas., Vevay.  
\*Lorenz, J. W., Evansville.  
†McCaslin, C. N., Earl Park.  
†McConnell, Joseph, Terre Haute.  
\*McDonald, W. B., New Augusta.  
†McKeehan, R. B., Fort Wayne.  
†Miller, C. A., Princeton.  
Milligan, J. W., Michigan City.  
†Miranda, W. F., Walkerton.  
\*Mitchell, E. E., Bedford.  
\*Morris, J. E., Indianapolis.  
†Mumford, E. B., Indianapolis.  
Nebeker, Eva, Covington.  
†Peck, W. M., South Bend.  
\*Perry, C. H., Lewis Creek.  
Perry, Ira E., Bippus.  
†Packard, C. W., Gary.  
\*Payne, A. T., Terre Haute.  
Peter, E. L., Flora.  
\*Poiland, U. G., Muncie.  
†Powell, N. B., Marion.  
†Proudfit, L., Osceola.  
†Radcliffe, F. E., Bourbon.  
†Redding, J. L., Bluffton.  
\*Robison, Elwood, Rossville.  
\*Robison, J. E., Frankfort.  
†Ross, David, Indianapolis.  
Saalman, J. E., Eckerty.  
\*Sanders, I. M., Greensburg.  
\*Shafer, Winfield, Rochester.  
\*Shepherd, G. W., Red Key.  
Shoaf, F. A., Veedersburg.  
\*Shultz, J. B., Logansport.  
†Snyder, J. W., Michigan City.  
†Spear, R., East Chicago.  
\*Sprowl, J. S., Warren.  
†Sprange, J. W., Logansport.  
\*Stormont, R. M., Stewartsville.  
†Swezey, H. N., Marion.  
†Taviner, R. Q., Huntington.  
†Taylor, J. E., Leopold.  
Thompson, N. H., Wabash.  
Vandiver, H. R., Clay City.  
†Van Kirk, G. H., Kentland.  
Van Reed, Earl, Lafayette.  
Wagner, E. P., South Bend.  
\*Whitlatch, Bine, Pierceville.  
\*Wood, H. D., Angola.  
†Work, Jr., J. A., Elkhart.  
†Yocum, M. G., Mentone.

## IOWA

Acher, A. E., Ft. Dodge.  
†Applegate, C. F., Mt. Pleasant.  
Arthur, W. R., Greene.  
†Bamford, E. E., Centerville.  
\*Barnes, F. L., Oskaloosa.  
\*Beardsley, D. E., Cedar Rapids.  
†Becker, W. L., Dubuque.

†Bliss, C. S., Renwick.  
\*Bowman, E. S., Davenport.  
†Brandt, G. C., Denison.  
\*Brewer, M. T., De Soto.  
†Brinkman, J. E., Waterloo.  
Brownson, J. D., Monona.  
†Calbreath, C. B., Lineville.  
†Carr, C. W., Denison.  
†Chase, C. S., Iowa City.  
†Cobb, H. A., Dunlap.  
†Counney, R. M., Sergeant Bluff.  
\*Criley, B. H., Dallas Center.  
\*Daly, J. J., Charles City.  
\*Dean, W. F., Osceola.  
†Dodds, W. E., Richland.  
†Duffin, W. L., Guttenberg.  
\*Engle, Perry, Newton.  
\*Ficke, E. O., Davenport.  
†Fitz Jerrell, H. B., Elkport.  
†Gillespie, H. S., Mapleton.  
Gleason, B. F., Arthur.  
†Harris, W. A., Centerville.  
†Hill, M. W., Mt. Vernon.  
†Hurst, W. N., Ottumwa.  
†Jeffries, W. G., Leon.  
\*Johnston, T. H., Spencer.  
†Jones, C. R., Griswold.  
†Kellogg, O. A., Blairsburg.  
†Kirschner, H. E., Iowa City.  
†Kisor, F. H., Kalona.  
†Klein, J. L., Muscatine.  
†LaForce, E. F., Burlington.  
Lamboch, Frederick, Davenport.  
†Leir, C. N. O., Des Moines.  
†Lewis, Byron, Jewell Jet.  
Lewis, S. J., Columbus City.  
\*Mammen, G. H., Le Mars.  
\*Matthey, Carl, Davenport.  
\*McCray, W. R., Rockford.  
McGlone, F. E., Mason City.  
†McKane, J. W., Lawler.  
\*McLaughlin, P. B., Sioux City.  
†McMillan, E. C., Hudson.  
†Miller, G. E., Sanborn.  
\*Minassian, H. A., Des Moines.  
\*Minthorn, M. F., Castana.  
\*Myers, E. M., Boone.  
†Newell, F. W., Ottumwa.  
Newell, W. C., Ottumwa.  
†Page, A. C., Des Moines.  
\*Parriott, R. P., Des Moines.  
\*Payne, J. E., Richland.  
†Pearson, Wm. W., Des Moines.  
Peters, J. A., Oxford.  
\*Peters, R. A., Tipton.  
†Pyles, R. H., Hudson.  
\*Quinn, Edw., Martinsburg.  
†Rayner, H. W., What Cheer.  
Schmidt, B. H., Davenport.  
†Sherbon, J. B., Colfax.  
\*Sigworth, H. W., Waterloo.  
Sinning, Augustus, Iowa City.  
†Small, W. B., Waterloo.  
†Smith, S. J., Iowa City.  
†Starr, C. F., Mason City.  
\*Steinle, H. F., Burlington.  
Sterns, W. L., Mason City.  
†Storie, Jr. D. Q., Chariton.  
Swale, C. M., Mason City.  
†Tallman, C. C., Fairfield.  
†Thielen, M. H., Grundy Center.  
†Thompson, Benj., Tama.  
Tilden, W. C., Stanwood.  
\*Tinley, M. A., Council Bluffs.  
Wanamaker, E. E., Hamburg.  
West, G. H., Armstrong.

## KANSAS

Ball, S. E., Mapleton.  
\*Carlile, J. B., Leon.  
†Cornell, H. M., Kansas City.  
\*Davis, J. E., Ottawa.  
\*Gardner, M. N., Greenleaf.  
\*Glasscock, S. S., Kansas City.  
†Jones, L. L., Altoona.  
Moberg, Arthur, Pittsburg.  
†Patton, C. L., Opea.  
\*Poole, J. G., Kansas City.  
\*Sams, L. V., Topeka.  
†Von Trebra, R. L., Chetopa.  
Wetherbee, Chas., Edna.

## KENTUCKY

\*Armstrong, M. W., Olive Hill.  
\*Arthur, Macaulay, Middlesboro.  
\*Clifford, C. M., Cynthia.  
\*Duvall, H. C., Millwood.  
\*Givan, S. L., Spring Lick.  
\*Gower, C. M., Trenton.  
\*Green, J. T., Litchfield.  
\*Jones, J. C., Buffalo.  
\*Kelsall, O. H., Louisville.  
\*Moss, M. M., Franklin.  
†Pace, J. E., Scottsville.  
\*Reynolds, J. F., Mt. Sterling.  
†Wheeler, C. L., Lexington.  
\*Zaring, A. M., Smithfield.

## LOUISIANA

†Allen, C. W., New Orleans.  
Haspel, M. D., New Orleans.  
McGrane, C. J., New Orleans.

## MARYLAND

Dudley, N. S., Church Hill.  
Perkins, E. S., Baltimore.  
Rollins, C. D., Baltimore.

## MASSACHUSETTS

Bowman, F. R., Boston.  
Champion, M. E., Arlington.  
Van Nuys, F., Weston.  
Wardwell, J. K., Boston.

## MICHIGAN

†Baird, T. A., Bay City.  
†Boys, C. E., Kalamazoo.  
\*Braden, G. M., Scotts.  
†Brown, R. W., Bay City.  
†Cahill, L. L., Mendon.  
†Cameron, W. C., White Pigeon.  
†Chivers, R. W., Jackson.  
†Chopoton, E. A., Detroit.  
\*Cooper, E. M., Carleton.  
†Cummings, R. B., Wayne.  
Crary, G. H., Ann Arbor.  
De Kraker, J. M., Grand Rapids.  
†Dodge, W. H., Hancock.  
\*Foster, R. F., Bear Lake, Mich.  
†Frazier, H. H., Allen.  
†Garner, G. L., Lansing.  
†Gannett, J. C., Elk Rapids.  
\*Gauss, C. B., Palo.  
†Gubbins, R. M., Ceresco.  
\*Hagadorn, A. D., Lansing.  
†Hoover, Harold, Alamo.  
Howard, J. J., Detroit.  
\*Kassabian, M. H., Coopersville.  
Leitch, A. E., Saginaw.  
†Libby, E. M., Iron River.  
\*Merriman, H. H., Grayling.  
†Miller, G. D., Cadillac.  
Miller, H. C., Hillsdale.  
\*Moore, G. W., Munger.  
Morse, Jason, Pontiac.  
†Mortensen, M. A., Battle Creek.  
Newark, W. E., Charlotte.  
†Paterson, E. W., Grand Rapids.  
Patrick, O. H., Port Huron.  
\*Pratt, C. G., Sparta.  
Rice, E. D., Flint.  
†Rowe, B. B., Saginaw.  
†Sherman, G. H., Detroit.  
†Simpson, H. L., Detroit.  
†Stebenson, F. T. F., Detroit.  
\*Stevenson, A. T., Bay City.  
†Stewart, L. H., Kalamazoo.  
†Swantek, C. M., Bay City.  
\*Upjohn, W. E., Kalamazoo.  
Vaughan, Cecil, Detroit.  
†Vennema, H. A., Menomonee.  
†Walker, R. A., Menomonee.  
†Williams, A. H., Grand Rapids.  
†Youngquist, O. G., Marquette.

## MINNESOTA

\*Blacklock, S. S., Hibbing.  
†Boleyn, E. S., Stillwater.  
Corbett, J. F., Minneapolis.  
†Cramer, M. H., Red Wing.  
†Crume, G. P., Minneapolis.  
Donnelly, I., St. Paul.  
†Eklund, J. J., Duluth.  
†Fahey, E. W., Duluth.  
\*Fleming, James, Cloquet.  
†Freeman, C. D., St. Paul.  
Jones, E. M., St. Paul.  
Larson, L. A., Montevideo.  
\*MacCarty, W. C., Rochester.  
\*Malchow, C. W., Minneapolis.  
†Matthews, Justus, Rochester.  
Mitchell, F. J., Richland Center.  
†Olander, J. E. E., St. Paul.  
\*Parker, E. H., Minneapolis.  
Peddicord, Harper, St. Paul.  
\*Rollins, F. H., St. Charles.  
†Schneider, J. P., Green Isle.  
†Stacy, Leda J., Rochester.  
†Taylor, C. U., Duluth.  
†Watson, J. A., Minneapolis.  
†Wheat, F. C., Marshall.  
†Whiting, A. D., St. Cloud.  
\*Williams, John, Lake Crystal.

## MISSISSIPPI

\*Day, E. C., Bay St. Louis.  
Kohlheim, Louis, Booneville.  
†Shands, H. R., Jackson.

## MISSOURI

\*Beckham, Genevieve S., St. Louis.  
\*Bellows, G. E., Kansas City.  
Banker, O. H., St. Louis.  
\*Burke, C. L., Kansas City.  
†Child, S. P., Kansas City.  
†Coffey, W. H., Kansas City.  
\*Epperly, R. G., Prairie Hill.  
Esselbruegge, F. C., St. Louis.  
\*Ferguson, J. W., St. Joseph.  
\*Gray, A. L., St. Joseph.  
†Hale, J. W., Greenville.  
†Harris, D. L., St. Louis.  
\*Humphreys, D. L., St. Joseph.  
Kern, B. C., St. Louis.  
\*Kessler, S. F., St. Joseph.  
†Leavy, C. A., St. Louis.  
\*McKillop, O. L., Kansas City.



\*McMurry, M. C., Paris.  
\*Neer, C. S., Springfield.  
Newman S. A., Cassville.  
\*Owens, M. J., Kansas City.  
\*Parce, A. D., St. Louis.  
Parker, H. F., Warrensburg.  
\*Payne, H. C., Paris.  
\*Redwine, J. T., Doniphan.  
\*Roselle, T. A., Palmyra.  
\*Sanford, S., Palmyra.  
\*Schmid, W. F., St. Joseph.  
\*Sheley, O. C., Independence.  
\*Smith, J. D., Shelbyville.  
\*Smith, W. P., Troy.  
\*Sneed, C. M., Jefferson City.  
\*Straus, Leon, St. Louis.  
\*Swahlen, P. H., St. Louis.  
\*Tout, B. B., Archii.

## NEBRASKA.

\*Demaree, E. W., Roca.  
\*Dunn, A. D., Omaha.  
\*Farley, B. F., York.  
Fuller, J. A. Jr., Uehling.  
\*Graham, F. H., Lincoln.  
\*Hollister, R. R., Omaha.  
\*Impey, Charles, Omaha.  
\*Ira, G. B., Lynch.  
Lemar, F. A., Newman Grove.  
\*Miller C. J., Ord.  
\*Oelke, E. H., Pierce.  
Rhoden, R. H., Fremont.  
Sachs, A., Omaha.  
\*Shaw, L. M., Osceola.

## NEW HAMPSHIRE.

\*Abbott, W. H., Hillsboro.  
Kelso, W. L., Hillsboro.

## NEW JERSEY.

Carter, Helen L., Newark.

## NORTH CAROLINA.

\*Battle, J. T. J., Greensboro.  
Caldwell, M. M., Wilmington.  
\*Cotton, C. E., Black Mountain.  
Griggs, W. T., Poplar Branch.  
Kapp, H. H., Winston-Salem.  
Kirkpatrick, L. R., Maxton.

## NORTH DAKOTA.

\*Rindlanb, M. P., Jr., Fargo.  
\*Westley, M. D., Cooperstown.

## NEW YORK.

Bachmann, G. W., Rochester.  
Brown, A. J., Rome.  
Bentz, G. H., Brooklyn.  
Daly, W. S., Ogdensburg.  
\*Dowd, P. M., Oswego.  
\*Dwyer, W. M., Amsterdam.  
Fabricius, J. R., New York City.  
\*Fairbairn, J. F., Buffalo.  
Foster, A. B., Fonda.  
Foster, J. B., Webster.  
Hazen, Roland, Brentwood.  
\*Hicks, J. S., Allegany.  
Judson, C. H., Dobbs Ferry.  
Junge, B. W., New York City.  
Le Fevre, Caroline H., Brooklyn.  
\*Ogilvy, Charles, New York City.  
O'Mara, T. J., New York City.  
\*Shirk, G. W., Cornwall on Hudson.  
Sill, W. M., Jamestown.  
Soble, N. H., Elmira.  
\*Stewart, C. M., Hume.  
Torrey, Edward, Olean.  
Travell, C. H., Troy.  
\*Van Bender, J. L., Penn Yan.  
\*Wright, Thew, Buffalo.

## OHIO.

Allaman, W. F., Dayton.  
Allen, F. Y., Cleveland.  
\*Bausman, S. M., Pleasant Hill.  
Bounds, H. L., Carroll.  
\*Brewer, L. A., Toledo.  
\*Bull, Mand L., Marion.  
Buxton, J. W., Howard.  
Coy, H. C., Napoleon.  
\*Davidson, H. S., Barberton.  
Dean, J. M., Sandalla.  
\*Dunton, O. H., Circleville.  
\*Eastman, W. H., Fredericktown.  
Elliott, R. W., Cleveland.  
\*Fry, R. D., Cleveland.  
\*Grubb, E. W., Payne.  
Haefele, G. L., Cleveland.  
Handmacher, E. B., Cleveland.  
\*Hart, W. E., Elyria.  
Hays, C. J., Akron.  
Heileman, J. H., Waynesfield.  
\*Heimlich, Daniel, Cleveland.  
\*Hill, W. C., Cleveland.  
Holmes, E. S., Plain City.  
Howland, J. S., Plain City.  
Huggins, T. A., Sparta.  
\*Jones, G. H., Toledo.  
Kohler, A. A., Akron.  
\*Kramer, J. D., Dayton.  
Lavanture, L. A., Buckeye City.

\*Lee, R. N., Mt. Blanchard.  
McDowell, J. R., Zanesville.  
\*McKendree, M. A., Bowling Green.

\*McKibben, J. T., Cincinnati.  
McKinzie, C. D., Lancaster.  
McNamara, F. X., Cleveland.  
McVety, A. F., Toledo.  
\*Miller, J. C., New Bavaria.  
\*Neal, C. A., Norwood.  
Pinkerton, W. L., Galloway.  
Portmann, O. E., Canton.  
Postle, R. A., Ashville.  
Rowers, H. G., Chickasaw.  
Reed, F. E., Cavett.  
\*Richards, C. C., Bellevue.  
Richardson, F. A., Hantsville.  
Rickey, L. D., Chillicothe.  
Roller, W. C., Willshire.  
\*Ross, C. H., Alliance.  
Sauer, W. W., Madisonville.  
Shuman, J. C., Akron.  
Shook, J. W., Canal Winchester.  
\*Silver, Harry, Hamilton.  
Sloan, H. G., Cleveland.  
Stadler, C. E., W. Cairo.  
Stamm, John, Jacksonville.  
Stone, C. W., Cleveland.  
Taggart, H. D., Akron.  
\*Todd, H. D., Akron.  
Trout, G. B., Duncan Falls.  
\*Underwood, E. S., Akron.  
\*Van Fossen, J. A., Columbus.  
Waldron, L. P., Akron.  
Welch, Mina G., Columbus.  
Wilson, W. A., Gahanna.  
Yoder, H. E., Cleveland.

## OKLAHOMA.

\*Bolton, W. D., Clinton.  
Childs, H. C., Noble.  
Diehl, C. H., Purdy.  
Hinson, T. B., Thomas.  
Marshall, J. W., Shawnee.  
\*Mraz, J. Z., Prague.  
Rogers, F. W.  
\*Rogers, McLain, Geary.  
Vanderpool, J. M., Calvin.

## PENNSYLVANIA.

Allen, W. H., Pittsburg.  
Auchmuty, J. E., Maryd.  
Beck, J. M., Alexandria.  
Blair, H. A., Curwensville.  
\*Blair, A. C., Pittsburg.  
Craig, Ford B., Pitsalrn.  
Crosby, W. S., Philadelphia.  
\*Edwards, Jr. O. M., Pittsburg.  
\*Jobson, G. B., Franklin.  
Kriebel, Asher G., Lynnville.  
\*McCready, E. B., Pittsburg.  
\*McDowell, H. F., Franklin.  
\*Murphy, J. C., York Haven.  
Nichols, H. J., Bradford.  
Owens, C. K., Pittsburg.  
\*Roth, A. H., Erie.  
Snodgrass, Bruce, Beaver Falls.  
Steinbock, F. W., Philadelphia.  
\*Thompson, E. V., Franklin.  
West, S. L., Philadelphia.  
Wood, W. A., Philadelphia.

## RHODE ISLAND.

Porter, L. B., Providence.

## SOUTH CAROLINA.

Wannamaker, T. E. Jr., Cheraw.  
Baker, Mary R., Columbia.

## SOUTH DAKOTA.

\*Ferguson, W. J., Milbank.  
\*Foxton, J. L., Huron.  
\*Freeburg H. M., Watertown.  
\*French, H. E., Vermillion.  
\*Mead, L. C., Yankton.

## TENNESSEE.

\*Caldwell, B. D., Milan.  
\*Eve, Dnnan, Nashville.  
Green, J. H., Trimble.  
\*Jones, G. R., Orlinda.  
\*King, J. M., Nashville.  
Overton, John, Nashville.  
Rogers, K. E., Dncktown.  
\*Sifford, W. R., Nashville.  
\*Swink, W. T., Milan.  
\*Witt, W. H., Nashville.  
\*Wood, E. G., Nashville.

## TEXAS.

Dycus, Earl, Juno.  
\*Jackson, R. R., Dallas.  
Leach, R. W., Bigbill.  
Mavo, O. N., McDade.  
Ruhl, J. H., Galveston.  
Schultz, W. M., Georgetown.  
Silver, C. M., Alvard.

## VIRGINIA.

Bosher, R. S. Jr., Richmond.  
Connelly, E. H., Alberta.  
Kellam, W. F., Onley.

WASHINGTON.  
Lazelle, H. G., Seattle.

## WEST VIRGINIA.

\*Barlow, C. A., Benwood.  
\*Bush, A. B., Weston.  
\*Holden, W. H., Clarksburg.  
Taylor, E. R., Bemis.

## WISCONSIN.

\*Bear, W. G., Monroe.  
\*Blackbourn, F. E., Beetown.  
\*Brett, F. N., Green Bay.  
Brockway, F., Oshkosh.  
\*Cavaney, James, Milwaukee.  
\*Donohue, M. J., Antigo.  
\*Edwards, W. M., Manston.  
\*Ehlert, E. H., Hartford.  
\*Greenwood, S. D., Neenah.  
\*Fosse, Benj., Beloit.  
Hopkins, F. G., Valders.  
\*Hopkinson, Daniel, Milwaukee.  
\*Hoag, H. J., Cudahy.

Huntington, S. D., Green Bay.  
\*Hyslop, F. R., Whitewater.  
Kelsey, Kate, Cable.  
\*Malone, F. A., Waterford.  
Matter, L. E., Lake Geneva.  
\*Moore, E. E., Merrillan.  
Nott, G. W., Racine.  
Olsen, A. K., Ettrick.  
\*Parke, Geo., Sylvan.  
\*Schoen, R. E., Beaver Dam.  
\*Schwendener, J., Milwaukee.  
\*Spears, T. R., Washburn.  
\*Searle, C. H., Palmyra.  
\*Stirn, F. J., Cudahy.  
\*Sweetman, R. H., Green Bay.  
\*Tarnutzer, B. C., Beaver Dam.  
\*Walbridge, J. S., Berlin.  
\*Wallace, Chas., Chippewa Falls.  
\*Wells, A. L., Clear Lake.  
\*Wintermute, C. E., Kilbourn.

## WYOMING.

\*Fox, G. A., Cheyenne.

## Medical Education and State Boards of Registration

### COMING EXAMINATIONS.

NEW MEXICO Board of Health and Medical Examiners, The Capitol, Santa Fe, July 13-14. Secretary, Dr. J. A. Massie, Santa Fe.  
ARKANSAS Regular Board of Medical Examiners, State Capitol Bldg., Little Rock, July 14. Secretary, Dr. F. T. Murphy, Brinkley.  
ARKANSAS Homeopathic Board of Medical Examiners, Little Rock, July 14. Secretary, P. C. Williams, Texarkana.

ARKANSAS Eclectic Board of Medical Examiners, Little Rock, July 14. Secretary, Dr. A. J. Widener, Little Rock.

CONNECTICUT Homeopathic Medical Examining Board, New Haven, July 14. Secretary, Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

CONNECTICUT Eclectic Medical Examining Board, Hotel Garde, New Haven, July 14. Secretary, Dr. T. S. Hodge, 16 Main St., Torrington.

CONNECTICUT Regular State Medical Examining Board, City Hall, New Haven, July 14-15. Secretary, Dr. Charles A. Tuttle, 196 York St., New Haven.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, July 14. Secretary, Dr. George C. Ober, 210 B. St., S.E., Washington.

WEST VIRGINIA State Board of Health, Charleston, July 14-16. Secretary, Dr. H. A. Barbee, Pt. Pleasant.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, July 14-16. Secretary, Dr. Edwin B. Harvey, Room 159, State House, Boston.

VERMONT State Board of Medical Registration, Burlington, July 14-16. Secretary, Dr. W. Scott Nay, Underhill.

WISCONSIN Board of Medical Examiners, Park Hotel, Madison, July 14-16. Secretary, Dr. J. V. Stevens, Jefferson.

NEW HAMPSHIRE State Board of Medical Examiners, State Library, Concord, July 15-16. Regent, Mr. H. C. Morrison, Concord.

### Cincinnati Colleges Merge.

We are informed that the long-contemplated merger between the Miami Medical College and the Medical College of Ohio, both of Cincinnati, has finally been consummated; the new college thus formed will be the Medical Department of the University of Cincinnati. Already extensive plans have been made to develop the school. A professor of pathology is to be secured at a salary of \$4,000 a year, who will also be in charge of the extensive laboratories at the Cincinnati Hospital. The school will have full use of the clinical material of the Cincinnati Hospital, which at present has nearly 600 beds. Within the next few years a new hospital is to be erected at a cost of about \$3,000,000. This merger ends the rivalry which has existed between the two faculties for many years. It is noteworthy that they have been willing to lay aside their differences, and even to make personal sacrifices in order that Cincinnati might have one strong medical college of high standard. The new school should receive the support of the alumni of the two schools, as well as of the medical profession generally.

### Errata in State Board Statistics.

Some errors in percentages occurred in the State Board Statistics published in THE JOURNAL, May 30, 1908. The percentage for Howard University in the 18th line, on page 1857, should be 23.5 instead of 41.2. The same correction should be made in Table K, on page 1846. On page 1844, in Table G, the percentage of failure for the University of Pennsylvania, "in other states," should be 1.6 instead of 6.2.



**Rhode Island Requires Graduation.**

An amendment to the Rhode Island medical practice act provides that every applicant for license hereafter must hold a diploma from a reputable medical college and gives the board the right to refuse recognition to medical colleges which are not doing satisfactory work.

**California April Report.**

Dr. Charles L. Tisdale, secretary of the Board of Medical Examiners of the State of California, reports the written examination held at San Francisco, April 7-9, 1908. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 58, of whom 34 passed and 24 failed. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Cooper Med. Coll.		(1907)	79
University of California		(1907)	79.2, 81.4
University of Southern California	(1906) 82.5; (1907)		76, 80
College of P. and S., San Francisco	(1902) 75.2; (1907)		78.6
California Med. Coll.		(1902)	75.7
College of P. and S., Los Angeles		(1907)	78.3
Gross Med. Coll.		(1891)	*76
Yale Medical School		(1894)	80.5
Georgetown University		(1900)	75.7
Northwestern University Medical School		(1904)	81.8
College of P. & S., Chicago	(1906) 78.4; (1907)		75, 81.1
Rush Med. Coll.		(1903)	75
Kansas Med. Coll.		(1892)	*75
Medical School of Maine		(1895)	*83.3
Harvard Med. School		(1906)	86.9
University of Michigan		(1903)	82.5
Detroit College of Med.		(1878)	*77.1
University of Missouri		(1897)	*74
Long Island Coll. Hosp.		(1905)	80.8
Eclectic Med. Inst., Cincinnati		(1891)	*78.1
Omaha Medical College		(1892)	*82.3
College of P. and S., New York		(1900)	80.4
New York Homeo. Medical College		(1902)	80.8
Medico-Chirurgical College of Philadelphia		(1904)	77.6
University of Pennsylvania	(1890) 79; (1895)		82
University of Toronto, Ontario		(1907)	77.7
McGill University, Quebec		(1902)	84.7

**FAILED.**

College of P. and S., San Francisco.	(1902) 61.6; (1906) 68.2, 71.8, 74; (1907) 53.4, 66.4, 73.7.
University of Southern California..	(1902) 66.6; (1904) 71.2; (1907) 73.6.
Cooper Medical College.....	(1903) 70.7; (1907) 69.9, 70
College of P. and S., San Francisco.....	(1902) 61.6
Howard University, Washington.....	(1891) 30.4
University of Iowa.....	(1907) 72.6
Louisville Medical College.....	(1897) 71.6
University of Michigan, (1879) 82.6; (1891) 76.3; (1892)	74.3
Barnes Medical College.....	(1904) 68.9
Miami Medical College.....	(1903) 70.6
Medical College of Ohio.....	(1871) 17.3
Nagasaki Medical College, Japan.....	(1902) 20.8

\*Five per cent. to be added for each ten years of practice.

**Georgia May Report.**

Dr. E. R. Anthony, secretary of the Regular Board of Medical Examiners of Georgia, reports the written examinations held at Atlanta and Augusta, May 4-5, and May 5-6, 1908, respectively. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 80.

At the examination held at Atlanta, May 4-5, the total number of candidates examined was 96, of whom 87 passed and 9 failed. One candidate withdrew from the examination. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Atlanta College of P. and S.	(1908) 81, 82, 83, 83, 84, 84, 84, 85, 85, 86, 86, 87, 88, 88, 88, 88, 89, 89, 89, 90, 90.		
Atlanta School of Medicine	(1908) 80, 80, 80, 81, 81, 81, 81, 82, 82, 82, 83, 83, 83, 83, 84, 84, 84, 84, 85, 85, 85, 86, 86, 87, 87, 88, 89, 90, 90, 91.		
International Med. Miss. Coll.		(1908)	82
Tulane University of Louisiana		(1907)	87
University of Louisville		(1907)	84, 87
Kentucky University		(1906)	82
Baltimore Med. Coll.		(1907)	83
Baltimore University		(1904)	82
Leonard School of Medicine		(1906)	83
Western Pennsylvania Med. Coll.		(1894)	88
University of Tennessee		(1908)	85, 85
Chattanooga Med. Coll.	(1896) 83; (1901) 83; (1903) 80; (1904) 80; (1907) 80.		
Meharry Med. Coll.	(1906) 82; (1908) 82, 84, 84, 85, 85, 85, 85, 89, 92.		
University of Nashville		(1908)	82, 88
University of the South		(1904)	85
College of P. and S., Memphis		(1907)	81

**FAILED.**

Atlanta School of Med.	(1908) 73, 74, 77, 79
International Med. Miss. Coll.	(1908) 77, 79
Maryland Med. Coll.	(1906) 78
College of P. and S., Baltimore	(1890) 60
Central University, Medicine and Science, of New Jersey*	76

\* This college is said to have been fraudulent and existed solely for the purpose of peddling diplomas. The charter was revoked in 1891.

At the examination held at Augusta, May 5-6, the total number of candidates examined was 36 of whom 33 passed and 3 failed. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Medical College of Georgia	(1908). the grades of 80 and 81 were reached by one each, 82 by four, 83 by six, 84 by eight, 85 by two, 86 by four, 87 by two, and 88 and 93 by one each.		
Medical College of Indiana	(1897)		84
Medical College of South Carolina	(1892) 93; (1908)		85

**FAILED.**

Medical College of Georgia	(1908)	79
Gate City Med. Coll.	(1908)	76, 79

**Louisiana May Report.**

Dr. F. A. LaRue, secretary of the Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, May 21-22, 1908. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 153 of whom 131 passed and 22 failed. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Birmingham Med. Coll.		(1908)	78
Atlanta College of Phys. and Surg.	(1900) 82.6; (1907)		81.6
Louisville Med. Coll.	(1906) 76.2; (1907)		80.4
Flint Med. Coll.	(1908) 76.8, 79.8, 78.8, 81, 81.6, 83		
Tulane University of Louisiana	(1891) 82; (1902) 82.6; (1905) 76.8; (1906) 75; (1908) 76, 76.4, 78, 79, 79.6, 80, 80.4, 80.8, 80.8, 81, 81, 81.2, 81.4, 81.6, 81.8, 82.4, 82.8, 83.2, 83.4, 83.4, 83.6, 83.6, 83.6, 83.8, 83.8, 83.8, 84, 84.4, 84.6, 84.8, 84.8, 84.8, 85.2, 85.4, 85.4, 85.4, 85.6, 85.6, 85.8, 85.8, 85.8, 85.8, 86, 86, 86, 86, 86.2, 86.2, 86.4, 86.4, 86.8, 86.8, 86.9, 87, 87, 87.2, 87.2, 87.2, 87.6, 87.8, 87.8, 87.8, 88, 88.2, 88.4, 88.4, 88.6, 88.6, 88.8, 88.8, 89, 89, 89.4, 89.8, 90.2, 90.6, 91.2.		
University of Maryland		(1906)	84.4
Saginaw Valley Med. Coll.		(1902)	77.6
Leonard School of Med.		(1908) 84, 84.6, 85.6	
Meharry Med. Coll.	(1907) 81; (1908)		79.6
Memphis Hospital Med. Coll.	(1907) 82.2; (1908) 78.4, 78.6, 78.6, 78.6, 80.6, 81, 81.6, 82.2, 82.2, 82.8, 83, 83, 83.6, 85.6, 87.6		
University of Nashville	(1907) 84.6, 87.6; (1908) 77.8, 79.6, 82.4, 84.6, 88.6.		
University of the South		(1907)	78.4
University of Tennessee		(1908)	82.2
University of Texas		(1907)	85.
College of P. and S., Dallas	(1905) 78.8; (1908)		76.8, 77
University of Virginia		(1907)	86.8
University of Palermo, Italy		(1900)	92.2

**FAILED.**

Flint Med. Coll.	(1902) 71.2; (1905) 66.6, 74.2. (1908)	72.4
Tulane University of Louisiana	(1901) 66.8; (1908)	72.6
Dartmouth Med. Coll.	(1881)	68.2
Memphis Hosp. Med. Coll.	(1893) 69.8; (1908) 66.6, 71.8, 70.4, 72.4	
University of Nashville	(1908)	69.8
University of the South	(1907) 49.6, 64.2, 71	
Meharry Med. Coll.	(1907) 69.4, 73.4	
College of P. and S., Dallas	(1908) 50, 56.8,	68.2
Medical Coll. of Virginia	(1905)	33.6

**Idaho April Report.**

Dr. W. F. Howard, secretary of the Idaho State Board of Medical Examiners, reports the written examination held at Camr d'Alene, April 7-8, 1908. The number of subjects examined in was 13; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 27, of whom 21 passed and 6 failed. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Denver and Gross College of Medicine	(1907)		78.9
Denver College of Medicine	(1888)		88
College of P. & S., Chicago	(1903) 79.8; (1906) 75.9 (1907)		79.5
Rush Medical College	(1893) 82.6; (1897) 75.8; (1902)		89.3
National Medical University	(1905)		82.4
Kansas Medical College	(1895)		81.4
Kentucky School of Medicine	(1901) 83.7; (1905)		80.4
Harvard Medical School	(1899)		83.7
University of Michigan	(1886)		92
Missouri Medical College	(1895)		75
Creighton Med. Coll.	(1905) 79.6, 84.8; (1907)		78.5, 86.7
Woman's Med. Coll. of Pennsylvania	(1895)		83.1
University of Virginia	(1904)		75



## FAILED.

Bennett Coll. of Ecl. Med. and Surg.....	(1894)	53.1
Detroit College of Medicine.....	(1906)	69.4
College of P. and S., St. Louis.....	(1903)	68.1
Missouri Medical College.....	(1894)	69.2
Barnes Medical College.....	(1898)	72.3
Vanderbilt University .....	(1900)	62.7

## Massachusetts May Report.

Dr. E. B. Harvey, secretary of the Massachusetts Board of Registration in Medicine, reports the written examination held at the State House, Boston, May 12-14, 1908. The number of subjects examined in was 13; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 50, of whom 24 passed, including one non-graduate, and 22 failed, including 5 non-graduates. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Maryland Med. Coll. ....		(1905)	79.4
University of Maryland.....		(1889)	75.2
Boston University.....		(1907)	75
Harvard Medical School.....		(1908)	77.7
Tufts College Medical School.....		(1900)	78.9
Dartmouth Medical College, (1894) 79; (1907) 75; (1908) 75, 78.2, 78.5, 80.8.			
Albany Medical College.....		(1907)	75
New York Homeopathic Med. Coll. ....		(1902)	79.9
Bellevue Hosp. Med. Coll.....		(1888)	82.7
Jefferson Med. Coll.....	(1897) 76.5; (1907)		77.7
Woman's Med. Coll. of Pennsylvania.....		(1907)	81
University of Vermont.....		(1898)	79.5
Queen's University, Kingston, Ont.....		(1902)	81
Laval University, Quebec.....		(1902)	75.
McGill University, Montreal.....		(1907)	75, 77
Dalhousie University, Halifax, Nova Scotia.....		(1903)	80.6
Nongraduate .....			79.4

## FAILED.

Georgetown University.....	(1906)	72.5
Howard University, Washington.....	(1907)	71.5
American Med. Miss. Coll. ....	(1906)	71.5
Chicago Homeo. Med. Coll. ....	(1890)	62
Baltimore Med. Coll... (1895) 43.3; (1902) 59.5; (1907) 69, 72.5		
Baltimore University.....	(1904) 62.9, 68.2; (1907)	71.9
Tufts College Medical School.....	(1907)	60.6
College of P. and S., Boston.. (1905) 67; (1906) 61; (1907) 67.7		
Laval University, Quebec.....	(1906)	67.4
Imperial Alexanders University, Finland, Russia.. (1902)		69.7
Nongraduates.....	53.3, 64.6, 65.2, 68.6, 73.5	

## Illinois Medical Colleges in Good Standing.

The Illinois State Board of Health announces for the information of medical colleges, medical students and those who may be about to take up the study of medicine, that the following medical colleges in the state of Illinois are in "good standing" with the State Board of Health:

Bennett College of Eclectic Medicine and Surgery, Chicago.  
Chicago College of Medicine and Surgery (formerly the American College of Medicine and Surgery), Chicago.  
College of Physicians and Surgeons, Chicago.  
Hahnemann Medical College, Chicago.  
Hering Medical College, Chicago.  
Illinois Medical College, Chicago.  
Northwestern University Medical School, Chicago.  
Rush Medical College, Chicago.

At the meeting held June 23, the Illinois State Board of Health declined to reinstate the National Medical University in "good standing" and by unanimous vote reaffirmed the action of the board taken March 15, 1907, when the National Medical University was declared not in "good standing."

## Marriages

VIRGIL ABEL, M.D., to Miss Mabel Boas, both of Vallonia, Ind., June 12.

FONROSE LAWSON, M.D., Sullivan, Ill., to Miss Helen Greer of Gays, Ill., June 10.

C. C. DOUGHERTY, M.D., to Miss Florence Merkle, both of Philadelphia, June 17.

J. F. CUTLER, M.D., to Miss Imogene Brigham, both of Philadelphia, June 19.

W. H. LIPHERT, M.D., to Miss Ida R. Lippincott, both of Philadelphia, June 17.

H. A. ROSS COPPAGE, M.D., to Miss Mabel E. Fowler, both of Baltimore, June 18.

BERT F. GLEASON, M.D., to Miss Adeline S. Miller, both of Arthur, Iowa, June 20.

CHARLES E. STAUTER, M.D., to Miss Sadie Wolfe, both of Baltimore, Md., June 6.

S. A. SHADRACH, M.D., Baltimore, to Miss Sallie R. Brown, at Danville, Va., June 9.

GEORGE G. TAYLOR, M.D., Chicago, to Miss Ethel G. Hiekok of Allegan, Mich., June 10.

HARLAN SHOEMAKER, M.D., Philadelphia, to Miss Graec Clyde Gilman of New York City, June 4.

WILLIAM RUDOLPH BOOSE, M.D., to Miss Mabel Wilson, both of Falls City, Neb., June 24.

DAVID A. BAKER, M.D., Bowman, N. D., to Miss Ollie Clark of Denver, Ill., recently.

JOHN C. JACOBS, M.D., Spicer, Minn., to Miss Mattie Lien of Willmar, Minn., recently.

HENRY MCGUIGAN, M.D., Mazeppa, Minn., to Miss Catherine Zender of Austin, Minn., June 16.

FRANK BARROWS, M.D., Boise, Idaho, to DESSIE B. ROBERTSON, M.D., of Boulder, Colo., June 17.

JOHN A. FREEMAN, M.D., to Miss Edna Marks, both of Beard, Ky., at O'Bannon, Ky., June 17.

WILLIAM PRESTON HOY, M.D., to Miss Eleanor Beverley Constable, both of Petersburg, Va., June 16.

WILLIAM FLETCHER HALL, M.D., Crisfield, Md., to Mrs. Clara J. Benson of Wilmington, Del., June 17.

WILEY LEON WHITEHEAD, M.D., Lake City, S. C., to Miss Bessie Branch Keels of Lynchburg, S. C., recently.

JOSEPH HASKELL CHILES, M.D., Oviedo, Fla., to Miss Ida Miller Howard of Pulaski, Va., in Jacksonville, Fla., June 17.

## Deaths

Furman J. Shadd, M.D. Howard University Medical Department, Washington, D. C., 1881; a member of the Medico-Chirurgical Society of Washington, D. C.; for thirteen years assistant surgeon at the Freedman's Hospital, Washington; professor of materia medica and therapeutics, and secretary and treasurer of the Medical Department of Howard University; one of the most prominent colored practitioners of Washington; died at his home, June 24, as the result of a general nervous breakdown, after an illness of several months, aged 54.

Peter V. Burnett, M.D. New York University Medical College, 1876; of Brooklyn, N. Y.; a member of the Medical Society of the State of New York; physician to the Eastern Dispensary and Nose, Throat and Ear Hospital; who was under treatment in Mount Sinai Hospital, New York City, on account of overwork; leaped from the roof garden of the hospital, June 29, and was instantly killed.

John Gilman McAllister, M.D. College of Physicians and Surgeons in the City of New York, 1866; a member of the Massachusetts Medical Society; president of the Lawrence (Mass.) board of U. S. pension examiners; a veteran of the Civil War and a member of the consulting staff of the Lawrence General Hospital; died from heart disease, June 20, after an illness of six months.

James Park West, M.D. Medical College of Ohio, Medical Department of University of Cincinnati, 1882; a member of the American Medical Association and American Pediatric Society; United States pension examining surgeon at Bellaire, Ohio; a well-known specialist in diseases of children; died at his home in Bellaire, June 25, from facial erysipelas, after a short illness, aged 49.

George M. Walker, M.D. University of Tennessee, Medical Department, Nashville, 1888; a member of the American Medical Association; one of the oldest practitioners of Hamilton County, Tennessee, and for several years physician to the New Soddy Coal Company; died at his home in Soddy, Tenn., June 21, after an illness of two weeks, aged about 60.

John G. VanDeveer, M.D. Kentucky School of Medicine, Louisville, 1903; a member of the American Medical Association; formerly a practitioner of Fairland, Okla., and an interne in the City Hospital, Louisville; died in his room in Louisville, June 27, from multiple neuritis and heart disease, after an illness of five weeks, aged 32.

William M. Michel, M.D. Georgetown University School of Medicine, Washington, D. C., 1870; for several years a physi-



cian at the Round Valley and Hoopa reservations; who was injured May 1 by a fall which caused paralysis; died at his home in Ferndale, Cal., as a result of his injuries, June 15, aged 68.

**Daniel W. Lynch, M.D.** Northwestern University Medical School, Chicago, 1875; a member of the American Medical Association; local surgeon at West Bend, Wis., for the Chicago & Northwestern Railway; died at his home in that city, June 25, after an illness of six weeks, aged 60.

**Samuel B. Lightner, M.D.** Jefferson Medical College, Philadelphia, 1863; a member of the American Medical Association; a member of the U. S. pension board of Clinton County, Ohio; and local surgeon of the Baltimore & Ohio Railroad at Sabina; died at his home, June 24, aged 68.

**George W. Jones, M.D.** Louisville (Ky.) Medical College, 1886; of Denham Springs, La.; a member of the Louisiana House of Representatives; was killed in the wrecking of a train at the crossing of the Baton Rouge and Hammond and Red River Valley Railroads, June 23.

**Pelatiah Fitch, M.D.** Jefferson Medical College, Philadelphia, 1862; assistant surgeon of the Eighth New Jersey Volunteer Infantry and surgeon of the Tenth New Jersey Volunteer Infantry during the Civil War; died at his home in Philadelphia, June 25, aged 66.

**John S. Sullivan, M.D.** Atlanta (Ga.) Medical College, 1891; a member of the American Medical Association, and one of the best known practitioners of Macon, Ga.; died at his home in that city, June 22, after an illness of several months, aged 58.

**Henry Morris Raker, M.D.** Jefferson Medical College, Philadelphia, 1862; of Augustaville, Pa.; died in the Mary H. Paeker Hospital, Milton, Pa., June 19, from cerebral hemorrhage, after an illness of several days, aged 67.

**James S. McNeel, M.D.** Rush Medical College, Chicago, 1889; a member of the State Medical Society of Wisconsin; died at his home in Waterloo, June 20, from cerebral hemorrhage, after an illness of several days, aged 67.

**James A. Lydston, M.D.** Rush Medical College, Chicago, 1885; formerly professor of chemistry in the College of Physicians and Surgeons; died suddenly at his home in Chicago, July 6, from the effects of the heat, aged 47.

**William Glasgow Condit, M.D.** Chicago Homeopathic Medical College, 1900; Jefferson Medical College, Philadelphia, Pa., 1904; a member of the Iowa State Medical Society; died at his home in Allerton, June 20, aged 32.

**John F. Daniel, M.D.** Medical College of the State of South Carolina, Charleston, 1858; died, June 23, at his home in Daniel, Saluda County, S. C., from paralysis, after an illness of three weeks, aged about 75.

**William A. Egbert, M.D.** Cleveland University of Medicine and Surgery, 1875; of Spokane, Wash.; died at the Deaconess' Home Hospital in that city, June 23, from heart disease, after a short illness, aged about 65.

**Henry Ganter, M.D.** University of Würzburg, Germany, 1875; died at his home in Floraville, Ill., from cerebral hemorrhage, June 24, after an illness of three days, aged 59.

**Louis H. Reid, M.D.** Georgetown University School of Medicine, Washington, D. C., 1876; a Confederate veteran; died at his home in Atlanta, Ga., June 25, aged 68.

**Thomas McCausland, M.D.** College of Physicians and Surgeons, Ontario, Toronto, 1868; died at his home in Toronto, June 21, after a prolonged illness, aged 72.

**George K. Tillotson, M.D.** Rush Medical College, Chicago, 1876; of Chicago; died in Lakeside Hospital, July 2, from septicemia, after an illness of two weeks, aged 58.

**George F. Webber, M.D.** Medical School of Maine, Medical Department of Bowdoin College, Brunswick, 1879; died at his home in Fairfield, Maine, May 11, aged 55.

**Oscar T. Lewis, M.D.** Medical Department of the University of Tennessee, Nashville, 1891; died at his home in Roans Prairie, Texas, June 23.

**Locke S. Pennington, M.D.** Memphis (Tenn.) Medical College, 1906; died recently at his home in Steens, Miss., aged 26.

#### Deaths Abroad.

**M. Bial, M.D.**, of Kissingen, whose name is connected with researches on the pathology of the metabolism, died at Munich, May 26, aged 38.

**A. Reverdin, M.D.**, the well-known professor of surgery at Geneva, Switzerland, died at that place June 16.

## Society Proceedings

### COMING MEETINGS.

American Ophthalmological Society, New London, Conn., July 15-16  
American Public Health Association, Winnipeg, Can., Aug. 25-28.  
American Acad. of Ophthal. and Oto-Laryng., Cleveland, Aug. 27-29.  
Wyoming State Medical Society, Sheridan, Aug. 28.

### AMERICAN PEDIATRIC SOCIETY.

*Annual Meeting, held at Delaware Water Gap, Pa., May 25-26, 1908.*

*(Continued from page 66.)*

#### Congenital Obliteration of Esophagus with Report of a Case.

DR. J. P. CROZER GRIFFITH, and DR. R. L. LAVENSON, Philadelphia, said that they had endeavored to make the report one for reference, and necessarily, they had referred largely to the writings of others, adding such cases as they had collected. The case reported was one of obstruction with fistula into the trachea; a child aged 9 days, admitted to the Hospital of the University of Pennsylvania, had been unable to swallow since birth and every attempt to give anything produced strangulation with cyanosis and regurgitation through the mouth. The child had been greatly emaciated and had died a few hours after admission. A drawing of the condition was shown. Upper part of esophagus ended blindly; lower part opened into trachea. Symptoms were characteristic. There was constant choking over mucus that could not be swallowed. Death invariably occurred in such cases, due partially to drying up of the tissues from lack of water. The only possible thing to do was a gastrostomy, which had been tried in several cases.

#### Spasmodic Stricture of the Esophagus in an Infant Aged Four Months.

DR. SAMUEL S. ADAMS, Washington, presented the history of infant who came under observation at the age of four months, a year last February. He was called in to see a well nourished baby with a history of having some difficulty in swallowing. The mother had nursed it, he said, up to the third month, when modified milk had to be substituted. The child could swallow at times and then something would take place that prevented swallowing and it would go some days without food. On giving a few spoonfuls of water, which were taken ravenously, distress was shown, with attempts at vomiting. Fluid would come up into the mouth and be swallowed again. After eight or ten attempts it was rejected, together with mucus. Obstruction of esophagus of a spasmodic nature was diagnosed. Attempts to pass a bougie had failed, but a small sound had been passed and followed up with a small feeding tube. Skiagraph showed nothing. The parents had removed the child from hospital and for the next fourteen months it had not been seen, but the condition was said to have persisted. Later the child had died of pneumonia; autopsy showing a pneumonia of posterior left side and rupture of a diverticulum. There was an obstruction of the esophagus due to breaking down of an enlarged tuberculous gland, which pressed upon the esophagus. Below the obstruction there were two diverticuli; and a third above it.

#### DISCUSSION.

DR. AUGUSTUS CAILLE, New York, reported a somewhat similar case in a lad of ten, who had had a spasmodic stricture for five years. It came on gradually and the boy was moribund from starvation. Once or twice a week the tube had to be used to feed him. He had had hydrocephalus in infancy and the speaker thought that the irritation was probably of central origin. Dr. Caille gave a warning regarding the examination of the esophagus by the sound or esophagoscope, having recently seen a girl of 16, with difficulty in swallowing, examined with the esophagoscope by expert, who had run the instrument into the pleural cavity, which was followed by pneumothorax and death.

DR. C. B. PUTNAM, Boston, mentioned a case like Dr. Griffith's, that had occurred in a child 3 years of age. The esophagus had had a blind ending and the lower portion had opened into the trachea.



DR. THOMAS MORGAN ROTCH, Boston, said that some of these cases of constriction of the esophagus simulated very closely pyloric stenosis and were almost identical as to rational signs. There was danger in passing a sound because there seemed to be a thinning of the wall at the lower part of the esophagus in these cases. They also simulated closely cases of chronic gastric indigestion.

DR. A. JACOBI, New York, said that carcinoma of the esophagus was apt to be found in the same position. He thought that the cause must be looked for in embryonal conditions. Defects of the muscular layers were quite common.

DR. SAMUEL S. ADAMS, Washington, said that there had been no fluid found outside the esophagus in the surrounding tissue, nor had there been anything in the bronchial tubes, but he believed the pneumonia to have been probably the result of inspiration of some food the child had been trying to take.

#### A Simple Method of Circumcision in the Newborn.

DR. W. REYNOLDS WILSON, Philadelphia, said that the disadvantages of the usual method were, first, in the incompleteness of removal of the foreskin in instances where it was adherent to the glans; second, in the application of the sutures; it might require a number of sutures to control the bleeding points and the sutures thus placed irregularly might have to be tightened to the point of unduly constricting the tissues, as a result of which edema might occur; should sutures become infected, a slough would form and resulting granulations would be difficult to deal with. He splits the prepuce longitudinally on the dorsal aspect with a pair of sharp scissors. The skin was first divided, division of the mucous membrane to a point corresponding to the limit of division of the skin following. The mucous membrane was rolled back to the corona and rendered perfectly free. The scissors were used to trim off the redundant fold of skin and mucous membrane on either side of the incision, and the redundant fold of skin to the distal side of the frenum was likewise removed. The skin was then drawn back and carefully inspected, in order to deal with any irregularity in the cut edge. A tape of gauze, half an inch in width, and so cut that the edges were frayed was applied, securing the roll of mucous membrane in position behind the corona and compressing the bleeding vessels. The end of the glans was left uncovered so that there might be no obstruction to the meatus. Over the gauze tape a dry gauze pad was placed and the napkin applied.

#### Acute Epidemic Anterior Poliomyelitis.

DR. HENRY KOPLIK, New York, said the epidemic which had visited New York last summer had been the most extensive known in New York and possibly in the United States, numbering something over 1,200 cases; and his impression was that a great many were not reported to the Board of Health. The disease had been quite widely distributed; it had occurred, not only in the crowded or filthy districts, but in the best localities. Conditions of the streets had not been unusual; there had been nothing in the water supply to attract attention, and the milk supply had been as good as in previous summers. The general characteristics of the disease had not resembled that which was known as poliomyelitis anterior, but something new. There had been cerebral cases, in which the child apparently healthy would go into a sudden condition of unconsciousness, or develop paralysis of the extremities, with difficulty in respiration and swallowing. In other cases the cerebral condition would abate but there would be complete paralysis. The child might go to bed apparently well and wake with acute pain in the extremities and joints. These cases were often mistaken for rheumatism. Patients would go to bed well and awake with paralysis of the extremities. The term poliomyelitis must be accepted temporarily. In the majority of the neurotic cases the reflexes had been increased. The rapid atrophy of the muscles in the cases where paralysis was to remain permanent had been striking. As to mode of infection; in most there had been some history of intestinal disturbance; in others a distinct tonsillar inflammation just before the onset of the disease. There was a new infectious agent capable of causing paralysis

and even death by its effect on the gray matter. It was sad to see how many children had been incapacitated by this disease. The treatment which had seemed to give the best result was that pursued in other forms of neuritis—hot baths, massage, electricity, etc. Dr. Koplik advised keeping up the tone of the muscle while the paralysis lasted.

#### Early Symptoms of the Recent Epidemic of Poliomyelitis.

DR. L. E. LAFETRA, New York, said that the epidemic in New York did not agree with the ordinary symptoms of poliomyelitis, which begun with vomiting and fever, followed later by paralysis. He had made a study of the early symptoms in 63 cases. The condition preceding the onset of the disease had not been sufficiently uniform to justify any conclusion. Vomiting had occurred in 25 cases; constipation in 14; diarrhea in 17. Fever had been noted as present in 52, but probably had been present in all. Restlessness and irritability had been very common. In three cases there had been marked general hyperesthesia; convulsions in 4, but severe in only 1; rigidity of the neck in 11, persisting over a week in one. Study of the reflexes was not satisfactory; of 20 cases reflexes had been absent in 16. In 2 patellar reflex had been absent on both sides while paralysis had involved only one extremity. In no case had the tendon reflex been exaggerated. Babinski sign present in 3. Apathy present in 10 cases, stupor in 4 cases, headache noted as present in 10 cases; photophobia present in 3. Pain and tenderness in the limbs in 3. Character of the paralysis: in 58 cases flaccid, in 5 rigidity. Opisthotonos had existed five days in one case. Lumbar puncture had been done in 14 cases; fluid clear in every instance and negative as to bacteria. Confusion with meningitis or neurosis very easy in the early stage.

#### DISCUSSION.

DR. L. EMMETT HOLT, New York, said the epidemic was now being studied by a committee appointed by several of the societies, and according to the best information obtained the number of cases in New York was not far from 3,000, so that it was probably the largest epidemic in the world. He had been struck by the number of groups of cases occurring together.

Another striking thing was the number of cases that recovered, and completely. The disease had stopped with the advent of October and that had been the history of these epidemics everywhere—that they ceased with the beginning of cold weather. Examinations suggested that it was perhaps an acute inflammation of the central nervous system, which generally localized its effects on the anterior horns, but might affect the cerebrum without affecting the cord at all.

DR. A. JACOBI, New York, did not agree with the view that it was an entirely new disease. He thought that it was not perhaps a disease of the cord itself, but of the whole nervous system. Similar cases had been observed in the extensive reports of Heine, in 1840 and 1860. Cases of poliomyelitis had a greater tendency to get well than cases of poliomyelitis.

DR. JOHN LOVETT MORSE, Boston, agreed that the symptomatology in this epidemic was not new.

DR. C. G. KERLEY, New York, had seen in this epidemic 43 cases, 13 in the Babies' Hospital, 9 in other institutions, 3 in his own practice and 18 in consultation. He agreed with Dr. Koplik and Dr. LaFetra as to the symptomatology.

DR. HENRY KOPLIK, New York, said that the findings post-mortem in two fatal cases at the Mount Sinai Hospital showed areas of softening throughout the cortex; areas of hemorrhage throughout the cord, and areas of softening in the cord. The disease did not affect any other nervous disease that might be in progress at the same time.

#### An Unusual Type of Acute Nephritis in Children.

DR. JOHN LOVETT MORSE, Boston, said that he had recently seen a number of cases of acute nephritis in children in which the characteristics of the urine had been materially different from those of the ordinary form, the chief difference being the complete or almost complete absence of blood and blood elements and the presence of a large number of small, round, mononuclear leucocytes. There could be no doubt that the cases were acute and not chronic. The course was essentially



the same as in other forms of acute nephritis with the exception that the duration was usually shorter and the prognosis somewhat better. The histories were given in detail and illustrated the types very well. In some instances not only was blood absent but very few other renal elements were found, even when the symptoms were marked and there was a large amount of albumin. The only description which seemed to fit this type was one by Immenner. He thought the condition one of pyelonephritis rather than the ordinary acute glomerular or interstitial nephritis.

#### DISCUSSION.

DR. HENRY KOPLIK, New York, called attention to the description in Osler's collection of cases of typhoid with the occurrence of such kidney trouble in which there were leucocytes and casts in the urine. He had a case then under observation in which the existing nephritis probably resulted from gastro-enteritis.

DR. J. H. MASON KNOX, Baltimore, described similar cases running a chronic course in which sections showed convoluted tubules undergoing hyaline degeneration, the nuclei not staining at all.

DR. L. E. LAFETRA, New York, had had one case that corresponded quite closely with those of Dr. Morse, and in that case the leucocytes had persisted for a long time after disappearance of the casts. The child had been otherwise in good health and the only thing that had called attention to the condition had been some puffiness of the eyelids.

#### President's Address—Public School Education.

DR. CHARLES GILMORE KERLEY, New York, said that the education of a child, taken in a broad sense, comprehended all that disciplined and enlightened the understanding, cultivated the taste and formed manners and habits. It meant all preparation, all means to the end of fitting the child for a field of activity whereby his own life might be made more satisfactory to himself and more useful to the state. The child should be taught how to live.

Dr. Kerley considered the subject from the two standpoints: That which related to the child's physical, and that which related to its mental development. The speaker said that in the United States to-day there were 18,000,000 children in attendance at the public schools. The school year had been increased from three months to ten months. The chief control of the child had been transferred from the home to the school, which meant that the duties and responsibilities of the public school had increased tremendously. He quoted from the report of Dr. Maxwell, Superintendent of Schools in New York, who said "sitting several hours a day at a desk which may not be hygienically constructed, increases such diseases as curvature of the spine and often produces faults of posture, and defects in eyesight." Dr. Kerley advocated some changes in the curriculum. He would have the pupils taught reading, penmanship, geography, history and arithmetic, and leave out the non-essentials. Among the essentials he included religion, as it was the corner stone of character; it should comprise allegiance to a Supreme Being and obligation to one's self and his neighbor. Social prophylaxis should be taught and what constitutes morality. The pupil should be taught the deleterious effects of alcohol and narcotics. Dr. Kerley deprecated the system of prizes and rewards for the best recitations and sets of answers as a bad one, as it overtaxed the pupil. He would impress on teachers and the Boards of Education the thought that "labor is the inevitable lot of the majority and the best education is that which makes labor the most productive."

#### Recent Diagnostic Methods in Tuberculosis of Children.

DR. L. EMMETT HOLT, New York, presented this paper, which consisted principally in the exhibition of a series of charts illustrating the employment of the fever reactions to tuberculin, the tuberculin eye test (Calmette) and the tuberculin skin test (v. Pirquet). Of the fever reactions to tuberculin, he said, of the positively tuberculous, 22 were positive, 1 doubtful and 1 negative; of cases probably tuberculous there were 17 positive reactions, no doubtful or negative; of cases probably not tuberculous, 2 positive reactions; of the positively not tuberculous, 1 positive, 60 negative reactions. There

had been no unfortunate results in any of the cases: 568 tests had been made. The second chart was based on experiments with the Calmette test: of the positively tuberculous, there had been a positive reaction in 24, doubtful 3, negative 8; probably tuberculous, 15 positive, 1 doubtful; probably not tuberculous, positive 2, doubtful 6, negative 508. Tuberculin skin test; of the positively tuberculous, positive 7, negative 1; probably tuberculous, positive 9, negative 1; probably not tuberculous, negative 41; positively not tuberculous, negative 3. In the skin test there had been no doubtful reactions recorded, a point in favor of that test. He had not employed the Moro test, with imunction. As regarded reliability, the fever test was not so scientific. The skin test was made with three scratches and 25 per cent. tuberculin rubbed into two of them. The character of the reaction was definite. The skin and temperature tests were the most reliable, and absolutely free from risk. Experience of others had shown that eye test was not altogether free from risk. He thought the fever reaction would disappear from clinical use to be replaced by the other two tests. In regard to ease of application the skin and Moro tests were to be preferred. The eye test also was satisfactory in this respect. He considered the tests of great assistance in the diagnosis of tuberculosis.

#### DISCUSSION.

DR. WILLIAM P. NORTHRUP, New York, agreed with the essayist. He did not take a cheerful view of the injection test. He thought there was considerable risk in the eye test.

DR. THOMAS MORGAN ROTCH, Boston, agreed that the fever test would not be so popular in the future as the eye and skin tests, but they had never met with any serious results, except where there had been a fault in the technique. In 100 consecutive cases the eye test had given no bad results. He preferred the skin test.

DR. AUGUSTUS CAILLE, New York, opposed the eye test, as he did not think the eye a proper organ for experimentation. He thought it fairly unreliable.

DR. HENRY KOPLIK, New York, had found the v. Pirquet test useful in those cases where fever existed and the tuberculin fever test was ruled out. The eye test he had not allowed to be used in his service as he was afraid of it.

DR. S. M. HAMILL, Philadelphia, had ruled out the eye test because it produced a lesion which was painful and disturbing, and he considered that it was attended with some risk.

DR. A. H. WENTWORTH, Boston, called attention to the positive reactions in healthy persons and said that there were a good many tables published in German literature of apparently healthy persons giving positive reactions. In one series one-sixth gave a positive reaction for the eye test and almost one-half for the cutaneous.

DR. L. EMMETT HOLT, New York, said that positive reactions in healthy persons might be due to latent tuberculosis.

#### Fresh Air in the Treatment of Disease.

DR. WILLIAM P. NORTHRUP, New York, presented two points; one as to the practical application of open air treatment; the other as to the cases to which it is adapted. One of the first questions, he said, was, Is cold essential? He was convinced that it was. The experience of the Health Department of New York in the treatment of tuberculosis was interesting; patients put out in the open shack slept well without "dope." He considered this one of the most important points—that the patients became quiet and slept. One of the first rules should be that the patient and attendant should be made comfortable, and this could be done in very cold weather if gone about in the proper manner. As to the preparation of the bed there should be first laid upon a spring mattress a sufficiently large blanket that when folded over should represent an envelope; it should be brought over and pinned around the entire patient; inside this there should be a paper or rubber layer to keep the cold from coming up from below. The patient should be clothed in a union suit. With adults it might be necessary to wheel them inside once in a while to allow them to stretch. As to the type of disease adapted for the open air treatment he suggested pneumonia, scarlet fever, measles, bronchitis, acute febrile disease of any kind. As to the results, it killed nobody; it hurt nobody, and, he was equally sure



that it helped all. In doubtful, desperate cases it had often determined the balance in favor of cure.

DR. E. E. GRAHAM, Philadelphia, said that the fresh air treatment had been of prime importance in reducing the infant mortality in his institutional practice. He had lost his dread of pneumonia as a hospital disease since the beginning of this manner of treatment in the wards. Typhoid patients did so much better in the fresh air that nothing could induce him to return to the old treatment.

(To be continued.)

#### AMERICAN ASSOCIATION FOR CANCER RESEARCH.

Meeting held in Buffalo, April 15, 1908, at the New York State Cancer Laboratory.

The President, DR. JAMES EWING, New York, in the Chair.

#### Hemolytic Tests for Malignancy in Human Beings.

DR. GEORGE W. CRILE reported the results of the test as follows:

I. Normals, 107 tests. No hemolysis.

Tests of miscellaneous diseases, 50. Hemolyzed, 4. These 4 included 1 hemoglobinuria, 1 eclampsia, 1 gastric case diagnosis not made, and 1 hematuria. Carcinoma, 50. Hemolyzed, 39. Sarcoma, 16. Hemolyzed, 13. Making a total of 66 cases of malignancy in which 53 hemolyzed.

Carcinoma recurrence, or cured, to prove if cured. Ten tests made, 9 no hemolysis, 1 questionable. Papilloma, 2 tests. Hemolysis, 1; no hemolysis, 1. Tuberculosis (surgical), 11 tests; hemolyzed, 9. Chronic suppuration, 10 cases. No hemolysis.

II. Of the 13 cases not giving hemolytic reaction: One gastric case; diagnosis not proved. One sarcoma spine; advanced case. One suspected sarcoma; advanced case. One carcinoma recurrence; advanced case. One cystic ovary. Five carcinomata breast; advanced cases. Two epitheliomata (neck); advanced cases. One lymphosarcoma; advanced case.

Suspected malignant cases not showing hemolysis, and positive diagnosis proving no malignancy: Two gastric cases. Four gall-bladder cases. Two tumor of the thigh. Two cirrhosis of liver. One tumor of chin. One tumor of clavicle. One cystic ovary. One breast case (cyst).

Case on the medical service March 18, 1908, showed hemolysis and reverse hemolysis, and a tentative diagnosis of carcinoma of the stomach was made. Medical service diagnosed the case anemia. April 25 medical service palpated tumor and diagnosis of carcinoma of stomach was made from specimen of tissue from stomach contents.

#### DISCUSSION.

DR. R. WEIL, in discussing Dr. Crile's paper, stated that during the past few years a number of observers had studied the hemolytic effects of human serum in certain diseases. The majority had used the corpuscles of alien species, but some, notably, Ascoli, had used human corpuscles. Ascoli had, by this method, reported three cases of hemolysis by cancer sera, but had also found hemolysis in other diseases. Dr. Weil had some time ago reported the results of a systematic study of the effects of a series of sera derived from dogs suffering with tumors, on the corpuscles of other dogs suffering with the same disease. He had found these sera hemolytic in almost every case, but he had also found normal sera frequently hemolytic for dog corpuscles. He had, however, been able to demonstrate a specific resistance on the part of the corpuscles of tumor dogs to the serum from such animals, which normal corpuscles do not show. He was glad that Dr. Crile had been able to confirm these reactions in human beings. His own experience in a smaller number of human cases had failed to reveal any such specific corpuscular resistance in cancer cases. He believed that the serum in human cancer is sometimes hemolytic, often not so, and that other diseases, such as tuberculosis, often show the same conditions. He did not believe that the reaction in human beings is of any value at present. The specific resistance of red cells to the hemolytic

sera of the individuals from which they were derived is a phenomenon which needs much further study. It has been demonstrated as the result of the injection of eel serum in rabbits and has been accepted by Ehrlich. It seems to be a necessary corollary of the existence of isolysins, as demonstrated by Theobald Smith in horses, and by the speaker in dogs, but was far from being generally accepted or understood.

#### The Lymphosarcoma of Dogs.

DR. LEO LOEB reported on investigations carried out with Drs. John Hunter and G. M. Laws into the character of the lymphosarcoma of dogs. About eight years ago the author showed that after a successful inoculation of the sarcoma of the thyroid of white rats the peripheral parts of the transplanted cells remain alive and multiply rapidly by mitotic division. The new sarcomata arise through a proliferation of the transplanted tissue and through cell multiplication in the host. Afterwards Jensen showed the same process to take place after transplantation of adeno-carcinomata of the mouse. In regard to the tumors found in dogs in the genital region, opinions differ very much. Sticker maintained that the inoculated tumors originate through a multiplication of the transplanted cells. Bashford disputed this view and stated that the formation of the new growths results from an infection of the host by unknown organisms. Beebe and Ewing showed that after transplantation the peripheral tumor cells remain alive and give origin to the tumors, a view which has not yet found general recognition. The author's investigations show without any doubt that the interpretation of Sticker and Beebe and Ewing is correct. The examination of tumor pieces at different periods after transplantation proves that peripheral tumor cells remain alive and propagate very soon after inoculation. That at any stages the connective tissue cells of the host can be proved to participate in the proliferation, as has been recently maintained by Wade, is very unlikely, but further researches into this question will be made.

#### The Transplantation of Skin of the Guinea-Pig into Different Species.

DR. LEO LOEB and DR. W. H. F. ADDISON said that a very large number of comparative transplantations of guinea-pig skin into the guinea-pig, rabbit, dog, pigeon and frog showed that (1) after transplantation into the rabbit and dog, infection of the transplanted skin is much more frequent than after transplantation into the guinea-pig and pigeon. (2) The number of pieces which grow is very much smaller after transplantation into foreign species. (3) Pieces of guinea-pig skin can proliferate by mitotic division in the rabbit and dog up to 8 days; but such a proliferation is only exceptional in the dog; in the pigeon such a proliferation may take place up to the sixth day and is much more frequent. No mitosis can be seen in the frog at any period after transplantation; the skin dies very rapidly in the frog; if such skin is retransplanted into the guinea-pig about six hours after transplantation into the frog, no growth takes place in the guinea-pig. Living epithelium is seen in the rabbit even ten days after transplantation. (4) Pieces of guinea-pig skin which remain alive in the rabbit are destroyed through the proliferation of the surrounding connective tissue of the host, in a similar way as guinea-pig skin transplanted into the guinea-pig is gradually destroyed through the surrounding connective tissue, in cases in which the epithelium of the guinea-pig skin has not been able to form a cyst. The formation of such a cyst has never been observed in the author's experiments, after transplantation of skin into other species, because the energy of cell-growth is less under these conditions. (5) They find typical differences in the curve of growth after transplantation of skin into different species. In the frog no growth takes place. In the pigeon the cell proliferation in the first five days is very good, but then follows a sudden decline. In the rabbit the growth of the non-infected pieces is in the first five days not better than in the pigeon, but, after this period the rabbit forms a soil much superior to the pigeon. In the dog the growth is usually very slight. On the whole, therefore, there is a distinct connection between the condition of growth of the transplanted skin and the relationship between



the guinea-pig and the animal into which the skin has been transplanted. (6) The facts established can not be very well explained on the basis of Ehrlich's hypothesis of athreptic immunity, but suggest the presence of toxic substances in the organisms of a different species.

Dr. Leo Loeb demonstrated microscopic specimens of different varieties of malignant stoma, sent by Professor Langhans from the Pathological Institute in Berne.

#### Autoinoculation or Local Infectivity of Cancer.

DR. WILLIAM B. COLEY, of New York, read this paper and gave a report of cases. Regarding the question of autoinoculation of lip carcinoma, Dr. Coley referred to an important discussion on this subject in Glasgow, 20 years ago, in which Sir Hector Cameron expressed his opinion against autoinoculation. In this discussion Cameron stated that "the upper lip in every case of epithelioma of the lower lip, is in close contact with the disease, night and day. But, has any one ever seen the upper lip become infected by direct contamination under such circumstances?"

Dr. Coley then cited Butlin, who stated that, since this discussion took place, there have been three cases of infection of the upper lip by the lower, but in only one—that of v. Bergmann, had a microscopical examination been made of both tumors. Through the kindness of Dr. George C. Johnston, of Pittsburg, Pa., Dr. Coley was enabled to report another case of apparent autoinoculation of the upper lip from an epithelioma of the lower lip. The patient, male, age 47 years, consulted Dr. Johnston in the fall of 1904, with a typical carcinoma of the lower lip involving the submaxillary glands. Refusing operation, the patient was treated with the x-ray, with the result that the tumors disappeared. Three years later, there developed a similar, typical, epitheliomatous tumor on the upper lip, precisely over the site occupied by the tumor of the lower lip three years before. Dr. Coley presented photographs of the case taken at different periods during the three years. He believed that from this observation it would be difficult to escape the conclusion that the tumor of the upper lip was the result of direct contact infection from the tumor of the lower lip, and, furthermore, that there was an incubation period of three years, which makes the case unique.

Dr. Coley reported in brief another case which had been under his personal observation about eight years ago, in which a primary carcinoma of the cecum had caused a similar tumor to develop in a loop of small intestine by direct contact infection. He had performed resection of both the large and the small intestine, and microscopical examination showed the growths to be of similar type in both cases. He stated that he had also observed a number of the more common varieties of so-called autoinoculation, e. g., rapidly developing carcinoma of the muscle and skin wound of the abdomen, following operation for abdominal carcinoma, especially in cases in which free fluid was present at the time of operation.

He referred to a recent paper by Charles Ryall (*Lancet*, Nov. 9, 1907) on Cancer Infection, describing 25 personal cases illustrating the various types of autoinoculation.

Dr. Coley stated that he believed the local infectivity of cancer to be an indisputable fact which no one, who has had a large operative and clinical experience with the disease, can doubt. He believed that if this fact were more generally appreciated, it would lead to much greater care in cutting wide of infected areas at primary operations, and would greatly lessen the number of so-called palliative operations for cancer, in which the disease is but partially removed, and in which highly infective cancer cells are widely disseminated over new areas.

#### DISCUSSION.

DR. LEO LOEB, in connection with Dr. Coley's interesting observations, mentioned (1) that in the course of his transplantation of various sarcomata in the white rat he had observed a number of cases in which tumors developed as the result of contact of tumor cells with certain tissues. Especially noteworthy was the fact that tumors of similar structures differed widely in regard to the readiness with which contact metastases could be produced. Rapidly growing strains of sarcoma caused the

formation of contact metastases much more frequently than slowly growing strains, although the microscopical structure in both cases was almost identical. This fact is not without interest to the operating surgeon. (2) In a paper recently published in the *Journal of Medical Research*, he showed, with Dr. S. Leopold, that tumor inoculation into the same organisms in which the tumor originated might succeed, while inoculations into other individuals of the same species were unsuccessful and he pointed out that the same probably holds good for the majority of tumors, including tumors in man. For that reason contact metastases may still be produced, where inoculation into another individual would be unsuccessful.

Dr. COLEY stated that it was possible that the tissues of an individual suffering from cancer, were more liable to infection from cancerous material, than in a healthy individual. This would seem to be shown by the very small number of cases in which the surgeon has apparently been infected during operation on cancerous patients.

The cases which he himself reported, together with the 25 cases reported by Ryall, certainly prove beyond any question that the cancerous cells have the power of autoinoculation, at least in individuals suffering from cancer. That this infection has the power of remaining latent for very long periods of time, is shown by his own experience in cases of late recurrence of cancer of the breast. He stated that he had observed three cases in which local recurrence had taken place within periods of from 12 to 17 years after operation. At the meeting of the American Surgical Association, a year ago, one case of local recurrence 20 years after operation was reported.

Dr. Coley further stated that, naturally, the question arises whether the cancer cell itself remains alive and dormant all these years, or whether it is a micro-organism of some sort which, as in tuberculosis, remains latent for long periods. In view of the recent observations of Ehrlich and Loeb, showing that it is possible for a carcinomatous tumor in animals to be transformed, in a single generation, into a sarcomatous tumor, there is some ground for accepting the theory of Ballou of London, who believes that a single micro-organism may, under varying conditions, give rise to proliferation of epithelial cells at one time and connective tissue at another time.

(To be continued.)

#### AMERICAN ASSOCIATION OF GENITOURINARY SURGEONS.

*Twenty-second Annual Meeting, held at Hot Springs, Va., May 1-2, 1908.*

The President, DR. HARVEY G. MUDD, St. Louis, in the Chair.

#### Cases of Stricture of the Membranous Urethra.

DR. EDWARD L. KEYES, JR., New York, said that up to the end of the last century gonorrheal stricture was considered to be confined to the anterior urethra. By performing perineal prostatectomy surgeons have come to recognize strictures at the neck of the bladder; but, with the exception of the case reported by Bazy, attention has not been called to strictures of the membranous urethra, and that portion of the urethra now enjoys the distinction of being the one portion of that canal supposedly exempt from sclerotic infiltration. It is supplied with the glands of Littre, and therefore offers a good field for that gonococcal penetration into the tissues which is the foundation of gonorrheal stricture. Dr. Keyes reported in detail two cases recently operated on, in which there was very marked stricture of the membranous urethra. In the first case perineal section was performed with a guide and under cocaine. The urethra being opened, a probe readily entered the membranous urethra, and this was cut on widely for about an inch—almost to the apex of the prostate—but even at this point nothing larger than a grooved director would enter the urethra. The second case was one of dense stricture in the bulbous urethra extending into the membranous urethra. This portion of the canal would take nothing larger than a 10 F. bougie. These two cases suggest that ancient neglected strictures of the bulbous urethra may often involve the membranous urethra as well. The presence of stricture in the mem-



branous urethra appears to add no danger or symptoms to that of the bulbous urethra. A more frequent use of local anesthesia will probably disclose the frequency of this condition.

#### DISCUSSION.

DR. HUGH H. YOUNG, Baltimore, said he thought that back of the posterior layer of the triangular ligament it is rare, indeed, to find any stricture, but that that portion within the triangular ligament is more commonly involved, and he has seen two or three cases in which that was the condition.

DR. BRANSFORD LEWIS, St. Louis, said he had met with stricture not only of the membranous urethra, but also distributed along the prostatic urethra, or both.

DR. SAMUEL ALEXANDER, New York, said he thought that we need not alter the generally accepted opinion that strictures of the urethra are in nearly all cases primarily limited to the anterior portion of the urethra; but the fact that strictures, not traumatic, of the membranous urethra do occur secondarily to stricture of the anterior portion of the urethra, has been well recognized for some time. Primarily there is a stricture of the anterior urethra, above that a dilatation of the membranous urethra, followed by infection of the glands of Littre, and then a secondary contraction of the membranous urethra. These strictures are always secondary to strictures of the anterior urethra, and due to a periurethral inflammation about the membranous urethra.

DR. JAMES PEDERSEN, New York, said his teaching had been that strictures of the membranous urethra do occur, and he asked if Dr. Keyes did not mean to present these cases merely as exaggerations of cases of stricture of the membranous urethra.

DR. KEYES said his teaching had been that strictures of the membranous urethra were solely traumatic and not gonorrheal. Until he heard Dr. Young's remarks, the only case reported that had been submitted to proof was the one reported by Bazy. Mild stricture of the membranous urethra probably occurs very frequently.

#### Common Errors in the Treatment of the Urethra and Bladder.

DR. JAMES PEDERSEN, New York, said that, excluding errors of judgment, errors in diagnosis and the accidents of normal instrumentation, there remains a high percentage of urethral and bladder cases which have been over-treated or erroneously treated by a conscientious physician who, all unwittingly, has thus fallen short of the attainable. The common errors in the treatment of the urethra and bladder may be classed under two heads—errors of omission and errors of commission. Under errors of omission may be grouped: Neglect of a prostatitis or seminal vesiculitis or both; neglect of the patients' general condition; failure to insist on sexual hygiene; failure to regulate his habits as to alcoholics, tobacco and coffee; inattention to the dietary and the quantity of water drunk. Under errors of commission may be placed: The use of the sound in the face of contraindications; over-frequent dilatation and over-dilatation; the unscientific use of irrigations in general; in particular, the use of intravesical irrigations before the chronic stage of a urethritis; the use of strong—that is, caustic, injections and instillations; the sudden emptying of a chronically overdistended bladder; the administration of methylene blue except as a placebo; and, finally, the use of undistilled water in making up solutions of silver nitrate. Numerous illustrative cases were cited.

#### Congenital Abnormalities of the Penis and Their Influence on the Acquisition and Course of Gonorrhea.

DR. E. WOOD RUGGLES, Rochester, N. Y., considered the various congenital abnormalities of the penis in detail, and mentioned illustrative cases. This, more than any other organ of the human body, is subject to the most varied changes in development and in appearance.

#### Disturbances Due to Disease of the Verumontanum and Its Treatment with the Posterior Urethroscope.

DR. GEORGE K. SWINBURNE, New York, described the symptoms due to disease of the verumontanum, presented his posterior urethroscope for treating such conditions, and went into

detail regarding the treatment. He uses silver nitrate, 10 per cent., or argentamin, full strength. Applications are made not oftener than once a week. Work on the posterior urethra through the urethroscope during the past eight or nine years has convinced him that it is a valuable aid and a distinct advance in the treatment of trouble in that portion of the genito-urinary tract, and that many obscure symptoms may be found to be due to disease or to some pathologic condition of the verumontanum, or of the urethral floor in its immediate vicinity. He prefers the instrument with the Koch auxiliary chamber because it keeps the lamp out of the way while swabbing the mucous membrane.

#### Operative Treatment of Tumors of the Bladder.

DR. LOUIS E. SCHMIDT, Chicago, said that since he presented his paper last year he had had eleven cases of tumor of the bladder, four of which had come to operation. In those four he had carried out the precepts laid down in the former paper, and he sees no reason to change the conclusions set forth in that paper. These are: (1) All benign tumors of the bladder should be approached from the inside of the bladder, and all malignant tumors from the outside. (2) In all malignant cases in which the loss of substance is not too great, the bladder should be closed completely by sutures after the removal of the tumor. (3) In cases of malignant tumor the incision into the bladder should be made in accordance with the location of the growth as defined by the cystoscope. (4) The permanent catheter should be abolished. (5) Gas anesthesia should be employed exclusively. (6) A subsequent cystoscopic surveillance should be maintained over any bladder that has been operated on for tumor.

#### Fatal Case after 128 Successful Perineal Prostatectomies.

DR. HUGH H. YOUNG, Baltimore, gave the details in this case and showed the kidneys, ureters and bladder. He said that the point he wished to emphasize was that there are certain cases that should not be operated on at once, particularly cases that have not been catheterized, although the urine may be of good quality when first examined. In these cases there is apt to be anuria or marked disturbance in the function of the kidneys, because they will not secrete so fast as they do when working against pressure. When the pressure is removed, a kidney which has been working against pressure for years will stop working.

#### Urethrorectal Fistulas.

DR. SAMUEL ALEXANDER, New York, read a paper on: (a) "An Operative Device for Urethrorectal Fistulas, (b) The Restoration of Voluntary Control of the Urogenital Sphincter in Incontinence of Urine Following Operations on the Prostate." He operates on urethrorectal fistulas as follows: A curved incision is made in front of the anus, extending from one tuberosity of the ischium to the other; the central portion of the perineum is divided and the dissection is carried upward between the rectum and the prostate, so as to expose the wall of the rectum externally for at least one-half inch above the upper margin of the fistula; the edges of the fistula are separated from the urethra by cutting with a sharp knife and scissors; the edges of the urethra at the seat of the fistula are carefully freshened, but the urethra should not be sutured; the tissues about the fistulous opening in the rectal wall are then freshened with curved scissors and made smooth; the opening in the rectal wall is closed by interrupted Lembert sutures of chromicized catgut placed from the perineal side; the sutures should not include the mucous membrane of the bowel. To protect the line of suture in the rectal wall, the following expedient is used: A small triangle of gauze consisting of six or eight layers is made to fit the wound. The apex of this triangle is carried by forceps into the vesical orifice. Between the layers of gauze a 10 per cent. iodoform ointment, made with petrolatum, is then injected from a glass syringe between the layers of the gauze, and the little pad is then plastered down so as to fit the posterior surface of the perineal wound accurately.

In restoring voluntary control the principle of treatment is to make the individual learn by practice to exercise voluntary control over what remains of the urogenital sphincter, thus preventing the escape of urine. If this can be done, automatic



control follows as a physiologic necessity. Any atonic or damaged muscle may be made to act, and the power of its action gradually increased by proper exercises.

#### Suture of Urethral and Vesical Sphincters for Incontinence of Urine.

DR. HUGH H. YOUNG, Baltimore, reported this case. The patient had had a perineal urethrotomy performed by another surgeon fifteen months previously, and was suffering from pain and incontinence of urine. Local treatment by massage of the prostate and dilatation of the urethra made him worse. It was evident that in the previous operation both sphincters had been divided. Preliminary suprapubic cystotomy showed the vesical sphincter to be gaping, so that the index finger could be easily introduced. After excising the mucous membrane in the lower half, the ends of the muscle were caught with tenaculum forceps and drawn together with catgut sutures. A large mass of scar tissue was found in the perineum, and a considerable portion of this was excised on each side, along with some urethral mucous membrane. The dissection was carried well out on each side until healthy looking muscle was reached, and the ends of the muscle were approximated with catgut sutures and the wound closed. Both suprapubic and perineal drainage were provided for, the latter by means of a small catheter which emerged from the anterior angle of the wound in the bulbous urethra. The convalescence was satisfactory, and although it has been necessary to dilate for stricture at the site of the operation, yet the patient has regained perfect control over his sphincters.

#### Antigonococcic Serum.

DR. GEORGE K. SWINBURNE, New York, read this paper. Since June, 1906, he has used the serum almost without interruption on a large variety of cases. Since September, 1907, he has treated 69 cases, 41 dispensary and 28 private cases. The serum was used in 14 cases of chronic relapsing epididymitis, 10 of which were dispensary cases, and in almost all there was marked improvement. The striking relief noted was in the diminution or quick cessation of the pain. In the cases of acute epididymitis, 27 in all, the majority were relieved of pain within forty-eight hours, and almost all went on to uninterrupted recovery. There were 4 cases of muscular rheumatism in connection with chronic gonorrheal disease treated with the serum. Two were relieved and 2 received no apparent benefit. There were 10 cases in which there was muscular rheumatism with apparent involvement of one or more joints. The majority of these yielded promptly, 1 was not relieved, and 2 were but slightly improved. Five cases of pure joint lesions were treated, and responded promptly to the serum. They all followed a primary attack of gonorrhea. In 2 cases of gonorrheal kidney in which the serum was used there was no improvement. Though the serum is supposed to have no power over the gonococcus, yet in 2 cases of persistent presence of gonococci in the urethral discharge the organisms disappeared after the use of the serum. In 1 case of acute prostatitis in which the serum was used once a day for three days, there was relief of the pain and throbbing. It was used in 1 case of acute vesiculitis with immediate benefit.

#### DISCUSSION.

DR. LOUIS E. SCHMIDT, Chicago, has used the serum treatment in a number of cases of prostatitis and epididymitis, and has noted all kinds of complications during the course of the serum treatment with no benefit whatever.

#### Operative Treatment of Acute Gonorrheal Epididymitis.

DR. FRANCIS R. HAGNER, Washington, gave a further report. He published his original paper in the *Medical Record*, Oct. 13, 1906. The operative treatment of gonorrheal arthritis was the procedure that suggested operative intervention in these cases. In every case operated on fluid had been present in the tunica vaginalis, varying in amount from two drams to two ounces. This fluid resembled that seen in gonorrheal joints, in that it was usually slightly blood-stained and contained a varying amount of fibrinous material in which are entangled a few leucocytes. The parietal layer of the tunica vaginalis was congested. That portion over the epididymis was intensely so, and seemed to be the seat of small punctate hemorrhages.

In a number of cases the entire epididymis was covered with a false membrane. It is the exception if this condition does not exist to some degree. The relief from pain and the rapid absorption of the inflammatory exudate seem to be just as great whether or not pus is obtained. Only the severest cases have been operated on. Since March, 1905, he had operated on but 19 cases, not more than 10 per cent. of the patients of this class. There was but one case that was not relieved absolutely of all pain on recovery from the anesthesia. There was a remarkable difference between the condition of the patients before and after operation. It is interesting to note the fall in the leucocyte count, which in one case dropped from 33,000 to 8,400 in forty-eight hours. There was a parallel fall of the temperature and pulse rate. There had been no cases of infection following the operation, recurrence, atrophy of the testicle, or other distressing sequelæ. In every case the temperature had been lower after operation than before. Pus was present in 17 of the 21 cases, being in the globus minor in 12, in the globus major and minor in 3, in the globus major in 1, and in the tunica vaginalis in 1 case. Of these 21 cases, gonococci were demonstrated five times in the pus from the epididymis, and once from the tunica vaginalis when none could be found in the epididymis. One of the most remarkable effects of this operation is the very rapid disappearance of the induration in both the cord and the epididymis. The wound is usually healed in less than a week. None of the patients have had the hard, nodular condition of the globus minor lasting for a long time, such as persists so frequently in those treated without operation. On an average, the patients are up and about and free from pain in five days. The urethral discharge does not increase afterwards.

#### DISCUSSION.

DR. SAMUEL ALEXANDER, New York, said he had employed this operation extensively in the service at Bellevue Hospital, and had achieved very nearly, although not quite, as good results as Dr. Hagner had reported. In five cases of acute epididymitis complicated with prostatic abscess pure cultures of the streptococcus were found.

DR. J. H. CUNNINGHAM, JR., Boston, has done the operation in six cases, and has observed the same quick relief that Dr. Hagner reports. Some induration remained, however, and in four of the cases the urethral discharge returned.

#### Other Cases Reported.

DR. J. BENTLEY SQUIER, New York, reported some unusual cases; DR. VAN DER POEL, a case of teratoma of the testis; and DR. HUGH CAROT, Boston, the case of a man, 50 years old, in whom varicose veins of a papilla of the kidney were a cause of persistent hematuria.

#### NEW HAMPSHIRE MEDICAL SOCIETY.

*One Hundred and Seventeenth Annual Meeting, held at Concord, May 14-15, 1908.*

The President, DR. J. H. NEAL, Portsmouth, in the Chair.

#### Standard Reorganization Adopted.

The House of Delegates had its first meeting the night before the opening of the sessions of the society, with a very creditable attendance. The report of the secretary contained some valuable suggestions, which were referred to a special committee; the committee subsequently recommended an approval of the election of alternate delegates by the component county societies, the publication in one volume of the earlier transactions of the society, and advised the appointment of a committee on the subject of education and the enlightenment of the public on sexual matters and venereal diseases. The last recommendation was laid on the table by the House, and the matter of organization of a branch association, referred by the Secretary of the American Medical Association, was deemed unadvisable at present.

The report of the Committee on Revision of the Constitution, appointed one year ago, read by Dr. Ira J. Prouty, Keene, the Chairman, suggested a number of amendments, the leading one being the adoption of the component county society



idea. After a free interchange of opinions, the amendments as a whole were adopted, to go into effect May 1, 1909, the beginning of the next fiscal year; so that on that date, the New Hampshire Medical Society, after five years' consideration of this very important question, will place itself in complete harmony with practically all other state societies.

It was unanimously voted to send the secretary, at the expense of the society, to the meeting of the state secretaries, at Chicago, June 1, and a liberal appropriation was made for clerk hire for his office, in view of the increased work necessitated by the new order.

#### State Tuberculosis Sanatorium.

In 1902, the society, through a representative committee, heartily advocated legislation by the state, establishing a state sanatorium for consumptives; but, notwithstanding early and favorable action by the legislature, not even a site for its location has yet been accepted by the governor and council. A strong resolution, introduced by Dr. John W. Parsons, of Portsmouth, and unanimously adopted by the House of Delegates and the society in general session, called on the executive officers for immediate relief for these unfortunates. Drs. Smith of Hanover, Parsons of Portsmouth, Crossman of Lisbon, Morse of Newmarket, and Flanders of Dover, were appointed a committee to carry into effect the purposes of the resolution.

The reports of the treasurer and trustees showed the financial condition to be sound and substantial, there being to the credit of the society more than \$4,500.

Twenty-nine new members have been elected; six have died during the year, and three have been dropped for non-payment of dues—a net gain of twenty.

The Committee on Medical Defense was continued for another year, and specific instructions were given to the Committee on Legislation, to secure a law providing for the appointment of expert medical witnesses by the court.

The next meeting will be held at Concord, May 13-14, 1909.

#### Officers for 1908-09.

The following officers were elected:

President—Dr. John M. Gile, Hanover.

Vice President—Dr. Frank Blaisdell, Goffstown.

Secretary—Dr. D. E. Sullivan, Concord.

Treasurer—Dr. D. M. Currier, Newport.

Delegate to A. M. A.—Dr. William T. Smith, Hanover.

Alternate—Dr. F. A. Stillings, Concord.

Councillors—Dr. A. H. Harriman, Belknap county; Dr. M. S. Woodman, Grafton county.

#### Relations of the Medical Profession to the Public.

The general meeting was called to order by the president at 11 o'clock, May 14.

After the appointment of committees and the introduction of visiting delegates, the president delivered the annual address. While giving due credit to the long strides taken in the treatment of disease—such diseases, for instance, as pneumonia, tuberculosis, diphtheria, etc.—he stated: "Preventive medicine is the branch of medicine which has led the profession into a field in which it has become a great factor in the industrial world. Through this the profession has performed a service which could not have been accomplished by any other agency. In this field we have produced results, the attainments of which have made the world pause with astonishment and awe. I heard Secretary Taft say before the Washington State Medical Association in Seattle last September," continued the speaker, "that the medical profession had made it possible for the United States to construct the Panama Canal, and that is the most gigantic proposition which has been contemplated in this, 'The Age of Progress.'"

The orator called attention to the great progress which has been made in the treatment, or, rather, the prevention of yellow fever, stating that thoroughly practical methods will now prevent the disease in any locality. Speaking of smallpox, he said that the death rate from this disease is about one-seventieth part of the death rate of pre-vaccination times, the severity of the disease also being lessened, as a consequence of the partial immunity inherited as a result of vaccination in previous generations. "There is every reason to believe," said the speaker, "that general and repeated vacci-

nations would stamp this disease from the face of the earth. But there will always be a few demagogues, a few disbelievers, and a few fools, and for this reason the profession will be obliged perpetually to wage war against this scourge."

Typhoid fever, tuberculosis and diphtheria were also discussed and the author urged on the profession the duty of educating the public in modern hygienic principles, at the same time commending the faithfulness and unselfishness with which physicians ever seek to prevent disease putting their most strenuous efforts into work for the good of humanity, which often reduces their own finances.

Hospital abuse, so-called, was next considered, the responsibility for which was placed squarely on the physician himself. "Does he tolerate the abuse," asked the speaker, "as a result of his philanthropic instinct, over which he has no control? Such an assumption is ridiculous. He renders his services to the rich and the poor alike for the prestige which he hopes to obtain as a result. He robs his brother of his legitimate means of livelihood and at the same time croaks at his own contemptible conduct. He not only tolerates the abuse, but he aids, abets, and assists to the fullest extent of his ability in continuing it. When the medical profession, individually, shall say to all people and to all corporations, 'We will render to all alike the best service that lies within us, whether rich or poor, demanding from all who are able a fair recompense, and from those who are not able, no recompense,' then, and not earlier, will the requiem of the hospital abuse be sung."

He further said that while the fact is well recognized that the results from medical expert testimony are far from satisfactory, and the knowledge of this condition of affairs is a source of regret and shame to every honest physician, for which he had no disposition to offer an apology, yet the responsibility rests only in part with the physician. The speaker denounced emphatically the evil which tends to exaggerate to the public eye that for which the profession is responsible—that is the method pursued by the lawyers before the courts in distorting the physician's testimony to suit the ends of their case, with the result that medical expert testimony is ridiculed by the press and the public in general.

#### Present Understanding of Non-tuberculous Joint Disease.

DR. JOEL E. GOLDTHWAIT, Boston, said that it must be recognized that the body is a machine, and that the adjustment of that machine depends on just as perfect balance as the adjustment and successful operation of an automobile, and no one with wisdom would think of operating an automobile if its axle or some other part were twisted or out of order; for, though a man might make the thing go, it would mean too great a strain on the tire in places, and one would know that sooner or later he would overturn the machine. In like manner, if the human machine is used in such a way that the balance of the body is disturbed, undesirable consequences result.

Remember that this subject is not worked through. Remember that rheumatism is not an entity, that many of the conditions are purely joint conditions, many are muscular conditions, but there is some way of finding out what those conditions mean, and it is up to you and me as physicians to bring intelligence and common sense and skill to bear in the treatment. A great many conditions we can relieve right off; a great many of the others we can control. Some of them we fail to control, but that is true of all classes of medicine at the present time I believe, and I believe that this class will get smaller and smaller the more we study such cases. It is for you, in general practice, who see these cases in the beginning, not to wait till the patients are in great danger and then bring them to the specialist to make them well, but get at them in the beginning before that disease has gotten hold of them to any extent, and then you can restore your patients to normal health with much satisfaction.

#### DISCUSSION.

DR. S. S. DEARBORN, Nashua, said that if we are not to mistake arthritis, we must be on the alert to recognize it. If we assume that rheumatism is due to infection, the connection between it and the condition of the fossæ becomes obvious.

(To be continued.)



# AMERICAN NEUROLOGICAL ASSOCIATION.

*Thirty-fourth Annual Meeting, held at Philadelphia, May 20-22, 1908.*

The President, DR. CHARLES W. BURR, Philadelphia, in the Chair.

(Continued from page 69.)

## Localized Epileptic Convulsions without Gross Lesions of the Cortex of the Brain.

DR. HERMAN H. HOPPE, Cincinnati, confined his remarks to cases showing genuine epileptic convulsions and not those of the Jacksonian or reflex type. Only cases in which the physical examination was negative were selected. In one class of cases there develops, without previous epilepsy, a status hemiepilepticus which results fatally in a short time. In these cases operation is futile. It is often difficult, even after prolonged observation, to decide whether a given case of localized epileptic seizure is due to an organic lesion or not, as there are so many forms of trauma and disease which may cause an organic lesion. We must conclude, however, that these are cases which are not produced by organic lesion. When the loss of consciousness occurs first and the convulsions follow and are limited to a small group of muscles they are undoubtedly epileptic and not Jacksonian. There is a second class of cases in which attacks recur for years and in which there is no progression. The attacks always occur in the same way. In Jacksonian epilepsy there is steady progression. Differentiation must also be made from hysterical epilepsy.

### DISCUSSION.

DR. L. PIERCE CLARK, New York, stated that in a series of 11 cases of status hemiepilepticus at the Craig Colony there was only one death. It is not uncommon for patients of this type to go through attacks 15 times or more. He thinks that the cases mentioned by Dr. Hoppe are not without suspicion of organic lesion. He believes that the underlying lesion in focal epilepsy is a chronic meningoencephalitis.

DR. E. E. SOUTHWARD, Boston, thinks that the possibility of bacterial etiology should be looked into in these cases.

DR. W. G. SPILLER, Philadelphia, thinks that in cases of doubt as to the presence of an organic lesion, operation should be done early, even if it turns out to be only exploratory, for in case of tumor, success can be assured only by early operation.

DR. B. SACHS, New York, stated that many cases of epilepsy are due to lesions sustained early in life. That there is some change either microscopic or macroscopic we must maintain until there is strong evidence to the contrary. In a case in which focal epilepsy comes on suddenly in an individual who has never had epilepsy before, the idea of operation might well be entertained.

DR. J. J. PUTNAM, Boston, said that in these cases, while there is no local lesion, there is an area of maximum irritability.

DR. F. X. DERCUM, Philadelphia, stated that in a disease so hopeless as epilepsy, operation should be done if there is only a shadow of a chance of its doing good.

DR. C. K. MILLS, Philadelphia, said that the more the question of operation is studied, the greater the success. A species of Jacksonian epilepsy sometimes occurs inside the general epileptic attack, and when this is the case, operation is indicated.

DR. HOPPE agreed that microscopic changes could perhaps be found in all cases of so-called idiopathic epilepsy. He believes in operation in the cases Dr. Spiller spoke of, but his cases were not of that kind.

## Sane Prototypes of Insane Mental Processes.

DR. THEODORE H. KELLOGG, New York, said that insanity is never a spontaneous mental variation, but is always evolved on persistent lines of mental action. All insane mental processes have their correlative sane prototypes which have not been adequately studied. He compared the insane mental

processes with their sane prototypes in the following order: Delusions of the sane as the casual prototypes of the false beliefs of the insane; extremes of conduct of the insane as uniformly modeled after sane exemplars; insane emotions, propensities, and impulses as directly derived from their sane prototypes; the hallucinations and illusions of the insane as mere projections of the prototype sensorial disorders of sanity.

### DISCUSSION.

DR. H. R. STEDMAN, Boston, said that the only mental conditions it seems hard to trace are the perversions of instinct, such as sexual perversions, and the eating and drinking of loathsome things.

## The Course of Sensory Impulses in the Spinal Cord.

DR. CARL D. CAMP, Ann Arbor, Mich., said that other sensations than pain and temperature, as first taught by van Gehuchten, are conveyed in the spinal cord by fibers which take their course in different parts of the cord. Pain sensation enters the posterior horn by the posterior roots and ascends in the gray matter for variable distances varying from 2 to 8 segments, crosses in the posterior commissure, and ascends in Gowers' tract to the cerebrum either directly or indirectly. Heat and cold enter by the posterior roots and follow the same course as pain, but by distinct and separate fibers. Tactile sensation enters by the posterior roots and passes up in the posterior columns on the same side without decussation. The sense of position comes from the joints; of motion from the muscles. These enter by the posterior horn, run to the cells in Clark's column, possibly ascend in the gray matter of the same side for a number of segments, and then pass up in the direct cerebellar tract of the same side.

## Diagnosis of Epilepsy and Dementia Præcox.

DR. L. PIERCE CLARK, New York, presented the results of a joint study with Dr. E. W. Scripture on the epileptic voice in which they had found a characteristic and constant loss of melody. The epileptic speech is "plateau" in form. No other nervous or mental disorder shows the epileptic voice type. The voice sign is dependent on the chronic exhaustion or degeneration of those cortical elements which constitute the brain pathology of epilepsy proper. In three-fourths of all cases of epilepsy one may detect the voice sign without any other knowledge of the disorder being present. Dr. Clark also showed four colored drawings of the fundus changes found by Dr. Tyson and himself in all cases of dementia præcox. He laid stress on the point that one must not consider all the signs and symptoms of the eye syndrome to depend on the syndrome in prognosis and diagnosis of this psychosis.

## The Symptom-Complex of Occlusion of the Posterior-Inferior Cerebellar Artery.

DR. WILLIAM G. SPILLER, Philadelphia, enumerated in detail the symptoms of this lesion.

## Thrombosis of the Posterior Inferior Cerebellar Artery with Autopsy Revealing the Lesion in the Medulla.

DR. HENRY M. THOMAS, Baltimore, referred to several cases reported in 1896. The second patient died two and a half years after onset of symptoms; autopsy was refused. In a third case, a man of 59, who, a week before entering the hospital had intense giddiness, pain in left side of face, difficulty in talking and swallowing, drooping of left eye, and weakness of left face, the examination showed an extremely ill man, with marked vascular, cardiac and renal involvement. Sensorium dull. Constant hiccup. Left pupil smaller than right. Slight left ptosis. Slight divergent squint of left eye. Dissociated sensory disturbance on left face, right arm, and leg. No sweating of left side of face. Death in four days. Autopsy, among much else, revealed thrombosis of left posterior inferior cerebellar artery.

### Discussion on Papers of Spiller and Thomas.

DR. B. SACHS, New York, said that he had a case of unquestionable thrombosis of the inferior cerebellar artery a short time ago; the patient has practically recovered.



DR. T. DILLER, Pittsburg, said that he had seen three or four such cases.

DR. CHARLES E. BEEVOR, London, Eng., said that he had not come across any case similar to those described.

DR. D. J. MCCARTHY said that it should be borne in mind that there is a wide variation in the posterior branches given off by the circle of Willis, hence the symptoms may differ greatly depending on which vessels are involved.

DR. SPILLER said that the symptom group he described is so striking that if it is kept in mind a diagnosis could be made without difficulty.

DR. THOMAS agreed with Dr. Spiller and said that about 30 cases could be collected, both with and without autopsy, showing this sharp cut symptomatology.

#### A Case of Myasthenia Gravis with Negative Pathologic Findings.

DR. J. ARTHUR BOOTH, New York, reported the case of a lad of eleven years who presented the familiar symptom-complex of the disease with a rather acute invasion, following an operation for adenoids. Death occurred from failure of respiratory musculature. Examination of the central nervous system was negative and specimens taken from muscles and nerves did not show anything abnormal. Thyroid, parathyroids, and pituitary glands were normal; there was slight simple hypertrophy of thymus gland.

#### DISCUSSION.

DR. N. E. BRILL, New York, regards the enlargement of the thymus in this case as distinctly pathologic. Abnormalities of the thymus occur in 20 per cent. of the cases of myasthenia gravis.

DR. W. G. SPILLER, Philadelphia, recently had a patient found to be eliminating an excess of calcium chlorid in the urine. He was put on calcium chlorid, with distinct improvement.

DR. BOOTH does not agree with Dr. Brill that the thymus in his case was pathologic.

#### Rest Treatment in Relation to Psychotherapy.

DR. S. WEIR MITCHELL, Philadelphia, read this paper which appeared in full in THE JOURNAL, June 20, page 2033.

#### DISCUSSION.

DR. F. X. DERGUM, Philadelphia, said that the rest treatment was certainly original with Dr. Mitchell and that the only remarkable fact about the method is that it makes use of simple physiologic means. The danger in the newer methods of so-called psychotherapy is that they will be used to the neglect of physiologic means.

DR. J. J. PUTNAM, Boston, said that no small factor in Dr. Mitchell's success is his glorious courage and inspiring personality. He agreed with Dr. Mitchell that neurasthenia is often purely physical in nature.

DR. CHARLES L. DANA, New York, said that Dr. Mitchell's colleagues have never questioned the value of this original contribution to therapeutics. In reference to psychotherapy it is true that many people are going to the wrong place for treatment and that physicians should acquire a knowledge of all that is good in the way of treatment by whatever name it is called and be prepared to use it.

DR. B. SACHS, New York, thinks that the association should stand in opposition to the psychotherapy idea as recently developed, because it has been horribly overdone, but that physicians should go along as they have always done exerting their influence often perhaps unconsciously, but nevertheless with good effect. He does not think it necessary to coin any new terms.

DR. CHARLES E. BEEVOR, London, stated that in England the Weir Mitchell treatment is used with the greatest success; also that psychotherapy has not, up to the present time, invaded England.

DR. PHILIP COOMBS KNAPP, Boston, endorsed absolutely everything that Dr. Mitchell said. The physical condition of the patient is too often overlooked. The most important thing is to put the patient on the best possible physical basis.

#### Data Regarding Paresis and Brain Disease in Railway Employés.

DR. PHILIP COOMBS KNAPP, Boston, as chairman of a committee appointed to collect data as to the existence of general paresis and general brain diseases in railway employés, reported that the committee had gone far enough to learn that those diseases are sufficiently prevalent to constitute a grave danger to the traveling public and that it would be desirable to have locomotive engineers and train dispatchers examined regularly by competent neurologists.

#### The Types of Encephalitis.

DR. E. E. SOUTHWARD, Boston, considered only the exudative forms of encephalitis which fall into three groups: (1) Acute, including coecal and typhoid forms; (2) subacute, including tuberculous and luetic forms; (3) the progressive form, or dementia paralytica.

#### Occupation Neuritis of the Deep Palmar Branch of the Ulnar Nerve.

DR. J. RAMSEY HUNT, New York, described this well-defined clinical type of occupation atrophy of the hand with the following clinical characteristics: (a) Atrophic paralysis of the intrinsic muscles of the hand, supplied by the deep palmar branch of the ulnar nerve; (b) reactions of degeneration in the intrinsic muscles of the hand, supplied by the deep palmar branch of the ulnar nerve; (c) no objective sensory disturbances of the hand or fingers. They are to be regarded as due to compression neuritis of the deep palmar branch of the ulnar nerve as it passes between the muscles of the hypothenar region on its way to the deeper structures in the palm.

#### DISCUSSION.

DR. F. W. LANGDON, Cincinnati, thinks that there is a tendency erroneously to ascribe this condition to progressive muscular atrophy.

DR. PHILIP COOMBS KNAPP, Boston, said that Dr. Hunt's careful work and his explanation are very convincing, and that these cases have been described as beginning spinal myelopathy.

#### Confusional Insanity and Dementia Præcox.

DR. PHILIP COOMBS KNAPP, Boston, stated that too sharp a distinction has been drawn between confusional insanity and dementia præcox, so-called, in the endeavor to establish two distinct diseases. The confusion of the former and the stupor of the latter are only two stages of what is really the same disease. One is a disturbance of projection, and the other of perception. The pathogenesis of these conditions has not yet received sufficient study. Intoxication and exhaustion play an important rôle. The so-called dementia præcox is not always precocious, as it may begin after fifty, neither does dementia always occur. Dementia præcox, as a term characterizes the disease too strongly as hopeless, for it is not ordinarily progressive, and is sometimes curable.

#### Facial Paralysis.

DR. G. A. WATERMANN, Boston based his paper on a number of cases of peripheral facial palsy. There was very slight difference in the side or sex affected or in the season of the year. However, exposure to cold and drafts played an undoubted causative rôle; as did also the toxins of syphilis, nephritis and the like. Ear disease also played a part. The character of pain at the beginning was of no prognostic import.

#### Prognosis of Spinal-Cord Tumors with Operation.

DR. WILLIAM C. KRAUSS, Buffalo, N. Y., said that the first operative case of spinal-cord tumor was that of Gowers and Horsley in 1888. There was one series of 50 cases in the first 10 years; a second series of 50 in the next 5 years, and a third series of 50 cases in the next 5 years. The prognosis has gradually grown better and better, and is especially good in cysts and sarcoma.

#### Delayed Apoplexy (Spätapoplexie) with Report of a Case.

DR. A. R. ALLEN, Philadelphia, concluded that traumatic delayed apoplexy is an entity; that it may be due to an occlusion of the arteries; that when hemorrhage occurs it is not due to necrosis outside of the artery, and that the arterial changes are the result of the trauma.



## Medicolegal

### Check Interposed to Use of Property for Tuberculosis Sanitarium.

The Supreme Court of North Carolina had, in the case of *Cherry vs. Williams*, an action to enjoin the erection and use of buildings on a certain lot, in the city of Greensboro, for a sanitarium for the treatment of tuberculosis, etc. The defendant, admitting his purpose to construct and use buildings for the treatment of consumptives, and at the place indicated, offered a large amount of evidence, including affidavits of specialists, eminent in their profession, and in the treatment of tuberculosis in hospitals and otherwise, to the effect that "a sanitarium for the treatment of consumptive patients, located in the city of Greensboro, properly maintained and conducted, would not be a menace to the health of the community in which it is situated, nor to the public health; that such sanitariums are conducted in large and populous cities all over the country where the climate is suitable for the patients, and that experience has shown that such sanitariums are not a menace to the public health, but rather a benefit;" that the proposed locality was not thickly populated, and consumption is not contagious, nor an infectious disease; and that the defendant was qualified to conduct the proposed sanitarium properly and intelligently. But the court thinks that the conditions suggested, if established, would come well within the definition of an actionable nuisance, and, if there was a well-grounded apprehension that neighbors would be unreasonably exposed to serious danger from a disease of the nature of consumption, the temporary injunction should be continued to the final hearing. The injury threatened in such case would be irreparable. It says that the authorities in that state will uphold the position that, when there are facts in evidence which give good reason to believe that the owner of property in the residential portion of a thickly settled vicinity is about to devote it permanently to a use which imports serious menace to the health of the owners and occupants of adjacent property, such use should be restrained until the facts on which the rights of the parties depend can be properly determined at the final hearing of the case.

In this case there was evidence on the part of the plaintiff, direct and specific, that the erection and use of a hospital in that particular locality, in the manner and for the purpose proposed, would be a source of real danger to the lives and health of numbers of people living in that vicinity, and while the affidavit of the defendant himself made specific response, a large portion of the supporting evidence offered by the defendant was very general in its terms, and made without reference either to the special locality or to the special manner in which the particular hospital was to be constructed and carried on.

If the defendant desired to proceed with the construction of his buildings and risk the results of the trial, the restraining order might be modified to that extent, but any and all use of the buildings for the purposes indicated should be restrained to the hearing.

### A Physician Suing for Services is Subject to Cross-Examination.

The Supreme Court of Colorado says, on the appeal of *Purse vs. Purcell*, that the latter-named party, a licensed physician, brought this action to recover the reasonable value of professional services, which, at the defendant's request, he rendered to the defendant's children who were sick of scarlet fever.

The answer denied that the services were of any value whatever, and alleged that the plaintiff prescribed for and attended five of the defendant's children, two of whom the defendant admitted, had scarlet fever and diphtheria, and said the others had diphtheria, but not scarlet fever—though the plaintiff treated all of them only for the latter—and that, by reason of the defendant's negligence, or want of skill, in making the proper diagnosis and prescribing the appropriate treatment, three of the children died. Substantially the same

matters, alleged as a defense, were set up in two separate cross-complaints or counterclaims, in each of which the defendant asked judgment against the plaintiff in the sum of \$5,000 for malpractice.

The court is clearly of opinion that a case of malpractice was not made out by the evidence. Indeed, the defendant did not in his brief press his claim in that behalf, apparently because his own expert evidence precluded a judgment in his favor. It also says that, in the absence of any evidence of value to the contrary, or of evidence inconsistent with the plaintiff's testimony as to the extent or character of the services, it might be that the jury ought to find in the plaintiff's favor for the amount claimed. But it thinks that prejudicial error was committed in limiting the scope of the cross-examination of the plaintiff by the defendant's counsel, for had the questions on cross-examination been allowed, and the plaintiff required to answer, the jury might have found, on substantial evidence, that the services were of less value, or not so extensive as the plaintiff said they were.

The plaintiff, the court says, testified in his own behalf merely to the effect that he was a licensed physician and had, at the defendant's request, attended the latter's children, and that the bill for which he sued was the customary and reasonable fee, no part of which had been paid. In his complaint he alleged that the children were sick with scarlet fever, and that the services rendered were on that account. On cross-examination he was asked, among other things, by the defendant's counsel, what was the matter with the children, what medicine he gave them, and was asked to describe to the jury their symptoms, and all the indications of disease which they exhibited. As throwing light on the extent and value of the services, as well as bearing on the diagnosis and method of treatment, it was competent under the issues to ask such questions.

The questions propounded were germane to the first defense of the answer, which denied that the services which the plaintiff rendered were of any value to the defendant. It was necessary for the plaintiff to prove that his services were of value, and when he himself testified as to that issue, the defendant might properly, by cross-examination, ask what the services were, and what the plaintiff did, and as to the symptoms and nature of the malady from which the children were suffering.

But if the questions propounded by the defendant had been answered by the plaintiff, it might be that there would have been evidence before the jury from which they might have concluded that the plaintiff's services were not so valuable as he claimed them to be.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Boston Medical and Surgical Journal.

June 25.

- 1 \*Surgical Shock. G. Crile, Cleveland, Ohio.
- 2 Achondroplasia. W. N. Bullard and A. W. George, Boston.
- 3 Alpha-monobrom-Isolvalerylurea. A New Nerve Sedative and Somnifacient. W. H. Porter, New York.
- 4 \*Local Treatment of Acute Inflammations of the Throat from the Standpoint of Pathology. J. L. Goodale, Boston.

1. **Surgical Shock.**—Crile omits theoretic discussion and deals with certain phases of shock in their relation to surgical practice. Repeated and accurate observations on the blood picture may differentiate between hemorrhage and shock. He discusses certain preventable factors, dwelling particularly on the psychical element which does not receive adequate attention, and warns against overanesthesia.

4. **Inflammations of the Throat.**—Goodale thinks that in a beginning tonsillitis antiseptic applications may perhaps be used with benefit and their effect, if any, will be to abort the local infection. If the disease is not checked at the outset by the sterilization of the parts, but proceeds to the formation of white spots in the crypts with systemic involvement, further application of antiseptics may be not only useless but



harmful. It would appear possible that antiseptics may retard convalescence in two ways: First, by diminishing the number of bacteria in the crypts, which are generating toxin, and consequently prolonging the period required for the formation of the requisite amount of antibodies; second, by their destructive action on the tissue cells and phagocytic leucocytes of the host. Forceful application of antiseptics may be followed by increased fever and cervical adenitis, indicating heightened absorption of toxin into the system. This phenomenon may be compared to the depression which follows the infection of too large a dose of vaccine in patients undergoing opsonic treatment. In certain cases in which acute tonsillitis appears to be aborted by local antiseptics, inflammatory manifestations may follow after a day or two in the neighboring regions and last for a number of days or several weeks. Here, the possibility is suggested that the checking of the tonsillitis checked also the establishment of immunity, and that for its final accomplishment a longer period of growth of the organism on the membranes of the nose, larynx, trachea or bronchi was necessary. In this connection may be recalled the protracted duration of nasal diphtheria, as compared with the relatively brief time occupied by the pharyngeal disease.

#### Medical Record, New York.

June 27.

- 5 \*Method of the Spread of Yellow Fever. W. C. Gorgas, Ancon, Canal Zone.
- 6 \*Influenza: Its Diagnosis from a Morphologic Standpoint in Stained Specimens of Sputum. G. W. Stiles, Washington, D. C.
- 7 Liver Symptoms in Cardiac Disease. L. F. Bishop, New York.
- 8 Adverse Suggestion. A. F. Riggs, New York.
- 9 Relation of Pleurisy to Pulmonary Tuberculosis. H. S. Goodall, Lake Kushaqua, N. Y.

5. **Yellow Fever.**—Gorgas describes the methods used in suppressing yellow fever in Havana and in the Canal Zone. He shows how the reduction in numbers of the stegomyia, even though short of extinction, can eliminate the disease. With a hundred stegomyiae to the square yard the introduction of a yellow-fever patient means the probable infection of many mosquitoes which will convey the disease to non-immunes present in the community, and each fresh case is likely to infect more mosquitoes and through them more non-immunes. As the number of mosquitoes is gradually reduced to 50, 25 and 15 to the square yard, the chances of an epidemic become smaller and the epidemic itself milder. By the time the mosquitoes are reduced to 10 per cent. of the original number, even if a yellow-fever patient is introduced, the chances of his being bitten, and thus infecting a mosquito, are minimized; and while it is possible with ten mosquitoes to the square yard for one mosquito to become infected and give yellow fever to some other non-immune in the same house, it is not probable that this second yellow-fever case will infect a second stegomyia. A certain number of mosquitoes are necessary for the propagation of yellow fever, but this number is ordinarily largely exceeded in yellow-fever countries. While it is probably impossible under any sanitary organization to exterminate the stegomyiae altogether, it is possible to reduce them below the yellow-fever point, but so long as the number remains above this point we shall continue to have yellow fever when non-immunes are present, no matter how much we fumigate or how carefully we isolate the sick. Gorgas regards this as a reasonable explanation of the disappearance of yellow fever, before we knew of its propagation by mosquitoes, from Philadelphia, New York, Boston and Quebec, cities in which the stegomyia is not normally found, but used to be carried there on the sailing vessels.

6. **Influenza.**—Stiles reports a hundred tabulated cases of suspected influenza, in which examination of the sputum was undertaken with a view to determining the trustworthiness of a method of diagnosis based on the morphologic characters alone of the organism found in the sputum. Several slides were made from each specimen, and, after drying in air and gently fixing by heat, were stained with alkaline methylene blue and dilute solution of carbolfuchsin (about one part to

eight or ten of water). He describes the characters of the *Bacterium influenza*, and concludes as follows: 1. In view of the results obtained from this series of cases, I can not too strongly emphasize the necessity of making a routine microscopic examination of sputum from cases manifesting general respiratory symptoms of disease. No matter what the previous diagnosis may have been from the symptomatology alone, further light on the condition of the patient may be obtained from a microscopic study of the sputum. 2. Valuable information may be obtained from a brief study of well-stained specimens of sputum from suspected or complicated cases of influenza. 3. A few cases resembling tuberculosis may be due to infection of influenza bacilli alone or to a mixed infection of the two organisms.

#### New York Medical Journal.

June 27.

- 10 \*Theoretical Considerations and Experimental Work Relative to Opsonins, with Observations at the Saranac Laboratory. E. R. Baldwin, Saranac Lake, N. Y.
- 11 \*Opsonic Treatment of Disease. G. M. Illman, Philadelphia, and H. A. Duncan, Philadelphia.
- 12 \*Tuberculin Inunction. E. Moro, Munich, Germany.
- 13 Ocular Tuberculin Test. A. L. Benedict, Buffalo, N. Y.
- 14 Ocular Tuberculin Reaction in Diagnosis of Tuberculous Conditions. H. H. Pelton, New York.
- 15 \*Mercury and Tuberculosis. W. F. Bernart, Chicago.
- 16 Porto Rico as a Field for Research in Tropical Medicine. B. K. Ashford, Washington, D. C.
- 17 Acute Syphilitic Nephritis. J. Ballagi, Homestead, Pa.
- 18 Results Obtained from Use of Diphtheria Antitoxin Refined and Concentrated by Gibson's Method. R. E. Wodehouse, New York.

10. Abstracted in THE JOURNAL, May 30, 1908, p. 1818.

11. **Opsonic Therapy.**—Illman and Duncan summarize their results with opsonic treatment in 30 cases, of which 13 were tuberculous, 5 gonorrheal, 6 staphylococcic, 3 streptococcic, 1 mixed, 1 colon, and 1 typhoid. Their conclusions are practically as follows: Vaccine therapy offers a chance of cure in many cases of disease heretofore regarded as incurable. In the large majority of cases stock vaccines are just as efficient as autogenous vaccines. Patients can be treated with fewer actual index observations than was at first supposed. Patients treated with clinical phenomena alone as a guide should only be so treated by some one well versed in vaccine therapy, and then only after having been under previous observation for a period long enough to have determined "the phase" the patient is in. Very small initial doses should be employed when the opsonic index has not been previously determined. The best results at the present time are obtained in tuberculous conditions and staphylococcic or streptococcic infections, as in acne. To get the best results vaccine treatment must be instituted as soon as the diagnosis is made. They report the thirty cases in detail.

12. **Tuberculin Inunction.**—Moro recommends as a substitute in many cases for the ocular and subcutaneous tuberculin reactions the following method: Koch's old tuberculin, 5 c.c.; anhydrous wool fat, 5 gms. A piece the size of a pea is rubbed into the skin of the chest or abdomen for about half a minute over an area of four square inches. On the following day, or later, the appearance of small papules which last for about a week indicates a positive reaction. Moro asserts that a positive result by this method is as conclusive as those of Calmett's or v. Pirquet's methods. The method is said to be entirely harmless.

15. **Mercury in Tuberculosis.**—Bernart, as the result of observation in the treatment of 422 syphilitics, of whom many were tuberculous, by intravenous injections of mercury, arrives at the following conclusions:

1. The control of the active syphilis in many of the tuberculous patients seemed for the time to benefit the tuberculosis also.
2. In patients with pulmonary tuberculosis, after the first control of the syphilis and if the treatment was continuously pushed, a few months would show a gradual aggravation of the tuberculosis.
3. The genitourinary tuberculous patients, outside of the benefit to their syphilis, showed no improvement in their tuberculosis.
4. Two patients with tuberculous eye trouble were benefited, one markedly so and the other but moderately so. This is not surprising, as the intravenous injections of mercuric chlorid exert a decided and beneficial influence over infections and ulcerations of the eye.
5. The patients with pulmonary tuberculosis, evidently suffering from the absorption of septic materials, probably due to a second



ary germ infection, were decidedly benefited up to a certain point, after which, if the mercurial treatment was continued, their retrogression was rapid.

#### Medical Fortnightly, St. Louis.

June 10.

- 19 \*A Plea for Prompt Use of Retrograde Catheterization in Surgical Treatment of Impassible Stricture of the Urethra. E. Jonas, St. Louis.  
20 Visiting Far Cathay. R. G. Eccles, Brooklyn, N. Y.

June 25.

- 21 Ectopic Gestation. E. Walker, Evansville, Ind.  
22 Why Do Young Men Crowd into the Professions? A. L. Benedict, Buffalo, N. Y.  
23 Glimpses of Early St. Louis Medical History. W. B. Outten, St. Louis.

19. **Retrograde Catheterization in Stricture.**—Jonas considers that there has been an unjustifiable lack of progress in treating benign urethral strictures, which he attributes in part to the want of surgical training in the older genitourinary physicians and to the public dread of operations on the penis. Treatment of strictures with sounds should be reserved for strictures of moderate size, frequently called of large caliber. For strictures of small caliber, and those admitting only a filiform bougie, urethrotomy is better, preferably external urethrotomy (except in strictures of the pendulous urethra, when internal urethrotomy may be chosen). Jonas favors urethrotomy in all cases in which the urethra can not easily be kept open by bougies, or in patients with pain or annoying symptoms, even when it is possible to pass a sound of normal size. All scar tissue should be completely excised. When in external urethrotomy it is impossible to pass a filiform bougie, an attempt may first be made to find the proximal opening of the urethra from the perineal incision, but failing speedy success, the bladder should be opened above the pubis and a sound should be passed through the bladder to the perineum (retrograde catheterization). The sound point acts as a guide to slit open the urethra. The wound of the bladder and the abdominal incision are closed at once, the prevesical tissue being safeguarded by a small cigarette or tubular drain.

#### Surgery, Gynecology and Obstetrics, Chicago.

May.

- 24 Hemorrhage from the Stomach and Duodenum. W. J. Mayo, Rochester, Minn.  
25 False Diverticula of the Appendix. H. Upeott, Hull, Eng.  
26 Case of Primary Ovarian Pregnancy. C. C. Norris and C. B. Mitchell, Philadelphia.  
27 \*Surgical Treatment of Cancer of Sigmoid and Rectum. B. G. A. Moynihan, Leeds, Eng.  
28 Intermittent Hydrops of Joints. W. Healy, Chicago.  
29 \*Synetioma or Chorioepithelioma of the Placenta. E. P. Davis, Philadelphia.  
30 Dawn of Modern Military Surgery. N. Senn, Chicago.  
31 \*Ureteral Calculi. J. H. Gibbon, Philadelphia.  
32 \*Cesarean Section. E. Reynolds, Boston.  
33 Prolapse of the Female Urethra. G. F. B. Simpson, Edinburgh, Scotland.  
34 \*Conditions That Require Removal of the Child from the Breast. C. B. Reed, Chicago.  
35 Successful Treatment of Chronic Gonorrheal Endometritis. G. Koliseher, Chicago.  
36 Simplified Technique for Supravaginal Hysterectomy. W. Bartlett, St. Louis.  
37 \*Improved Hodgen Splint for Fractures of the Thigh. G. S. Brown, Birmingham, Ala.  
38 Simple Hysterectomy in Simple Cases. A. H. Ferguson, Chicago.

27. **Cancer of Sigmoid.**—Moynihan endeavors to show that the descending colon and the upper part of the sigmoid flexure retain their vitality after the sacrifice of the inferior mesenteric artery and that the mobilization of the colon and the splenic flexure permits considerable displacement of these portions of the bowel, and argues that in all cases of carcinoma of the sigmoid or of the rectum, whether high or low (the proctodeum excepted), an abdominal operation seems advisable, for by this route only can the whole lymphatic territory be extirpated. He describes the procedure necessary in a case of growth about the middle of the sigmoid.

29. **Chorioepithelioma of Placenta.**—Davis reports a case and discusses the literature of the subject. He urges the importance of examining the placenta in all cases in which pregnancy is interrupted after the fourth month. Ballantyne's statement that the placenta is the key to fetal pathology should be kept in mind in all cases in which the fetus is still-born or the pregnancy is interrupted after the placenta is

formed. If chorioepithelioma is found, attention must be directed to the mother. All cases of pregnancy complicated by anomalous hemorrhage should arouse the suspicion of chorioepithelioma malignum. He asks: "Shall the operator who detects chorioepithelioma of the placenta proceed immediately to hysterectomy as soon as the patient's condition justifies it, or shall he content himself with a thorough examination of the patient under ether, including curetting, and the microscopic examination of the scrapings? If these procedures give no evidence of chorioepithelioma, is he justified in allowing the patient to pass from his observation without hysterectomy?"

31. **Ureteral Calculi.**—Gibbon reports six cases, and discusses the pathology, symptoms, diagnosis and treatment, considering the operative treatment as it is applicable to stones situated in the upper third, the lower two-thirds, and the vesical portion of the ureter respectively. He discusses various routes and operations, and urges the advantage in doubtful and difficult cases of the combined intraperitoneal and extraperitoneal operation.

32. Abstracted in THE JOURNAL, March 14, 1908, p. 911.

34. **Removal of Child from Breast.**—Reed reviews observations of the effect on the child of drugs administered to the mother. It seems probable that alcohol, opium, chloroform, ether, thyroid extract and lead should be used with extreme care in a nursing woman until their status is determined; that zinc apparently has no effect, while all the other drugs investigated, atropin, arsenic, antipyrin, acetic acid, bismuth, potassium bromid, balsam of copaiba, castor oil, copper, chloral, iodine and its compounds, mercury, phenacetin, quinin, salicylic acid and senna—pass over in small quantities in the milk, but rarely to a degree injurious to a sensitive babe. The child, therefore, need practically never be removed from the breast on account of their administration. Nephritis, serious and obstinate erosion and fissure of the nipple, Paget's disease, scirrhus, sarcoma or abscess of the breast, together with local or systemic tuberculosis, syphilis, erysipelas, acute articular rheumatism, acute pulmonary or pleuritic affections, and all infections and contagious diseases, osteomalacia, and all puerperal infections that are not mild and transitory in character demand the absolute separation of mother and child.

37. Abstracted in THE JOURNAL, Jan. 25, 1908, p. 310.

#### American Journal of Medical Sciences, Philadelphia.

May.

- 39 \*Analysis of One Hundred and Forty Operations on the Kidneys and Ureters. G. E. Brewer, New York.  
40 \*Epidemiology of Acute Poliomyelitis. L. E. Holt and F. H. Bartlett, New York.  
41 \*Suppurative Phlegmonous Gastritis. J. W. Bovee, Washington, D. C.  
42 \*Galloping Rhythm of the Heart. G. C. Robinson, Philadelphia.  
43 Toxemia from Standpoint of Perverted Metabolism. R. W. Webster, Chicago.  
44 \*Relaxed Knee Joint. A. H. Freiberg, Cincinnati.  
45 Primary Colloid Carcinoma of the Appendix. E. H. White, Montreal.  
46 \*Management of Labor in Minor Degrees of Pelvic Contraction with Reference to the Relative Indications for Abdominal Cesarean Section. H. D. Fry, Washington, D. C.  
47 \*Clinical and Pathologic Aspect of Rodent Ulcer. G. McConnell, St. Louis.  
48 Erysipeloid of Rosenbach. J. H. Jopson, Philadelphia.  
49 Symptom-Complex of Transverse Lesion of the Spinal Cord and Its Relation to Structural Changes Therein. A. R. Allen, Philadelphia.

39. Abstracted in THE JOURNAL, Feb. 29, 1908, p. 719.

40. **Acute Poliomyelitis.**—Holt and Bartlett present as complete a collection as possible of the epidemics of this disease so far reported, 35 in all, excluding the New York (1907) epidemic, which is to be made the subject of a special report by the medical societies. They discuss the data on communicability, and conclude that this is unquestionably an infectious disease, but whether it is communicable is open to question. They believe that it is communicable, but only to a slight degree. They give a tabulation of the principal facts regarding the thirty-five epidemics, together with references to the literature.

41. Abstracted in THE JOURNAL, Jan. 25, 1908, p. 311.



**42. Gallop Rhythm.**—Robinson summarizes his paper as follows: Gallop rhythm of the heart is a fairly frequent clinical phenomenon, which consists in the presence of a group of three cardiac tones, none of which are murmurs. It occurs under variable clinical conditions. That form of gallop rhythm which is best heard at the apex, or over the central part of the precordium, may be divided into the presystolic, protodiastolic and mesodiastolic types, depending on whether the extra tone falls at the end, at the beginning, or in the middle of each diastole. Each form is associated with a characteristic cardiogram. There are a number of factors which probably combine in various ways to produce the various forms of gallop rhythm. Presystolic gallop rhythm is heard in two classes of cases. It is heard in strongly acting hearts in which a muscle sound produced by a strongly acting, hypertrophied auricle is probably the cause of the extra tone; and in weak, rapidly acting hearts at the height of acute febrile diseases, at which time there is possibly a delay in the conduction of the heart beat from the auricles to the ventricles. Under these circumstances the sound produced during the contraction of the auricles becomes distinguishable from that produced during the contraction of the ventricles. In both classes of cases the extra tone seems to be produced in the auricle rather than in the ventricle. Protodiastolic and mesodiastolic gallop rhythm are caused by the production of an extra tone in the ventricles. The factors that probably combine to produce this extra tone are an increase in the amount and velocity of the flow of blood from the auricles into the empty ventricles and a loss of tone of the heart muscles of the ventricles. The longer silent period in cases of gallop rhythm does not usually occur during diastole, but is generally a systolic silence.

44. Abstracted in THE JOURNAL, Jan. 18, 1908, p. 233.

**46. Pelvic Contraction.**—Fry emphasizes the importance of early surgical intervention before the woman has gone through the exhaustion of prolonged labor pains, and particularly before employing forceps and manipulations that may produce infection. It is incumbent on the general practitioner to learn to recognize early the cases of disproportion between the infant's head and the maternal pelvis. Pelvic deformity is much more frequent than is generally supposed. He describes the varieties of deformity and says that pelvimetry should be performed at the eighth month of pregnancy in all primiparae, and in those multiparae who have passed through difficult labors. He discusses in detail the three lines of treatment open in minor degrees of pelvic contraction discovered in the thirty-second week: (1) The induction of premature labor; (2) elective Cesarean section; (3) delay until labor has demonstrated the resources of Nature; then (a) spontaneous delivery; (b) version; (c) axis-traction forceps; (d) Cesarean section; (e) symphyseotomy or pubiotomy; (f) craniotomy.

**47. Rodent Ulcer.**—McConnell discusses the literature of rodent ulcer and analyzes 16 cases from the St. Louis Skin and Cancer Hospital. Both gross and microscopic appearances were practically alike in all cases. Contrary to Bland-Sutton's statement that rodent ulcer never cicatrizes, in one of these cases it had done so to a remarkable extent. McConnell describes the histologic findings minutely and emphasizes the characteristic formation of the cell nests, the marked fragmentation of elastic tissue, and the fact that in one case, which came to autopsy, no infiltrated nodes were found nor were there any metastases to distant structures; from which he argues the probability of permanent cure by early excision. A number of patients were treated by x-rays for varying periods without permanent benefit. The lesion and symptoms would seem to improve, the patient would stop coming, and would return later when the lesion had broken down. Excision followed by x-ray treatment gave the best results.

#### Bulletin of the Johns Hopkins Hospital.

May.

- 50 John Syng Dorsey: The Secret of His Success. A. Robin, Washington, Del.

- 51 Intestinal Anastomosis Without Open Incisions by Means of Basting Stitches. E. M. Parker and H. H. Kerr, Washington, D. C.  
52 A Clinical Study of the Alkalinity of the Blood. S. Strouse, Baltimore.  
53 \*Cardiohepatic Angle. W. J. Calvert, Columbia, Mo.

**53. The Cardiohepatic Angle.**—Calvert says that clinically the value of the cardiohepatic angle in pericarditis is not decreased in the early stages of the development of dilatation of the left auricle, because the signs of the mitral lesion would be present. In enlarged hearts the lesion must be determined before an increased cardiohepatic angle is differential for an associated pericardial effusion. In extreme dilatation of the heart, when differentiation from pericarditis is the most difficult, the cardiohepatic angle is of little value, unless the history of the case is known; even then it is, at best, uncertain. When pericardial effusion can be positively excluded, an increase in the cardiohepatic angle becomes a sign of mitral stenosis, because this lesion most frequently causes extensive dilatation of the left auricle and displacement of the root of the lung. When the history of the case is known, allowing heart lesions to be excluded, an increase in the cardiohepatic angle retains the value in pericarditis with effusion given to it by Ebstein and others.

#### California State Journal of Medicine, San Francisco.

May.

- 54 The Weber Murder; Was Adolph Weber Insane? R. F. Rooney, Auburn.  
55 \*Fallaciousness of So-called Pathognomonic Signs in Diagnostic Work. C. M. Cooper, San Francisco.  
56 Reaction of Anaphylaxis. L. S. Mace, San Francisco.  
57 Development of the County Medical Society. W. T. Barry, Santa Barbara.  
58 A Nerve Sedative. C. Renz, San Francisco.

**55. Fallaciousness of Diagnostic Signs.**—Cooper considers that the McBurney point has been given a pathognomonic significance which it does not merit, and has caused many innocent appendices to be operated on. The continuous presence of occult blood in the stools can not be relied on to indicate alimentary carcinoma. Chronic apical catarrh may indicate influenza and not tuberculosis. Acid-fast bacilli may be found in non-tuberculous ailments. Lung tissue in the sputum does not necessarily indicate an intrapulmonic purulent collection. A diastolic puff over the aortic and pulmonary valves is sometimes due to mechanical diastolic movement of air in the neighboring lung tissue. Both leucocytosis and fever may be absent in malignant endocarditis. Cooper doubts the diagnostic value of pulsus alternans as to loss of contractibility of cardiac muscle, etc. He suggests that: 1. The time has come to state and to teach that there are no pathognomonic signs of the individual diseases, that the presence of such signs forms only one link in the diagnostic chain, and in no way excuses neglect of thorough and, if necessary, repeated investigations of our patients. 2. The use of pathognomonic terms such as gallstones crepitus and ureteral clots would better be discarded.

#### Northwestern Lancet, Minneapolis.

May 1.

- 59 \*Diagnosis and Treatment of Extrauterine Pregnancy. G. C. Barton, Minneapolis.  
60 Tact in the Practice of Medicine. A. D. Hard, Marshall, Minn.  
61 Cardiospasm; Functional Stenosis of the Esophagus at the Cardia. O. R. Bryant, Minneapolis.

May 15.

- 62 Methods of Diagnosis in Some of the Clinics of Germany. L. A. Nippert, Minneapolis.  
63 Diagnosis and Treatment of Pneumonias in Childhood. J. T. Christison, St. Paul.  
64 Southern Travels. C. J. Ringnell, Minneapolis.  
65 Optic Neuritis Due to Chronic Empyema of the Frontal and Anterior Ethmoidal Sinuses. W. R. Murray, Minneapolis.

**59. Extrauterine Pregnancy.**—Barton describes a peculiar case in which, besides the left ruptured tubal pregnancy for which operation was done, there was a distention of the right tube with serous fluid and blood, which did not have the characteristics of a hydrosalpinx. He suggests the possibility of there having been a pregnancy in both tubes. He discusses the diagnosis of extrauterine pregnancy and regards irregularity in the menstrual flow as the most constant symptom. He agrees with those who think that with proper judg-



ment more lives would be saved if we were to wait a few hours until shock is over before operating. He believes that the shock is not entirely due to the hemorrhage, but that the sudden pain and the fear of dissolution are factors in it also.

**Journal of the Missouri State Medical Association, St. Louis.**

May.

- 66 Status of the Medical Profession. R. H. Goodier, Hannibal.
- 67 \*The Roentgen Ray in the Diagnosis of Renal and Ureteral Calculi. R. D. Carman, St. Louis.
- 68 Relation of Salts to the Heart Beat. W. W. Duke, Kansas City.
- 69 \*Effect of Surgical Operations on Diabetic Patients. L. T. Riesmeyer, St. Louis.
- 70 Peritoneal Tuberculosis. J. D. Seba, Bland.

67. This article was published in the *Interstate Medical Journal*, May, 1908.

69. **Surgical Operations on Diabetics.**—Riesmeyer points out that even in cases in which the general constitution of the patient seems to guarantee a good result coma and death have followed operation, while in relatively far-advanced cases good results of operative intervention and improvement in diabetic symptoms have followed. It is wise to prefer palliative measures in small ailments, such as ingrown toenail, and even corns. That a good result will ensue can not be foretold with exactness, so that prognosis must be cautious. General anesthesia, especially chloroform, increases the danger of coma. On the whole, the prognostic significance of operation on diabetic patients may be somewhat modified by sustaining the nutrition, the strength and the resisting power of the body by preventing or counteracting acidemia, and by reducing infection and the duration of operative procedures to a minimum.

**Journal of the South Carolina Medical Association, Greenville.**

May.

- 71 The Great Black Plague. L. Guerry, Columbia.
- 72 \*Treatment of Fractured Patella. T. Maddox, Union.

72. **Fractured Patella.**—Maddox had to operate in a case in which only catgut was available for suture of the patella. The patient did well and is now, years afterwards, in excellent condition. Maddox considers that there is no need, if bony union is effected in from 10 to 20 days, for leaving sutures longer, and he believes strong catgut the best material.

**Illinois Medical Journal, Springfield.**

May.

- 73 What the Illinois State Board of Charities Is Accomplishing. W. G. Graves, Springfield.
- 74 Medical Administration of State Charitable Institutions. F. P. Norbury, Jacksonville.
- 75 What the Civil Service Commission Is Accomplishing. W. B. Moulton, Chicago.
- 76 Early Diagnosis of Pulmonary Tuberculosis. E. H. Butterfield, Chicago.
- 77 \*Arteriosclerosis of the Nervous System. H. T. Patrick, Chicago.
- 78 \*Vaccine Treatment of Gonorrhea in Female Children. W. J. Butler and J. P. Long, Chicago.
- 79 Inflammatory Conditions Within the Abdomen and Thorax Differentiated from Appendicitis. C. J. Whalen, Chicago.

77. Abstracted in *THE JOURNAL*, March 28, 1908, p. 1069.

78. This article was published in *THE JOURNAL*, March 7, 1908, p. 744.

**Military Surgeon, Carlisle.**

May.

- 80 \*An Operation for Varicocele. G. F. Freeman, U. S. Navy.
- 81 Simple and Double Continued Fevers of the Philippines. H. J. Nichols, U. S. Navy.
- 82 Epidemic of Typhoid Fever at Iloilo. E. H. Bruns, U. S. Army.
- 83 Epidemic Typhoid with Special Reference to Contact Infection. L. A. LaGarde, U. S. Army.
- 84 A Small Typhoid Epidemic. L. C. Duncan, U. S. Army.
- 85 A Honolulu School of Tropical Medicine: Life History of an Idea. E. S. Goodhue, Kealahou, Hawaii.
- 86 Practical Portable X-Ray Equipment for Army Field Service. J. A. Metzger, U. S. Volunteers.

80. **Operation for Varicocele.**—Freeman describes an operation for which he claims the advantages that no material is left for absorption; shortening of the scrotum by transverse suturing of the external wound at the time of the shortening of the structures within; simplicity; removable sutures for

tying the varicose mass that would at the same time safeguard against hemorrhage. The article is illustrated.

**Pennsylvania Medical Journal, Athens.**

May.

- 87 Oration in Dermatology. H. W. Stelwagon, Philadelphia.
- 88 \*Treatment of Acute Infections of the Female Pelvic Organs. F. H. Maier, Philadelphia.
- 89 \*Treatment of Pelvic Abscess. F. C. Hammond, Philadelphia.
- 90 \*Ovarian Tumors Complicating Pregnancy and the Puerperium. W. Krusen, Philadelphia.
- 91 \*Treatment of Eclampsia. J. C. Applegate, Philadelphia.
- 92 \*Treatment of Terminated Ectopic Pregnancy. C. A. Stillwagon, Pittsburg.
- 93 \*Treatment of Dysmenorrhea by Forceful Dilatation of the Cervical Canal and Application of the Wylie Drain. H. D. Beyea, Philadelphia.
- 94 \*Sliding Hernia. J. D. Singley, Pittsburg.
- 95 Old Friends in New Clothes. S. J. McGhee, Mill Hall.
- 96 Why Pennsylvania Should Build, Equip and Maintain a Hospital for the Restraint, Care and Treatment of Inebriates, and What the Hospital Should Be. J. B. Carroll, Hathboro.

88 to 91. Abstracted in *THE JOURNAL*, Nov. 16, 1907, p. 1706.

92. Abstracted in *THE JOURNAL*, Nov. 9, 1907, p. 1624.

93. Abstracted in *THE JOURNAL*, Nov. 16, 1907, p. 1706.

94. **Sliding Hernia.**—Singley directs attention to this inadequately considered condition and describes the method of dealing with it. He emphasizes the importance of seeing clearly all sides of the external surface of the neck of the sac in inguinal hernia, and of ligating it in full view, low down, if necessary. If ligated low down it may be dislocated, if desired, according to one of the several methods in vogue.

**West Virginia Medical Journal, Wheeling.**

May.

- 97 President's Address Before West Virginia State Medical Association (concluded). F. Howell, Clarksburg.
- 98 Clinical Aspects of Appendicitis. W. W. Golden, Elkins.
- 99 West Virginia Institutions. L. V. Guthrie, Huntington.
- 100 The Social Evil: What Shall We Do with It? J. C. Irons, Elkins.
- 101 Maternal Impressions. T. M. Hood, Clarksburg.
- 102 Case of Fracture of Larynx. C. M. Hawes, Huntington.
- 103 The Fraternal Spirit. R. J. Reed, Wheeling.

**Journal of the Medical Society of New Jersey, Orange.**

May.

- 104 \*Value of Some Modern Laboratory Methods for the Practitioner. F. C. Wood, New York.
- 105 Trichiasis. T. R. Paganelli, Hoboken.
- 106 Relation of Physician and Pharmacist to the United States Pharmacopeia and National Formulary. W. C. Anderson, Brooklyn, N. Y.
- 107 Doctor and Druggist. C. J. McCloskey, Jersey City.

104. **Laboratory Methods.**—Wood deals with blood examinations in their relation to the malarial parasite, leucocytosis, *Filaria nocturna*, the *Spirocheta pallida*, agglutination tests, the opsonic index, etc., and also the examination of the stools in cases of severe anemia, for the eggs of bothriocephalus. The irrigation method, washing out the lower intestine once or twice daily with high irrigation of physiologic salt solution in pernicious anemia is recommended. He cautions against paying too great attention to the leucocyte count to the exclusion of physical examination, and discusses the differentiation of pneumonia and typhoid by blood examination. Leucocytosis is also an aid in prognosis, *c. g.*, in appendicitis. The Widal test has proved one of the most useful of laboratory diagnostic methods. Wright's vaccine treatment, owing to the complexity of its methods, will probably be left to special laboratories. The topical tuberculin test for tuberculosis—by the skin and the eye—is discussed, and the author considers that the latter would prove valuable if a purified and standardized tuberculin could be obtained. The article, being didactic, hardly lends itself to abstraction.

**Therapeutic Gazette, Detroit.**

May.

- 109 \*Analysis of Psychotherapeutic Methods. F. X. Dercum, Philadelphia.
- 110 Treatment of Enlargement of the Prostate. W. Karo, Berlin.
- 111 Medicinal Treatment of Pulmonary Tuberculosis. G. L. Haebele, Cleveland.
- 112 Bier's Method in Treatment of Some Neuroses. A. Gordon, Philadelphia.

109. **Psychotherapy.**—Dercum says that we should always bear in mind that symptoms have a physical basis, and this is



especially true of functional nervous disease. Exhaustion plays a fundamental rôle in all cases, and when the general level of the mental tone is raised obsessions disappear (Janet), so that the bringing up of the general health to the highest possible level is the first thing. To this end simple physiological procedures, rest, full feeding, gentle exercise, massage, bathing, etc., should be instituted in every case. In obsessional states there is essentially a neurasthenia or "psychasthenia." In addition to rest and physiologic measures, mental rest by isolation, retraining of the patient, and later special mental exercises or gymnastics are advised. Judicious normal suggestion should be used, including such explanation of the patient's condition as may be adequate and tactful, pointing out that the symptoms are functional and will disappear. Suggestion under hypnotism he regards as rarely, if ever, justified. Psychoanalysis will probably not find a permanent place in therapeutics.

#### Ohio State Medical Journal, Columbus.

- 113 Acute Yellow Atrophy of the Liver. D. B. Conklin, Dayton.
- 114 Diagnosis of Surgical Diseases of the Kidneys. G. M. Todd, Toledo.
- 115 Spinal Curvature Arising from the Improper Seating of School Children, and Its Prevention. W. G. Stern, Cleveland.
- 116 Mechanical Treatment of Habitual Constipation. W. Teachnor, Columbus.
- 117 Statistical Consideration of Six Hundred General Anesthetics. R. Carothers, Cincinnati.
- 118 \*What the Profession May Do in Matters of State. J. M. Howell, Dayton.

118. Abstracted in THE JOURNAL, Sept. 28, 1907, p. 1140.

#### Washington Medical Annals.

May.

- 119 \*Acid Intoxication. J. B. Nichols, Washington.
- 120 Differential Diagnosis of the Chronic Non-tuberculous Joint Affections. J. Dunlop, Washington.
- 121 Clinical Studies in Organotherapy. I. H. Lamp, Washington.
- 122 Perkins' Metallic Tractors. D. S. Lamb, Washington.
- 123 Easy Methods of Carrying Out the Principles of Aseptic Surgery. R. Reyburn, Washington.

119. **Acid Intoxication.**—Nichols discusses the physiologic chemistry of this condition and summarizes the four principal hypotheses as to the agents actually producing the toxic phenomena: (1) That the acetone bodies are themselves the toxic agents—which view he considers entirely inadequate; (2) that beta-oxybutyric and diabetic acids exert their deleterious action by virtue of their acidity; (3) that the harmful effects are due to the withdrawal or diminution of the bases of the body; (4) that the real toxic agents are some unknown precursors or associates of the acetone bodies. The condition, even in marked and serious form, occurs much more frequently than is generally realized, and he suspects that many obscure features that puzzle the clinician as in peculiar forms of indigestion, shock, uremia, etc., are dependent partly on an element of acidosis. The free administration of alkalis, while it produces no results in some cases, should nevertheless be tried in all severe cases. He recommends sodium bicarbonate 15 or more grams (225) grains daily. In addition, calcium carbonate, 3 grams (45 grains) daily, and sodium citrate, 5 grams (75 grains). When alkalis can not be given by the mouth they may be administered by rectum, subcutaneously or even intravenously.

#### Southern California Practitioner, Los Angeles.

May.

- 124 \*Cases of Benign and Malignant Diseases of the Pancreas. C. E. Zerfing, Los Angeles.
- 125 \*Surgery of the Pancreas. R. P. McReynolds, Los Angeles.
- 126 Phases of the Physiology of the Pancreas. L. B. Stookey, Los Angeles.
- 127 \*Relation of Gastrointestinal Diseases to the Pancreas. L. G. Visscher, Los Angeles.
- 128 Mechanism of Shock in Acute Disease of the Pancreas. J. T. Fisher, Los Angeles.
- 129 Early Surgical Intervention in Pancreatic Diseases. A. S. Lobinger, Los Angeles.
- 130 Relation Between Cholelithiasis and Surgery of the Pancreas. W. A. Edwards, Los Angeles.
- 131 Public Health Work and the Medical Profession. G. H. Kress, Los Angeles.

124. **Diseases of the Pancreas.**—Zerfing discusses the anatomy, histology and physiology of the pancreas, and summa-

rizes recent work in pathology. He considers in detail acute hemorrhagic pancreatitis and chronic interstitial pancreatitis.

125. **Surgery of Pancreas.**—McReynolds refers to the most important and special indications for operative interference: 1. Injuries to the pancreas from stab or bullet wounds, or severe contusions in the epigastric region. 2. Inflammations—(a) acute hemorrhagic pancreatitis; (b) subacute pancreatitis; (c) chronic pancreatitis. 3. Pancreatic cysts.

127. **Gastrointestinal Diseases and the Pancreas.**—Visscher discusses the diagnosis of pancreatic insufficiency, and describes the laboratory methods of determining the missing functions of lipolysis, proteolysis, and amylolysis. As to treatment, here, as elsewhere, "pipes and tubes get dirty, stopped up, kinked, or compressed," and "nothing but a plumber will do"—to-wit, surgical help. But when the ducts are open and the gland is not degenerated, but only inactive, potentially active, then we can stimulate pancreatic functions indirectly, by hygienic, mechanical, hydratic and electric measures. We have in the carbohydrates a physiologic stimulus to pancreatic secretion; but this must not be overdone by trying to make the gland secrete more than it can.

#### Atlanta Journal-Record of Medicine.

May.

- 132 Weaning. H. McHatton, Macon, Ga.
- 133 Early Operation for Adenoids. A. W. Stirling, Atlanta.
- 134 Cases of Hydrocele and Spermatocoele. W. L. Champion, Atlanta.
- 135 \*Treatment of Sprains. T. Toepel, Atlanta.
- 136 Crushing Injuries of the Extremities. T. H. Hancock, Atlanta.

135. **Sprains.**—After definitely excluding fracture in a recent sprain Toepel recommends: (1) Exposure for one hour to heat to relax tension. (2) Massage by gentle friction, gradually increasing in force, then gentle kneading, long-continued, beginning at a distance from the injury and gradually approaching it. End with palmar percussion. (3) Bandaging tightly with a wet bandage and applying ice bags to keep down inflammation, insisting on perfect rest with the joint elevated for from twelve to twenty-four hours. On the second day the treatment should be repeated, omitting the ice and adding passive circumduction and passive flexion and extension. On the third day resistive movements should be added. Activity should be encouraged between treatments after the second day and the bandage removed permanently on the third or fourth day. A light sprain takes from 7 to 10 days for cure, a hip or shoulder sprain longer, and it is safer not to use the latter for another week.

#### Journal of Nervous and Mental Diseases, New York.

May.

- 137 Case of Meningeal Tumor Compressing the Cerebellum. H. Baldwin, New York.
- 138 Three Cases of Melancholia with Delusions of Negation. H. W. Mitchell and E. E. Southard, Danvers, Mass.
- 139 Two Cases of Spinal Cord Tumor and Trauma; Report of Two Cases. P. Bailey, New York.

#### Archives of Ophthalmology, New York.

May.

- 140 One Hundred Consecutive Cases of Cataract Extraction. J. L. Duncan, Pittsburg, Pa.
- 141 \*Transillumination of the Eye. P. Fridenberg, New York.
- 142 Influence of Ultra-Violet Light on the Lens. C. Hess, Würzburg, Germany.
- 143 Camphor Water and Cherry-Laurel Water in Collyria. J. A. Spalding, Portland, Me.

141. **Transillumination of the Eye.**—Fridenberg discusses transillumination of the eye by the Sachs transilluminator and the Würdemann transilluminator; he prefers the latter instrument. For some time he has been making transillumination a routine measure in ophthalmoscopic examination. A better reflex is obtained by applying the illuminating pencil far back near the equator of the globe, pointing it forward toward the anterior segment than under opposite conditions. The observer should look into the pupil in a line with the patient's gaze and not directly from in front as is usually done, unless the patient is looking straight ahead. He describes transillumination of the iris, the influence of the epithelial pigment layer of the iris on transillumination, as also the effect of opacities of the media, and suggests that the



ophthalmoscopic examination of the anterior segment of the fundus gives a much clearer and more brilliant picture if the retina anterior to the ora serrata is made self-luminous by applying the Sachs instrument to the sclera directly over the point to be examined.

#### Virginia Medical Semi-Monthly, Richmond.

May 22.

- 144 Gallstones. S. Lile, Lynchburg.
- 145 Diagnosis and Treatment of Coxalgia. K. Osterhaus, Norfolk.
- 146 Treatment of Epilepsy. J. A. Hodges, Richmond.
- 147 Epidemic Influenza Otitis Media; Sequelæ and Treatment. C. R. DuFour, Washington, D. C.
- 148 Complications and Sequelæ of Influenza. T. A. Parker, Richmond.
- 149 Conservative Treatment of Toothache. J. O. Hart, Ashland.

#### Journal of Ophthalmology and Oto-Laryngology, Chicago.

May.

- 150 Relation of Eyestrain to Epilepsy. M. B. Hodskins and G. A. Moore, Palmer, Mass.
- 151 Chronic Purulent Otitis Media. E. R. Ogden, Chicago.
- 152 Headache of Non-suppurative Frontal Sinuitis. F. Brawley, Chicago.
- 153 Unusual Constitutional Effects of Atropin Solution in the Eye. G. T. von Colditz, Chicago.
- 154 A New Style Tonsil Forceps. D. S. Hager, Chicago.

#### Montreal Medical Journal.

May.

- 155 Mayo's Surgical Clinic. A. L. Smith, Montreal.
- 156 Primary Carcinoma of the Appendix. A. E. Garrow and C. B. Keenan, Montreal.
- 157 Gunshot Wound Causing Rupture of Bowel Without Damage to Peritoneum. J. C. Fyshe, Bangkok, Siam.
- 158 Splirochæta Pallida; Its Relation to Syphilis. R. P. Campbell, Montreal.
- 159 Opsonins and Opsonic Index; a Bibliography. A. R. Charlton, Montreal.

#### Long Island Medical Journal, Brooklyn.

May.

- 160 Benign Diseases of the Stomach and Duodenum. A. T. Bristow, Brooklyn.
- 161 Carcinoma of the Stomach. H. B. Delatour, Brooklyn.
- 162 Results of the Surgical Treatment of the Bile Passages. R. W. Westbrook, Brooklyn.
- 163 Results of Operations in Pancreatic Disease. W. G. Wood, Brooklyn.
- 164 Early Exploratory Laparotomy in the Diagnosis of Certain Diseases of the Upper Abdominal Digestive Tract. L. S. Pilcher, Brooklyn.

#### Journal of the Michigan State Medical Society, Detroit.

May.

- 165 Obstetric Service for the Laboring Classes and the Relation of the Midwife to It in Michigan. C. M. Davis, Lansing.
- 166 What the Public Should Know Concerning Venereal Disease. L. J. Hirschman, Detroit.
- 167 A Complete, Practical and Brief Examination of the Alimentary Tract. W. H. Enders, Jackson.
- 168 Abdominal Pain; Its Diagnostic Significance. H. W. Yates, Detroit.
- 169 Chronic Interstitial Nephritis and Its Relation to Recurring Paralysis. B. A. Shepard, Plainwell.
- 170 Rheumatism in Children. W. G. Hutchinson, Detroit.

#### Detroit Medical Journal.

May.

- 171 Chronic Ulcer of the Stomach and Duodenum. W. J. Mayo, Rochester, Minn.
- 172 Diagnosis and Treatment of General Peritonitis. M. Ballin, Detroit.
- 173 Inoperable Gastric Ulcer; Syphilitic Jaundice; Syphilitic Dyspnea. W. M. Donald, Detroit.

#### American Practitioner and News, Louisville.

June.

- 174 Neurasthenia and Its Relation to the Drug and Liquor Addictions. F. F. Young, Abbeville, La.
- 175 Mental and Nervous Diseases in General Practice. J. A. Flexner, Louisville.
- 176 Effect of Alcohol on Protoplasm. E. S. Allen, Louisville.

#### Ophthalmic Record.

May.

- 177 Method of Illuminating Test-Type Charts with Artificial Light. N. M. Black, Milwaukee, Wis.
- 178 Case of Right Homonymous Hemianopsia in the Macular Regions. W. C. Posey, Philadelphia.
- 179 Probable Tumor of the Pituitary Body with Optic Atrophy Following Premature Menopause. E. R. Wylie, Boston.
- 180 A Wire Lid-Elevator for Prevention of Loss of Vitreous Humor in Extraction of Cataract. E. Morawek, Louisville, Ky.

#### Texas State Journal of Medicine, Fort Worth.

May.

- 181 Relation of the Tonsil to Systemic Infection. J. M. Woodson, Temple.
- 182 Toxemia of Pregnancy. R. J. Alexander, Waco.

- 183 Case of Severe Vertigo and Ataxia Complicating Chronic Suppurative Otitis Media; Operation; Recovery. J. H. Foster, Houston.
- 184 Can We Always Know When to Operate for Mastoiditis? E. H. Carv, Dallas.
- 185 Retrodisplacement of the Uterus. A. Herff, San Antonio, Id., R. R. White, Temple.
- 186 Acute Mastoiditis, Non-operative, Operative and Postoperative Treatment. W. D. Jones, Dallas.
- 187 Opsonins and Vaccine Therapy. K. H. Beall, Fort Worth.
- 188 Cesarean Section. W. Cantrell, Greenville.

#### St. Louis Medical Review.

May.

- 189 Medical Ethics—Duties of Physicians. H. C. Fairbrother, St. Louis.
- 190 Some Devices for Increasing the Usefulness of Blood Counting Apparatus. W. P. Elmer, St. Louis.
- 191 Urticaria Sycosiforme. C. H. Ball, St. Louis.
- 192 Surgery of the Ureter. B. M. Ricketts.

#### FOREIGN.

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

#### Lancet, London.

June 13.

- 1 Melitensis Septicemia. J. W. H. Eyre.
- 2 Dangers and Treatment of Myoma of the Uterus. C. Martin.
- 3 \*Bacteriology of Cerebrospinal Meningitis. W. J. Wilson.
- 4 \*Intractable Hay Fever and Paroxysmal Coryza by Resection of Nasal Nerve. E. S. Yonge.
- 5 The Gastroscope. A. E. Morison.
- 6 Case in Which Occlusion of Abdominal Aorta Took Place. C. H. Cattle.
- 7 \*Treatment of Gangrene in Strangulated Hernia. E. M. Corner.
- 8 Case of Dissecting Aneurism of Pulmonary Artery; Patent Ductus Arteriosus; Rupture into Pericardium. L. Durno and W. L. Brown.

3. Bacteriology of Cerebrospinal Meningitis.—Wilson describes a Gram negative diplococcus found in the feces of cerebrospinal fever patients. It superficially resembles the meningococcus, though quite distinct from it, and is shown by the following facts to have nothing to do with meningitis: 1. Typical meningococci were cultivated from the cerebrospinal fluid; and 2, the blood serum of these patients had a high opsonic index as regards the true meningococcus, but a normal index as regards this organism. Wilson describes the morphology, the cultural characteristics and the pathogenicity. He also describes a case of cerebrospinal meningitis due to infection with an organism of the *Micrococcus catarrhalis* class, which he describes in like manner, concluding with a résumé of the history of the *M. catarrhalis*.

4. Resection of Nasal Nerve for Hay Fever.—In a preliminary communication Yonge described a method of dealing with desperate cases of hay fever, based on the theory that the stimulant which induces the reflex manifestations observed in hay fever and in paroxysmal coryza is conveyed to the centers of the nasal nerve, which is thus the afferent path of the reflex. He discusses the distribution and functions of this nerve and describes the effect of cauterizing the nasal mucous membrane, and the effect of bilateral resection of the nasal nerve. Division of that nerve on one side abolished the intermittent nasal obstruction, with profuse hypersecretion on the side on which the nerve had been divided, whereas the disturbances continue to recur periodically in the opposite nasal cavity, as before operation. This led him in an intractable case to perform the following operation: Resection of the nasal nerve on the right side was first performed, chloroform anesthesia being employed. The nerve was reached by an incision at the inner edge of the orbit, commencing just above the inner canthus and extending upward and slightly outward for about two-thirds of an inch. The cellular tissue having been cleared from the inner upper wall of the orbit by means of a blunt dissector and the nerve located at the anterior ethmoidal foramen, the latter was separated from the artery and divided close to the foramen, about a quarter of an inch of the nerve being removed. Horsehair sutures were inserted and the wound was dressed with gauze and collodion. The stitches were removed on the fourth day. Resection of the nerve on the left side was carried out four weeks later. Two months after operation the paroxysmal coryza, sneezing and asthma had entirely disappeared, there was increased freedom of nasal



respiration, and consequently the patient slept better. He had gained seven pounds in weight and the general health was manifestly improved.

7. **Gangrenous Strangulated Hernia.**—Corner reports the results of the treatment of necrosis of the bowel in strangulated hernia at St. Thomas's Hospital, between 1901 and 1905, numbering 30 cases. The methods used have been resection and immediate anastomosis, resection and enterostomy, and invagination. Comparing the first two methods, he considers that the line of treatment tends toward resection and anastomosis, notwithstanding the unanimity of abdominal surgeons as to the general danger of anastomosis in a bowel distended with septic fluid; but he points out that there is a great difference between cases in which the septic distention has taken place rapidly on an acute condition, as in strangulated hernia, and those in which it follows slowly in a chronic condition, such as carcinoma of the sigmoid. With regard to invagination, the two cases in which it was used proved very successful. It is applicable to small areas of necrotic bowel, and will be mainly useful for secluding "doubtful" bowel, at places where the bowel has been nipped, and for the patchy gangrene sometimes found at the apex of the strangulated loop.

#### British Medical Journal, London.

June 13.

- 9 Thoracic Aneurism. D. Drummond.
- 10 Myalgia. J. R. Keith.
- 11 \*Dangers and Evil Effects of Infant Binders. A. Waring.
- 12 The Inky Polygraph. J. Mackenzie.
- 13 Plea for Habitual Performance of Autopsies in General Practice. J. T. Fox.
- 14 Traumatic Rupture of the Large Intestine; Operation; Recovery. W. H. Battle.
- 15 Treatment of Fractures. H. T. Gray.

11. **Infant Binders.**—Waring calls attention to the dangers of enveloping the infant's body "in countless bands, swathes and swaddling clothes." The dangers of constriction and increased intra-abdominal and intrathoracic pressure depend on: 1. The degree of constricting or binding force; 2. the extent of surface covered; 3. the time worn; 4. the health and power of resistance of the infant. He enumerates the following effects and conditions that may result from binder comparison: 1, Discomfort; 2, vomiting; 3, inguinal and umbilical hernia; 4, prolapsus ani; 5, thoracic deformities; 6, thoracic constriction in pulmonary diseases; 7, interference with cerebral circulation; 8, a contributory factor to the danger of death by overlying.

#### Medical Press and Circular, London.

June 10.

- 16 \*Landmarks in the Study of Tuberculosis. W. St. C. Symmers.
- 17 \*New Generalization in Serum Therapy. D. M. Paton.
- 18 The Milk Problem, or the Production and Distribution of Pure, Clean Milk. J. C. Thresh.
- 19 \*Empyema in Children. S. J. Ross.
- 20 Surgical Treatment of Chronic Dysentery. H. Steiner.

16. **Tuberculosis.**—Symmers gives a historical account of the progress of our knowledge of tuberculosis. Incidentally, he says that in conjunction with Sir William Whitla he has corroborated the findings of Vansteenberghe and Grysez, that ingested matter can pass from the intestines to the lungs. On introducing ground-up India ink through an esophageal tube, the carbon particles have been found in the lungs of an adult guinea-pig within four hours, the intestines and mesenteric glands offering little or no hindrance. In the case of baby guinea-pigs, however, the mesenteric glands act as a sieve and retain the offending particles.

17. Published in the *Intercolonial Medical Journal of Australasia*, February, 1908, and abstracted in *THE JOURNAL*, May 2, 1908.

19. **Empyema in Children.**—Ross sums up his remarks as follows: 1. If a child is brought on account of wasting, never omit to examine the chest. 2. If the child is too feeble to stand the operation of resection of ribs, remember that aspiration sometimes results in cure. 3. If we have a child under our care suffering from pneumonia whose convalescence is protracted, we must never forget to keep a watchful eye for the development of fluid. 4. If after drainage the patient's prog-

ress is unsatisfactory, we must remember that loculated collections of pus are not infrequent. 5. It is always necessary to examine the pus for the causal organism. If the pneumococcus is found the outlook is favorable. If the streptococcus, the injection of antistreptococcal serum will hasten convalescence. If the tubercle bacillus is discovered the outlook is very unfavorable indeed.

#### Clinical Journal, London.

June 10.

- 21 Pathology and Treatment of Headache. A. E. Russell.

#### Glasgow Medical Journal.

June.

- 22 \*Means of Observing and Recording the Efficiency of Urinary Discharge by the Urethra. A. N. McGregor.
- 23 Esophagoscopy. R. Fullerton.

22. **The Urinary Flow.**—McGregor details a method invented by one of his patients of gauging the rate of progress and the patency of his urethra during bougie treatment. The first micturition of the morning is most suitable as giving more constant results. The urine is passed into a four-ounce measure graduated in drams, a second being ready for instant substitution if necessary. The urine is allowed to flow into the glass, or glasses, for five seconds from the commencement of the act and then immediately stopped. The amount in drams is read off and noted on cross-section paper, having the numbers 0 to 32 from below upward on the left margin, and the dates along the base line. The dates of dilatation are marked, and the effect on the amount of urine passed in five seconds is thus charted. Experiments with normal patients showed a fairly constant figure, the average quantity passed being taken at 8 ounces. From 32 to 42 drams was found to be the normal amount passed in five seconds. In the case of strictured patients the charts appended to the article show that after dilatation there is a rapid rise in the amount passed in five seconds at the morning micturition; but they show also that overdilatation gives less satisfactory results than more moderate distention, for the gain more quickly subsides than in the latter case.

#### Dublin Journal of Medical Science.

June.

- 24 Unusual Pulmonary Cases. T. G. Moorhead.
- 25 Alcohol and Mental Diseases. W. R. Dawson.
- 26 \*Duodenal Ulcer; Diagnosis and Treatment. A. B. Mitchell.

26. **Duodenal Ulcer.**—Mitchell answers in the affirmative the questions: 1, whether it is necessary and important to be able to diagnose duodenal ulcer with accuracy, and, 2, whether such diagnosis can be made with reasonable certainty. The reasons for the first question are the greater seriousness of duodenal than gastric ulcer, the greater liability to profuse and dangerous hemorrhage, the lesser likelihood of permanent cure by medical means in duodenal than in gastric ulcer, and the greater importance of surgical intervention. Duodenal ulcer can be recognized clinically, he says, with as great a degree of accuracy as gastric ulcer, gallstones or even appendicitis. The characteristic symptoms are: 1. Pain of a special type. 2. A feeling of fulness and discomfort after food, with eructations of gas, and generally some hyperacidity. 3. Local tendencies over an area just above and to the right of the umbilicus. 4. Hematemesis and melena. 5. Some degree of dilatation of the stomach exists in most cases from an early stage of the affection. He discusses these signs in detail. As to operation, his own practice is to do a jejunostomy (posterior operation when possible), and then close or partially close the pylorus by a few Lembert sutures. He reports seventeen cases of gastrojejunostomy for duodenal ulcer and nine cases of perforating duodenal ulcer, all terminating in recovery.

#### Annales de Dermatologie et de Syphiligraphie, Paris.

May, IX, No. 5, pp. 257-349.

- 27 Congenital Circumscribed Alopecia. W. Dubreuilh and G. Petges.
- 28 \*Treatment of Syphilids with Local Injections of Mercury. H. Hamel.



**28. Treatment of Syphilids by Local Injections of Mercury.**

Hamel advises local medication in ulcerative and destructive syphilids and also when the lesions are localized at an inconvenient point. He advises it also when general treatment is impossible or has proved ineffectual or if there are kidney, intestinal or gum affections. Sixteen cases are described with the technic followed. The best results were obtained with an isotonic solution of mercury cyanid, 1 to 2,000, with a little anesthetic. A very fine needle is inserted, slanting, at one or more points, and enough fluid is injected to cause considerable infiltration. He made from five to ten injections, as a rule, with or without general treatment.

**Annales de Médecine et Chirurgie Infantiles, Paris.**

May 15, XII, No. 10, pp. 325-360.

29 Study of Respiration in Children. (Pneumographie.) E. Ganjoux.

30 Case of Gangrenous Purpura in Eight Months' Infant. L. Babonneix and L. Tixier.

June 1, No. 11, pp. 361-396.

31 Two Cases of Suppurative Cerebrospinal Meningitis in Infants Simulating Tetany. L. Babonneix and L. Tixier.

32 Bacteriologic Study of Contagious Affection of the Lips. (Perlèche.) M. B. Auché.

**Archives Générales de Chirurgie, Paris.**

May 25, II, No. 5, pp. 437-539.

33 \*Traumatic Diffusion of Urine in Kidney Region. (Pseudo-hydronephrose traumatique.) Nové-Josserand and Ballivet.

34 \*Postoperative Parotitis. (Considérations cliniques et pathogéniques.) P. Soubeyran and A. Rives.

35 Non-existence of "Adenoma of Testicle." (L'adénome testiculaire existe-t-il et peut-il exister?) A. Branca and A. Bassetta.

**33. Traumatic Diffusion of Urine in Kidney Region.**—Two cases are described of traumatic pseudohydronephrosis, both in children. In 18 cases on record treated by puncture there were 4 deaths in the pre-aseptic era; in 4 cases further operation was required, and the other patients were all cured; the puncture had to be repeated from 2 to 8 times in all but one case. If the perirenal effusion is not very large and the functional disturbances not alarming, expectant treatment is advisable or puncture is repeated as indicated. If the effusion constantly recurs it is better to open the pocket and marsupialize. If the pocket is infected, a plastic operation should not be attempted and nephrectomy must be done. In one of the cases described a large incision with a counteropening in the lumbar region proved insufficient, and the child succumbed to sepsis.

**34. Postoperative Parotitis.**—Soubeyran and Rives relate a case personally observed and 4 others from Maclaure's experience and summarize 85 from the literature. They ascribe the parotitis to diminished secretion of saliva and enhanced virulence of the germs in the mouth. In some of the cases the parotitis had been preceded by stomatitis.

**Bulletin de l'Académie de Médecine, Paris.**

June 2, LXXII, No. 22, pp. 581-613.

36 \*Preventive Injections of Antitoxic Serum in Prophylaxis of Tetanus. L. Vaillard.

37 \*Arteriosclerosis. Its Pathogenesis and Treatment. Lancereaux.

38 Jean-Jacques Rousseau et Desessart. A. d'Espine.

**36. Preventive Injections of Serum for Tetanus.**—Vaillard discusses 31 cases on record in which tetanus developed after the prophylactic injection. In 10 cases the tetanus developed between the seventeenth and eighteenth and in 8 between the tenth and sixteenth days after the injection. He thinks that the serum ceases to be effectual after a week or at most two weeks, and consequently the above cases are outside the range of the immunity conferred by the serum. A second injection might have prevented the tetanus. In the 13 cases in which the tetanus developed between the second and tenth days, in 6 there had been inadequate dosage; in others the wound was merely dusted with dry serum. There thus remain only 5 cases in which the prophylactic injection proved actually ineffectual—an insignificant proportion in view of the thousands of preventive injections made since 1896 in all countries. The statistics in veterinary practice show good results, he says. In a recent series of 13,124 injections of horses none con-

tracted tetanus. He suggests that possibly one reason for the better results in veterinary practice is that the veterinarian makes the injection himself. Another reason is that in case of disabling accident the horse is killed and the outcome of the serum is known only in the mild cases. The conditions consequently are not the same as in case of serious injury to man. Antitetanus serum is not bactericidal. Spores protected against the phagocytes can proliferate even when the blood is strongly antitoxic. This proves the importance of destroying the spores in the wound and suppressing all conditions favorable to their growth. The serum protects against the action of the toxin, but only for about a week. The first dose should be effectual; the ordinary dose should be doubled or tripled in case of severe traumatism. Phagocytosis is less active in unscarred tissue, and the abundance of nerve elements favors the absorption and the passage of the toxin by routes where the antitoxin does not seem to be able to penetrate. When tetanus developed notwithstanding the preventive injection, its course was undoubtedly milder. He advises repeating the injection as needed, his practice being a primary injection of from 20 to 50 c.c.; with 10 or 15 c.c. every week afterward; in one case the tetanus developed nearly thirteen weeks after a single injection. Local application to the wound is effectual only when the serum is not drained away by the dressings.

**37. Arteriosclerosis.**—Lancereaux protests against the assumption that arteriosclerosis is an affection of old age. He has observed it frequently between 30 and 40, and has noticed that its course is more rapid in the comparatively young. The two main factors are gout and lead poisoning. Tobacco, liquor and alimentary toxemia have long been overestimated, he thinks, as factors in arteriosclerosis. They act only in case of a tendency to gout or lead poisoning. The practical result of his views is that members of families which display a tendency to gout should be treated early, seeking to modify that condition of the nervous system which predisposes to arteriosclerosis. He thinks that he has done good work in this line, although its very nature prevents conclusive testimony. He prescribes potassium iodid, from 1 to 3 gm. (15 to 45 grains) in twenty-four hours, continuing this for months and years with intervals of a week each month. He orders at the same time a drastic purgative to promote the elimination of the iodid. Hypertrophy of the heart with high arterial tension and nocturnal polyuria with lesser density of the urine are signs of diffuse arteriosclerosis. Brine baths, alcohol rubs and tepid douches, by soothing the nervous system, favor the elimination of waste. The practitioner should seek to ward off the impending uremia, asystole or cerebral insufficiency, and treat them with the greatest energy if already developed.

**Presse Médicale, Paris.**

June 3, XVI, No. 45, pp. 353-360.

39 Histology of the Liver Cells. (Cellules hépatiques claires, travées hépatiques normales.) A. Gilbert and J. Jomier.

40 \*Symptom of Perforation of Appendix. P. Delbet.

41 Improved Instrument for Tonsillectomy. (Nouveau Morceau à érigne.) R. Leroux.

June 6, No. 46, pp. 361-368.

42 Interpretation of Urine Findings. (Analyses urinaires.) H. Labbé.

43 \*Ethyl Chlorid for General Anesthesia. (Chlorure d'éthyle comme anesthésique général dans la pratique chirurgicale journalière.) F. Lemaître.

June 10, No. 47, pp. 369-376.

44 \*Multiple and Recurring Patches of Gangrene on Arms and Foot. Dieulafoy.

**40. Symptom of Perforation of Appendix.**—Delbet bases the diagnosis of perforation on a single symptom, which he has found constantly in all his cases. After the first onset of symptoms the pain subsides under repose and ice, but suddenly a paroxysm of pain returns. Although it soon subsides again, this abrupt return of the pain, notwithstanding that no imprudence has been committed, is a sign of perforation, and he operates at once.

**43. Ethyl Chlorid for General Anesthesia.**—Lemaître has been using for two years ethyl chlorid in all operations not



requiring more than two minutes, and as the first stage of chloroform anesthesia. He gives an illustrated description of the simple apparatus, mask and collapsible bag which is used for the purpose. He is convinced that this technic is the most rapid and, with the chloroform, is perhaps less dangerous than any other method for prolonged anesthesia.

**44. Recurring Patches of Gangrene.**—Dieulafoy reports a case in which a man of 30 consulted more than fifteen physicians and surgeons for recurring eschars on the left arm. The affection was diagnosed as neuritis, myelitis, etc., and all kinds of treatment were tried, including stretching the nerve. Finally, he consented to have the arm amputated, but after a few months the patches appeared on the other arm and on the foot. After two and half years of this affection Dieulafoy decided that the man was malingering, and obtained a confession that he had made the sores himself with caustic potash. With the confession the obsession vanished. He had no pecuniary motives for this conduct, and the case raises interesting questions in regard to legal responsibility.

#### Revue de Médecine, Paris.

May, XXVIII, No. 5, pp. 401-504.

- 45 Experimental Cholecystitis. J. Thiroloix and R. Debré.
- 46 \*Pernicious Anemia. M. Labbé and M. Salomon. Commenced in No. 4.
- 47 Initial Lesions in Chronic Hepatitis. E. Géraudel.
- 48 \*Two Cases of Severe Jaundice. Stoicescu and Bacaloglu.
- 49 Determination in Breast Milk of Substances Indicating Intestinal Putrefaction. (Recherches dans le lait des nourrices.) H. Labbé and R. Pepin.
- 50 Familial Gallstone Affections. (Lithiase biliaire familiale.) P. Londe.

**46. Pernicious Anemia.**—Labbé and Salomon declare that pernicious anemia is not a morbid entity but a clinical syndrome resulting from extensive destruction of blood with insufficient repair. It is merely, they assert, the last stage of a symptomatic anemia. These conclusions are based on the international literature, and on clinical and experimental research. Six pages of bibliography are appended.

**48. Severe Jaundice from Meat Poisoning.**—In the two cases reported the jaundice came on in the midst of health in young men, except that one in the past had been treated for dyspepsia and mild nephritis and his father for delirium tremens. After eating the spoiled meat, a few days of dyspeptic disturbances and pains were followed by severe illness with delirium, intense jaundice, filiform pulse and terminal coma in the first case. During the coma in the second case there was incontinence of urine and feces, but the kidneys worked so effectually, passing nearly 4,000 grams of urine a day, that the patient gradually recuperated after four days of coma and subcutaneous hemorrhages. The soundness of the kidneys, re-enforced by saline infusion, was evidently his salvation.

#### Semaine Médicale, Paris.

June 3, XXVIII, No. 23, pp. 265-276.

- 51 \*Characteristics of Venous Pulse in Hypertrophy of Left Heart Associated with "Kidney Heart" and Aortic Insufficiency. (Caractères du pouls veineux dans les hypertrophies du cœur gauche liées au cœur rénal et à l'insuffisance aortique.) L. Bard.

June 10, No. 24, pp. 277-288.

- 52 Intrapelvic Saccular Dilatation of Uterus at Term. R. de Bovis.

**51. Characteristics of Venous Pulse with Hypertrophy of the Left Heart.**—Bard gives a number of tracings in cases of hypertrophy of the left heart with kidney disease and aortic insufficiency. He shows that the special phases of the venous pulse reveal several important features of this condition. Accentuation of the presystolic wave, after acute nephritis not leaving any traces of albuminuria, is one of the earliest signs of later chronic nephritis. As the characteristics of the venous pulse become modified in the various phases of the kidney affection, they throw light not only on the diagnosis, but also on the prognosis of the cardiac lesions. The lengthening and the—at least apparent—anticipation of the systole of the auricles in nephritis and in aortic insufficiency, reveal the existence of changes in the habitual synchronous action of the auricles and ventricles from the disturbance in the usual course of the blood through the heart.

#### Berliner klinische Wochenschrift.

June 8, XLV, No. 23, pp. 1081-1120.

- 53 Intramuscular Myeloma and Hematoma as Complication of Myeloid Leukemia. C. Frugoni.
- 54 Laryngeal Disturbances in Beriberi. (Kehlkopfstörungen bei Beriberi.) H. E. Kanasugi.
- 55 Microsporia Epidemic. F. Glaser.
- 56 Clinical Importance of Turgosphygmographic Pulse Tracings. H. Strauss and F. Fleischer.
- 57 Intestinal Dyspepsia. (Darmdyspepsie.) M. Einhorn (New York).
- 58 Experiences at Stettin with Diphtheria. Gabriel.
- 59 Chronic Diphtheroid Throat Affection. (Chronischer Raehendiphtheroid.) Gabriel.
- 60 Fracture of Distal Phalanx from Tearing Off of Extension Tendon. F. Davidsohn.
- 61 \*Tuberculin Salve in Differentiation and Treatment of Lupus. E. Senger.
- 62 Retrogression to Embryonal Conditions in Blood. (Rückschlag in die embryonale Blutbildung.) C. S. Engel.

**61. Tuberculin Salve in Lupus.**—Senger applies a 3 per cent. tuberculin-lanolin salve in local treatment of lupus. There is no general reaction, but the local reaction is like an explosion, he says. The inflammation and suppuration that follow the application of the salve have a curative action, or at least prepare the soil effectually for phototherapy. He has been studying this technic for two years, and extols the manner in which it cures the lupus or influences toward a cure, especially when the inunction of tuberculin salve is supplemented by Roentgen exposures. He regards the reaction as specific, comparing it to the sudden chemical reaction between gunpowder and fire, or that between nitric and carbolic acids. The reaction stops abruptly at the edge of the lupous patch. The reaction also serves to differentiate a tuberculous or lupous lesion from ulceration of other origin.

#### Deutsches Archiv für klinische Medizin.

March 4, XCII, Nos. 5-6, pp. 383-618.

- 63 \*Influence of Occupation on Size of Heart. (Einfluss der Berufsarbeit auf die Herzgrösse.) Schieffer.
- 64 Peristaltic Movements of the Stomach and Capacity of Extension of the Fundus. (Studien über Magenbewegung.) K. Sick and F. Tedesko.
- 65 \*Dyspepsia from Intestinal Fermentation. (Intestinale Gärungs-dyspepsie.) H. Meyer. Id. and Test Diet for Study of Functioning of Intestines. (Probediäten zur Untersuchung der Darmfunktionen.) A. Schmidt.
- 66 Experimental Production of Atrophy of Bone Marrow with Typhoid Toxin. (Knochenmarksatrophie.) H. Hirschfeld.
- 67 \*Intravenous Strophanthin Treatment. C. Hoepffner.
- 68 \*Morphologic Study of the Blood at the Bedside. (Blutuntersuchung am Krankenbette.) O. J. Wynhausen.
- 69 \*Pressure in Pleuritic Effusions. (Druck bei Pleuraergüssen.) W. Weitz.
- 70 \*Temporary Improvement in Leukemia Under Tuberculin. Id.
- 71 Physiologic Importance of Leucocytic Changes in the Blood in Infectious Disease. (Leukocytenischen Blutveränderungen bei Infektionskrankheiten.) K. Ziegler and H. Schlecht.
- 72 Ring Bodies in the Blood in Anemia. (Ringkörper im Blute Anämischer.) Gabriel.

**63. Influence of Occupation on Size of Heart.**—Schieffer computed a normal standard for the proportions of the body and heart from an average of 56 healthy young recruits. Comparing this standard with 33 men accustomed to hard manual labor, 23 with light work, and 32 others who use the bicycle constantly, he finds that the heart enlarges in size as demands are made on it—a physiologic reaction to the stress. Bicycling has the same effect as hard manual labor in this respect. The same conclusions apply also to the military service.

**65. Dyspepsia from Abnormal Fermentation in the Intestines.**—Meyer describes his experiences with 16 patients. The trouble is defective secretion in the glands of the small intestines, presumably of functional nature. It may occur independently, especially in neurasthenic and anemic individuals, or it may be the result of a primary stomach affection. Abstention from carbohydrates for a time is generally sufficient treatment, with all vegetables passed through a sieve. Possibly lavage of the stomach, hydrochloric acid and massage may be required. (See abstract 74.)

**67. Intravenous Injection of Strophanthin.**—Hoepffner has made 78 intravenous injections in 34 patients, including 5 with pneumonia and 4 with tuberculosis. In these latter cases the results were only transient. The drug displayed the greatest efficacy in 8 cases of chronic nephritis with cardiac insufficiency. In one of these cases 11 injections of 1 mg. were given in 41 days with complete subsidence of the extensive dropsy which had previously resisted all treatment.



The drug also proved beneficial in 2 cases of heart failure in meningitis and typhoid, also in 12 cases of chronic heart disease. He had 2 fatalities, and the injection was evidently responsible for one of them, he says. The patient had a severe chill an hour after the injection; it had been given for a severe uncompensated valvular defect. The chill was probably the result of bacterial contamination of the drug. The patient succumbed during the chill.

**68. Blood Findings at the Bedside.**—Wynhausen describes the findings in half a dozen cases of atypical leukemia and leukanemia in children.

**69. Pressure in Pleural Effusions.**—Weitz regards determination of the pressure as very important. It shows when to arrest the puncture, and is also useful for differentiation.

**70. Tuberculin in Leukemia.**—Weitz has found that tuberculin gives a transient improvement which may be found useful as a preliminary to other measures in treating leukemia.

**Deutsche medizinische Wochenschrift, Berlin.**

*June 4, XXXIV, No. 23, pp. 993-1040.*

- 73 \*Painless Delivery Under Scopolamin-Morphin. (Schmerzlose Entbindungen im Dämmer Schlaf.) B. Krönig.
- 74 \*Tests of Intestine Functioning and Their Results. (Die neueren klinischen Untersuchungsmethoden der Darmfunktionen und ihre Ergebnisse.) A. Schmidt.
- 75 Stenosis and Insufficiency of the Pylorus. (Fall von Verengung und Schlussunfähigkeit des Pylorus.) M. Einhorn.
- 76 Meningococcus Serum. Krumbein and P. Schatilloff.
- 77 \*Examination with the Sphygmobolometer. (Sphygmobolometrische Untersuchungen an Gesunden und Kranken.) H. Schulthess. Commenced in No. 22.
- 78 Unilateral Hyperidrosis. J. Friedländer.
- 79 Operation for Deep Abscess on the Tongue. (Operation von tiefliegenden Zungenabszessen.) A. Brunk.
- 80 Treatment of Fractures of Fingers. (Fingerfrakturen.) P. Ewald.

**73. Delivery Under Scopolamin-Morphin.**—Krönig believes that the modern woman has nervous exhaustion and loss of will power in the course of childbirth to an extent hitherto unrecognized, and that this tendency is constantly increasing, especially among the so-called better classes. Obstetricians who practice in the "West End" of Berlin state that they have to use forceps in nearly 40 per cent. of the childbirths. Everyone there agrees that the increase in the number of cases of puerperal fever is due to the increasing proportion of forceps deliveries. More and more is it demanded of obstetricians that they relieve or put an end to the pains of childbirth. He thinks that the nervous system of the modern woman is scarcely able to stand the stress of labor, which is really not physiologic with her, as the nervous system is below par. That neurasthenia does not follow childbirth more frequently than it does is a matter for surprise. He is convinced that his technic of scopolamin-morphin "twilight sleep" answers its purpose of rendering childbirth entirely or nearly painless. He has applied it in 1,500 cases. In his last 500 one patient succumbed to hemorrhage from rupture of the uterus, the family refusing to allow an operation: one child died during delivery and 3 others in the first three days. He ascribes this low mortality to the benumbing of the respiration center by the trace of scopolamin which passes to the child and prevents aspiration of amniotic fluid, etc. This theoretic explanation is assailable, but the fact remains that with an experience of 1,500 cases the mortality of the children, during and immediately after delivery, is much less than it was before the scopolamin technic was introduced. Later reports from nearly 300 of the children show that the development in all respects has been normal. Everything depends on correct dosage and management, and years of experience have been required to attain the results reported. The supervision of the patient requires the most careful intensive attention. The woman must be protected against noises, bright light, etc. Great practice and skill are required for this technic. He has not found that it prolongs the birth process beyond its physiologic limits; even if it should lengthen it by half an hour, he thinks that this might well be disregarded. The details of the technic used at the clinic were summarized in these columns March 7 and 16, 1907, pages 912 and 983, as published by Gauss.

**74. Tests of Intestinal Functioning.**—Schmidt uses a test diet for two or three days consisting of from one to three pints of milk, raw or cooked in the dishes; porridge, strained: one soft boiled egg; from 100 to 250 gm. soft mashed potato and 100 gm. white bread or its equivalent, with tea or cocoa in the morning, and, at midday, a quarter of a pound of finely chopped raw beef, browned a little on the outside, but raw inside. The third day the stool is examined; scraps of connective tissue reveal disturbance in the gastric digestion. Of all the digestive fluids, only the gastric juice is able to digest raw connective tissue. The discovery of undigested connective tissue thus reveals some derangement in the functioning of the stomach, which may be responsible for a supposed intestinal trouble. He gives an illustrated description of his test of pancreas functioning by means of small cubes of fresh beef tied in a bag made of a circle of gauze. It is swallowed with the food. When the little bag is found in the stool the nuclei in the meat are digested out in normal conditions and nothing is left in the gauze but the tissue fibers. When the nuclei are retained unimpaired this is a sign of secretory insufficiency in the pancreas on a functional basis. The Cammidge test is rather a sign of destruction of pancreas tissue, especially fat tissue necrosis. Discovery of sago-like grains, representing the relics of potatoes, indicates disturbance in the digestion in the small intestine. This may occur alone, and suggest insufficiency of the intestinal secretion which breaks up starch, for neither the lack of saliva nor of pancreatic secretion leads to such losses of starch. One of the common consequences is abnormal fermentation in the intestines, revealed by formation of gas, acid reaction, lighter color and odor of butyric acid when the stool is kept in the incubator for 24 hours. Prolonged fermentation dyspepsia entails irritation of the intestinal mucosa, with secondary catarrh. Treatment consists in abstention from carbohydrates and treatment of any accompanying stomach derangement. His experience has been that the majority of the so-called nervous diarrheas are latent catarrhs. The nutrient medium determines the flora, not the reverse. In regard to constipation, his research has shown that not only the water, but also the dry substance of the total stools are much below the normal amounts. The constipation is due to the fact that the digestion is too perfect. The food is digested and assimilated too completely; there is not enough waste left to form a proper culture medium for the normal bacteria, and consequently there is no stimulus for natural peristalsis. Treatment should aim to supply substances to make the feces more bulky and moist, and this he accomplishes by having the patients take agar-agar regularly. The intestinal motor functions are stimulated by it without the least irritating action. The effect has been excellent, and confirms his theory in regard to the true cause of constipation. Increasing knowledge of the functional disturbances of the stomach has shown, he declares, that motor disturbances, aside from stenosis, are as a rule secondary, and it is more than likely that the same is true also of the intestines. The aim should be to separate the complicated chemistry of digestion in the small intestine and its disturbances into its single components. Functional tests with his "test diet" show that this is possible.

**77. Clinical Importance of the Sphygmobolometer.**—Schulthess relates his experiences and the results of examination of more than 100 recruits, 18 healthy nurses and 19 patients with heart affections. He thinks that this method of sphygmobolometry fills a long-felt want, as it allows the work of the left ventricle to be recorded in figures. It shows the relations and the differences between the pathologic and the normal systole, and the varying behavior of the same heart under different conditions. The reaction of the heart thus measured in figures allows the effect of heart tonics to be judged with certain and objective findings, apart from the patient's statements or the pulse findings, and without waiting for the disappearance of signs of pronounced insufficiency.



## Medizinische Klinik, Berlin.

June 7, IV, No. 28, pp. 855-894.

- 81 Participation of Ophthalmologists in Operative Treatment of Orbital Accessory Cavities. (Operative Behandlung der orbitalen Nebenhöhlen.) T. Axenfeld.  
 82 \*Non-melanotic Sarcoma of Rectum. A. Exner.  
 83 Course of Influenzal Encephalitis Simulating Tetanus. II. Berger.  
 84 \*Preparation of Patients for Laparotomies. M. Schwab.  
 85 Balneotherapy of Heart and Vascular Affections Result of Metabolic Disturbances. (Balneotherapie bei durch Stoffwechselstörungen bedingten Herz- und Gefässerkrankungen.) M. Fisch.  
 86 Injections of Air. (Luftinjektionen.) W. Alexander.  
 87 Conjunctival Reaction and Allergy Test. (Ophthalmoreaktion und Allergieprobe.) Hammerschmidt.  
 88 Arteriosclerosis and Sea Climate. Ide.  
 89 Determination of Presence of Carbon Monoxid in Blood. (Nachweis von Kohlenoxyd im Blute.) O. Schumm.  
 90 \*Failure of Calomel Salve to Protect Against Syphilis. G. Vorberg.

82. **Sarcoma of Rectum.**—Exner reviews what has been written on the subject of non-melanotic sarcoma of the rectum and reports two cases. This material shows that apparently harmless hemorrhoidal nodules may be the starting point for a sarcoma. Overlooking the malignant nature of the hemorrhoidal growth may have the most serious consequences, as in one of the cases reported. In the other case the unusual toughness of one of the nodules led to its being examined under the microscope, with discovery of a small-celled, round-celled sarcoma. The patient is in apparently perfect health to date, more than a year since its removal. She had applied for relief from recurring hemorrhages from inflamed external hemorrhoids. The rectum was amputated; no metastases were found in it.

84. **Preparation for Laparotomy.**—Schwab regards general anesthesia as defectively conducted when the patient makes any retching movements. Even if it does not come to vomiting, the retching not only brings danger of aspiration pneumonia, but has a very weakening effect besides. Consequently he believes in using plenty of the anesthetic to prevent any tendency to vomit. Another prophylactic measure which does not receive the attention it deserves, he says, is thorough disinfection of the mouth. Disinfection of the field of operation with benzin and iodine is the simplest, quickest and least depressing of all technics to date, he thinks. He gives a sedative for the last few days before the operation, and insists on all present refraining from speaking during the operation or else wearing veils, even when they have nothing to do with the operation.

90. **Failure of Calomel Salve to Protect Against Syphilis.**—Vorberg has collected from various society proceedings a number of cases of the prophylactic use of Metchnikoff's calomel salve with disastrous results, although applied strictly according to directions.

## Münchener medizinische Wochenschrift.

June 2, LV, No. 22, pp. 1161-1216.

- 91 \*Experimental Study of Extrauterine Blood Production. (Extrauterine Blutbildung.) E. Meyer.  
 92 Histologic Changes in Blood Producing Organs in Pernicious Anemia. P. Schatloff.  
 93 Spirochetes in Mouse Cancers. (Spirochäten bei den Krebsgeschwülsten der Mäuse.) H. Deetjen.  
 94 \*Congenital Syphilis and Tuberculosis of Suprarenals. Esser and Schultze.  
 95 Determination of "Bacillus Longus" in Feces and Its Significance. (Nachweis der langen Bazillen in den Fäzes und dessen klinische Bedeutung.) G. Sandberger.  
 96 \*Diagnosis of Tuberculosis of Lungs. K. E. Ranke.  
 97 Moderate or Radical Conservatism in Treatment of Contracted Pelvis? (Behandlung des engen Beckens?) O. v. Herff.  
 98 \*Cesarean Section and Spinal Anesthesia. (Kaiserschnitt und Lumbalanästhesie.) O. Polano.  
 99 Systematic Inhalation of Hydrogen Dioxid in Prophylaxis of Measles. (Vorschläge zu einer medikamentösen Prophylaxe der Masern.) J. Langer.  
 100 Bolus in Treatment of Diphtheria. Stumpf.

91. **Experimental Research on Formation of Blood.**—Meyer's experiments demonstrate that degeneration of the spleen follicles can not be the cause of leukemia. Consequently splenectomy is irrational. They further show that the proliferation of marrow tissue in pernicious anemia is a reparatory process and not the cause of the anemia. Roentgen treatment of this proliferation of marrow tissue is therefore useless.

94. **Congenital Syphilis of the Suprarenals.**—Esser reports

three cases of inherited syphilis in infants in which the sole or predominant localization of the syphilis was in the suprarenals. Vomiting, colic and diarrhea, independent of the food, were the main symptoms. In Elässer's compilation of 549 cases of tuberculosis of the suprarenals, in 17 per cent. there was no tuberculous affection of any other organ, but in 43 per cent. there was chronic pulmonary tuberculosis. In both syphilis and tuberculosis the suprarenals can thus be the primary seat of the disease, possibly from intrauterine transmission of the infection. The suprarenals of syphilitic fetuses should be examined for spirochetes.

96. **Diagnosis of Incipient Tuberculosis of the Lungs.**—Ranke has been able to make a physical examination of the lungs of a number of persons succumbing to various non-tuberculous diseases, the findings being controlled by autopsy not long after. He found ten cases in which the lungs showed traces of a small apical lesion. Those about the size of a bean gave no clinical signs of their existence, but one lesion, about the size of a hazelnut, was recognized during life. The breathing sound was harshly vesicular, expiration prolonged, and the murmur changed more to the bronchial type. The infiltration in this case was manifested both by percussion and auscultation. His experience further confirms the diagnostic importance of the obscuring, the "veiling" of the inner margin. It is generally combined with dullness over the apex. His cases showed that distinct restriction of the field of resonance over the apex is the result of an effusion or of pleuritic thickening. Percussion of the lower margin of the lung and its excursion is an important link in the chain of symptoms, especially when positive. The diaphragm may be restricted in its movements, even in incipient tuberculosis, but this is not always necessary. In twenty persons examined there was no change in the breathing sound toward the bronchial type, and in none of these cases was any infiltration in the lungs discovered later. This confirms the importance of this physical sign for the diagnosis. In case of secretion in the bronchi the breathing sounds are harsh and jerking, with prolonged expiration. This form of expiration is exclusively a symptom of secretion, and must be distinguished from the prolonged expiration with the tendency to bronchial breathing and its transitions into the vesicular—this being a symptom of infiltration, although both types may be combined. He found what he calls "unclear" breathing sounds (*unreines Atmen*) in three cases with pleuritic thickening, but no infiltration or secretion. This anomaly is noted especially in elderly people, but has no differentiating importance. Increased intensity in the inspiratory sound is ascribed in the text-books to catarrhal secretion. His experience has shown, however, that it occurs frequently when there is a tuberculous focus, as a sign of vicarious emphysema. Infiltrated parts are surrounded by a zone of more or less distended air vesicles, and this is the rule with apical cicatrices. He thinks it probable that this local emphysema is manifested by increased intensity in the breathing sounds. He adds that the relative proportions between the signs must be borne in mind, citing as an example of the necessity for this rule a case of heart disease in which there was pronounced dullness over one apex, impairment of resonance, increased vocal resonance, and prolonged expiration but no vesicular inspiration. The lack of change in the inspiratory sound was all that prevented the erroneous diagnosis of a large cicatrix in the right apex. Autopsy showed extensive pleuritic thickening and reduced circulation in the apex, owing to an old thrombus in the pulmonary vein, but no signs of infiltration. This case teaches the importance of correlation between the symptoms for the diagnosis of tuberculosis.

98. **Cesarean Section and Spinal Anesthesia.**—Polano was able to render Cesarean section painless, in the four cases he reports, by the use of spinal anesthesia. The patients all had flat, rachitic pelvises. The four children were normal and lively, differing in no respect from spontaneously born children. He believes that the children suffer from the general anesthesia in ordinary Cesarean section, and that this is avoided with spinal anesthesia. The fact that the contracting power



of the uterus is independent of the anesthetized spinal cord was confirmed by the experiences in these cases. The uterus contracted at once as under normal conditions, and the loss of blood was slight, while the anesthesia was complete.

Virchows Archiv, Berlin.

April, CXCII, No. 1, pp. 1-192.

- 101 \*The Blood in Meningitis. (Verhalten des Blutes bei Meningitis.) G. Zand.  
102 \*Etiology, Course and Cure of Dissecting Aneurism of the Aorta. F. Schede.  
103 Pocket Formation in the Endocardium with Aortic Incompetence. (Endokardiale Taschenbildung bei Aorteninsuffizienz.) A. Schmincke.  
104 Experimental Pathology of the Blood Vessels. L. D'Amato.  
105 Etiology of Congenital Atresia of the Esophagus with Esophagotracheal Fistula. H. Giffhorn.  
106 Pathogenesis of Traction Diverticulum of the Esophagus. G. Riebold.

101. **The Blood in Meningitis.**—Zand concludes from investigations in 10 cases of epidemic meningitis, 2 of suppurative and 6 of tuberculous meningitis that high leucocytosis speaks against the tuberculous variety. When the case is progressing favorably, the number of leucocytes gradually declines even to subnormal figures. In the non-tuberculous forms the leucocytosis is predominantly in the multinuclear neutrophile cells.

102. **Dissecting Aneurism of the Aorta.**—Schede reports, with autopsy findings, a case of dissecting aortic aneurism in a woman of 70, and reviews similar cases on record. In his case the dissecting aneurism had spontaneously healed enough to restore comparatively normal conditions, and it was an autopsy surprise.

Wiener klinische Wochenschrift.

May 28, XXI, No. 22, pp. 783-822.

- 107 \*Constitutional Predisposition to Disease on Part of Lymphatics. (Hypoplastische Konstitution und ihre Bedeutung.) J. Bartel.  
108 Connection Between Lobule of Ear and Tuberculosis. (Verhältnis des Ohrbläppchens zur Tuberkulose.) G. J. Rosso-limo.  
109 \*Alimentary Levulosuria. A. R. v. Sabatowski.  
110 \*Phloridzin Test of Kidney Functioning. (Phloridzinprobe.) V. Blum and H. Prigl.  
111 Palpation of Appendix. T. Hausmann.  
112 Means of Aborting Attack of Angina Pectoris and Paroxysmal Tachycardia. (Kunstgriff zur Unterdrückung der Anfälle von Angina pectoris und paroxysmaler Tachykardie.) M. Hierz.

107. **"The Lymphatic Temperament."**—Bartel writes from Weichselbaum's Institute for pathologic anatomy at Vienna to announce certain conclusions in regard to the influence of defective development of the lymphatic system as encountered in more than 100 cadavers. Individuals with this hypoplastic constitution succumb between the ages of 14 and 25 in 56 per cent. of the cases, mostly to infectious diseases, especially tuberculosis, to which they oppose slight resistance. Suicide, diabetes and nephritis, also abnormal pregnancy or eclampsia, are responsible for some of the mortality. Between 26 and 45, exophthalmic goiter, placenta prævia, ectopic pregnancy, atheroma and fatalities under anesthesia carry off 40 per cent. After 46, tumors are exceptionally frequent at all ages, especially glioma, teratoid, epithelial and connective tissue growths. The female sex predominates. He regards the fate of individuals with this hypoplastic constitution as a kind of natural filtering process, fully 56 per cent. succumbing before they reach the reproductive period. All were tall and well developed, even unusually plump in some of his cases, except for the narrowness of the arterial system, the "lymphatism," and the hypoplasia of the genitalia. The vulnerability may be due to some special weakness of the mesodermal layer. The glands in the neck and mesentery were always inclined to be large, and they cut like marrow; the thymus was always large, except in cases of chronic tuberculosis.

109. **Alimentary Levulosuria.**—Sabatowski calls attention to the alimentary levulosuria test as deserving wider application. Positive findings were obtained constantly in cirrhosis of the liver, while the findings were negative with nutmeg liver unless there were marked anatomic changes in the parenchyma. Positive findings are also the rule in infectious

diseases, and in jaundice of infectious and toxic origin. Jaundice from obstruction does not give the test unless there are anatomic changes in the parenchyma. He has applied the test in 78 cases of liver affections, giving 100 gm. levulose in lemonade. Vomiting or diarrhea occurred in about 6 cases each in 120 tests. He believes that the levulosuria is independent of stasis of bile, but is a constant accompaniment of every severe liver affection, and may serve to differentiate an infectious process in the liver. In one case a tumor under the right costal arch suggested a liver affection, but the absence of alimentary levulosuria confirmed the assumption of a tuberculous process in the great omentum.

110. **The Phloridzin Test of Kidney Functioning.**—Blum and Prigl regard this test as much inferior to the indigo carmine test, as it has given contradictory findings in their hands. Delay in appearance of sugar in the urine after administration of the phloridzin, beyond the fifteen-minutes interval accepted as the normal standard, is not a certain sign of anatomic or functional lesion in the kidney.

Zentralblatt für Chirurgie, Leipsic.

June 6, XXV, No. 23, pp. 697-728.

- 113 \*Method of Expelling the Blood from the Lower Half of the Body. (Künstliche Blutleere der unteren Körperhälfte.) Momburg.  
114 Technic of Esophagoscopy. Kölliker.

113. **Method of Expelling the Blood from the Lower Half of the Body.**—Momburg has been studying for some time means to render operations as bloodless as possible, and has become convinced that it is possible and harmless to cut off from the circulation the entire lower half of the body. He accomplishes this by drawing a belt so tight that the pulsation in the femoral artery can no longer be detected. A rubber tube nearly an inch in diameter is stretched to its utmost length and then wound from two to four times around the waist of the reclining patient, midway between the crests of the ileum and the costal arch, and fastened. This exclusion of half of the body from the circulation is very simple; it answers the purpose perfectly, and does not injure the intestines or ureter, as the thick abdominal walls spread the pressure; the other abdominal organs lie outside the zone of compression. There does not seem to be any disturbance in the heart action when the patient is thus belted in. The spinal cord is not affected, as the compression is below its lowest point. The conditions are different in animals, but even with them the use of a broad band or interposition of a strip of felt allows the compression to be maintained for an hour and a half without apparent injury. When the compression is to be removed he applies a constricting band to each thigh and raises the legs so that the restoration of circulation occurs gradually, as otherwise there is transient disturbance in the heart action. The respiration was never affected. He has applied this technic in two cases, besides tests on healthy men, who bore the compression without an anesthetic for five minutes. In one of the clinical cases the elastic tube was in place for 43 minutes and in the other for 18 minutes. In the last case a sarcoma of the hip joint required exarticulation, which was done under spinal anesthesia without loss of blood, as the lower part of the body had thus been shut off from the circulation.

Zentralblatt für Gynäkologie, Leipsic.

May 23, XXXII, No. 21, pp. 689-728.

- 115 \*Scopolamin-Morphin in Obstetrics. K. Mayer.  
116 Obstetric Importance of Blood Pressure and Its Relation to the Work of the Heart. (Geburtshilfliche Bedeutung des Blutdrucks und sein Verhältnis zur Arbeit des Herzens.) J. M. Slemmons and F. C. Goldsborough.  
117 A Cytotoxin Which Induces Fatty Degeneration of the Ovary. (Ein Cytotoxin welches die Fettentartung des Eierstocks hervorruft.) S. delle Chiaje.  
118 \*Case of Amaurosis in Pregnancy. E. Holzbach.  
119 Measurement of Gravid Uterus. (Messung des graviden Uterus.) Piering.  
120 Combined Instrument Sterilizer and Table. (Vereinigung von Instrumentenkocher und Instrumententisch.) F. Stahler. (Siegen).

115. **Scopolamin Morphin in Obstetrics.**—Mayer has followed Gauss' technic in 50 obstetric cases. His impressions



are that the procedure does not quite attain its purpose of relieving or banishing the pain of labor, and that the indications for this technic are comparatively limited, while the occasional by-effects and disturbances stand in the way of its unconditional recommendation. He reiterates that this scopolamin-morphin method should never be applied outside of an institution where constant supervision of the parturient by a physician is possible. The general practitioner can not expect to apply this technic in his practice.

118. **Amaurosis in Pregnancy.**—Holzbach reports a case of amaurosis gradually developing in the course of pregnancy. The first signs of optic neuritis were noted about the fourth month; both eyes were affected and external causes could be excluded. The optic nerve was atrophied when the patient was first seen and the indications for interruption of the pregnancy were beyond question. Sight began to improve at once, and within two weeks vision was restored in the right eye. The other eye was first involved and the nerve was atrophic beyond relief. The woman was an x-para of 37, with eight children, and he deemed it necessary to insure future sterility by an operation on the tubes. The case confirms anew the importance of immediate interruption of the pregnancy in case of optic neuritis from this cause.

#### *Gazzetta degli Ospedali e delle Cliniche, Milan.*

*May 10, XXIX, No. 56, pp. 585-600.*

- 121 Case of Syphilitic Tumor in Stomach. L. Paglieri.  
122 Astrology in Medicine. (L'astrologia nella medicina e il "fascicolo" di Petrus da Montagnana.) G. Tanfani.

*May 17, No. 59, pp. 617-632.*

- 123 \*Pyretic Phase in Action of Quinin. (Fase piretica nell'azione del chinino.) S. Mircoli.  
124 Cutaneous Serum Reaction in Syphilis. (Fenomeni di allergia nei sifilitici.) E. Tedeschi.

123. **Pyretic Phase in Action of Quinin.**—Mircoli reports experimental research which corroborates the views of the Roman school in regard to the best technic for administration of quinin. If given too soon either it has no action or the pyretic phase of the quinin influence will be superposed on that of the malaria. Given too close to the paroxysm the quinin does not have time to manifest its antipyretic action. The sensitized organism is liable to react with the febrile phase, and the febrile condition is magnified by the combination of the malarial and quinin pyresis. In the subcontinuous form, lacking the control of the thermic cycle, if quinin is given by routine it may induce continued high temperature from the thermic reaction to the quinin by the soil sensitized by the malaria. The "Roman" technic is the administration of a single dose of 1 or 2 gm. (15 or 30 grains) of the quinin salt a few hours before the paroxysm.

#### *Policlinico, Rome.*

*May, XV, Surgical Section, No. 5, pp. 193-240.*

- 125 Modifications in Blood in Preventive Hemostasis with Es-march-Silvestri Technic. (Modificazioni della crasi sanguigna nell'emostasi preventiva.) T. Casoni.

*May, Medical Section, No. 5, pp. 193-240.*

- 126 Are There Latent or Rudimentary Types of Dystrophy of the Muscles (Erb)? Is Recovery Possible? A. Marina.  
127 Tumors in Corpus Callosum. G. Panegrossi.  
128 \*Raynaud's Disease and Exophthalmic Goiter. A. Piazza.

*May 31, Practical Section, No. 22, pp. 677-708.*

- 129 \*Perineal Prostatectomy Preceded by Suprapubic Cystostomy in Septic Case. R. Cassanello.  
130 \*Parotitis from Pneumococcus Infection. E. Bargellini.

128. **Raynaud's Disease and Exophthalmic Goiter.**—Piazza has recently observed a case of this combination in a young woman. The first symptom of Raynaud's disease appeared at the age of 6, and progressed to trophic disturbances. The symptoms of exophthalmic goiter appeared about puberty.

129. **Prostatectomy in Septic Cases.**—Cassanello's patient was a man of 63, with complete septic retention of urine, enormous distention of the bladder, and serious general intoxication. Suprapubic cystostomy with local treatment of the urinary passages improved conditions to such an extent that perineal prostatectomy could be successfully performed a month later.

130. **Parotitis from Pneumococcus Infection.**—Bargellini reports three cases of pneumonia in which bilateral parotitis developed toward the crisis. In one case the process progressed to necrosis of the gland. Streptococci could be cultivated from the pus, after the incision, and healing was not complete for more than a month. The process healed in the second case immediately after evacuation; in the third case the process subsided spontaneously.

#### *Norsk Magazin for Lægevidenskaben, Christiania.*

*June, LXIX, No. 6, pp. 509-640.*

- 131 History of Conceptions of Cause and Nature of Disease. (Forskjellige tiders ideer om sygdommenes aarsager og væsen.) A. Fonahn.  
132 \*Multiple Cancers. A. De Besche.  
133 Principles of Psychiatry. (Psykiatriens grundtraek.) R. Vogt. Commenced in No. 4.  
134 \*Nodular Rheumatism in Children. (Subkutane knuder ved rheumatismus acutus i barnealderen med sektionsresultat.) K. J. Titlestad.

132. **Multiple Cancers.**—De Besche reports 6 cases and reviews others in the literature in which malignant neoplasms of different histologic structure occurred in the same individual, generally each with its distinct metastases.

134. **Nodular Acute Rheumatism.**—Titlestad reports a case of acute rheumatism in a girl of 6 with numerous subcutaneous nodules. Most of the nodules subsided spontaneously in the course of a week or so. The little patient had also a valvular defect, and collapse followed a dose of 0.5 gm. (7.5 grains) of antipyrin given to arrest the pain of the rheumatism. The child succumbed a few days later.

### *Book Notices*

**MODERN MEDICINE, ITS THEORY AND PRACTICE.** By William Osler, M.D., Regius Professor of Medicine in Oxford University, England. Assisted by Thomas McCrae, M.D., Associate Professor of Medicine and Clinical Therapeutics in Johns Hopkins University, Baltimore. Vol. IV. Cloth. Pp. 865 with illustrations. Price, \$6.00. Philadelphia: Lea and Febiger, 1908.

**TEXT-BOOK OF HUMAN PHYSIOLOGY, including a Section on Physiologic Apparatus.** By Albert P. Brubaker, A.M., M.D., Professor of Physiology and Hygiene in the Jefferson Medical College. Third Edition, revised and enlarged. Pp. 752 with illustrations. Price, \$3.00. Philadelphia: P. Blakiston's Son & Co., 1908.

**URIC ACID AS A FACTOR IN THE CAUSATION OF DISEASE.** By Alexander Haig, M.A., M.D. Oxon., F.R.C.P. Physician to the Metropolitan Hospital and the Royal Hospital for Children and Women. Seventh Edition. Pp. 940 with 75 illustrations. Price, \$4.00. Philadelphia: P. Blakiston's Son & Co., 1908.

**TEXT-BOOK OF THE PRINCIPLES OF ANIMAL HISTOLOGY.** By Ulric Dahlgren, M.S., Assistant Professor in Biology in Princeton University, and William A. Kepner, A.B., Adjunct Professor in Biology in the University of Virginia. Cloth. Pp. 515. Price, \$3.75. New York: The Macmillan Co., 1908.

**HANDBOOK OF MEDICINE AND THERAPEUTICS.** By Alexander Wheeler, L.R.C.P., S.E., and William R. Jack, B.Sc., F.F.P.S.G., Assistant to the Professor of Practice of Medicine, Glasgow University. Third Edition. Cloth. Pp. 512. Price, \$2.50. New York: William Wood & Co., 1908.

**DISEASES OF INFANCY AND CHILDHOOD.** By Louis Fischer, M.D., Fellow of the New York Academy of Medicine. Second Edition. Pp. 979 with illustrations. Cloth. Price, \$6.50. Philadelphia: F. A. Davis Co., 1908.

**STUDENT'S HANDBOOK OF GYNECOLOGY.** By George Ernest Herman, M.D. (Lond.), F.R.C.P., F.R.C.S., Consulting Obstetric Physician to the London Hospital. Cloth. Pp. 544 with illustrations. Price, \$2.50. New York: William Wood & Co., 1908.

**LASLEY'S BOOK OF PRESCRIPTIONS.** Rewritten by E. W. Lucas, F.R.C., F.I.S., Late Examiner to the Pharmaceutical Society of Great Britain. Ninth Edition. Pp. 366. Cloth. Price, \$2.00. Philadelphia: P. Blakiston's Son & Co., 1907.

**TREATMENT OF GONORRHEA IN THE FEMALE.** By Charles Leedham-Green, M.B., F.R.C.P., Surgeon to the Queen's Hospital, Birmingham. Second Edition. Cloth. Price, \$2.00. Pp. 160. New York: William Wood & Co., 1908.

**PHYSICAL SIGNS OF DISEASES OF THE THORAX AND ABDOMEN.** By James E. H. Sawyer, M.A., M.D. Oxon., M.R.C.P. Lond. Pp. 188. Cloth. Price, \$2.00. New York: William Wood & Co., 1908.

**AIDS IN OSTEOLOGY.** By Philip Turner, B.Sc., M.B., M.S. (Lond.), F.R.C.S., Demonstrator of Anatomy, Guy's Hospital. Cloth. Pp. 187. Price, \$1.25. New York: William Wood & Co., 1908.

**WRITINGS OF SIR WILLIAM BROADBENT.** Edited by Walter Broadbent M.D., M.R.C.P. Cloth. Pp. 444. Price, 3.60. New York: Oxford University Press, 1908.

**TWENTY-SIXTH ANNUAL REPORT of the State Hospital for the Insane, Warren, Pa., for the Year Ending Nov. 30, 1907.** Paper Pp. 103.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOLUME LI

CHICAGO, ILLINOIS, JULY 18, 1908

NUMBER 3

## Original Articles

### DISEASE OF THE CEREBRAL VESSELS, WITH ITS PROBLEMS IN DIAGNOSIS.\*

WILLIAM ALEXANDER JONES, M.D.

Clinical Professor of Nervous and Mental Diseases, College of  
Medicine and Surgery, University of Minnesota.  
MINNEAPOLIS.

Diseases of the arterial system in the brain often give rise to a misleading and confusing chain of clinical symptoms.

Not infrequently these symptoms are almost identical with those of well-known diseases, such as tumors, abscesses, cysts, and hemorrhages. The diagnosis is, therefore, empirical or impossible, particularly if no gross evidences of disease are found in accessible or palpable vessels.

Changes in the vessel wall may be dependent on a defective development of the media, which leads to aneurismal pouches, minute, moderate, or large. Atrophy, inflammation, or degeneration follows wasting disease. Acute arteritis from infective processes or intoxications, extensions of disease, septic or otherwise, from adjacent structures, and from external injuries, have been clearly demonstrated by bacteriologic and histologic investigations. Thromboarteritis, in which the brunt of the attack is sustained by the intima and media, may result in the organization of a thrombus and the partial or complete obliteration of the vessel lumen. Arteriosclerosis, a circumscribed or diffuse thickening of the arterial walls, especially of the intima, secondary to certain inflammatory or degenerative changes in the media, covers such a broad field and is so well appreciated that further description is unnecessary.

The following cases represent a form of vessel disease in which there are fairly well-defined focal manifestations, which might easily fall under the head of brain tumor or other gross disease, and yet not represent the ordinarily recognized forms of cerebral arteriosclerosis. These cases also illustrate disease of the arteries of the brain without other marked evidences of general vessel degeneration.

CASE 1.—L. W. R., male, aged 45, married, telegrapher.

*Family History.*—Father died of bronchitis at 48; mother died of old age at 77. One brother and one sister are living and well. One sister is dead; cause unknown. Two sons and a daughter are living and well, except that all are somewhat nervous.

*Personal History.*—General health is fair. He can not recall any severe illness. He had gonorrhea years ago; syphilis, he denied. He had been twice married; neither wife had any miscarriages. Twenty years ago, the patient fell, striking his

spine, and sustained some sort of injury, which necessitated his being kept in bed in a prone position for ten weeks. There was apparently a complete recovery.

*Present Disease.*—Ten years ago he began to have jerking in his legs at night with occasional cramps. This condition grew worse, and seven years ago his arms also began to jerk, but after a time he improved in this respect, and his upper extremities are no longer affected, though he still has slight jerking in his legs, both day and night. About ten years ago he also began to lose the power of hearing in the left ear, and at the end of two years the loss was complete. A few months later, hearing in the right ear became dull, but he was still able to continue his work as a telegrapher until one morning he woke to find himself absolutely deaf. From that time till two years ago, he did clerical work. Ever since his deafness appeared, he has had noises in his head. There is constantly present a sound as of singing insects, and, in addition, there is at times a roaring like the fall of water, sometimes near, again far away, and at times there is a noise like that of the intermittent tooting of an automobile horn, sometimes high and sometimes low in pitch. This latter sound occurs only when he is nervous or worried. Sexual power has been weak for six years, and for the last year wholly gone. Two years ago he lost control of his bowels and bladder. After a time, this was regained, but is now again lost. During the last five years he has had attacks of dizziness from time to time, possibly due to digestive disturbances. When he becomes dizzy, he is also nauseated unless he assumes a recumbent posture. If he lies down, the nausea goes away, and if he closes his eyes, the dizziness also disappears. During the week before consulting me he had been dizzy always when rising from a recumbent posture. Four years ago he began to shuffle his feet when walking, and of late his gait is decidedly staggering. He still writes fairly well, but at times his hand jerks and the pen drops. He is confined to the bed and a chair practically all the time.

*Physical Examination.*—He is a medium-sized man, fairly well developed and nourished; skin, healthy in appearance; muscles, small. Temperature, 98.6 F.; pulse, 64, regular and normal in volume. Examination of heart and lungs is entirely negative. Radial and temporal arteries are soft. Abdominal organs are normal except for a considerable amount of gas in the stomach and intestines.

Urine: Clear, dark amber, strongly acid; specific gravity, 1.028; trace of albumin; no sugar; cylindroids and considerable mucus.

He complains of vertigo when he first rises, and says this is not worse when it is dark. He has an occasional slight headache—never any that is severe; no tenderness about the head. The eyes are deep set. There is no conjunctivitis, ptosis, lagophthalmos, nystagmus, or strabismus. Vision is fair. Examination of the ears is negative, except that he is absolutely deaf. Taste and smell are normal. No disturbance of cutaneous sensibility for touch, pressure, pain, or temperature can be demonstrated. The patellar reflexes are both increased; no ankle clonus. Marked Romberg sign is present with moderate ataxia in the hands; no Babinski sign. The muscles are all small. Those of the upper extremities are soft and flabby; those of the lower limbs are spastic; no atrophies; no fibrillary twitchings. He walks with a distinctly spastic, staggering gait.

*Mental Condition.*—His expression is sad but intelligent, and he has no peculiarities of dress or attitude. He is oriented

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



as to time, place, and surroundings, comprehends what is said to him and answers relevantly. His memory is good. He is evidently much depressed and worries a great deal because he is unable to get about. At times he is extremely irritable; no hallucinations or delusions.

*Course of Disease.*—Oct. 26, 1907: He has been failing since last note. He says that he is losing flesh and that the power in his right hand is failing, though examination does not confirm the latter statement. Suffers severely from constipation and passes a limited amount of urine. His feet and legs become cyanotic and swollen if held in a dependent position. Almost ever since the last note, he has had a free flow of saliva, which, if swallowed, causes vomiting. He has a bitter taste in his mouth and has a constant feeling of distention and slight pain in his stomach. Taking food relieves this for a short time, but afterward seems to make it worse. Teeth are not tender, and gums are perfectly normal. Right pupil is a little larger than the left; both react normally for distance but sluggishly for light. Patellar reflexes are increased; no ankle clonus. He thinks that his eyesight is worse, and he is sure that he does not see so well during the dizzy spells as at other times. He says that he suffers greatly from mental distress.

Nov. 14, 1907: Much of the time the patient is extremely irritable and depressed. He walks with increasing difficulty and thinks that his eyesight is failing. He has no headache. The flow of saliva decreased for a time, but is again excessive.

Nov. 18, 1907: Dr. William R. Murray examined his eyes to-day and reported: "Lids and external ocular muscles normal. Cornea normal. Iris normal; reacts to light and convergence. Crystalline lens normal. Optic discs normal (lamina cribrosa prominent). Retinal arteries slightly contracted and pale; otherwise normal. Fundi show no pathologic changes. Visual fields (roughly) appear normal. Vision (R. and L.) for distance good. Reads fine print at ten inches. Examination of eyes negative."

Dec. 13, 1907: The man constantly complains of being weak; can not sit up except for short periods; he scarcely ever suffers from vertigo now. He has no pain except an occasional slight headache. Expression is bright. Sensibility to pressure and pain are about normal in upper part of body, but distinctly impaired in the legs and lower abdomen. Deep reflexes in the upper extremities are about normal, but are much increased in the legs. There is more or less spasticity everywhere, but especially in the lower extremities. No ankle or patellar clonus. No fibrillary twitching is noted; no contractures. There is no atrophy of tongue. He is still spitting very freely.

May 27, 1908: The man is in practically the same condition except that his ataxia is greater.

CASE 2.—Male, aged 48, married, train dispatcher, was seen June 14, 1907.

*Family History.*—Father died at 66 of kidney trouble; he had been a heavy drinker. Mother is living at 76 and well. One brother died of dysentery, and one brother drinks to excess. The maternal grandfather died of paralysis. There is no other nervous or mental trouble in the family.

*Personal History.*—General health in early life was fair. He had typhoid in childhood and gonorrhea at 17. Syphilis was denied. He was very ill with mountain fever twenty-four years ago. At different times he had a number of abscesses. He drank some every day, but rarely to the extent of being intoxicated. He used tobacco to excess habitually, his cigar bill amounting to \$35 a month. He was married at 22. His wife has never been pregnant. He has never been injured.

*Present Illness.*—About twenty-four years ago, when excited over a little family trouble, he had an attack of jerking of all the muscles, lasting one-half hour. A second similar attack, only more severe, occurred seven years ago, and again during a family quarrel. It lasted one hour, and was not accompanied by unconsciousness. He did not fall, but was lying down at the time. For the last sixteen years he has been failing in health, and fourteen years ago he noticed some unsteadiness in gait. This latter has gradually grown worse since. Sixteen years ago he first complained of the wind and the pillows hurting his ears, and not long after that he began

to slowly lose his hearing. The explosion of a cannon-cracker is thought by the family to have hastened the latter. The trouble began in the right ear, and eight years ago the left also began to be affected. Eighteen months ago, the right ear had become absolutely deaf and eleven months ago he suddenly lost hearing completely in the left ear, the change occurring within a few hours. From the outset of his ear trouble, he was greatly bothered by noises in his ears, a constant roaring with intervals of the sound of blowing whistles and the tooting of engines. These have continued ever since. On one occasion, since he became deaf, his wife dropped her scissors and made considerable noise. He threw down the paper which he was reading, said he must have dropped his knife and began searching for it. He also said that at times, when holding his watch in hand, he could hear it ticking. His ataxia is now so great that he walks only with the assistance of a cane and, even then, with a distinctly staggering gait. His sexual power has been failing for sixteen years, and for one and one-half years he has been entirely impotent. He is much constipated and for several years has often gone from seven to ten days without a bowel movement. For the past year there has been some loss of bowel control. Four years ago his urine began to dribble at the end of urination, and for three years he has had no control whatever of his bladder. There has been a tremor of the hands for years, but not of such extent as to interfere with his writing until recently. About four years ago he had some attacks when his head would fall to one side or the other, and he would be unable to control it. These were of very short duration. He has had lumbar pain at times, but no headache. He always has vertigo if he moves suddenly, and frequently at other times also. He sleeps fairly well, but often talks in his sleep, and sometimes very loudly. He is a little more querulous and nervous of late, but there was no distinct mental change previously.

*Physical Examination.*—He is a rather large man, fairly well developed and well nourished. Muscles are of fair size but flabby. Temperature 98.4 F.; pulse 80 and of normal quality. Lung examination is entirely negative. He has no cough. Apex beat of heart is slightly outside the normal line; no murmurs. There is a moderate degree of thickening of the radial and temporal arteries. Abdominal organs are apparently healthy. Sexual apparatus is normal.

Urine: Clear, amber, acid; specific gravity, 1.024; no albumin; no sugar. Microscopic examination is negative.

He has an anxious, worried expression; does not complain of pain. Eyes are bright; both lids droop slightly and equally; there is moderate areus senilis. There are no ocular palsies; no double vision; no nystagmus. Pupils are equal and react sluggishly to light, fairly well as to distance. Vision is good. Ophthalmoscopic examination is negative. He is absolutely deaf. Taste is normal, but smell is very much impaired, possibly on account of a prolonged condition of catarrh. There is no disturbance of sensibility to touch, pressure, or pain. The deep reflexes of the arms are increased, and of the legs very much increased; no ankle clonus. Babinski sign is uncertain. Abdominal and cremasteric reflexes are normal. There is a fairly well-marked tremor of the extended fingers; no paresis or paralysis of the face or extremities.

*Course of Disease.*—At the time of his examination he was advised to go to a hospital, but he declined to do so and remained for four days at a hotel. On July 8, while sitting at dinner, he suddenly became unusually dizzy. With assistance, he was able to get to his room where he lay down on the bed. Shortly after he began to scream loudly and continued this for some time, but when seen one hour later he was lying in bed in a stuporous condition. He was transferred to the hospital where his temperature was found to be 98.2 and his pulse 84. The next morning the following conditions were noted:

He is conscious, but has a dull, heavy look and responds slowly to whatever is said or done. Is distinctly emotional. When questioned as to his experience of the preceding day, he says that while seated at the table he experienced an unusual sensation in his head. This became gradually more pronounced and he feared that he would die. Says he screamed in order to obtain help. He can not describe the sensation in his head other than to say that it seemed like an "unusual commotion."



His temperature has ranged from 99.6 to 102.2 F., and his pulse from 100 to 110. There is some paresis of the left face, including a distinct drooping of the left lid. He appreciates touch in the left face but not the pricking of a pin. Tongue can be protruded straight. There is nystagmus of vestibular type with quick component upward and to left. Vision is very bad, probably on account of nystagmus. He has a constant sense of dizziness even in the recumbent posture. There is no ocular palsy. He can not swallow, and there is no movement of the throat on the left side. Deafness is complete. Apparently there is no disturbance of sensation in arms or body. There is possibly numbness in the right leg. Both knee jerks are exaggerated; double ankle clonus; no Babinski sign.

July 10, 1907: He has been failing since yesterday. Temperature dropped from 100 to 103.2 F., and pulse from 106 to 132. Nystagmus continues with some tendency to a rotary movement. He is very dizzy. Pupils react to accommodation and slightly to light. There are no ocular palsies. Left face is still numb and shows some motor impairment. He can not swallow and there is no movement of the left side of the throat. Left hand is very ataxic. No abdominal or cremasteric reflex is obtainable. Both knee jerks are exaggerated and right leg is rigid. Ankle clonus is present on the left side; no Babinski sign. He is unable to retain urine. He complains of no pain except slight backache. He died at fifteen minutes past midnight.

*Autopsy.*—The postmortem was made the next day at noon.

*Macroscopic Appearance:* There are some adhesions at the apex of the right lung. Both lungs are congested and edematous and the bronchi are full of mucus. There is a beginning pneumonia in the left lower lobe. Heart is moderately enlarged. There is an old endocarditis and a moderate degree of atheroma of the aorta. Liver is normal. Spleen is soft. Left kidney is normal in appearance. The right kidney shows marked atrophy and hydronephrosis. The ureter also is enlarged, but shows no constriction at any point, and there is no indication of distension of the bladder. Prostate is normal. The calvarium is very thick, especially anteriorly. Dura is not adherent; the pia-arachnoid is thickened and opaque, especially along the larger vessels, but is not adherent. There is no atrophy of the brain substances. Ependyma is normal. All the large vessels at the base of the brain are very much diseased; they are increased in diameter; the walls, except in the region of the aneurismal dilatation, are much thickened and show many patches of distinct nodular sclerosis. The basilar artery is almost uniformly distended and measures a little over one cm. in diameter. Its walls are thin and almost translucent, except at a few small points. The left vertebral artery is moderately enlarged; the right is greatly enlarged, and at the point of junction with the left measures 0.8 cm. in diameter. The right inferior cerebellar artery has three distinct sacular aneurisms in its course, the largest measuring 0.7 cm. in diameter. The left inferior cerebellar artery has one small sacular aneurism and one rather fusiform aneurism, the latter measuring 1.5 cm. in its greatest diameter. This entire vessel and its branches for some distance are completely obstructed by blood clots. There is a well-marked extravasation of blood into the pia-arachnoid in the region of distribution of this vessel. The left anterior cerebellar is very small and not aneurismal; the right, also small, is not dilated. The right and left posterior cerebral arteries are very much sclerosed, the left having two small sacular aneurisms, and the right one aneurism. All the other vessels, at the best, are very much thickened, and at points show irregular dilatation, but none have any distinct aneurismal formation.

*Microscopic Examination:* On section and microscopic examination of the vessels the intima is found greatly thickened in places, with well-marked areas of degeneration. There is very little elastic tissue in the intima. The media in many places is thin, and this is particularly true in the region of the aneurisms where it is almost wholly absent. The elastic tissue of the media is much broken up, and there is also well-marked round-cell infiltration of this coat, as well as of the adventitia. The thrombus is infiltrated with leucocytes. Section of small vessels from the cortex shows the ordinary changes of arteriosclerosis rather well marked.

CASE 3.—Male, aged 48, married, farmer, referred to me by Drs. Kilbride and Kelly of Canby, Minn.; was seen Dec. 16, 1907.

*Family History.*—Father died at 75 of paralysis; he had been temperate. Mother is living and well at 78. One brother died of nephritis at 40; one sister of tuberculosis and one sister of tuberculosis and nephritis. Four brothers and two sisters are living and well. The patient is married and has had six children, one of whom died in infancy; the others are well. There is no nervous or mental trouble in the family.

*Personal History.*—He was sickly in infancy, but after that period his general health was very good. He can not recall any severe illness at any time in his life. He has had occasional light attacks of rheumatism. Venereal diseases he denied. He has been temperate in the use of alcohol. Fifteen years ago he had a fracture of the right leg, which healed readily.

*Present Disease.*—Apparently he was perfectly well up to six months ago. At that time was working in the field and struck his left hand, just above the knuckle of the forefinger, with a wrench. The injury was slight, causing a moderate flow of blood, but no great pain. He continued at his work for a time, but at noon, when washing away the blood from the hand, he noticed a twitching of the first two fingers. This was slight, but not under his control. For three weeks longer he continued at his farm work, and during this period the twitching spread slowly to other areas. It was always worse when he was excited, and at such times appeared in parts which were entirely quiet when he was calm. The movements involved the left arm, shoulder, and neck, in the order named. Then the left foot and leg became affected, and when seen, Dec. 16, 1907, six weeks after the onset, there was twitching of the whole body, but more pronounced on the left side. He walked with difficulty and could scarcely button his clothes, especially if at all excited. He said that he had had vertigo at times for the past year. He was easily confused and cried at times.

*Physical Examination.*—He is a medium-sized man, fairly well developed and nourished. Heart and lung examination is entirely negative, except that his pulse rate is 88. There is a moderate degree of thickening of the radial and temporal arteries. His bowels move regularly and are entirely under his control, but he can not hold his urine so long as he could formerly. Sexual power is somewhat impaired.

Urine analysis is negative.

He has a rather dull, heavy expression, and complains of being weak. He has frequent attacks of vertigo, but can not associate them with any special time or act. He says that he has no pain. There is moderate senilis but no ptosis, lagophthalmos, nystagmus, or strabismus. Vision is good with the aid of glasses. Examination of eye-grounds is negative. There is no defect of hearing and he has no subjective sounds. Sensation for touch, pressure, pain, heat, and cold is normal in all parts of the body. The patellar and Achilles reflexes are increased on both sides, but more so on the left. Ankle clonus is present on left side, but not on the right. There is well-marked ataxia in both upper and lower extremities, more marked on left than on right. All the muscles on the left side are spastic; there are no vibratory twitchings. There is a constant, well-marked, fine tremor in left arm and hand, and at times this is seen in all parts of the body. It is increased by excitement or movement and is always worse on the left side. There is some incontinence of urine; none of feces.

*Mental Condition.*—Expression is dull and heavy. He has no peculiarities of dress or attitude. He talks but little and then only in response to questions. Is fairly well oriented as to time, place, and persons. His memory is much impaired, and he is slow to comprehend what is said to him. Often even a simple question must be repeated two or three times. His answers are only fairly relevant. He realizes that he is ill, but has no real insight into his mental condition. There are no delusions, illusions or hallucinations.

*Course of Disease.*—He was sent to the hospital and placed in bed. The next day his movements seemed about the same as when first examined, but the spasticity on the left side had increased and at times was much worse than at others. Occa-



sionally he was restless and, in an aimless sort of way, kept trying to get out of bed. His temperature was normal, but the pulse ranged from 72 to 96. There was involuntary urination. Two days after admission he had two convulsive seizures, the first one lasting eight and the second five minutes. The movements involved the entire body, but the left side more than the right. The next day he had another seizure of the same sort. The rigidity of the body was constant and much greater than on any other previous occasion. The left hand was tightly clinched. He swallowed with difficulty and was much more stupid. Temperature in the evening was 99.6 F.

December 20: There was not much change except that he was worse mentally, but on the following day he became partially paralyzed on the left side, and the right side became more rigid. His temperature was normal, but the pulse was 108 and weak.

December 23: He was quite unable to swallow, his stupor had increased, the paralysis on the left side was complete and the rigidity on the right side was much worse.

December 25: The following notes were made on this date: His expression is very dull. He talks little and only in whispers. Eyes are open, no ptosis or strabismus. Pupils are equal and react normally for light and distance. Tongue is dry and coated, protrudes slightly to the right. Right arm is rigid and strongly flexed, the fingers being drawn firmly into the palm. Right leg is extended and spastic, but less so than the arm. Left arm and leg are slightly spastic and almost completely paralyzed. The twitching is marked in the right hand, leg and foot; very slight in left hand and foot and, in the hand, is confined almost entirely to the thumb and forefinger. At times there is slight twitching in the right upper lip. He can move the right arm and leg but slowly and with difficulty. On the left side there are ankle clonus and greatly increased patellar reflex. On the right side there is no clonus but the patellar reflex is increased. Achilles jerk is increased on both sides. The head is distinctly drawn to the right side, though the muscles on both sides of the neck are firm. The left pectoral muscle is moderately contracted; the right firmly so. The right rectus abdominis is very firm; left flat. No abdominal reflex can be obtained on either side. Cremasteric reflex is absent on the left and slight on the right. There is involuntary passage of urine and feces. On account of his mental condition, it is impossible to determine anything as to sensibility. Pulse is weak and in the neighborhood of 120.

December 26: He was unable to swallow and was fed by nasal tube. Pulse ranged from 120 to 128, and was very weak and irregular. The right side had also become paralyzed. He was constantly in a condition of stupor. He died December 27, apparently from progressive failure of heart and respiratory action.

*Postmortem Findings.*—Dura is not adherent and is normal in appearance. Pia-arachnoid is thickened and very edematous in many places, not adherent to the brain. All the pial vessels are much distended with blood. The arteries at the base are thickened but uniformly so, and there are no calcareous plates. The right vertebral artery, at about the level of the first cervical nerve, shows a well-marked fusiform aneurism, 0.75 cm. in length and about 0.33 cm. in breadth. Almost directly opposite there is a sacular aneurism of the left vertebral 0.4 cm. in diameter. There is a moderate degree of atrophy of the cerebral substance in the anterior part of the brain. Section shows nothing except a general condition of hyperemia. Ependyma is smooth. On microscopic examination of the vessels there is a thickening of the intima and of the media with considerable increase of the elastic tissue.

The literature covering these specific findings is not very satisfactory.

The brain-tumor symptom-complex of arteriosclerosis is mentioned here and there by various writers, but no one author has given it his undivided attention. The majority of writers describe conditions under a general head and designate all vessel changes as arteriosclerotic.

Practically all cases reported seem to have ended by rupture of the vessel, with the usual manifestations of

apoplexy. In Case 2 the patient died from obstruction of the circulation in the cerebellum and brain-stem. In Case 3 the patient died from rather uncertain causes. The most evident postmortem finding, other than the vessel changes, was edema.

Mummert<sup>1</sup> calls special attention to the rarity of cerebellar aneurisms.

Rindfleisch<sup>2</sup> speaks of the rarity of cases of aneurism of the basilar artery seen clinically, often symptomless until rupture occurs and then mistaken for ordinary apoplexy. If symptoms are present during life, a diagnosis of brain tumor is most commonly made.

Saathoff<sup>3</sup> refers to the position of the basilar artery whereby it is frequently exposed to undue pressure from indirect injuries.

Grunwald<sup>4</sup> gives considerable attention to the differential diagnosis of disease of the vessels at the base of the brain from other conditions with which it is likely to be confused.

Joseph Collins<sup>5</sup> has written an exhaustive treatise on the different phases of cerebral arteriosclerosis, in which he refers to the brain-tumor symptom-complex.

Fisher and Brooks<sup>6</sup> discuss the relation of arteriosclerosis to diseases of the nervous system, but do not refer to aneurisms or other gross lesions of the basal vessels.

Bramwell<sup>7</sup> covers the field of intracranial aneurisms and reports cases with focal manifestations, but does not refer to cerebellar lesions or symptoms.

Barrett<sup>8</sup> has contributed an excellent article on the histology of cerebral arteriosclerosis with its clinical signs.

#### DISCUSSION.

DR. H. A. TOMLINSON, St. Peter: I have the records of about two hundred and fifty cases among the insane, and about thirty others, with regard to the postmortem findings in the cerebral blood vessels. My attention has been called particularly to the significance of the interference with the egress of blood from the brain, and I find that but little attention has been paid to this aspect of the subject. In the average individual, after 35 years of age, there is some pial adhesion at the vertex, interfering with the emptying of the pial veins. In the defective and the degenerate, the tendency is for these adhesions to extend forward, finally involving the drainage of the area of the frontal lobes particularly. On account of the peculiar arrangement of the outlet of the pial veins into the sinus, the narrowing of the lumen of this outlet is a cause of serious obstruction; while the pial adhesions along the median fissure, and at the base, interfere with lymph drainage. Therefore, aside from the diminished blood supply, resulting from the arteriosclerosis, there are the factors of the retained waste products, and the mechanical effect of lymph accumulation in the arachnoid space.

I have been interested to note two apparently different types of degeneration in the cerebral vessels: the one the usual productive periarteritis or endarteritis; and the other the not so common atrophic form of degeneration, in which there is apparent atrophy, beginning in the intima and extending to the media. This is the usual senile change, and just to the extent that it is presenile, do we find the symptoms resulting from chronic cerebral anemia: the confusion in mental effort, loss of memory and progressive muscular weakness, which disappears after a period of rest and improved metabolism, only to reappear on the resumption of active life.

1. Beitrag zur Aetiologie der Blutungen in Pons und Kleinhirn, Diss., Greifswald, 1904.
2. Deutsch. Arch. f. klin. Med., lxxxvi, 183.
3. Deutsch. Arch. f. klin. Med., 1905, lxxxiv, 384.
4. Ueber Aneurysmen der Gehirnarterien, Diss., Greifswald, 1906.
5. New York Med. Jour., June 9, 1906.
6. Jour. Nerv. and Ment. Dis., May, 1905.
7. Clinical Lecture on Intracranial Aneurisms and Meningeal or Extracerebral Hemorrhage, Clinical Studies, 1905-6.
8. Jour. Nerv. and Ment. Dis., April, 1905.



I believe that there is, under certain conditions, an angio-neurotic edema, involving small areas of the cortex, which gives rise to focal symptoms that disappear as suddenly as they come; also, that in the so-called uremic palsies there is a local ischemia followed by hypostasis; because, in all the cases that I have had an opportunity to observe these conditions existed in other organs or parts, and particularly in the kidneys.

DR. C. EUGENE RIGGS, St. Paul: I find in all cases that the use of the manometer is a matter of much practical importance. I remember a case of arteriosclerosis which I saw about a year ago. The patient had had a slight hemorrhage evidently, recovered from it, but complained of a great deal of dizziness and vertigo and much general distress and the indefinite symptoms which arteriosclerotics describe. The blood pressure registered 275, and then the tubing of the manometer broke, so that I could not measure the pressure further. Treatment for the relief of pressure proved efficacious. The patient is living very comfortably, but of course is still arteriosclerotic. I have had a number of cases in which much benefit has been derived by the use of the well-known remedy which we are almost inclined to disregard because of our familiarity with it, calomel. Calomel has some influence on metabolism and probably thus affects arterial tension.

The clinical picture of arteriosclerosis is very confusing. There are undoubtedly many forms of pathologic manifestations included under this name. Whether or not arteriosclerosis is due to toxemia affecting the smaller vessels and the capillaries and thus increasing the tension and after a while causing the change in the vessels, is a matter of theory perhaps, but certain it is that in these cases if the patient is put to bed and rested, given calomel and put on a light diet, usually the blood pressure will come down, and the vertigo will be materially relieved; and it is a very common thing to find the patient going on for years without any material change. Dr. Clifford Allbutt speaks of a case which he observed for nineteen years in which there were various attacks of hyperpiesis which were relieved, after which the patient was comfortable.

DR. JULIUS GRINKER, Chicago: It is the cases which present focal symptoms which trouble us rather than the ones presenting general symptoms of arteriosclerosis. We are often confronted with these cases and are asked: "Is this a tumor, or is it cerebral arteriosclerosis?" Only recently I have been puzzled, as never before, by a case in which I was consulted as to whether or not there was a tumor of the cerebellum. The symptoms were very much like tumor symptoms, and resembled one of the cases which Dr. Jones so ably described—almost a sister case in every detail. It was very difficult to decide whether we had to deal with a tumor causing vertigo and incoordination of the cerebellar variety, a type of cerebellar arteriosclerosis. I believe that the only way we can learn something about these cases is by having as many postmortem reports as we are able to obtain, and then correlating the symptoms with the findings, because this subject needs revision and classification. The symptoms are rather vague; we are often unable to make a positive diagnosis, because cases presenting these symptoms may turn out to be neoplasm or internal hydrocephalus, or generalized arteriosclerosis or aneurismal dilatation of the arteries at the base of the brain.

DR. ARTHUR S. HAMILTON, Minneapolis: We have, of course, many cases of cerebral arteriosclerosis, but gross changes, such as were found in Dr. Jones' cases, and yet not including the well-known military aneurism, are, I think, not very common. There is a fair number of instances of aneurism of some one of the cerebral vessels on record, but they are rarely recognized until they are found postmortem. In most of the individuals a previous diagnosis of brain tumor has been made but, if no symptoms have been present during life, death, when it occurs, is usually assumed to be due to apoplexy from the ordinary causes. Very rarely, when the aneurism is large, an accurate diagnosis has been arrived at through the recognition of a bruit, but this is quite impossible when the aneurism is small. In at least one of Dr. Jones' patients the symptoms were evidently due, not to the size of the aneurism acting very much as a tumor, but to the disturbance of the circulation in important parts of the brain. Aneurism of the cere-

bellar vessels is particularly uncommon, probably because these vessels do not receive the full force of the blood pressure from the middle cerebrals, and because they are not often the seat of emboli which lodge and occasionally produce aneurisms behind them. Very recently I had an opportunity to examine the brain of a comparatively young woman, in whom, following the development of a very extensive vegetative endocarditis, an embolus had lodged in the right Sylvian artery and, directly below the point of lodgment, an aneurism, about the size of a pea, had developed.

DR. W. A. JONES, Minneapolis: I want to emphasize the varying degrees of disease of the vessels other than the generally accepted arteriosclerosis. It seems to me that these cases emphasize the necessity of differentiating between arteriosclerosis and other diseases of the vessels. I appreciate the very great difficulty there is in making a positive diagnosis in any of these cases. The blood pressure in these cases is not great—in fact, it is often either normal or below normal. I do not know whether it would be helpful or not to take the blood pressure. It may be that that was improperly omitted. The venous return to which Dr. Tomlinson refers is a very natural sequence of the condition of the blood vessels that we found in these cases; and the obliteration or the simple subsidence of what was formerly a vessel would of necessity give rise to great changes in the cerebral circulation.

## CEREBRAL INHIBITION WITH RELATION TO MOTOR FUNCTION.\*

H. A. TOMLINSON, M.D.

Superintendent of the St. Peter State Hospital,  
ST. PETER, MINN.

From time to time there have been cases under observation in the St. Peter State Hospital in which there was loss of capacity to coordinate muscular movements involved in prehension and locomotion. These cases could not be placed in any of the usual categories, because there was no evidence of organic disease in the general nervous system. In some of these cases the loss of control of muscular movement was so great that any voluntary action was impossible, while in others there was, apparently, complete palsy. We never have been able to determine the nature of the involvement of the central nervous system in these cases, because there has always been more or less complete recovery of functional capacity, and none of the cases has come to necropsy.

So long as these peculiar manifestations occurred in the ordinary course of brain degeneration, they were considered to be a part of the sequence to these degenerative changes, as I reported in two papers on the subject.<sup>1</sup> However, a number of cases have been under observation during the past three years, the course of which would indicate that extreme incoordination of voluntary movement, and even palsy, may result from simple cerebral inhibition.

The term inhibition is used here to define that function of the cerebrum which interferes between the afferent impulse and the direct motor response. During the progress of development, in the integration of the nervous system, this function has resided in the ganglia at the cephalic pole, and its development has been in a direct ratio with the growing complexity of the conditions in the environment of the animal; also *pari passu* with the multiplication of the specially organized areas

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Sensory and Sensory-Motor Disturbance Associated with Insanity, *Jour. Nerv. and Mental Dis.*, October, 1892; The History of Three Cases of Peculiar Motor Manifestations in the Insane, *Jour. Nerv. and Mental Dis.*, December, 1892.



for the reception and transmission of afferent impulses. Along with the increasing complexity of the organization has gone a corresponding amplification of the reflexes, and an increasing diversity of the functional elements of which they are composed; so that in the most multiform, there is a sequence, resulting from the correlation of a series of simple reflexes that are primarily antagonistic. Consequently, if anything occurs to interrupt this sequence, or disarrange the series, the antagonism of the individual elements becomes dominant. Therefore, along with the development of that part of the nervous system concerned with inhibition, there has gone the building up of another portion, the function of which is to maintain the sequence among the elements of the reflexes, and the proper relation in the series; that is, the function of coordination.

In experimentation on the lower animals with regard to the conduction of sensation, and the resulting reflexes, it is first necessary to separate the cerebrum from the rest of the nervous system, in order to prevent the inhibition of the movement following the stimulus, or its modification; and to reduce the reflex to its simplest form. As we go up in the animal scale, the association of the reflex with the coordinate becomes so intimate, and the functions of the general nervous system so interdependent, that we can not separate them completely; until, in the highest forms, where this inhibitory control is greatest, this separation of the two is incompatible with the continuance of life. In other words, inhibition becomes so dominant that any sufficiently powerful shock to the general nervous system, and particularly one involving mutilation or separation of the spinal nervous system from its connection with the cerebrum, brings about an immediate and permanent cessation of activity. Even in those animals in which this isolation of the cerebrum is compatible with continued life, the necessary operation must be performed with the most delicate care, in order to prevent permanent inhibition of function. That is, the act of mutilation must be as free as possible from the elements of a stimulus. So far as I am aware, the converse of these observations has not been made, or at least not formulated with relation to incoordination and disintegration of motion in the most highly developed form of organization.

Any attempt at formulation of the process involved in the generation and coordination of the motor reactions involved in the highly complicated reflexes concerned with the adaptation of the individual to the varying conditions in the environment must necessarily be speculative, and, judging from recent discussions, we have lost a great deal of our supposed certainty as to the area of origin of the motor impulses for the most complicated reflexes. It has always seemed to me an inevitable deduction from the mode of development in the nervous system, that as soon as the organism has developed to the extent that impressions of different kinds, and various degrees of intensity, begin to arrive simultaneously in the central ganglia, the first and chief function of the elements in the central area must be to inhibit the efferent impulse, until the afferent impulses can be related and coordinated. As the nervous organization becomes more complicated, so as to be able to adapt the activities of the organism to the conditions in the environment, the number of elements that enter into the composition of a coordinate movement becomes not only very great, but these elements are also very

diverse; with the result that the movement becomes a series of related antagonistic reflexes, in a regular sequence. If anything occurs to break up this series, or to interrupt the sequence, the movement is incomplete, abortive, or entirely arrested. This can easily be illustrated in the new-born child. There is no coordinate movement except that involved in the act of nursing, which is a combination of motor impulses of the same type as the scratch reflex described by Sherrington. If the child is placed in the position to nurse, and just as it takes hold of the nipple, the bottom of either foot is stimulated, the movement of nursing is arrested. Again, if the child is nursing, and the stimulus is applied, the movement of sucking is arrested, to be renewed as soon as the stimulus ceases; provided the application of the stimulus is intermittent. If the stimulation is continuous, the child lets go the nipple and begins to cry. With each inspiration the voluntary muscles are relaxed; while with expiration they are contracted. At the same time the force of the heart beat is increased and the peripheral vessels are dilated. Here are a host of apparently unrelated reflexes brought into action, most of them antagonistic, but following each other in a regular sequence. The different compound reflexes may be tested in turn, but if any two antagonistic reflexes are stimulated at the same time, inhibition always results, to be followed by the gradual domination of flexion.

These observations have taught me that the new-born child is as good a subject in which to study the reflexes as is the decerebrate dog, and for the same reason, that is, functionally it is decerebrate. We may make accurate observations under experimental conditions, using the clinical opportunities that come to us in our everyday work, without the aid of elaborate laboratory apparatus; and I wish to impress on you that our institutions for the insane are unworked mines of neurologic wealth.

The development of coordinated movement in the infant follows the combination of antagonistic simple reflexes, so that they shall be supplementary to each other; but at any time these compound reflexes may be disintegrated by overstimulation of the flexion or extension element; or the movement may be entirely inhibited by the stimulation of an indifferent area having another form of functional activity. As the functional capacity of the cerebrum develops, these inhibitions become more frequent and active; until the response to the afferent stimuli is completely coordinated, and there is so-called voluntary motion. Thereafter, combinations of primarily antagonistic reflexes become more and more numerous, as the conditions in the environment become more uniform, and familiar by repetition; so that highly complex reflexes exist, apparently free from cerebral inhibition. But should any given combination of conditions in the environment change, so as to vary the intensity and relation of the resulting afferent impulses, the given impulse is first inhibited, and then its elements are recombined to meet the changed conditions. This is illustrated constantly in the futility and confusion that result when an individual is called on suddenly to meet unusual and untoward conditions in the environment, or when, for reason, he has lost the capacity to relate and coordinate the afferent impulses coming from accustomed environment.

Unfortunately, the motor reactions and reflexes have not been studied in the same detail in the human organ-



ism that they have been in the lower orders of animal life; so that there is a hiatus in our knowledge of the order in which cerebral inhibition has developed. Besides, we are prone to forget that there is no standstill in the functional capacity of the cerebrum. New modes of activity are constantly being integrated; combinations and recombinations; adaptations and readaptations are constantly taking place; increasing in complexity, or disintegrating into simpler forms. It is important, too, to remember when considering the development of the cerebrospinal nervous system, that there is a difference between anatomic arrangement and functional capacity. While anatomically there has been comparative uniformity, and in histology likeness, functionally there has been constant variation; often reversion; and sometimes almost complete disintegration of most complex reflexes. These variations are well illustrated in the modifications in functional capacity of the different special senses, by the artificial conditions which have grown into the human environment; so that the functional capacity of all the special senses has become more uniform, and instead of vision, smell, or hearing being conspicuously dominant, they share comparatively equally with the other senses the task of adaptation to the conditions in the environment; and yet there is neither anatomic nor morphologic change in the elements of their cerebral centers. So, too, it is possible that without anatomic difference or morphologic unlikeness in the elements of the brain cortex, there may be relative incapacity in the development of functional potentiality in the cortical areas of the highest forms of cerebral functioning; resulting in temporary or permanent failure under stress of the capacity for coordination and direction. Therefore, there may be disintegration of function and disassociation of the elements of complex motor activities, without lesion or morphologic change in the histologic elements of the cortex of the brain.

Sherrington<sup>2</sup> has shown in detail how the reflexes are built up, but he first eliminates the inhibitory function of the cerebrum, and he does not show how these reflexes are combined, controlled and the efferent impulses directed in so-called conscious effort by the cerebrum; although, in the last chapter of his book, he sums up the relation of the cerebrum to motor activity from the standpoint of our present knowledge.

From observations of new-born children I have learned that, in order to construct a compound reflex, it is necessary that all the afferent impulses should be received in their proper order and related in their habitual sequence. When this order and sequence are interrupted or incomplete, the efferent impulses are inhibited, and then the reflex is modified. From observations among the insane, it has been found that the progress of degeneration in dementia brings about a similar state; so that as the capacity for relation, coordination and direction are lost, inhibition becomes dominant. Then, in the presence of physical deterioration, or some cause of vasomotor disturbance, there are various degrees of inhibition, ranging from incoordination to palsy, usually in the functions of prehension and locomotion and next in the acts of articulation and deglutition.

The following case histories illustrate this contention:

*Patient.*—L. D., woman, born in Minnesota, 27 years old, a farmer's daughter.

*Family History.*—The paternal grandmother is still living; the other grandparents died in old age after healthy lives. The parents are still living and in good health. There are six children in the family, and all of them in good health except the patient. The parents were in good physical condition at the time of the conception of this child: she was healthy as a baby and during her childhood she began to menstruate at 14 years of age; the function was established without disturbance, and she was healthy until her nineteenth year, when she had "spasms" for two days, and since that time is said to have had "epilepsy."

*Personal History.*—Ten months before coming to the hospital it was noticed that when alone she would talk incoherently to herself. After this time she became suspicious, and when interfered with, violent; also noisy and profane. She believed that her family wanted to harm her, developed furtive suspicion, was sullen and obstinate, would attack any one who came near her, and destroyed her clothing and the furniture.

*Examination.*—She was admitted April 8, 1907. She was poorly nourished, the skin was dry and harsh, the flesh flabby. She weighed 103 pounds, although tall and large boned. The chest was depressed above the clavicles; the circumference 75 cm., expansion 4 cm. Resonance was impaired over the apices, sibilant râles were present in the interseapular region, and moist râles in the subseapular region. The heart was slightly enlarged, the sounds were clear and distinct; the aortic second sound was accentuated. There was no atheroma apparent. The abdomen was flattened, its walls thin. The tongue was heavily coated, the appetite poor, digestion impaired, and she was constipated. The labia minora were hypertrophied, the hymen lacerated, the uterus small and anteverted. Apparently the ovaries and tubes were healthy.

*Urine:* The urine indicated chronic renal congestion, and functional inadequacy of the kidneys. Indican was much increased, there was a small amount of albumin, deutero-albumose, acetone and diacetic acid, as well as numerous uric acid crystals.

*Muscles and Reflexes:* The muscles of the face were under poor control, but the movements of the eyes were coordinate, and the tongue was protruded readily in the median line. The pupils were 5 mm. in diameter, equal, and reacted to light and accommodation. The hand grasp was 48 in the right and 38 in the left, and there was no paresis. There was slight tremor about the mouth, intention tremor in the tongue, and slight rest tremor in the arms. The superficial reflexes were present; the knee jerks were exaggerated, and increased on reinforcement. There was no ankle clonus. Coordination was poor in both arms and legs. On account of the dulness and suspicion, common sensation and the special senses could not be tested.

*Mental State and Motor Disturbance:* She was untidy and indifferent; stooped, walked unsteadily, hopped, and dragged her feet. The expression was vacant, she did not respond to questions except by yes or no, but whispered incoherently to herself. She was alternately exalted and depressed; restless, irritable, and there was auditory and visual hallucination. When asked to do a thing she would twist herself about spasmodically, say "I can't," make a great many futile efforts and purposeless movements, and finally accomplish the coordinated movement. When alone she would grimace and gesticulate, and her body and lower limbs twitched. In trying to sit down, she would look about her, grin, grasp the chair, put her left knee on it, and then drop down with the left leg doubled under. She had a shuffling, unsteady gait, and was apparently in constant fear of falling. When food was given her she would make no effort to feed herself until after some of the food had been put in her mouth, when she would go ahead and eat a hearty meal. She could not take off or put on her clothing alone; while in getting out of or into bed, she would make a number of ineffectual efforts, with gesture and contortion; finally rolling and throwing herself on to her feet, or into the bed.

*Course of Disease.*—During the first month she was in the hospital she was in worse condition than when admitted; became disturbed, restless, noisy, and at times filthy. The incoordination was more extreme; so that efforts toward prehension and locomotion were almost entirely futile. In her efforts to go from place to place, she would twist her shoulders, throw

2. The Integrative Action of the Nervous System.



the elbows out from the body, make a few uncertain dragging movements with the feet; lean forward, then take several rapid steps backward; and finally with a propulsive impulse she would start forward on a run; finally settling into a walk in the direction she wanted to go. When asked to shake hands, she would slowly extend the arm in an uncertain movement, suddenly withdraw it, go through a number of gyrating movements of the body and arms; then after several futile efforts propulsively extend the arm and shake hands. The nurses frequently helped her to walk by moving her feet forward alternately for several steps, until she could coordinate the movement and walk without assistance. She gradually improved physically, but remained suspicious, irritable, obstinate; kept by herself, was usually sullen, and sometimes noisy, profane and disposed to be violent. Later the motor incoordination grew less, she could move about without much difficulty, became brighter and more cheerful, and began to occupy herself in various ways.

In December she weighed 140 pounds, was in good physical condition and much improved mentally. Her parents took her home and when last heard from there was no incoordination, and she was engaged in the usual activities of a farm household.

*Patient.*—J. M., man, aged 21, born in Minnesota.

*Family History.*—The father, a healthy, vigorous man, was, when a young man, a lumberman. The mother is, and always has been, neurotic. No definite information could be obtained concerning the grandparents.

*Personal History.*—The patient was born at full time, the mother was able to nurse him, and he had no serious illness during childhood. He was not so bright as his brothers and sisters, was obstinate, and not amenable to discipline. Punishment made him sullen, and neither stimulated nor deterred him. While apparently fond of his family, he never expressed any feeling for them, and did not actively share the joys and griefs of his brothers and sisters. He did not associate with other children, but stayed either with his parents about the house, or in the company of other adults. He was very selfish, inconsiderate of his parents, and even as a child responded to bribes only. Punishment did not affect him. From the time of the period of second dentition, he would, when alone, stand staring into space, apparently oblivious of his surroundings. Often he would stop in the middle of the street and look about him, apparently at nothing, for half an hour at a time; and he would stop outside of the house, regardless of the weather, for an indefinite period, unless he was called in. He was always in good physical condition, ate and slept well, and grew as rapidly as the other children. He spoke rapidly and explosively, did not stutter, but would leave out words, or repeat himself frequently. He did not take much exercise, but read a great deal, apparently only to occupy his time. He was naturally furtive and deceitful; disinclined to work; but ingenious in hiding his derelictions. He had no sense of responsibility or moral obligation, and although he learned easily, he would not go to school regularly, and did no work after he was 20 years old, but hung about dance halls and cheap theaters; he came in late at night and was never willing to tell even his brother of his movements. So far as could be found out he neither drank nor frequented houses of prostitution, but in the spring of 1905, when he was 21 years old, he wanted to marry a street walker.

*Development of Incoordination.*—In the autumn of 1905 his peculiarities became more marked, he became ugly and disposed to be violent toward the members of the family. In February, 1906, he came home late one night in a cab, said that he saw a man drop dead, and was so frightened that he was afraid to come home alone. After getting home he was afraid to stay alone. This fear persisted, he talked more rapidly, repeated oftener, and was sometimes incoherent. At this time it was also noted that it took him a long time to eat his food; also to dress and undress. He walked very slowly, was careful of his steps, and examined anxiously the space in front of him before taking a step. He would not go anywhere out of the house unless accompanied by his parents. He was placed in a hospital; soon became confused; later stupid; passed his urine and feces in bed; required constant

personal care, and seldom spoke. He took little food, became emaciated, and either could not or would not use his arms or legs in prehension or locomotion. His parents, thinking he was going to die, took him home; but soon after getting him home he began to improve physically, looked after his own secretions, and was apparently not so timid, although he was very deliberate in his movements. It was soon after this time that I saw the young man in consultation.

*Examination.*—The patient presented the appearance and manner of a boy of 14 years of age, and there was practically no hair on his face. He was awkward, self-conscious; with extreme facial mobility, general restlessness and emotional exaggeration. In attempting to shake hands he struggled vainly for some time to bend the elbow and raise the hand; moving the other arm and the body, but he was unable to raise the arm or extend the hand. Finally, after a number of futile efforts, he suddenly put out his hand and shook hands. He also had considerable difficulty in letting go the grasp of the hand; going through a number of gyrations with the arms and contortions of the body before he could let go. He spoke rapidly, repeated almost every word, was apparently in constant motion; yet never succeeded in doing anything until after continued effort. When he undertook to pick up a knife, spoon or fork, the same series of unavailing efforts were made; and after the object was taken into his hand, another series of efforts was made before he could begin to make use of the object. After he was started, however, he could continue any combination of movements indefinitely, but he had the same difficulty in stopping that he had in starting. It took him sometimes fifteen minutes to start to move, but having started, he could move in a straight line indefinitely, but at a turn, or in stepping from one level to another, the same struggle took place. If asked to pick up a pencil and write, he would make a whole series of movements before he succeeded in grasping the pen. The pen in his fingers, there followed a spasm of the muscles of the hand, lasting about half a minute. Then he would start to write, getting along without difficulty, and writing fluently, either spontaneously or from dictation. It was as much of a task, however, to let go of the pencil as it had been to pick it up. In walking, if he saw some one coming toward him, or if, in crossing the street he saw a team coming toward him, he became rigid and could not move again until after considerable effort. Every thing he undertook was a repetition of the series of inhibitions and incoordinate movements here described. Nothing wrong could be discovered in the motor or sensory functions of the nervous system, and he was in good physical health, had a good appetite and slept well, and yet every voluntary effort was inhibited by an antagonistic reflex.

*Treatment.*—The treatment, aside from the employment of a tactful and strong-willed nurse, was the systematic retraining in coordinate movement of all of the muscle groups. In the course of three months the young man was much better, and he has slowly improved since that time, so that he can now go anywhere alone and care for himself. The mental enfeeblement is, of course, permanent; he is still very emotional, speaks very rapidly, and has practically no self-control.

*Patient.*—A. T. L., woman, born in England; single, aged 17 at the time of admission. The father, a farmer, is living; the mother died in childbirth. No other history of the family could be obtained.

*History.*—The patient, one of twins, was born after a difficult labor. The other child was born dead, and the mother died soon afterward. When nine months old the patient had convulsions and "severe fever." Following the convulsions she had a left hemiplegia, from which she gradually recovered. She began to menstruate at 14 years of age, and soon afterward developed epilepsy, the convulsions being nocturnal at first. She became dull, irritable, obstinate, and at times violent.

*Examination.*—When admitted to the hospital February, 1907, she was disturbed, noisy and violent. She was well-nourished, the flesh firm and vitality good. There was no evidence of disease in the chest or abdomen. There was some indigestion and she was constipated. The urine indicated renal inadequacy and there was some albumin and casts.



**Muscles and Reflexes:** The face was asymmetrical. The tongue was protruded readily, but deviated to the right. She stuttered. The pupils were dilated and equal. There was some twitching of the eyelids, slight intention tremor in the limbs; the knee jerk was exaggerated and increased on reinforcement; coordination was fair and there was no clonus. She was too dull and irritable to make subjective tests.

**Course of Disease.**—During the time of her residence in the hospital her history has been the usual one of a demented epileptic. Explosive outbreaks followed by periods of dullness, and occasional intervals of comparative brightness. In the spring of 1906 it was noticed that she was very awkward and was gradually losing the power of motion in the lower limbs, so that she stumbled and fell frequently. For some time previously she had been having an unusual number of convulsions, was irritable, obstinate, and frequently explosively violent. The weakness in the lower limbs increased, the paresis being apparently more marked in the extensors, until in June there was complete paraplegia.

**Description of Paralysis:** The paralysis was spastic and most marked on the left side. Each group of muscles, however, responded to stimulation and there was no reaction of degeneration. The paralysis slowly disappeared, but the incoordination remained for about a year. At present she is awkward and has a rolling gait. During the time she was in bed numerous tests were made of the coordination in the arms, with the result that movements of prehension were at first difficult, and at the time the paraplegia was most complete, impossible. Even now considerable effort is necessary for her to take anything in her hands. When she is dull the incoordination is still marked in both upper and lower extremities, but during her brighter intervals, she has very little difficulty in either prehension or locomotion. However, if she becomes disturbed for any reason, she begins to stagger, and if not supported will fall to the floor.

These three cases were chosen because they formed a sequence, showing the varying degrees in the development of inhibition, according to the extent of the primary defect in the nervous organization, and the advance of the process of dementia. I have seen these inhibitions in the terminal stages of general paresis, and they, for obvious reasons, are frequently present in hysteria. Indeed, in hysteria, the palsies and contractions are graphic illustrations of disintegrated compound reflexes, primarily due to inhibition.

There are, however, in every-day experience, frequent examples of inhibition, resulting from fear or other emotion; and it is to be noted that these examples are conspicuous just in proportion to the instability of the individual in whom they are manifested.

The pathology of this condition is obscure, and it has no morbid histology, so far as the brain cell is concerned. There is no means by which we may become familiar with the process involved, because even in those cases in which the incoordination or palsy persists the secondary degenerative changes obscure any primary alteration that might have been present. However, the evidence furnished by current knowledge of the physiology of the brain shows fairly conclusively that the function of inhibition is most highly developed in the cortex of the middle portion of the frontal lobes anterior to the precentral fissure. That is, the areas connected with the lower, middle, and upper portions of the anterior central convolution. It would seem that these areas are grouped together functionally with relation to motion, just as the inferior and superior parietal lobules are grouped with the subdivisions of the ascending parietal convolution with relation to sensation. As I have stated in another connection,<sup>4</sup> atrophy in the cortex, in the

progress of degeneration, always begins in the convolutions of the operculum, and is usually most marked over the posterior portion of the second and third frontal convolutions on the left side, in right-handed persons. Again, in the defective, this is the part of the brain that is least well developed. I have found, also, that it is in this area, in the blood vessels distributed to the cortex, that atheroma, with white streaks along the vessels, appears first. Besides, the veins in the frontal area are always the most tortuous and distended, and their entrance into the sinus most narrowed by the pial adhesions along the median fissure; so that there is not only interference with nutrition and elimination, but a mechanical cause for atrophy in the accumulation of fluid in the arachnoid space.

We have recently had the opportunity to see these conditions in two cases of cranial vivisection, in one case while searching for the assumed cause of mental degeneration in an old cranial injury. Although the site of the injury was over the left superior parietal lobule, the atrophy was about the insula. The arachnoid space over the frontal lobes was distended with fluid, and there were white streaks along the vessels. The brain did not pulsate. There was no evidence of change at the site of the injury, except some thickening of the outer table of the skull. This patient, a man, was confused, irritable, often denuded himself, and wanted to "get away from here." That is, there was reversion to the animal tendency to seclusion.

The other case was one of epileptiform convulsions, with confusion and explosive outbreaks of violence, procursive, and the sequence to visual and auditory hallucination. The convulsions followed a severe attack of typhoid fever, during which delirium had been severe, and the convulsions had continued for twelve years. They had been infrequent at first; then occurred in groups at irregular intervals. These intervals became shorter, and about a year before coming to the hospital the patient was noted, when alone, to laugh and talk incoherently to himself. About three months before he was admitted the convulsions became rather frequent and the mental disturbance active. The convulsions, although usually general, began in the muscles of the right side of the face. After the convulsion he was very much confused for several days. During one of these periods of confusion, in a procursive explosion, he jumped out of the window, ran some distance from home, and hid in an old barn. It was after this escapade that he was committed to the hospital.

When the cranial flap was turned down on the left side, an area of thickening in the dura over the operculum was found, and underneath a retention cyst in the pia. The brain bulged into the opening and the convolutions were flattened. The arachnoid space over the frontal lobes was distended with fluid, there were white streaks along the vessels, and the veins were distended and tortuous. The brain did not pulsate, until after pushing a trocar into the lateral ventricle and draining out considerable fluid. In this case there was not much atrophy, but the convolutions were flattened by the intraventricular pressure—the periods of confusion corresponding with the accumulation of fluid resulting from the hypostasis following the convulsion.

In neither of these cases was there any incoordination, and both patients were men in middle life. They are referred to here to show the condition of the brain in acute mental disturbance in the course of chronic

4. The Motor Degenerative Sequence in Dementia, *THE JOURNAL A. M. A.*, Oct. 27, 1906.



degenerative change, and because they suggest the probability that in all cases of confusion and stupor there is pressure from an increased amount of fluid in the lateral ventricles; while in the cases that are disturbed the fluid is probably over the convexity.

In my experience inhibition and incoordination occur only in those cases in which the degeneration is primary and begins during adolescence, that is, when degeneration begins before development is complete. In these individuals the higher functions of the brain are necessarily imperfectly developed, with the consequence that coordination and direction are not completely organized. Therefore, anything that lowers vitality may put these functions in abeyance, and leave inhibition dominant, just as in the normal individual unusual and untoward conditions may operate to produce the same result in the undeveloped and inexperienced.

### IMPERFORATION OF THE LACHRYMONASAL DUCT IN THE NEW-BORN, AND ITS CLINICAL MANIFESTATIONS.\*

WILLIAM ZENTMAYER, M.D.

PHILADELPHIA.

The common clinical manifestation of obstruction to the lachrymonasal duct in the new-born has been usually described under the term "congenital dacryocystitis," a very unsatisfactory one as a cystitis is not usually present, and when present is of secondary origin. Jackson<sup>1</sup> has recently written on the subject under the title of "Delayed Development of the Lachrymal-nasal Duct," an entirely proper term, in a restricted sense, but not intended to cover all the conditions which may give rise to the symptoms of so-called congenital dacryocystitis.

Until the appearance of the paper of Peters<sup>2</sup> but little consideration had been given this interesting and important subject and it is only within the past decade that frequent references to it are to be found in literature. Few of these are by American authors, and these mostly within the past three or four years. Historically, it is of interest to note that in the first edition of the Graefe-Sämisch Handbuch, Schirmer states that until Critchett published his cases, infants at the breast were considered exempt from dacryocystitis (Kipp). Kipp<sup>3</sup> says his statistics show that 10 per cent. of all cases of dacryocystitis, among which were several cases of phlegmon of the sac, occurred in children, under 1 year of age. But it was not until the appearance of the paper of Peters that the subject was broadly considered, and a causal relationship established between the clinical phenomena and the developmental peculiarities of the lachrymal passages. The investigations of Rochon-Duvigneaud,<sup>4</sup> Vlacovitch,<sup>5</sup> Stanculeanu,<sup>6</sup> and others, established from anatomic research the existence of structural abnormalities as well as delayed development as causes.

As it is the author's purpose to present principally the clinical side of the subject and to emphasize the method of treatment which he considers best meets the indica-

tions, no extended account of the embryology of the tear passages will be given.

#### EMBRYOLOGY.

The accepted view of the development of the lachrymonasal canal is that in the young fetus there exists a groove between the external nasal, the frontonasal and the maxillary processes, extending from the eye to the outer border of the nasal opening. The nasal duct arises as a thickening of the epidermis along the line of the lachrymonasal groove. This forms a solid ridge, which separates, except at each end, and forms a solid cord (Ryder). This cord becomes converted into a canal by a separation of the epithelial cells. The resulting debris, up until the seventh month or later, fills the canal with a gelatinous mass.

#### ETIOLOGY.

The possible causes of the condition manifesting itself as a discharge from the puncti, a distention of the sac or an abscess in the new-born are sixfold: (1) Delayed separation and necrosis of the epithelial cells forming the cord from which the canal is formed. (2) Retention of the separated cells through imperforation of the septum between the lachrymonasal duct and the nasal chamber. (3) Through obstruction due to annular folds of the mucous membrane which may form at any point within the duct, Henschke's and Hasner's valves. (4) Faulty development of the cartilages (D. Gunn<sup>7</sup>). (5) Partial occlusion by pressure of inferior turbinate. (6) Stenosis from pressure exerted on the bones of the face during instrumental labor. (The last group is a suppositional one, suggested by Peters' observation that in one of his cases there were marks of the forceps over the nose on the side corresponding to the discharge from the punctum.)

The majority of the cases doubtless fall under the second group, as here the cause is one for which the anatomic possibility exists in every fetus. It would seem probable that this affection might be found proportionately more frequently in the prematurely born as the septum is usually present until shortly before birth, but Stanculeanu<sup>6</sup> found the condition of so-called congenital dacryocystitis present only four times in twenty embryos at the seventh month, the period previous to which, according to this writer, the lachrymonasal duct is never patulous. He believes that this observation overthrows the classical theory as to the pathogenesis of this condition. He was, however, unable to demonstrate an infection to explain the cases that he did observe; but Rochon-Duvigneaud<sup>4</sup> holds that to produce this condition there must be an exaggerated proliferation of the epithelium of the canal. Morax believes that infection first takes place after the birth of the child, and therefore considers the term "congenital dacryocystitis" incorrect.

#### COMPLICATIONS.

A distention forming a diverticulum at the lower part of the sac is an associated condition, the presence of which, often suspected from the clinical phenomena (Vossius,<sup>8</sup> D. Gunn,<sup>7</sup> Addario) has now been demonstrated in section by more than one investigator (Rochon-Duvigneaud,<sup>4</sup> Vossius<sup>8</sup>). This abnormality may be due to a faulty development, or as is more often the case, by distention of the duct by retained epithelial debris and mucous secretion. The latter, as pointed out

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Ophth. Rec., July, 1907.

2. Klin. Monatsbl. f. Augenheilk.; also Ztschr. f. Augenheilk., 1899.

3. Trans. Am. Ophth. Soc., N. Y., 1879.

4. Arch. d'ophth., February, 1899; February, 1900.

5. Beitr. z. Augenh., 1892 (Nagel's Jahresh., ii).

6. Arch. d'ophth., February, 1900.

7. Ophth. Rev., February, 1900.

8. Beitr. z. Augenh., i, 1891.



by Bochdalek, forming a consistent mass, may, in itself, obstruct the lumen of the canal and hinder egress to the nose. Mayou<sup>9</sup> has shown that throughout development the lower end of the lachrymal duct is extremely small and remains so at birth, being partially occluded by pressure of the inferior turbinate bone. That a catarrhal or even purulent conjunctivitis may be excited by the contents of the lachrymal sac was demonstrated by Ollendorff's<sup>10</sup> cases and by the cases of Gunn,<sup>7</sup> where the inflammation of this membrane at once subsided when the duct was made patulous.

Lachrymal abscess figures as a sequel to atresia of the duct. D. Gunn<sup>7</sup> has seen five cases of this nature in infants ranging in age from nine days to six months, in which the method and result of treatment left no doubt as to the origin. Mayou<sup>9</sup> has treated eight cases occurring in the first few weeks of life the result of secondary infection from ophthalmia neonatorum or from organisms which may gain entrance to the lachrymal sac. Van Duyse,<sup>11</sup> Selenowsky<sup>12</sup> and others record like cases.

#### SYMPTOMATOLOGY.

It needs but a brief chapter wherein to describe the symptoms by which congenital obstruction of the lachrymonasal duct presents itself. Immediately, or within a few days after the birth of the child, a small amount of white or yellowish-white discharge is noticeable at the inner angle of the eye. The conjunctiva is usually normal, or but slightly injected. There may or may not be fulness over the sac. Pressure applied over this region may cause a gelatinous white fluid to exude from the punctum. If there has been distention, the pressure may cause the fulness to disappear, accompanied or not by a discharge from the puncti or from the nose. In some instances there is associated a catarrhal conjunctivitis, which occasionally takes on a purulent type.

If proper treatment is withheld, under the influence of winking, the conjunctival secretions penetrate and infect the gelatinous contents of the sac and excite an inflammation which may continue as a subacute condition or kindle an acute process.

The affection is very rarely bilateral.

#### BACTERIOLOGY.

As might well be expected from the circumstances, a great variety of micro-organisms have been found in the secretion. Mercanti<sup>13</sup> saw a bacillus resembling the coli communis. The gonococcus of Neisser was found by Antonelli<sup>14</sup> and Mayou,<sup>9</sup> the pneumococcus by Hirsch<sup>15</sup> and the *Staphylococcus pyogenes aureus* by Selenowsky,<sup>12</sup> and the Morax-Axenfeld bacillus by Mayou. Ball<sup>16</sup> states that the xerosis bacillus, the pneumobacillus and the *Bacillus fetidus ozena* have all been found.

#### PROGNOSIS.

This is undoubtedly good in a great majority of instances, as it has been shown that in those cases where there is either an incompleteness of the cleaning up process or an imperforation of the thin diaphragm at the inferior meatus, Nature, in time, corrects the trouble; but at any stage in the process, infection of the contents of the canal may determine an inflammatory process,

leading to abscess formation, if immediate drainage into the nose is not secured. An injury to the cornea, or a marasmic ulceration of the cornea, might endanger the safety of the eye, as evidenced by Selenowsky's case of phlegmon of the tear sac in the new-born in which the *S. pyogenes aureus*, of a highly virulent type, was present in large numbers. Purulent conjunctivitis may be set up by infection.

Considering that one careful observer has found that 25 per cent. of his cases of dacryocystitis occurred before the tenth year, it is likely that chronic dacryocystitis in the child may be looked on as a possible sequel to the congenital obstruction.

#### DIAGNOSIS.

To those familiar with the occurrence of the affection, its diagnosis presents no difficulties; but to the general practitioner, alert to possible occurrence of gonococcal conjunctivitis, the presence of a white secretion in the eye, just after birth, is a disturbing symptom. The absence of inflammatory phenomena, with puffiness of the lids, the benignity of the course, the usual monolateral development, and the scantiness of the discharge, should ease his mind, and if it does not, a microscopic examination of the discharge would.

Terson<sup>17</sup> has seen in a prematurely born, but well developed female child, a hemispherical fluctuating tumor, of about the size of a hazelnut, overlying the right lachrymal sac. It was absolutely irreducible and unattached to the skin. The nature of the cyst was problematic. According to Terson, the possibility of such a tumor being a meningocele, an encephalocele, or of the nature of a true prelachrymal serous or fatty cyst, must be borne in mind. The elder Terson removed from an adult the anterior portion of a prelachrymal cyst which was entirely independent of the healthy lachrymal passages, yet proved, histologically, to be made up of tissue normal to the lachrymal sac.

According to Terson the differential diagnosis between prelachrymal cysts of various kinds, and so-called congenital dacryocystitis is extremely difficult. In certain cases it must rest entirely on the irreducibility of the tumor.

#### TREATMENT.

Varied opinions are held concerning the proper management of these cases. Some surgeons (Weeks,<sup>18</sup> Jackson,<sup>1</sup> Peters,<sup>2</sup> Panas, Terson,<sup>17</sup> Valude<sup>19</sup> and others), believing that as the condition is one which, in the vast majority of instances, will correct itself in time, presumably without exciting any secondary disturbance, advise a simple collyrium, the use of solutions of silver, of pressure, and massage, until Nature has asserted herself, or for several months before employing operative procedures, Ollendorff,<sup>10</sup> Koster,<sup>20</sup> Cutler,<sup>21</sup> Rochon-Duvigneaud,<sup>4</sup> Parsons,<sup>22</sup> Bochdalek, Mayou and others<sup>23</sup> employ probing or syringing. Peters has, at times, used probes. Parsons, who holds a decided opinion as to the injurious effect of probing in the adult, apparently makes an exception in treating this affection in the young, as he states that a single probing usually brings

9. Roy, London Ophth. Hosp. Rep., xvii, 246, January, 1908.

10. Ophth. Klin., Jan. 20, 1907.

11. Ann. Soc. de méd. de Gand, 1892, lxxi, 11-19.

12. Vestnik oftalmol., xix, No. 1.

13. Atti d. r. Accad. d. fisiocrit. di Siena, 1892.

14. Quoted by Vossius, Ann. de méd. et chir. inf., 1905.

15. Arch. Ophth., 1907, xxxvii, 61.

16. Modern Ophthalmology.

17. Arch. méd. de Toulouse, 1904, 306-310.

18. THE JOURNAL A. M. A., Dec. 10, 1904, p. 1760.

19. Bull. Soc. de pédiat. de Paris, 1899, i.

20. Graefe's Arch., Nov. 5, 1905.

21. Arch. of Ophth., May, 1903.

22. Brit. Med. Jour., Feb. 23, 1907.

23. Fejer: Arch. f. Augenheilk., February, 1907; Rabinovich: Russk. Vrach., St. Petersburg, 1902, i, 1206-1208; Kamueff: Vrach. Gaz., St. Petersburg, 1902, ix, 29; Levy: Paris Thesis; Jemollinski: Vestnik oftalmol., 1903, xx; Pechin: Arch. d'ophth., 1905.



about a cure. Mayou<sup>9</sup> believes that aspiration fails to clear the duct when there is congenital narrowing, and says that this view is further borne out by the clinical fact that, if one of these patients "is seen before an abscess forms, one careful passage of a probe is generally sufficient to effect a cure." Jackson, in quoting Weeks'<sup>18</sup> advice simply to cleanse the conjunctival sac and protect the parts until Nature has had a fair opportunity to establish a passage, and if this has not occurred at the end of two months to slit the canaliculus slightly and pass a small Bowman probe, states that he would not limit to two months, or even six months, the period in which it is proper to try milder measures, provided the symptoms are controlled by such treatment.

A successful method, not recommended by any writer, was witnessed by Copez. According to Van Duyse,<sup>11</sup> this author saw a lachrymal tumor rapidly cured by the nurse applying mouth suction to the nose of the infant.

As the possible results of delayed opening of the tear passages may be the occurrence of infection, with its usual sequelæ and dangers, it does not seem to the author a wise procedure to wait on Nature an indefinite period to eliminate this menace; especially as the therapeutic measures advised in the palliative treatment include the continued use of organic salts of silver at home, thus adding to the former dangers the one of argyrosis, the use of massage, a measure to which Ollendorff<sup>10</sup> ascribes the blame for the occurrence of necrosis in one of his cases; also, seemingly, disturbance of the nutrition of the infant (Cutler<sup>21</sup>).

No doubt the danger of allowing Nature to effect the cure would be slight if the patient could be kept under constant supervision, but this is rarely possible, especially when the treatment may be giving no tangible results.

As it seems to be the practice of some of these clinicians to use probes to overcome the obstruction when the expectant treatment has failed, it would appear to me that some such procedure is indicated at once, when simple pressure over the sac fails to give permanent relief. Maternal pride shrinks from displaying a pussy-eyed infant to the critical public, and the author has received from no one more grateful thanks than he did from a mother whose infant had been treated expectantly for weeks, and was at once cured by probing.

The result secured by probing in the first case of my series was so brilliant that I pursued the same course in my subsequent cases, and, with one exception, with the same success, namely, disappearance of the trouble after a single probing. In the exceptional instance it was necessary to repeat the probing three times.

Doubtless, for those unaccustomed to passing probes, it would be wiser to counsel measures requiring less skill. For this reason, syringing has been recommended by some, and while it is possible in some cases to force a passage in this way, it does not seem to me to be less difficult than probing, unless the baby be etherized, a measure which I have found unnecessary in passing probes.

Probing here is done under different circumstances from those in lachrymal obstruction in the adult. As a rule, no resistance is met with, and the probe readily follows the natural passage, which, according to Mayou,<sup>9</sup> is inclined much more backward than it is in the adult, a probe making an angle of about 45 degrees with the forehead when passed through the duct.

## DISCUSSION.

DR. EDWARD JACKSON, Denver: The classification given under the heading of etiology covers the ground thoroughly. But if we consider the lachrymal passages in general, including the adjoining bony and cartilaginous structures as well as the soft parts, all of the causes enumerated, except the conjectural one of pressure of the face during instrumental labor, would be included in faults of development of the passages. Generally the fault is merely a delay in reaching normal development. Failure to develop a lumen, converting the rod of epithelium, which generally marks the site of the lachrymal passages, into a tube, might occur at any point. Most frequently it occurs at the nasal end of the passage; but probably in an important proportion of cases it is one of the so-called valves that fails to become pervious. Some such structures are generally present at some stage of development, but mostly they become pervious before the lachrymonasal septum.

The condition is most likely to be confused with conjunctivitis in the new-born; not with gonococcus conjunctivitis, but with certain subacute or chronic forms that are not rare. In these cases of conjunctivitis the discharge is whitish or gray, the conjunctival sac is likely to present some accumulation of tears, and the persistence of the condition is quite suggestive of lachrymal disease. One is scarcely justified in making the diagnosis of lachrymal obstruction in the new-born unless there is actual evidence of accumulation in the sac and regurgitation of the matter on pressure.

Knowing, as we do, the strong tendency to continued development of the passages and the probability of ultimately securing in these cases completely normal lachrymal apparatus in the end, without operative interference, I watch for complications, and so long as they do not arise avoid any operative interference other than frequent gentle pressure over the lachrymal sac. I have not seen any case of staining from silver salts in infants; but the use of silver preparations is not a necessary part in the expectant treatment of infantile lachrymal obstruction. Solutions of boric acid or sodium chlorid used to cleanse the eye at frequent intervals probably serve the purpose equally well. It is but right that the parents of an infant presenting this condition should be fully informed of the nature and probabilities of the case, and allowed to choose whether or not any operative measure should be resorted to. At the same time they should be informed that the condition could probably be relieved by a simple probing, and that complications might arise which would render operation urgent. When mechanical interference is to be resorted to I prefer the passage of a probe of moderate size through the temporarily dilated punctum. This is not wholly without risk even in skilful hands, but the risk from attempting to force a passage with fluid from a syringe is at least equally great. Syringing has been looked on as quite safe and conservative, but the permanent staining of the skin by argyrol and the orbital cellulitis with optic nerve atrophy, which have been reported after syringing the lachrymal passages are serious possibilities. The risk of mechanical injury at the time of treatment seems quite as great with the syringe as with the lachrymal probe.

DR. S. L. ZIEGLER, Philadelphia: I think that these cases of congenital occlusion of the duct are sufficiently rare so that we should place on record any that we may have seen. In twenty years I can recall having treated only two cases. The first was a case of dacryocystitis which occurred between the first and second months. There was no involvement other than the dacryocystitis with mucopurulent discharge. The valve of Hasner was probably closed, thus preventing the passage of tears down into the nose. The case occurred fifteen years ago, and I have had occasion to see the young girl within the past year. She has had no further trouble. My treatment at that time was a single rapid dilatation of the duct, which was practically all the treatment that the child had. The second was a case of atresia with epiphora, in which no remedial measures would bring about a passage of the tears. This case was also promptly relieved by rapid dilatation. The parents bring these children to us for relief,



and if this is not promptly obtained by remedial measures I think that the question of dilatation is quite within the bounds of conservative surgery.

DR. C. J. KIPP, Newark: I wrote on this subject twenty-nine years ago and am surprised to hear the last speaker say he has seen so few cases. I see cases at least once a month. They come as cases of ophthalmia limited to one eye. In all cases treated within the last ten years I have used simply cleansing and pressure and have not had to use a probe in any case. The cases that come with abscess of the lachrymal sac are those that have been probed by other oculists. Cases that come to me within a couple of weeks after birth are cured in a very short time by simple cleansing and pressure. You must instruct the nurse or mother to exert pressure properly to direct the secretions downward. If you do it yourself you can often feel the obstruction give way. I think that the best plan, even for a skilful oculist, is to avoid probing. You can get along without it. Of course, it makes more of an impression on the mother and friends to use the probe, but it is more beneficial to the patient to use the finger.

DR. HIRAM WOODS, Baltimore: I recall four cases that I have followed very closely. One got well without any treatment whatever. It was simply treated on the expectant plan, expressing the secretion and cleansing, and in two months the whole thing disappeared. The other cases were treated by probing under anesthesia. In two cases one single probing effected the cure. In one of the cases a difficulty arose in getting a probe down into the nose. The small No. 2 Bowman passed a short distance, then stopped, and it was impossible, without exerting more pressure than I cared to use, to introduce it further. It occurred to me that the difficulty might be a catarrhal swelling of the mucous membrane. After two weeks of waiting a third attempt took the probe directly into the nasal cavity without effort and the case has remained well now for six months. I think that it is extremely important to realize in the introduction of probes into the infant lachrymal duct that when mucous secretion has persisted there is possibility of a good deal of swelling in the lower end of the duct and rough manipulation may do a good deal of harm.

DR. W. ZENTMAYER, Philadelphia: In my first case the patient had been treated by a local ophthalmologist for catarrhal conjunctivitis. An immediate cure followed the passing of a probe. It was the gratitude of the mother in this case that caused me to pursue the treatment advocated in my paper in subsequent cases. It is very unpleasant for a mother to have an infant with a purulent eye to show her friends and she is grateful for having it cured by a single treatment. Dr. Jackson says that he would treat a member of his own family in the expectant manner. So would I, because I should have the patient under constant observation. In practice this is not possible, and if the treatment is giving no results, the patient is apt to be neglected and serious trouble may supervene. In the Rostock clinic and in the private practice of Professor Peters, but seventeen cases were observed between 1901 and 1908; so that the condition can not be considered a common one. Mayou, whose experience has been large, states that if these cases be seen before an abscess forms one careful passage of a probe is generally sufficient to effect a cure. Dr. Woods' difficulty in passing a probe in his case may have been due to that condition referred to in the fifth division of the etiology, "partial occlusion by pressure of the inferior turbinate bone."

**The Ocular Tuberculin Reaction.**—E. Waldstein in the *Prag. med. Wchnschr.*, Feb. 27, 1908, xxxiii, 9, warns against the use of the tuberculin ocular test in cases in which disease of the conjunctiva exists. He says that the reaction in such cases is much more severe than in sound eyes and may cause inconvenient results. The cutaneous method of von Pirquet, in which a healthy skin is expressly stipulated, is therefore preferable as it in no way endangers the health of the patient, while the conjunctival reaction often extends beyond the desired limits and sometimes causes permanent lesions.

## THE CORRELATION OF CLINICIAN, PATHOLOGIST AND LAYMAN.\*

BOND STOW, A.M., M.D.

Pathologist, Metropolitan Hospital, Blackwell's Island.  
NEW YORK.

Medicine has two fundamental objects in view, of equal and vital importance: first, the immediate relief of human suffering and the restoration of the individual to his normal standard of health; second, the protection and maintenance of the members of society in this normal state. The first strictly concerns the clinician, the second the hygienist.

Hygiene, although strictly founded on scientific medical data, nevertheless, so intimately is associated with many intricate sociologic problems that we recognize it as a science distinct and apart from medicine in its more restricted significance.

I wish to center your thought more particularly on clinical medicine or that intimate association between physician and patient in the diagnosis and treatment of disease, as well as to point out the inestimable service rendered both laity and the profession by the pathologist, the clinician's inseparable companion.

Virchow recognized the clinician as the close and confidential agent of the pathologist, as it is he who garners the data from life which the latter is to combine with those of his studies as he forges the chain of our understanding of morbid phenomena. The clinician must guard the truth and accuracy of his findings as carefully as the pathologist does the facts elicited by his work, so that when these combined data are received in the final summing up of the evidence the conclusions to be drawn therefrom shall rest on trustworthy premises.

The one can not be regarded as the superior of the other, for both reciprocally are dependent as they struggle in their respective spheres each to search out and collect the evidence which united deciphers Nature's hieroglyphics.

The clinician is often confronted with an array of symptoms as occult and intricate as the solution of a Chinese puzzle. It becomes his duty to separate the primary from the secondary symptoms, carefully to place each in its proper perspective, and therefrom logically to deduce a true conception of the actual underlying pathologic processes involved, for which he is to advise rational means that are to remove the cause and hence the effect. A comprehensive understanding of the etiology of disease, a vast bedside experience, in conjunction with a thorough knowledge of the fundamental truths of pathology, compose the tripod on which he must stand before attempting to solve the mystery. Even then the task is not always a simple one.

The clinician who is privileged to have his bedside conclusions reviewed by the pathologist is indeed fortunate, for thereby his errors become rectified, and after repeated humiliating disclosures stern necessity compels the cultivation of that spirit of intelligent criticism and conservatism so essential for mastery over the difficult details of medical science.

But he who knows not the blessings of pathologic criticism may go on and on, year after year, committing the same error over and over again because of the lack of this acquaintanceship with the pathologist, who, though occasionally quite discomforting to an oversensitive soul, yet nevertheless remains the clinician's best

\* Read before the Medical Society of the County of New York at its stated meeting, March 23, 1908.



friend. This correlation of clinical medicine and pathology is wisely acknowledged abroad both by the profession and by the laity and acted on accordingly, whereas here in America as yet it receives but scanty recognition.

With these introductory remarks, let us turn our attention to the inductive method of diagnosis, cursorily passing in review the two premises which constitute the basis of our bedside conclusions, the anamnesis and the status præsens. I shall try to point out a few striking instances of the erroneous diagnoses which frequently occur because these premises are too carelessly considered or even negligently disregarded.

The value of an accurately gathered anamnesis is of as much importance to the physician as the shrewd sifting of testimony is to the lawyer. Frequently when the clinical symptoms are too few or misleading we must rely quite implicitly on the anamnesis alone.

It is not easy to obtain a history sufficiently trustworthy to form the major premise on which to rest a diagnosis. Too great caution can not be taken to keep our patients in a calm confidential attitude so that the truth may be elicited without omission or modification from pride, fear, forgetfulness or overstimulated imagination.

Our interrogations should be as simple, clear, logical and few as the necessity of the individual case demands, for confusion in our minds inevitably will be reflected in the minds of our patients. Each statement should be accepted only after the most critical examination. The anamnesis, in some cases, of necessity must extend to the collateral branches of the family to trace the influence of the now universally accepted law of atavism.

Unfortunately, history-taking in some of our hospitals is frequently done in a perfunctory, hurried manner. This branch of the work is usually entrusted to the younger members of the house staff, who are as yet new and inexperienced and often show a sad tendency to slight this rather irksome yet, nevertheless, most important task for the more spectacular scenes of the bedside or operating amphitheater.

It would appear judicious for the profession to appoint a commission, composed of both clinicians and pathologists of long practical experience, to formulate some general plan of history-taking, strictly relevant and compendious, yet sufficiently comprehensive to meet the fullest requirements of medical science, so as to be accepted as a standard by all public hospitals.

The resultants of the work in our various hospitals must be combined into ultimate conclusions which shall represent the standards of medical thought and practice. The starting point for such a combination of forces is the standardizing of all hospital anamneses. The goal will be attained after the laity are educated to the point of placing reason above sentiment and permitting science to complete on the dead body the search for truth begun during life. When such ideal conditions prevail here in America then the statistics and generalizations of scientific medical data from our hospitals will be the more accurate and acceptable because of the vastly increased number of cases recorded under the one and same general plan of work.

Passing now to the status præsens or the physical examination of the patient, we find here a field productive of the widest differences among physicians. Hasty observations, with their ill-drawn conclusions, overconfidence, and, in many instances, common ignorance of pathologic anatomy, owing to the comparatively infre-

quent autopsies in this country, are among the causes for these differences.

No symptom can be too trivial to be neglected, for often an apparently insignificant symptom far distant from the seat of disease gives the sole clue that leads to a correct diagnosis.

It is a most mortifying as well as a serious error to assign as cause of pain in the knee some simple form of synovitis, and fail to detect an incipient coxitis; or to diagnose a sudden severe lancinating pain in the right hypochondriac region as due to cholelithiasis, and possibly operate for gallstones when simply dealing with a reflex pain caused by an attack of angina pectoris; or hastily to diagnose a daily hectic fever with slight amount of purulent sputum as an ordinary bronchitis, when a careful microscopic examination of the sputum would have disclosed the *Amœba coli* that came from a previous attack of dysentery, which, having caused an abscess of the liver with perihepatitis, finally ruptured into and produced an abscess of the lung; or to associate repeated attacks of epigastric pain and vomiting with simple catarrhal gastritis, when an examination of a twenty-four hour specimen of urine would have shown slight traces of albumin, with hyalin and granular casts, and thus enlightened the physician as to the true meaning of the uremic storm signals set up by an advancing interstitial nephritis.

Clinicians can not exercise too great care in establishing the reality of each concrete fact, whether positive or negative, that forms the basis of their bedside conclusions.

If the boundaries of the heart are asserted to be enlarged, or if a bronchial respiration exists at the base of a lung, or if it is positively affirmed that an empyema, for example, does not exist, or that a urinalysis proves to be negative, there must be no uncertainty of such premises, for thereon depends a conclusion that may be the means of saving or losing a human life.

I was recently confronted at the autopsy by a diagnosis proved to be wholly in error, simple because I did not pay sufficient heed to one of my major premises. On the following symptoms I had ventured a diagnosis of cerebellar tumor: Double choked disc, vertigo, cerebral vomiting, ataxia, increased and irregular respiration and pulse, loss of intelligence, difficult hearing and gradual muscular atony; urinalysis asserted to be negative so far as trace of albumin, casts or kidney epithelium. Signs of edema were absent.

The autopsy proved entire absence of any cerebral tumor. There was a slight cerebral edema, an acute hydrocephalus, and a chronic interstitial nephritis. Thus the symptoms of uremia were mistaken for cerebellar tumor because the evidence of a negative urinalysis was accepted from another, while there is no doubt a painstaking and searching examination would have given positive tests for albumin, casts, and possibly kidney epithelium, and thus at once would have revealed the true significance of the symptomatology.

Another source of error in diagnosis lies in the too hasty association of ideas. In a malarious district not every inhabitant with an enlarged spleen and an occasional fever necessarily has malaria; not every painter that comes complaining of cramps and obdurate coprostasis has chronic lead poisoning; not every cook that consults with reference to a hematemesis has a gastric ulcer.

Thus the knowledge gained by the occasional association of certain trades with certain diseases is directive



but by no means conclusive, and it is precisely in such cases that our analysis of the symptomatology and etiology of any specific case should be the more exhaustive and critical. These are the cases that demand shrewd judgment and draw on our largest resources if we are to give the proper values and deduce rightful conclusions.

The acquirement of the so-called "diagnostic glance" is solely obtained by a long patient schooling in this inductive method of diagnosis. It teaches us to grasp the important factors in any case and from them the lines of investigation that must be pursued and others that may be omitted for the want of time.

An abscess of the lung suddenly developing in the course of previous indefinite cerebral symptoms, as headache, somnolence, spasms, chills, and an irregular temperature, arouses at once a suspicion of lateral sinus suppurative thrombosis; whereas the same set of symptoms arising in a case of bronchiectasis, with the well-known drumstick fingers, a stinking sputum and hectic flush, should demand a thorough examination of the fundus of the eye for choked disc due to cerebral abscess.

Well-marked symptoms of indigestion, icterus, headache and extreme nervousness in a woman at full term would suggest acute yellow atrophy of the liver; but these same symptoms in a young despondent foreign girl of the working classes, instead of being a case of simple catarrhal jaundice, may be a case of phosphorus poisoning induced for the purpose of committing an abortion.

In emergency cases (particularly when coma is present) this well-developed "diagnostic glance" is of incalculable service. Here the physician must comprehend at a glance and act on premises rapidly if not too securely laid.

The work of the master in this respect is no trick of legerdemain, but the result of his thorough unerring knowledge gained through years of training in the inductive method of diagnosis and the fearless verification of those bedside conclusions at the autopsy. But humiliating, indeed, will be the experience of one attempting this rapid snapshot diagnosing who has not had the prerequisite bedside and postmortem training.

The failure thoroughly and systematically to examine our cases by the inductive method often leads to painful disclosures. The discovery of one lesion is no reason to cease searching for others, but on the contrary should be a stimulus for the discovery of complications or other independent primary lesions.

Among my autopsy experiments one pre-eminently illustrates the results of hasty clinical observations. A drunken man, run over by a wagon, had been brought into the hospital. After a hasty examination no lesion of a serious nature was diagnosed. A pleuropneumonia developed and the case was transferred from the surgical to the medical ward. Death intervened and the autopsy, performed by one of Europe's master pathologists, demonstrated a pleuropneumonia in consequence of twelve fractured ribs, six on either side. There was also found a complete fracture of one of the dorsal and one of the lumbar vertebrae, none of which lesions, according to the record, appear to have been diagnosed in life.

Although this represents an extreme case, nevertheless, reviewing my bedside and postmortem experiences, I can recall many instances occurring with painful frequency where eminent clinicians have been accused of the most egregious mistakes simply because pressed for

time, the overcrowded conditions of our hospitals prevented each patient from receiving the requisite care and attention his case demanded for a successful scientific issue.

This brings up a present burning question in regard to our hospital services: Why have we not more physicians on our hospital staffs; and why is not better and more scientific work demanded of each, together with quarterly or semi-annual reports accurately summarizing the work done in each department so that the profession generally may become a beneficiary? Not all are privileged to receive hospital appointments, but those denied such positions of power are none the less entitled to the full knowledge derived therefrom, not through the occasional spasmodic efforts of the few, but through regular complete reports stamped with official authority, detailing with equal impartiality and minuteness both the failures and causes thereof, as well as the commendable successes.

Public hospital appointments should be regarded as positions of trust, and the scientific emoluments resulting from such trusteeship as the common property of the entire profession. Only men especially endowed with natural talents, education and executive ability, actuated by a true love of science rather than personal preferment, should be chosen as the profession's trustees to such positions.

Furthermore, as evidence of their right and fitness for such trusteeship original scientific contributions gleaned from their individual fields of labor should be demanded of them by the general profession as its eminent right and privilege.

The satisfactory accomplishment of such scientific work in our overcrowded charity institutions would require a greater number of workers in proportion to the patients so that closer attention to detail might be given. Such an increase of workers, for harmony's sake and better scientific results, naturally would necessitate the abandonment of our present antiquated hospital methods for newer and more centralizing ones. Each ward would require one chief of staff permanently appointed and empowered to apportion the work and to summarize the results therefrom for use by the general profession, instead of each attending physician assuming this rôle. Not every one is fitted to act as administrative head.

The period of service would need extension, particularly in chronic cases and those of perverted metabolism, for often to-day in our public hospitals unfortunate results follow the bi-monthly and tri-monthly changes of our attending physicians, who often differ in matters of diagnosis and treatment, with the result that the patients suffer.

The rarity of autopsies in our country and the lay prejudices against them emboldens clinicians to formulate unwarranted and speculative conclusions and to be content with diagnoses that would not be tolerated if they knew that a thorough autopsy must be held in case of death. Our hasty, superficial methods sometimes lead to results by which the profession must feel humiliated. For example, take this instance, reported in the *New York Sun*, Aug. 17, 1907:

#### HOSPITAL CENSURED.

CORONER'S JURY SAYS PATIENT DID NOT GET PROPER TREATMENT.

Coroner Harburger and a jury held an inquest yesterday into the death of David Rodesky, the painter who died in the insane asylum on Ward's Island on July 29 from blood poisoning.

Rodesky fell off a surface car and injured his foot. Through neglect the wound became infected. He was sent to Bellevue



Hospital and then to the insane asylum. The jury found this verdict:

"We censure the Manhattan State Hospital and Bellevue Hospital for failure to give the deceased proper treatment while in their care, and recommend that the Manhattan State Hospital increase the number of their attendants and adopt a system of reports to show the exact status of every patient at all times, making it possible for the authorities to ascertain at any time who is in charge of a patient."

Does it not seem wiser for the profession to demand a higher grade of work than to chafe under the slurs and humiliating criticisms of a public too often outraged by the unfortunate results occasionally following the independent hasty observations of the self-overburdened few?

Considering the difficulty of obtaining correct data as to the anamnesis and the status *præsens*, it is not strange that even experienced physicians occasionally commit serious errors because, through carelessness, overconfidence or lack of time, they pay too little respect to these premises. Nothnagel admitted that he felt himself quite fortunate when he proved to be correct in 60 per cent. of his diagnosis of difficult cases. It should not be forgotten that his every bedside conclusion was recorded and in case of death had to receive the judicial stamp of a rigid autopsy. Under similar conditions it is probable that not many clinicians would improve on this record.

This brings us to the consideration of one of the important topics of this address, namely, the value to both laity and profession of diagnosis when reviewed by the autopsy.

Suppose under the influence of a strong public sentiment it was the prevailing custom for each case of death to be examined as to the cause thereof. What must be the ultimate and inevitable effect of such a practice? Would it not quickly expose the charlatan with his obnoxious nostrums and offensive advertising, lay bare the false claims of the numerous pseudo scientific delusions under which yearly many lives ruthlessly are sacrificed, and weed out the unfitted by natural selection under the operation of that most inexorable of all laws?

Such a custom should be in force to-day, at least with respect to all patients dying in our charity institutions. In private practice public sentiment should be educated to the point of demanding an autopsy at least in all cases that defy an explanation free from speculation. In such cases the necessity of an autopsy is a positive duty, for the living are entitled to those secrets of the dead which alone can elucidate morbid phenomena. This is the sole invaluable service the dead can render the living. The laity becomes the great beneficiary of the raising of the professional standard which would result.

Pathologic anatomy is the force to-day disturbing the contentment and dry-rot in medicine engendered under the former régime of empiricism. It teaches us the abundant recuperative resources of Nature, thereby more and more emphasizing our own limitations and demonstrating the truth that all our therapeutics should be simplified and founded on more rational scientific bases, and employed only to assist Nature in overcoming insurmountable obstacles. This is neither hopeless therapeutic nihilism nor *do nothing* irresponsible fatalism, but rather the advocacy of a still closer study of the inimical forces about us and a more singular purpose in employing those of our protective agencies tried and not found wanting. Science to-day with its ever-increasing exactness demands that the intelligent use of any drug shall be the same as the skilful conservative use of the scalpel.

Pathologic anatomy is no respecter of persons, "pathies" or "isms," but an impartial moderator in all scientific controversies over somatology. It is pathologic anatomy that teaches us the transcendentalism and futility of high potencies; that curbs the reckless extravagant use of the prescription blank; that disillusionizes those misguided mental therapists who attempt cures in defiance of natural law and order. In a word, it is pathologic anatomy that levels the barriers that divide into schisms what should be one great united fraternity, and compels all schools, standing shoulder to shoulder on a common basis, to recognize that the science of medicine is subject to that one great universal law which controls all other phenomena in the natural world—the law of cause and effect.

If we are to remain in darkness, cloaking our mistakes with the mantle of vain assumption, as we frequently do to-day in the absence of a verifying autopsy, then let the present deplorable indifference continue. But if we would seek the light, surrendering self to science by thinking harder, speaking less frequently, but fearlessly and willingly facing our conclusions when spoken, thus having a little less of the personal factor in our work and a little more earnest searching for the hidden truths of medicine; if we would advance and maintain our noble profession in a position commanding the high respect and sincere veneration it should, but unfortunately often does not, receive to-day, as evidenced by the numerous pseudo-scientific "isms" flourishing among us; if we would protect both the laity and ourselves from our ever-recurring mistakes—thus silencing the criticisms and aspersions too often deserved, that our faith-curists and other enemies cast on us—then, harmoniously working together, clinician, pathologist and layman, let us welcome the invaluable knowledge to be gleaned solely from the respectful scientific autopsy of our revered dead.

214 West Seventieth St.

## TYPHOID FEVER.

A SUMMARY OF 148 CASES WITH REFERENCE TO THE EFFICACY OF THERAPEUTIC FASTING.

R. M. HARBIN, M.D.

ROME, GA.

Autointoxication and inanition are the Scylla and Charybdis of a typhoid patient, and the physician who can pilot the charge through the narrow channel of safety, should be accorded a high degree of therapeutic skill.

For the treatment of typhoid fever a specific remedy has not been discovered, and the consensus of opinion is that medicines have but little more than a contributory effect in the management of this disease. So the drug treatment may be eliminated altogether from this discussion.

The process of using bacterial vaccines for hastening the process of immunization by increasing the phagocytic property of the blood, thus raising the opsonic index, a process which also takes place in a normal case of typhoid fever, is rational and scientific and deserves a more extended application. In other words, the processes of Nature are expedited by this method.

\* This paper, read at the Fifty-ninth annual session of the Medical Association of Georgia, Fitzgerald, April 15, 1908, is a continuation of some studies, a report on which was read at the New Orleans session of the American Medical Association, and published in *THE JOURNAL*, July 11, 1903.



At present it is universally agreed that the food factor in the management of a typhoid patient is the most important practical question to be solved. In this day of progressive medicine there is a tendency to wander away from convictions that have been evolved from years of bedside study. It is reasonable to suppose that the newer methods of research would reveal certain fallacies that have resulted from clinical observations, but it is unreasonable to admit that old clinical conclusions could be displaced by bedside studies of the present day, for it is doubtful that clinical observers of recent years are in any way superior to our medical forefathers.

Bacteriologic investigations have not caused us to discard many of the old clinical methods of management of typhoid fever, but, on the other hand, have enabled us to confirm and perfect the technic of treatment given by our predecessors. It is safe to say that the lowered mortality rates are now more due to that factor than to any other cause, excepting possibly the serum treatment. Of course there has been great advance in prophylaxis.

Our apology for offering these observations is that the heavy mortalities from the accepted form of treatment of typhoid fever are unwarrantably high. One of the best known surgeons in America a few years ago made the statement publicly that in one year a number of his family connection had died from typhoid fever, and had had the best medical service available; and further said that if he were to contract the disease he would prefer that some intelligent country physician should manage the case. Such comments are not uncommon.

As this summary is offered from the standpoint of a clinician, it is well to refer to certain clinical facts relating to this disease.

Typhoid fever is a disease of early adult life, the average age in this series of cases being 21 years. Extremes of age show less susceptibility, as do also the anemic.

Robust individuals seem to be more susceptible and furnish the more violent types of the disease, which is probably due to a peculiar susceptibility and to the fact that more infection is consumed. Of the total number there was 27 per cent. of cases classed severe between the ages of 20 and 30 years, while the percentage of severe cases among others was 12.4. There was a greater amount of toxemia associated with those exhibiting gastrointestinal symptoms, showing a direct relation between the extent of pathognomonic lesions and the constitutional symptoms. Of the fifty-seven severe cases, forty-five, or 78.7 per cent., gave marked gastrointestinal symptoms, while in the mild cases the percentage was 15. We have similar conditions in diphtheria, in which the extent of pathognomonic lesions, as a rule, bears a direct relation to the systemic disturbance. The toxin of the *Bacillus typhosus* is liberated by the disintegration of the organism, and takes place more rapidly in the human organism than in culture media.<sup>1</sup> The bacilli found in the feces represent those that have escaped absorption, and are probably a small percentage of those existing in the digestive tract. "In typhoid fever the bacillus first found its way from the alimentary tract to the lymphopoietic system, including the spleen, where it developed chiefly, and from it invaded the blood stream. They thought it doubtful if the bacillus multiplied in the blood, but believed that its presence there represented simply an overflow from the

lymph organs."<sup>2</sup> So we would conclude that the battleground of treatment lies in the vicinity of the small intestines.

More characteristic symptoms are displayed in diarrheic cases, while the opposite is true of the constipated cases. A contrast of symptoms may be noted in the second week, where watery diarrhea exists, and a week later, when the bowels become constipated; yet the patient has been taking the same food and running the same temperature, while the symptom-complex has markedly changed. The excessive activity of purgatives is evidence of contraindication to this class of remedies, and as diarrheic cases tend to constipation, temperatures become lowered and, as a rule, general improvement follows.

Emaciation occurs independently of the amount of food taken into the stomach,<sup>3</sup> and this suggests the fact that but little food is assimilated, while the remainder furnishes a culture medium for the *B. typhosus* and other bacilli, thus giving rise to a mixed infection, resulting in a greater degree of toxemia. While the specific typhoid toxin is associated with high temperatures, it is not a constant accompaniment, as a patient may improve under a higher temperature. Tympanites and diarrhea are distressing complications, and under these circumstances it is almost criminal to give more than minimum quantities of the blandest forms of nourishment, for the absorption of food is almost *nil*. Because of an increased area there is increase of the absorption of toxins, while there is a transudation of fluids out of proportion to the intake of liquids, and whatever food is given under these circumstances usually excites peristalsis in the effort to eliminate the surplus. We know that under normal conditions peristalsis is essential to absorption, and in this abnormal condition it is reasonable to believe that peristalsis still increases absorption of toxic substances, and clinical observation warrants this conclusion. Feces usually consist principally of excretions from the intestinal walls.<sup>4</sup> Where there is toxic paralysis of this function the process of elimination and absorption is disturbed by any food residue, and one of the first signs of improvement in a case of typhoid fever is the appearance of feces in the dejecta. The use of purgatives will not force the presence of bile and feces, but aggravate a condition already established by the disease. It is frequently noticeable that a purgative or enema temporarily raises the temperature, which was not directly dependent on constipation, and this fact is not to be noted in any other acute gastroenteric disorder.

Ambulatory cases are not, as a rule, any less prone to intestinal complications than others, for obvious reasons. In fact, the diagnosis of typhoid fever is frequently made only after the occurrence of a fatal hemorrhage or perforation. Hemorrhage in an unsuspected case of typhoid fever often initiates a typical course of the disease because of the establishment of conditions favorable for the increase of intestinal symbiosis. Septic products from the decomposition of blood in the intestinal canal probably constitute a greater danger than the immediate loss of blood entails.

Of the seven fatal cases, four occurred in those primarily classed mild, and in one a fatal hemorrhage revealed the diagnosis. A late diagnosis is often responsible for the untoward course of a typhoid case.

2. Coleman and Buxton: Bacteriology of the Blood in Typhoid Fever, Med. Rec., March 30, 1907.

3. Lewis: Med. Rec., Aug. 2, 1902.

4. Lusk: Science of Nutrition, p. 48.

1. Editorial, THE JOURNAL A. M. A., August, 1903.



The younger the patient, the milder the course of the disease. There were but three of the fifty-seven severe cases in patients under 10.

If the onset is sudden and severe, the duration will be shorter. The degree of pyrexia is not necessarily an index of gravity.

Pulse frequency, barring individual peculiarities, is an index of danger.

Delirium, when due to hyperpyrexia, has not as bad a significance as that occurring with a low temperature. Abortive cases show a greater tendency to relapse than others, probably because the organism has not had time to produce a sufficient amount of its own antitoxin. There were five relapses, or 3.3 per cent. of the total number of cases, and all were associated with some unusual gastrointestinal disturbances. This percentage is far below the average. The variety of types of this disease is more due to individual conditions than to variation in types of epidemics. There may be only one severe case in the family with others.

The first discernible sign of improvement is a notable increase of urine.

Clinical diagnoses were principally relied on in these cases. Cabot concludes<sup>5</sup> from extensive postmortem examinations that 97 per cent. of all cases of continued fever in the New England states lasting two weeks or more proved to be typhoid, tuberculosis or sepsis. From an investigation by Dr. H. F. Harris<sup>6</sup> of forty-five cases of "slow fever" in southern Georgia the typhoid bacillus was isolated in 51.1 per cent., the paratyphoid bacillus in 20 per cent. and a mixed infection in 2.29 per cent. of cases. The commission appointed to investigate the outbreak of typhoid fever during the Spanish-American war recognized the existence of continued fevers as belonging to the malarial and typhoid classes only. The Widal reaction is only confirmatory. So we would conclude from the available scientific data that clinical diagnoses can be made with a reasonable degree of accuracy. It is very necessary to make a diagnosis during the first week of typhoid fever, for the subsequent course is materially influenced by the management of the disease during this period of time. Every case of continued fever lasting a week or more without obvious cause should be assumed to be typhoid fever.

In those liberally fed a great majority of deaths from typhoid fever result, directly or indirectly, from gastrointestinal complications, and this would lead us to regard the dietetic management one most important part of treatment. As in all diseases for which there is no specific remedy, the aim should be to treat the patient and not the disease, for the patient in some cases of typhoid fever will recover under an abusive form of treatment, while in others the small thread of vitality can be conserved only by a precision of the most delicate management. In any case, however mild, the aspect of the disease may become suddenly changed by some intestinal complication. This leads us to the consideration of the food question.

The great desideratum is to nourish the patient without increasing saprophytosis. It would appear that a patient having vomiting and diarrhea would do better without food altogether for a time, while food could be taken *ad libitum* in another case without such disturbances. While a majority of the latter class would do well, a certain number would be changed to the former class. In a twenty years' experience I have not

acquired a therapeutic skill that enables me to say which case will do well on a free diet. Previous to this series, which covers a period of twelve years, we have treated a number of cases on a liberal diet, with painful mortalities, so we must adopt a course that has fewer hazards. A small percentage of these cases were given liberal feeding where conditions were exceptional. It is a question of saving the greater number, for a small percentage of mortality is inevitable. When we can discover a preventable cause that produces death we should endeavor to apply the knowledge in subsequent cases. In fact, the majority of deaths are theoretically preventable. Of the seven deaths, four could have been prevented.

The proper food management will well-nigh shield a case of typhoid fever from the usual dangers incident to the disease. "Clinical typhoid is really in many instances a comparatively mild original infection, plus a fatal intestinal toxemia due to saprophytosis, plus inanition,"<sup>7</sup> and it is our belief that more patients die from saprophytosis than from typhoid infection. "Typhoid fever, especially in the later stages, was largely autointoxication."<sup>8</sup> It is absurd to try to maintain any standard that approaches a normal nitrogen metabolism in an acute infectious disease having gastrointestinal lesions, for the patient's life does not depend on it. A patient weighing 120 pounds requires 1,925 calories a day in health. In infectious diseases there is an increased waste of nitrogen, but it is advisable to give as much food as possible without increasing the amount of autointoxication. Fats and carbohydrates in excess do not prevent tissue waste, which is the inevitable consequence of the disease, regardless of the proteid content of the food.<sup>9</sup> That being true, a surplus of food would cause hyperpyrexia. So it is incumbent on the physician to keep his patient alive, by avoiding the dangerous effect of overfeeding, until individual immunity is established. Milk may be a digestible, or it may be the worst food. My inability to decide what cases are suitable to its use has led me to discard it altogether, for nothing is so disastrous to an intestinal ulcer as a milk curd. Mandel<sup>10</sup> has observed that in milk-fed fever patients the temperature rises or falls with the quantity of purin bases eliminated, and Lusk suggests the possibility that medicinal antipyretics nullify the activity of purin bases on the nerve centers because these remedies do not lower the temperature under normal conditions. The clinical observation has been recorded that milk is inadmissible in any form of hyperpyrexia, more especially that arising from gastrointestinal disturbances. It has been our observation that milk as food will not accomplish in the South what it is said to do in New England in the treatment of gastroenteric disorders. It is doubtful if the average man in health could digest the classical two quarts of milk a day when abruptly placed on that diet alone. It may be diluted, however, to obviate the danger of curd formation.

Therapeutic fasting—not starving, an incorrect term frequently used—serves an admirable purpose in allowing a typhoid case to pursue a more nearly normal course, for fasting is effectual by reducing the bacterial content of the alimentary tract, thus becoming a negative intestinal antiseptic. By such means we establish conditions more favorable for feeding. As the more

5. Tr. New Hampshire Med. Soc., 1907.

6. THE JOURNAL A. M. A., Aug. 3, 1907, p. 407.

7. Benedict: THE JOURNAL A. M. A., Nov. 17, 1906.

8. Ewing: Med. Rec., March 30, 1907.

9. Lusk: Science of Nutrition, pp. 264-265.

10. Am. Jour. Physiol., 1904, x, p. 452.



violent types are seen in sthenic cases, this class furnishes the more favorable subjects for fasting, which is the only remedy we have for reducing a case more nearly to a normal typhoid infection. Fasting before abdominal operations is effective by reducing the number of intestinal bacteria. Kelly<sup>11</sup> advises fasting for the same reason in plastic operations of the intestines. "Cusing and Lovingood examined twenty-seven dogs and eight rabbits. They found that the duodenum, jejunum and upper part of the ileum were nearly always sterile after a fast. . . . Where patients have been subjected to preparations for an operation, the usual period of fasting has a marked tendency to reduce the bacterial content about the ileocecal valve."<sup>12</sup> Emaciation may not be any more marked in patients that have fasted than in others. Frequently the reverse happens, for nutrition is cell activity, and typhoid fever is not more fatal when accompanied by emaciation, for cell activity in sthenic cases may be paralyzed by toxins. In convalescence, gain in weight may be obtained on the same quantity of food, because cell activity seems to be stimulated by Nature's antitoxin. Metabolism is a function of the cell and is increased by autointoxication.

The pathologic nature of tuberculosis and typhoid fever are very similar. The conclusion is established that the mixed infection, and not the tubercle bacillus alone, produces the hectic fevers, sweats, etc., which exhaust a tubercular patient. The tubercle bacillus plays only an initial part in the morbid process. In typhoid fever the initial lesion is caused by the *B. typhosus*, which opens up an area for the multiplication of other micro-organisms and absorption of their toxins. One truth clearly established in the successful treatment of pulmonary tuberculosis is the necessity for the enforcement of absolute rest of the respiratory organs as far as possible. Reasoning by analogy, we should endeavor to give as much rest as possible to the intestines in typhoid fever, and clinical evidences bear out this assumption. If pathognomonic lesions were away from the alimentary tract, forced feeding would be rational. In the treatment of typhoid fever we may apply with benefit Ochsner's rationale in the management of cases of acute appendicitis, his aim being to keep intestines in a passive state by fasting, thus reducing bacterial symbiosis, and by insisting on absolute bodily rest. In these two diseases increase of peristalsis is a means of distributing infection—in one disease, inside, and in the other, outside the intestines. The two conditions are essentially surgical.

Hence the conclusion was reached that in typhoid fever, and other infectious diseases, an important part of the morbid process consisted in a disturbance of nitrogen metabolism which was very similar to that seen in pure autointoxication, and which, therefore, was not directly connected with the toxins of the invading bacteria. The excessive nitrogenous metabolism in typhoid fever was not the specific effect of the action of the endotoxins of the typhoid bacilli, but represented hyperactivity of a normal type, associated with fever. Wolf had pointed out that bacterial endotoxins were much alike in their actions, and affected chiefly the nervous system.<sup>13</sup>

The pathologic anatomy of typhoid fever shows a condition of gastrointestinal catarrh with hyperplasia, with a great reduction of all the digestive fluids. Saliva is

diminished or absent, and hydrochloric acid is usually absent in the gastric juice, and, in fact, almost every condition unfavorable to digestion exists. Diarrhea is an effort of Nature to throw off what the intestines can not assimilate. Intestinal ulcers should be assumed to exist in every case, however mild, and the proper treatment of ulcers is rest.

The rational treatment of such a condition is a restricted diet, or fasting; then peristalsis can be better controlled by cold applications, and an opiate may be used if much diarrhea exists.

It has been our observation that the use of opium retards tissue waste during a fast, and in these cases it was prescribed when any indication arose, especially insomnia. Prof. Lafayette B. Mendel, professor of physiologic Chemistry in the Sheffield Scientific School, in a personal communication, says:

The few available experiments on man regarding the influence of morphin on metabolism indicate no change in the respiratory exchange when therapeutic doses are given. The studies on animals have indicated a slight decrease in nitrogenous metabolism with small doses, and an increase with distinctly larger doses in starvation. It seems probable, from the small amount of experimental evidence available at present, that the doses used for your patients would exert no marked effect on their nitrogenous exchanges.

Drugs may influence the course of metabolism, iodothyron increasing it and morphin profoundly diminishing it.<sup>14</sup>

Death from starvation occurs ordinarily in eight days after the withdrawal of all food and water. The same result occurs, even though dry food is allowed, but life is prolonged forty days when water is freely given.

In sthenic cases fasting should be applied from one to three days until the active symptoms are controlled. Gentzen proved by experiment that fasting does not arrest the secretion of hydrochloric acid.<sup>15</sup> The reduction of the degree of toxemia is hardly noticeable the first day, but is shown by a reduction of one or two degrees of temperature on the second day, and on the third day more than that; but it is exceptionally advisable to continue fasting through the third day, as the severe symptoms are usually ameliorated. In other than sthenic cases, that is, in pregnancy, the puerperium, the tubercular diathesis, the anemic, senile cases, etc., fasting should not be applied, but in these cases there is rarely a necessity for its use. On the advent of pneumonia the patient should have more liberal feeding, because of increased demands for food. An argument obtains that fasting and a restricted diet enhance the effects of hydrotherapy, the technic of which will be referred to later. Full feeding in many cases results in the necessity of packing the patient in ice to control fever. Those violent toxic cases show marked improvement after a twenty-four hour fast, which allows the organism to unload the excessive amount of toxemia.

Many cases run an abortive course after the amphibolic period under a treatment by fasting and a restricted diet. After fasting twenty-four to forty-eight hours, a very restricted diet should be given, consisting of broths of beef, chicken, mutton, oysters, etc., coffee, cocoa, egg albumin, peptonoids, gelatin, etc., in prescribed amounts.

The effect of these slops should be carefully watched, and definite quantities should be ordered in severe cases. It is needless to say that they can be taken *ad libitum* in mild cases. The popular custom of water-logging the

11. Tr. South. Surg. and Gynec. Assn., 1905.

12. Houghton: Med. Rec. Dec. 30, 1905.

13. Ewing: Nitrogenous Metabolism in Typhoid Fever, Med. Rec., March 20, 1907.

14. Lusk: Science of Nutrition, p. 289.

15. Deutsch. med. Wchnschr., Aug. 22, 1907.



system is to be deprecated, and if the patient is rational his inclination would be a reliable guide. Lusk says that the ingestion of quantities of water causes a true increase of proteid metabolism.

Gelatin is a valuable adjuvant in the dietary of a typhoid patient. It serves three purposes: it adds to the relish of the various liquids, lessens the nitrogenous waste from the system and prevents hemorrhage. A teaspoonful three or four times a day is the amount usually ordered and should be dissolved in a little hot water and then added to any liquid nourishment, meat broths, cocoa, coffee, tea, etc., or else flavored with wine or lemon and served with whipped cream. It adds richness of taste to these slops, which otherwise become tiresome to the patient. An agreeable sherbet may be made by combining gelatin with white of eggs with 20 per cent. of cream and sweetened and flavored to taste. The food value of gelatin, which, being in a concentrated form, serves an excellent purpose, is recognized.

Prof. Lafayette B. Mendel writes me in this connection: "Gelatin plays the same rôle as the carbohydrates in sparing tissue waste," and cites a conclusion by Dr. J. R. Murlin:<sup>16</sup>

The power of the organism to utilize gelatin as a substitute for proteid in maintaining nitrogen equilibrium depends to some extent on the proteid condition of the body at the time of the experiment. The lower the proteid condition becomes, the more strongly does the organism lay claim to gelatin as a means of protecting its living substance. Herein appears a biologic adaptation of no small importance.

Gelatin spares proteid in metabolism.<sup>17</sup>

When used emaciation is less rapid. The hemostatic effect of gelatin is universally recognized, but to wait until an intestinal hemorrhage has occurred but little immediate good can be hoped for by its use. It should be used as a routine in all cases to prevent hemorrhage. Very aggravated diarrheic cases do not tolerate it so well, as it may increase tympany. But in these cases it may be used on alternate days in small quantities. In the last seventy-three cases in which routine gelatin feeding was given no case of hemorrhage occurred after having been under treatment two days.

The case should be closely studied. Any surplus of food will be indicated by a rise of temperature, for to nourish the patient without overcharging the digestive capacity requires a very close study. Milk should be absolutely forbidden, because no one can predict when it will form a curd, which is worse than solid food. One of my patients had a hemorrhage in convalescence from taking milk and lime water in equal parts. I examined curds the size of a hazelnut in the bloody dejecta. The case was a mild one.

Another patient was seen in consultation, with symptoms of perforation, twenty-four hours after drinking two glasses of buttermilk at an interval of half an hour. He died three days later from peritonitis. This case was a mild one.

Milk is valuable, however, diluted with two to five parts of coffee, cocoa, broths, hot water, as under these circumstances the danger of curd formation is slight, unless contradicted by diarrhea and tympany.

This plan of dietetic treatment should be continued until active symptoms are controlled, and as improvement advances nourishment may be more liberally given. Solid food is a danger that offers few advantages to the patient. Nearly all recrudescences are due to dietetic

errors. Fasting in late stages and convalescent stages will cause fever, as inanition often causes fever. The subsequent history of patients subjected to fasting has been in no way different from that of those more liberally fed.

As before suggested, fasting and a restricted diet greatly enhance the effect of hydrotherapy. Where there is fermentation in the alimentary canal with hyperpyrexia it is easy to understand how difficult it is to reduce the temperature by baths, but under other conditions the modified bath is effective, whether cold, tepid or hot.

I have often observed a reduction of more than two degrees of temperature after a single sponge bath in sthenic cases after fasting.

To illustrate: The patient in Case 94 fasted the first day and was then allowed a very restricted diet. There were given thirteen cold sponge baths, lasting from twenty to thirty minutes. The greatest reduction of temperature was 2.4 degrees, while the lowest was 0.8

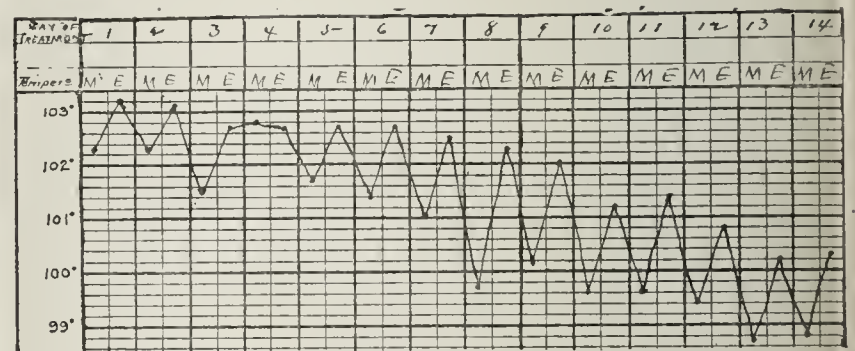


Chart 1.—A composite temperature chart of ten cases of typhoid fever.

TABLE 1.

Averages of 10 cases of uncomplicated typhoid fever under treatment by a restricted diet and fasting. These cases are taken at random from those lasting 14 days or more and do not include abortive cases.

Case No.	Sex.	Age.	Severe.	Gastrointestinal symptoms.	Nervous symptoms.	Duration, days.	Mortality.
72.....	F.	17	+	+	—	33	...
80.....	F.	14	+	+	—	14	...
81.....	M.	20	—	—	—	15	...
82.....	F.	18	+	+	—	20	...
88.....	M.	5	+	+	+	14	...
93.....	M.	25	+	+	—	15	...
94.....	M.	24	+	+	—	21	...
95.....	M.	23	—	—	—	16	...
96.....	F.	26	+	+	+	30	...
98.....	M.	26	—	—	—	14	...
Average.....		19.8	70. %	70. %	20. %	19.2	0 %
Average of entire series of 148 cases.....		21.	38.5 %	39.9 %	16.2 %	17.4	4.7 %

of a degree, and the average 1.8 degree per bath. We would not expect to find such results under other circumstances. Constipation should be relieved on alternate days by a soapsuds enema.

There are many minor details in the treatment of certain symptoms and complications that need no mention and are familiar to every clinical observer.

I append a chart of an abortive case (Case 108) in which the diagnosis was confirmed on the eleventh day by the Widal reaction. On the third day there was active delirium, with unconsciousness and diarrhea with tympanites. The notes on the chart need no comment.

In this report cases lasting twelve days or less were classed as abortive, and there were forty-nine cases, or 33.1 per cent. of this type, which is a greater proportion than ordinarily expected.

Abortive cases show a greater tendency to relapse,

16. Am. Jour. Physiol., 1907, xix, 285.  
17. Lusk: Science of Nutrition, p. 102.



and require to be kept in bed on a restricted diet at least ten days after a normal evening temperature.

Of the total number, 144 were white and 4 black. Patients under 10 years, 23; between 10 and 20 years, 43; between 20 and 30 years, 54; and over 30 years, 28. There were 80 males and 68 females. The average duration of these cases was 17.4 days, that is, up to the time when the evening temperature became normal. Gastrointestinal disturbances were noticeable in 59 and absent in 89 cases. Nervous symptoms were marked in 24 cases and absent in 124 cases. Eleven cases, or 7.4 per cent., were complicated. Five patients, or 3.3 per cent., had hemorrhages, four of which were slight and one immediately fatal from coming out of bed during delirium. It may be remarked that two of these had hemorrhage before coming under treatment. Two patients had two attacks within twelve months. Pneumonia occurred as a complication in three cases; one

sue of the gland to the depth of an inch or more. Symptoms of sepsis were ameliorated and swelling rapidly subsided without suppuration. Two weeks later orchitis developed. Three years previous he had had mumps, followed by orchitis. Among the seven deaths patient 46, a negro, died from urinary retention and neglect. Patient 57 died from hemorrhage in a few hours from getting out of bed, not having a nurse. Patient 70 died on the tenth day after convalescence, from pneumonia. There were no evidences of typhoid reinfection. Patient 64, a negro, alcoholic, died on the twelfth day, from asthenia. Death in Case 118 resulted from osteomyelitis after a month's duration. Patient 120, an ambulatory type, before coming under treatment, had hemorrhage, which determined a fatal issue. Patient 124, the wife of this man, being depressed with grief, died a month later, complicated with pneumonia. Of the 144 whites there occurred five deaths, or 3.4 per cent.

CONCLUSIONS.

1. The food factor in the treatment of typhoid fever is the most important practical question to be solved.
2. Toxemia is more marked in cases having gastrointestinal disturbances.
3. Clinical evidences warrant liberal feeding only in a few cases.
4. The chief source of development of the *B. typhosus* is found in the intestinal canal and the lympho-poietic system.
5. The aim should be to nourish the patient without increasing saprophytosis, and the battleground of treatment lies in the gastrointestinal tract.
6. A greater danger exists from a toxic paralysis of nutritive activity of the cell than from inanition.
7. Any vital organs containing pathognomonic lesion of an infectious disease demand absolute rest.
8. The excessive nitrogenous waste in typhoid fever is not due to the endotoxins of the typhoid bacillus but probably mixed infections, and the specific typhoid toxin is not necessarily accompanied by high temperatures.
9. Emaciation occurs independently of the amount of food taken and results more rapidly from toxemia than from any lack of nourishment.
10. The patient's life does depend on attempting to maintain a normal nitrogen metabolism.
11. The proper food management will shield a patient from the usual dangers of typhoid fever.
12. Sthenic cases furnish the more dangerous types of the disease, and these are more amenable to therapeutic fasting.
13. Ambulatory cases are not less prone to intestinal complications than others.
14. A greater danger arises from septic conditions set up by a hemorrhage than the mere loss of blood entails.
15. Symptoms are no guides as to the presence of intestinal lesions, consequently patients require more or less routine feeding.
16. Abortive cases show a greater tendency to relapse.
17. Tympanites furnishes an increased area for absorption, and is provoked by any surplus of food, which increases peristalsis.
18. The great desideratum is to treat the patient and not the disease.
19. Scientific data prove that clinical diagnoses may be made with a reasonable degree of accuracy.

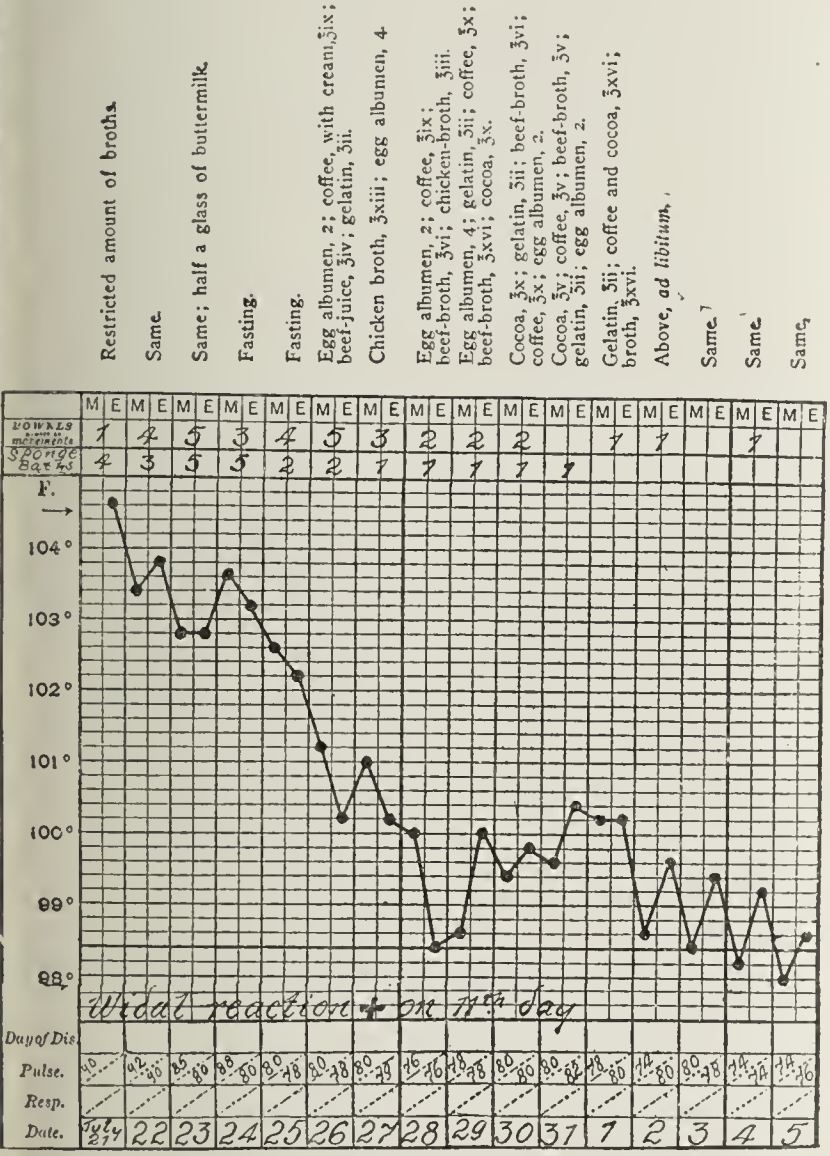


Chart 2.—Chart of an aborted case of typhoid fever; the record begins on the second day of the disease and ends on the seventeenth day.

had osteomyelitis, one hematuria, and one showed mental imbecility during convalescence, but recovered promptly. One case showed hyperpyrexia, the temperature reaching 106.7 F. and during the following week remaining subnormal. No case of perforation or thrombosis was diagnosed. Two patients had double parotitis and recovered. In one the parotid glands sloughed out *en masse*. The treatment adopted in the other case deserves some notice. A man 30 years old developed double parotitis in the third week, with symptoms of profound sepsis and collateral edema quite closing the eyes. Under chloroform anesthesia the glands were incised and a grooved director was passed in six or seven different directions through the edematous tis-



20. Therapeutic fasting allows an uncomplicated typhoid infection to pursue a normally mild course without any mixed infection, by reducing the bacterial content of the intestines. This was applied only to the severe cases.

21. Fasting will enhance the effect of hydrotherapy, and frequently render the use of antipyretic measures unnecessary.

22. Gelatin is a valuable food in that it lessens the nitrogenous waste and prevents hemorrhage.

23. The low mortality in this series of cases was greatly due to the elimination of relapses and complications among the mild or abortive cases by restricted feeding and lessening the dangers in sthenic patients by fasting.

24. In this report forty-five consecutive cases occurred without a death. Of the 144 whites, five, or 3.4 per cent., died, and the low mortality, 4.7 per cent., of all cases was ascribed to the dietetic management, though many of the cases had very inefficient nursing.

### MIGRAINE, AN OCCUPATION NEUROSIS.\*

GEORGE LINCOLN WALTON, M.D.

Consulting Neurologist, Massachusetts General Hospital.  
BOSTON.

It is not claimed that this paper will present a complete explanation of migraine; it is hoped, however, that it will start a suggestive line of thought bearing on a pathogeny which can be at the best only hypothetical.

The form of migraine to which I shall confine myself is the every-day type, the variety which I have found occurring in complete form in 17 per cent. of healthy young adults, and in incomplete form in many more. It reaches its greatest intensity in early life and generally disappears after middle life. It is often preceded by scotomata, by temporary aphasia and numbness, loss of memory, signs of mental incapacity and confusion, and even possibly, as Gowers suggests, by the peculiar feeling that the present is a reproduction of the past, the feeling thus described by Coleridge:

Of t' o'er my brain does that strong fancy roll  
Which makes the present (while the flash doth last)  
Seem a mere semblance of some unknown past,  
Mixed with such feelings as perplex the soul  
Self questioned in her sleep.

Any of these symptoms may appear without the pain in the head. Loss of consciousness never occurs, a fact which sharply distinguishes migraine from epilepsy, though there have been attempts to make them analogous. The frontal and temporal regions are most often involved, the occipital next often, the vertex practically never alone.

At the time of greatest intensity the pain is sometimes accompanied by nausea and vomiting, especially in early life, whence the term "sick headache." The time varies in duration from several hours to a day or more. It does not often materially interfere with sleep, though it frequently appears on awakening in the morning. It does not necessarily accompany extreme use of the eyes, though it is apt to appear after such use, as on the morning following a theater party.

The so-called ophthalmoplegic form of migraine is so rare in comparison with this form, and so distinct in its

symptoms, that it seems hardly fair to discuss both types together. The suggestion of Plavec,<sup>1</sup> that the ordinary form is the precursor of the ophthalmoplegic form, seems to have little basis, and his proposed pathology (periodic swelling of the hypophysis) as concerns the ordinary migraine, is purely speculative.

A case reported some years ago by Dr. Cheney and myself has a practical bearing on this question. A man of middle age had suffered many years from what was supposed to be the common type of migraine, though it was accompanied by the unusual symptom of persistent homonymous hemianopsia. The headaches became more severe, various paralyses appeared, mental deterioration ensued, and death followed. The autopsy revealed pituitary tumor.

While this case bears favorably on Plavec's location for ophthalmoplegic migraine, it is far from aiding us in the pathogeny of ordinary migraine. Nor does it suggest that ordinary migraine was the precursor of the more serious trouble. The migrainous headaches in this case should rather be regarded as symptomatic of the local lesion, no more allied to or resulting from ordinary migraine than epileptoid seizures from cerebral tumor are allied to, or result from, idiopathic epilepsy, though they may be mistaken for it at the outset.

Whatever theory is advanced for the pathogeny of ordinary migraine, the use of the eyes can hardly be left out.<sup>2</sup> The arguments connecting the use of the eyes and migraine are easily preponderant. In the first place too many cases of migraine have been relieved, in part or entirely, by correction of refractive error, particularly of astigmatism, to be explained by coincidence. In the second place, attacks have been frequently aborted by the mere straightening of glasses, as I have many times verified in my own case. In the third place, migraine has lessened and disappeared in innumerable cases after accommodative paralysis has appeared. Finally, study of the blind shows that the greater the blindness the less the migraine. My own examination of a long series convinced me that migrainous headaches are only half as frequent among the blind as among individuals of corresponding age and under like conditions.<sup>3</sup>

It may be objected that migrainous headaches are not quite unknown among the blind. But it must be remembered that it is a common practice for the blind, as for others, to adjust their accommodation to the distance of their work as judged, even in the absence of sight, by the position of the hands.

Assuming, then, that disturbance of the accommodative centers plays a part in migraine, it need not be expected that the blind shall be quite exempt.

Another peculiarity of eyestrain which has an important bearing on my proposition is the almost continuous frown of the astigmatic. This frown involves principally the corrugator supercilii and the anterior part of the occipitofrontalis, which muscles occupy the regions in which the pain most frequently appears.

If one voluntarily contract the brows for fifteen minutes he will experience a disagreeable sensation which suggests migraine in mild form. This leads to the ques-

1. Deutsche Ztschr. f. Nervenheilk., 1907, xxxii.

2. This statement does not apply to the views of those who find in migraine the precursor of vascular disease and cerebral softening. My conception of migraine is widely at variance with theories which include such outcome. When we weigh the isolated cases supporting this proposition against the hordes of cases running an innocuous course, it seems reasonable to assume that these few cases represent either coincidence of migraine and organic disease or symptomatic headaches which resemble migraine.

3. Eye Strain, Its Importance and Its Limitations, Boston Med. and Surg. Jour., June 22, 1905.

\*Read in the Joint Meeting of the Section on Nervous and Mental Diseases, and the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, at Chicago, June, 1908.



tion whether we must assume the pain of migraine to be entirely intracranial, a doubt emphasized by the recent observations of Cushing<sup>4</sup> showing the non-sensitiveness of the dura, the part to which perhaps more than any other the pain of migraine has been credited. It may assist us to recall a somewhat analogous pain which sometimes appears in the back of the neck and "base of the brain" after long-continued eyework in which the head is held firmly in one position. I have been not infrequently consulted for this pain by persons who have undertaken an uncommon line of work, requiring this posture, the commonest illustration being that of the person who has recently undertaken the position of secretary. This pain so often appears after the completion of the day's work, rather than during the work, that its source is apt to be overlooked. The pain is apt first to appear during the night or in the early morning, and is sometimes decidedly paroxysmal. The only relief is found in discontinuance, or lessening the constancy, of the work (unless, happily, the mere correction of refraction serves the turn). This form of headache is surely muscular rather than intracranial; its analogy to migraine is shown by the fact that it is sometimes preceded by twinkling scotoma.

This occipital form of headache offers a fair illustration of acute occupation neurosis.

The proposition I have to submit is the following:

Migraine is an occupation neurosis, and involves (1) the visual centers; (2) the centers of accommodation (centers of divergence and convergence in the frontal region); (3) the intrinsic and extrinsic muscles of the globe, and (4) the muscles outside the orbit which are called into play in the effort required for accurate vision, principally the corrugator supercilii and occipitofrontalis, and also the muscles inserted in the occipital region, which serve to steady the head.

In order that we may approach the question fairly, it is important that we start with a clear idea of the symptomatology of occupation neurosis in general; its exact pathogeny is hardly susceptible of analysis.

This is a subject not generally understood. "Writers' cramp" has called attention to one symptom (cramp) which is really neither the most prominent nor the most common. Even writer's cramp has its "neuralgie" form, and in other occupation neuroses pain is not only by far the most prominent, but often the only symptom, the other symptoms, weakness, paresthesia and cramp, following with varying frequency and in varying degrees.

An occupation neurosis is a condition resulting from overuse of certain parts. The most constant symptom is pain, generally referred to the overused muscles, but sometimes extending to other parts. Among the less constant symptoms are muscular spasm and paresthesia. The symptoms may be constant or paroxysmal, and are not always synchronous with the muscular overuse which causes them, but sometimes follows after an interval. The disturbance involves the muscles and the sensory and motor cerebral centers which constitute the overused mechanism.

The following case illustrates a common form of occupation neurosis involving the arm:

*Patient.*—A woman, aged 30, suffered from pain in the thumb and first finger extending up the forearm, accompanied at night by a numb prickly feeling. She practiced much on the piano, carried a heavy music roll, and often sewed a whole evening without stopping. In short, there was almost constant use, in one form or another, of the hand. There was moderate

tenderness of the forearm. There was no objective anesthesia or loss of power. The diagnosis of occupation neurosis was made.

*Treatment.*—No improvement appeared from simple rest, but when a splint was applied and the arm placed in a sling, thus producing absolute rest, improvement soon appeared, and complete recovery followed. She can now use the hand perfectly, but has learned to keep its use within reasonable limits.

The following case presents a connecting link between such cases and migraine:

*Patient.*—A successful laryngologist from another state had worked for twenty-five years without vacation. He complained of paroxysms of pain in the left side of the neck and behind the ear, sometimes accompanied by tenderness. The pain would come on when his head was placed in the position of operating, become rapidly unbearable if the posture was maintained, and persist after its discontinuance. It would sometimes come on at an interval after operating. Attempts to read sometimes produced the pain. He had astigmatism with correction by a competent oculist. The condition had naturally given rise to much solicitude, and obvious relief of mind followed the diagnosis of "occupation neurosis." The day following the consultation he spent in and about Boston, and for thirty-six hours was entirely free from pain, an experience which he had not had for some time. On the second day he was feeling so much better that he was tempted to return to his work, notwithstanding my advice for a prolonged abstinence from employment. He was desirous of visiting the Massachusetts General Hospital, and I there introduced him to the throat department, in which he was especially interested. Here he spent about an hour, watching operations, and examining throats. On sitting down to lunch afterward a violent paroxysm of pain appeared and lasted for some time. It recurred during the evening on taking up a paper and putting his head in the position of reading. The evening attack lasted several hours, during which the pain was intense and accompanied by tenderness. The only recourse in this case was absolute cessation from work for many months. He is therefore now taking an extended vacation and reports continued improvement.

This case, like many others which have come under my observation, shows that the pain of occupation neurosis may follow the occupation after an interval, just as that of "theater migraine" may first appear on awakening the morning after attending the theater.

The paroxysmal pain illustrated by such cases of occupation neurosis strongly suggests that of migraine. Nor are the minor symptoms of occupation neurosis wanting in migraine. The analogue of the paresthesia is the scotoma, which represents similarly, disturbance of sensory centers. Analogous to the cramp is the ciliary spasm, to say nothing of the facial spasm which sometimes appears in the lids and spreads to other parts, representing perhaps an effort on the part of the overworked centers to close the eye and relieve the tension. I have seen the most long-standing and obstinate cases of this spasm relieved by the correction of refractive error.

The suggestion that migraine is an occupation neurosis does no violence to the opinion of those who regard all migraine as the result of refractive error, and at the same time may prove more acceptable than the reflex theory to those who insist on the hereditary and constitutional basis of migraine. One need only be reminded that all occupation neuroses are more prevalent among the neurotic and the sensitively organized, in whose families appear the varied signs of feeble resistance. It is surely among this class that we look for migraine—but we have not explained migraine by simply conceding its hereditary tendency.

Furthermore, the theory of occupation neurosis would account for cases of migraine in which the patients

4. THE JOURNAL A. M. A., March 14, 1908.



have slight error of refraction, but marked psychopathic heredity, and at the same time explain its prevalence among those who have marked error of refraction, since the eyes are here used with an overwhelming handicap, the relief of which may well cause the disappearance of the neurosis.

According to the occupation neurosis theory migraine may even appear without error of refraction, in other words it may result from overuse of the eyes, or, in cases of extreme susceptibility, from moderate use of the eyes, just as writer's cramp may be produced, doubtless, in the absence of a faulty method of writing. The fact is recognized, however, that a faulty method favors writer's cramp, and, similarly, error of refraction is doubtless more potent than any other one factor in the production of migraine.

It is no objection to this theory that some individuals use the eyes continuously without migraine, while others acquire this trouble with comparatively little use of the eyes. The same is true of all occupation neuroses. One individual can practice with immunity on a musical instrument from early morning till late at night; in another individual symptoms of occupation neurosis appear with a few hours' exercise.

It may be objected that no account is taken of the vasomotor phenomena of migraine, a factor on which Eulenberg long ago based his entire theory of the pathology of the condition. But the vasomotor changes, in my view, at least, are so far from constant that they are not to be taken into consideration in the search for causal factors, but are rather to be reckoned, when present, as among the comparatively unimportant accompaniments. This is the view long held by Gowers.

The vasomotor symptoms are not only secondary rather than primary, but, in fact, they are not always present. All suppositions based on dilatation or contraction of blood vessels as a primary cause of migraine lead to theoretical considerations which obscure rather than clarify our ideas of migraine. And, further, all such theories are based on a fallacy, namely, that contraction and dilatation of blood vessels necessarily cause pain. To confute this proposition we need only remind ourselves of the extreme dilatation of blood vessels in the blush of shame or the turgidity of anger, on the one hand, and on the other hand, with the pallor of fear and faintness. Even the extreme degree of vascular spasm which results from cold produces numbness rather than pain. It is true that after exposure to cold with resulting vascular spasm, if warmth is too quickly applied, a vascular dilatation follows which is accompanied by extreme pain, but when we consider the extreme degree of vascular dilatation that produces no pain, it is questionable whether the pain is to be attributed simply to dilatation.

The vomiting is difficult of explanation by the theory offered, but it is not less difficult by any other theory. In point of fact, this symptom is probably not one of the essential features but rather an indirect result appearing generally only in the young and at the height of the paroxysm, representing rather a protective effort on the part of Nature, through producing general and special relaxation, just as fainting may appear at the height of pain, resulting from whatever cause. The fact that relief does often follow the vomiting fortifies this supposition.

#### CONCLUSION.

Migraine is an occupation neurosis resulting, in individuals of neurotic inheritance, from overuse, or use

under the handicap of refractive error, of the parts concerned in vision.

It involves, like other occupation neuroses, disturbance of (1) sensory cerebral centers (those of vision in the occipital region); (2) motor cerebral centers (centers of divergence and convergence in the frontal lobe); and, (3) certain muscles (particularly the intrinsic and extrinsic muscles of the globe, the corrugator supercilii and the occipitofrontalis, and also the muscles which steady the head).

The pain of migraine is not necessarily intracranial, but is localized, in part at least, in the region of the muscles concerned, directly or indirectly, in vision.

#### DISCUSSION.

DR. H. GRADLE, Chicago: In one-fifth of my records of migraine (headache of periodic occurrence), an ocular origin could be excluded at the start. Of one hundred patients observed by me (consecutive but not selected cases), twenty-two were practically, under ordinary circumstances, relieved of their migraine by glasses as long as they wore them continuously. A few complained again whenever the glasses were omitted. Of these 22 patients, twelve had complained of their eyes, while ten had either not known that their eyes were at fault or had been annoyed only to a trifling extent. Among the cured two had hyperopia, five had astigmatism against the rule or with an oblique axis amounting to 0.37 D. or more, and fifteen astigmatism with the rule (0.5 D. in two instances and  $> 0.5$  D. in thirteen cases). An impression that I had gradually formed of the greater significance of astigmatism against the rule or with oblique axis is not fully borne out numerically by an analytic review of these records, but it is again strongly suggested by noting throughout my case books the more frequent coincidence of migraine with lower degrees of astigmatism (0.37 to 0.5 D.) when the meridian of greater curvature was not vertical. It has also seemed significant to me that one-sided migraine occurred strikingly often on the side of astigmatism with oblique or inverse axis in asymmetric cases (three in this series). Cases of migraine exclusively or mainly one-sided are especially instructive when the attacks occur on the side of the astigmatic eye and are permanently avoided by suitable correction (eight times in these twenty-two). It is significant that hyperopia of unequal degree in the two eyes does not provoke one-sided migraine. In fact, simple hyperopia figures only in a small proportion of the fully relieved (as well as the much benefited) cases.

Of the hundred patients, thirty-two were only partially relieved of their periodic headache. The headaches were less frequent or less severe and shorter. A few of these returned after years with the history of a long partial relief, but with recent increase in the attacks, though with optic change.

Twenty-six received glasses that proved useful as far as the eyes were concerned, but which did not influence the migraine. To these twenty-six I ought to add one-quarter (five) of the remaining twenty, who had previously been given correct glasses by others without benefiting the migraine.

The results are:

- 22 practically cured by glasses.
- 22 benefited by glasses.
- 31 not influenced by glasses.
- 15 not requiring glasses (except simple concave spheres).

Among those merely improved or not influenced as regards the migraine were a number who had besides the typical periodic attacks other forms of headache which were practically cured by their glasses.

An analysis of the imperfect results and failures showed an absence among them of one-sided migraine corresponding to the more astigmatic eye. Yet among the patients least improved there were a few pronounced instances of hyperopia and astigmatism of 1.5 to 2.5 diopters. There was also a scarcity of astigmatism against the rule (or oblique) in the negative series. In those least influenced by glasses there was oftener the history of attacks with fairly regular periodicity dating back to childhood than in the more benefited class of patients. The proportion of simple hyperopia was least



among those entirely cured and greater in those only partially influenced.

I believe that there are various factors involved in the etiology of migraine. Heredity is one of the most constant, but not an invariable one. Anemia, poor nutrition, want of outdoor exercise and indoor confinement have in many instances coincided with pronounced aggravation. In relatively infrequent instances migraine may depend on suppuration of a nasal sinus or the existence of a nasal stenosis. In nearly one-half of my observations there has been no relation between migraine and the eyes. In fact, I have even found the neurosis fairly common among people who do not do much close eye-work. Yet in about one-third the correction of hyperopia and astigmatism made the patient less liable to migraine or reduced its severity. In fully one-fifth of my cases the headache could be practically prevented by the use of suitable glasses, when worn continuously.

The scintillating scotoma is the symptom which more than any other suggests an ocular origin of migraine—at least to the patient. The scotoma does not, however, prove the ocular origin of the migraine, as in thirty-five instances tabulated from my records I find twenty not requiring or not improved by glasses, while nine were benefited and six were cured by spectacles. In two of the cured and three of the benefited only hyperopia and not astigmatism needed correction; in several others compound hyperopic astigmatism was found.

DR. LUCIEN HOWE, Buffalo: We began by using this term "migraine" in a most indefinite sense, meaning either one of two entirely distinct diseases, and we are now just beginning to recognize a difference between them. We still talk about "headaches," but that term may mean almost anything. Head called attention some time ago to the necessity, when we speak of headaches, of stating just where that ache is, what is its area, and also what is the area of increased or decreased sensibility. As long as we talk in a general way about headaches, we are simply increasing the chaos which exists. Again, when we speak of the strictly ocular symptoms, we may mean either the condition of the refraction or the condition of the intraocular or of the extraocular muscles, or of both. That abnormality may be primarily in either or both of these groups of muscles, or may be shown in them only secondarily in the effort to overcome any ametropia which may be present. Now, in any given case, if we do not know what those factors are, we are discussing something indefinite, and increasing the confusion of our ideas. Headaches, especially when localized in the muscles in the frontal region or at the back of the head, are apparently due to the action of the accessory muscles of accommodation. When we contract the frontal portion of the occipitofrontalis we draw also on the occipital portion. That strain can often be relieved, as we know, by proper glasses or by cycloplegics.

DR. HUGH T. PATRICK, Chicago: The use of the eyes is not an occupation at all; it is a function. The idea of occupation implies something acquired for a definite purpose. Occupation is connected with the artificial conditions of modern living, or, if you like, with the present state of evolution or development of humankind. To put an occupation side by side with a thing as remotely, as anciently physiologic, as the use of the eyes, is, I believe, altogether a strained comparison. According to my understanding of Dr. Walton's abstract, there might be ascertainable eyestrain and there might not be; but the idea was that the migraine might have been produced merely by the use of the eyes in a susceptible individual. I believe that this is an untenable position, because the use of the eyes is a function just as much as mastication, digestion and defecation, and we do not call those occupations at all. Of course, one may abuse his masticator apparatus or his digestive apparatus, and he may abuse his bowels, and if he does, he pays the penalty; but to say that a man has an occupation neurosis simply because he exercises, as he is bound to exercise, these functions born away back low down in the primordial something which was originally the progenitor of man, is rather far-fetched.

DR. ALBERT E. STERNE, Indianapolis: We must all recognize the fact that no organs of the body are so constantly in function as are our eyes; that considering the innervation of the

eye, it is hardly wonderful that irritating effects should expand themselves on the central nervous system, notably the brain, through the medium of the eye. I should, however, like to register a strong objection to considering migraine as an occupation neurosis, not only on the grounds that Dr. Patrick has brought forth, but also on the ground that there is in all probability a very subtle but not well-understood relationship between true migraine and epilepsy. It is peculiar enough that the subject of migraine and the subject of epilepsy should come into close contact with the oculists so frequently. It is possibly due to the fact that there is much to be said from the ophthalmic standpoint in dealing both with migraine and with epilepsy. Shall we regard epilepsy as an occupation neurosis? Is there any similarity, or is there even a remote connection between migraine and epilepsy? These questions are far from being solved. We have absolutely no knowledge of the pathology of true, essential epilepsy or of the pathology of true migraine. We know from certain facts and experiences that the two seem to run hand in hand frequently enough. I have seen cases of true migraine, periodic migraine, cease, and in their place I have seen epileptic seizures for a series of years—major seizures at that, not minor—and I have seen these epileptic and epileptiform seizures cease and the migraine become re-established. Such conditions are not extremely frequent, but still they occur in sufficient numbers to warrant us in regarding them as possibly allied, though I do not think that they are anything like identical. They may, however, be founded on similar causes in any given case. On the other hand, they may arise coincidentally and independently.

DR. D. I. WOLFSTEIN, Cincinnati: The supposed effect of the constant contraction of the occipitofrontalis muscle in case of headache in connection with occupation neurosis would not appeal to me, as in many cases of headache the patients voluntarily and frequently contract this muscle with a view to getting relief from the headache. I do not doubt that in epileptics or those who have an epileptic diathesis or tendency, occasionally a migrainoid attack may stand in the relation of epileptic equivalent, but I do not believe that migraine and epilepsy are interchangeable and closely related conditions. Certainly most of those who suffer from migraine have nothing in their history to lead to the slightest suspicion that they are in any way epileptic. I do not believe that migraine is often an occupation neurosis because it would be difficult to say what particular occupation itself causes migraine in a very large percentage of cases. Indeed, it is more apt to affect people who have no occupation at all. I believe that there is a very decided connection in many cases of migraine and disturbance of digestion and that a fair proportion of cases are best treated when we take into consideration the gouty, arthritic, or autotoxic forms of disturbance. Often if we treat these cases along the lines of improved elimination and alimentation, with the exclusion of those factors which are toxic in character, particularly the digestion of too much meat, good results are obtained. In my judgment you will find that many cases of migraine are intimately connected with a disturbance in the digestive tract and that the factor of occupation is not of particular moment.

---

Propaganda Against Cancer in Uruguay.—L. Calzada in a communication to the *Revista Med. del Uruguay*, February, 1908, compares the statistics of uterine cancer in various countries, especially in regard to operability. It was only 7 per cent. in his experience with 187 patients; in France the best statistics give only 20 per cent.; in Italy, 5 per cent.; in Holland, 9 per cent. He urges sending out circulars to physicians impressing on them the importance of early discovery of cancer, also circulars to midwives urging them to send to physicians all their patients with gynecologic affections, emphasizing their responsibility if they allow lesions to pass undiscovered. He also urges education of women by lectures and pamphlets in regard to the dangers of neglect of uterine disease, advocating that this propaganda should be initiated and carried on by medical societies or official bodies to avoid opportunity for individual advertising by irresponsible individuals.



## OCULAR COMPLICATIONS OF PREGNANCY.\*

HIRAM WOODS, M.D.

BALTIMORE.

In dealing with the ocular complications of pregnancy, I shall try to present the bearing of recent pathologic investigations on the cause of serious eye disturbance. Medical literature shows that there is scarcely an eye disease which has not been more or less directly traced to the pregnant state. Some of these we now know are not distinctively so caused. Pregnancy, at most, increases liability by lessening resisting powers. Power<sup>1</sup> published three interesting papers, claiming that, among other complications, pregnancy produced a definite type of superficial central ulceration of the cornea. With our present knowledge of the rôle of infection in corneal ulceration, it seems more natural to attribute to pregnancy only such influence as is seen after any other severe tax on the system.

The same is true of the supposed tendency to phlyctenular ophthalmia. Asthenopia, with its defective accommodation, short of absolute paralysis, varying muscular anomalies, occasional blurring of vision, may be laid at the door of the general nerve tax under which the pregnant woman lives. One must take into account, too, from the same cause, an increase in a pre-existing hysterical habit. Thus, Knies<sup>2</sup> reports cases of temporary blindness, without urinary abnormality or ocular lesion, occurring after unusually painful labor. A patient of Szili's became suddenly blind from the opening of a window in a darkened room, and recovered only after six weeks. Then there are the considerable classes of metastatic ocular infections, of amblyopia from excessive hemorrhage, of lighting up of a latent syphilitic lesion, which would probably have remained quiet but for the overtaxed metabolism. I have seen specific chorioiditis relapse during pregnancy. But in all these cases there is, so far as I can see, nothing that is not observed after numerous other conditions.

Apart from temporary functional derangement, hysterical or neurotic, and diminished tissue resistance, there are certain ocular troubles of intensely serious significance to eyesight and even to life, which are observed with sufficient frequency during pregnancy to make the relation of cause and effect almost certain. For purposes of study, they may, I think, be divided into four classes, based on clinical manifestations: (1) The so-called uremic amaurosis, or sudden and complete blindness, without ophthalmoscopic lesion; (2) The hemorrhagic, exudative and degenerative changes in the retina, occurring in connection with albuminuria, and termed albuminuric retinitis of pregnancy; (3) Temporary or permanent loss of central vision or some portion of the visual field, without retinal lesion, the fundus either appearing normal or showing pallor of some portion of the optic disc; (4) A definite neuroretinitis, with hemorrhages and exudates, but not resembling the albuminuric retinitis.

We may consider each of these separately.

1. *Uremic Amaurosis*.—In its association with pregnancy, the term has the same meaning as in nephritis: sudden occurrence of total blindness (usual form), or great impairment of vision. There may be associated other nervous symptoms, such as headache, vomiting,

etc. Pupillary reaction is usually maintained, and Fuchs thinks this proves "that the location of the affection can not be in the eye or the optic nerve, but higher up, i. e., in the brain, which is poisoned by the excretory matters retained in the blood."

No lesion is found in the eye, and while this form of blindness has the gravest possible significance in chronic nephritis, and may be serious in pregnancy, it is usually transitory in the pregnant woman, provided she survives other complications. So far as my observation goes, it is confined, when occurring in pregnancy or parturition, to eclamptic cases, and follows the convulsion. The cause of this blindness is usually attributed to uremic poisoning, dependent on kidney disease.

The name, uremic amaurosis, is applied to cases incidental to pregnancy and parturition, because of the similarity of symptoms in the nephritic and parturient forms of blindness, the usual co-existing albuminuria, and the deeply grounded belief that it is through the medium of the kidneys that pernicious vomiting, puerperal convulsions and blindness occur. Difference in the prognostic significance of nephritic and parturient blindness is generally attributed to the fact that in the former the kidneys are in an advanced stage of disorganization, while in the latter the cause of blindness terminates with labor; but that parturient blindness is uremic and that derangement of kidney structure and function is essential to its production seems the fixed teaching of to-day, so far as our text-books go.

2. *Albuminuric Retinitis*.—The characteristic silvery-white, radiating spots, seen in the perifoveal region and at the disc margin, are too well known to need description. In both chronic nephritis and pregnancy the appearances are practically identical. As is well known, in the former these spots are considered of grave significance, and a fatal termination usually comes within two years. In pregnancy, they may appear as early as the third or fourth month, but usually they are seen toward the close of pregnancy.

According to Fuchs these white patches are made up of "fatty degeneration of the retinal elements and of the cells of the exudate." Dr Schweinitz states that in the retinitis of pregnancy the type is most often inflammatory, and that with the termination of gestation these inflammatory deposits may subside. It is on this possibility of absorption of inflammatory exudates before destructive processes have occurred in the retina, that we base the better prognosis in this form of retinitis. Hence, there is a practical unanimity of opinion that the only logical treatment is induction of labor. While, however, this is true, and while the kidney lesion of pregnancy, to which the retinal inflammation is attributed, is, as Fuchs says, "benign," there is not in our ophthalmic literature much suggestion of any other pathway from the uterus to the eye than through the kidney. Is this a logical or correct position in view of teaching from modern pathologic investigation?

One finds in treatises on obstetrics uniform warning about the increased danger from pregnancy to a woman who has chronic nephritis. She is certainly more liable to show remote complications of kidney inflammation than she would be if the extra burden of pregnancy were not put on her. But if she develops uremic blindness or albuminuric retinitis during or at the close of pregnancy, the latter condition can no more be blamed for the complication than other influences which are known to exert a bad effect on chronic nephritis. At most, gestation is only an exciting cause and the complication

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. *Lancet*, Lond., May 8, 15, 22, 1880.

2. *The Eye in General Diseases*.



is really dependent on the antecedent nephritis. The same is true of acute nephritis, from any of its usual causes, developing during gestation. Danger of remote complications or even of a fatal ending are greater. But this is not equivalent to saying that pregnancy can cause real nephritis, or that, in a woman, free from kidney involvement before pregnancy, the latter can so influence kidney structure and function as to produce through them grave ocular complications. Indeed, the weight of opinion seems the other way.

In the American Text-Book of Obstetrics the author of the chapter on the pathology of pregnancy says: "An acute inflammation of the kidney can not be caused by pregnancy, and is only observed in the rare cases where infective bacteria find entrance to the genito-urinary tract of the pregnant." J. Clifton Edgar states that "the kidney is affected in pregnancy by lesions which stop short of actual nephritis." This lesion is "purely a disease of the renal epithelium which undergoes fatty metamorphosis—a deposit and not a degeneration."

It may be well to speak a moment of the so-called "kidney of pregnancy," a condition to which we are apt to attribute too much importance. J. Whitridge Williams mentions it only incidentally in the first edition of his book, and in the second edition says: "It is a slight degree of nephritis. . . . Such conditions are nearly always connected with the various disturbances of metabolism which will be taken up under toxemia of pregnancy." Edgar says: "There is an affection to which the term 'pregnancy kidney' is familiarly restricted, and which is certainly not due to pressure, nor has it anything in common with ordinary nephritis, whether pre-existent or developing during gestation as a result of exposure or infection. In one sense, the notion of pregnancy-kidney is a negative one, formed after the exclusion of other renal lesions, and including numerous conditions which present little in common." Hirst seems to attach more importance to it than most modern writers, and says: "There is often albuminuria in advanced degrees of the condition. Hyaline and granular casts, with epithelium filled with fat, may be found. The kidneys may prove physiologically insufficient, and there may appear all the symptoms of renal insufficiency observed in true nephritis." Hirst also differentiates between chronic nephritis and the kidney of pregnancy, and says that in the latter the kidney symptoms are usually confined to the last months, while in nephritis they are pronounced at an early stage; and, again, that so far as his experience goes, albuminuric retinitis does not appear in the kidney of pregnancy, unless symptoms point to chronic nephritis.

The question I am trying to present is—are ophthalmologists justified in limiting their conception of the etiology of pregnancy-blindness or retinitis to renal lesions? Pregnancy does produce temporary blindness, and sometimes permanent impairment of vision in women previously healthy. It does cause retinal spots of exudation and degeneration in the same class, and the retinal lesion is usually accompanied by albuminuria. But is albuminuria the pathway to the retinal disease, or is the blindness essentially uremic? The recognized authorities from whom I have quoted might be multiplied, but such a course would only confirm the opinions expressed: (1) That pregnancy itself does not produce nephritis; (2) That the so-called kidney of pregnancy is usually insignificant in its effects, and recovers; (3) That it does not produce what we term "albuminuric retinitis."

We may now study the matter from another point of view. The dimness of vision or blindness in cases which do not show retinal lesion usually comes toward the close of gestation, during or after parturition. Again, the visual defect is one of a symptom-group of which headache, somnolence, convulsive seizures, etc., are members. This array has received the name of eclampsia, and convulsions are its prominent manifestation. As is well known, puerperal eclampsia, or convulsions, was generally thought, until late years, to have a renal origin. This opinion was based on the close resemblance of the puerperal to the nephritic seizures, and the usual presence of albuminuria.

Beyond mention of a few facts it is needless to discuss the reasons for abandoning this theory. Briefly, the insignificant renal changes often found at autopsy, and absence during life of symptoms of renal involvement in cases of eclampsia, started investigations which have led away from the renal theory. Edgar agrees with Williams that the pregnancy kidney is most probably a mild product of toxemia. He adds: "The all-important subject of the connection between this renal lesion and eclampsia is best accounted for by attributing the latter to the toxic state and not to the kidney lesion, which is itself the result of the same or an allied toxemia. There is, moreover, every reason to believe that this unknown toxic state of the blood is not uremia."

In the last edition of his work on obstetrics Williams reviews at length his own work on the pernicious vomiting of pregnancy, first published as a monograph in 1906, and includes the work of Prutz, Schmorl and others. A brief summary of conclusions may be given. In pernicious vomiting there are found hepatic changes identical with those found in acute yellow atrophy of the liver. There is profound necrosis of the central portion of the lobule, while the periphery remains intact. The lesions differ from those observed in eclampsia in which the process is essentially one of thrombosis and begins in the peripheral spaces. Williams urges that the hepatic changes in both pernicious vomiting and eclampsia may account for at least part of the urinary changes through the non-conversion of nitrogenous material into urea and its excretion as ammonia. He continues, "It should not be believed that the essential process consists in the hepatic or renal lesions, but in an underlying toxemia, to which they are due."

To summarize those parts of the work which touch ocular problems, it seems to be the prevailing opinion (1) That eclampsia of parturition is not uremic; (2) that both eclampsia and pernicious vomiting are results of a toxic substance circulating in the blood whose nature, or natures, are unknown; (3) that these toxic substances are capable of profoundly affecting the liver, and do so in a much more characteristic way than they do the kidneys; (4) that these substances can produce thrombosis in many of the smaller vessels with consequent degenerative and necrotic changes in various organs.

This conception of the serious complications of pregnancy, if confirmed, will put renal complications in the list of toxic effects. It will also influence our conception of these renal complications as the cause of ocular disturbances. The question will arise whether the toxemia which produces the renal, hepatic and other lesions may not also produce the ocular disturbances and lesions. If eclamptic convulsions are not uremic,



except in cases of aggravated pre-existing nephritis, it seems more logical to attribute the temporary blindness of eclampsia to the toxemia of the latter, than to bring in an uremia whose existence is at the most hypothetical. A toxic substance capable of causing such profound nerve disturbances as convulsions and many of the sequelæ might affect the optic centers as well. And, as a matter of fact, we know that these centers are often affected, sometimes permanently, by toxic agents having no connection with uremia.

#### SECONDARY EFFECTS OF TOXEMIA.

The secondary effects of a toxemia are many; edema, exudation, thrombosis, apoplexy, etc., are among them. They affect the nervous system as well as other parts. Among 65 eclamptic autopsies Schmorl<sup>3</sup> noted thrombi in the smaller cerebral vessels in 58. Edema, hyperemia, etc., were practically constant.

Bearing these facts in mind, we may for a moment look at what we term the albuminuric retinitis of pregnancy. I think all of us have seen nearly identical appearances in patients without albuminuria. I have seen them in a chlorotic girl, with functional menstrual trouble, clearing up with improvement in general health. There was no albuminuria. I have seen them in an apparently healthy boy, without known cause, who later developed a chorioiditis of exudative type in the other eye. In a case of neuroretinitis from venous thrombosis during pregnancy the characteristic retinal spots were evident. Yet there was no albuminuria.

Dr. James Bordley has been making careful study of ocular changes in cases of brain tumors at the Hopkins Hospital. He tells me that he has studied two hundred cases, but at this writing has tabulated only half. Yet in sixteen he found spots in the retina which he would have called albuminuric. The urine was normal. Diagnosis of intracranial neoplasm was confirmed by operation or autopsy. He and Dr. Cushing attribute the retinal changes to pressure, edema, exudation and consequent degeneration without inflammatory processes. All these are logical results of toxemia.

We have, then, the facts that other conditions than albuminuria can produce the characteristic clinical retinitis which has been called albuminuric; that among these are effects produced by toxemia, and that it is to a toxemia that kidney changes in pregnancy are attributed: that in cases in which premature labor has been induced, cure of the retinal lesion has followed. I do not think it is going too far if one urges, with evidence at hand, that we cultivate at least an open-mindedness regarding the causation of what we have always termed the albuminuric retinitis of pregnancy. Such a state of mind has one very important bearing on therapeutics. So long as we interject an albuminuria into our thinking we will be in imminent risk of sacrificing eyes. There is but one remedy that will cure the disease—prompt emptying of the uterus. But if there is no albuminuria, and we believe this to be an essential pathologic factor, we will miss our only opportunity to save vision, and subject the patient to the risks of a profound toxemia, already evidencing its presence in a most dangerous form.

3. *Loss of central vision or some portion of visual field, without retinal lesion.* In 1902,<sup>4</sup> I reported a case, the fields of which are here reproduced (Figs. 1 and 2). Her history is given here as Case 1. At the time I was

able to find only one such case reported in medical literature, but another has since been found.<sup>5</sup> and it is more than possible that there are others, under one name or another.

CASE 1.—Patient was 33 years of age, in her first confinement. From the sixth month there had been traces of albumin, and careful watch had been kept. Her pregnancy was closed abruptly toward the end of the ninth month by instrumental delivery, after a single convulsion. Recovery was without incident, except that for four days she had transient visual disturbances, and then, with an atrocious headache, she suddenly lost the left field of vision. This was in September, 1901, and the loss has been permanent. Dr. Whitridge Williams recently furnished me with the following data concerning the urine. Its importance was not duly appreciated by me when the original report was made: "For the week prior to the eclampsia the daily amount of urine varied from 43 to 64 ounces, while the albumin and urea content varied from 0.5 to 1.5 grams and 7 to 10.5 grams, respectively. For the week following the eclampsia the quantity of urine varied from 33 to 65 ounces, the albumin occurred only in traces, while the urea content varied from 15. to 21 grams per day." The significant element is diminished output of urea.

CASE 2.—In this case the fields were taken in May, 1903, and again in March, 1908 (Figs. 3, 4, 5 and 6). Central vision then, as now, was 20/20. The papilla now is slightly pale (?). The following history was furnished by Dr. Williams: "The patient is a well-nourished woman, 37 years of age. Her fourth pregnancy began March 16, 1902. In July she com-

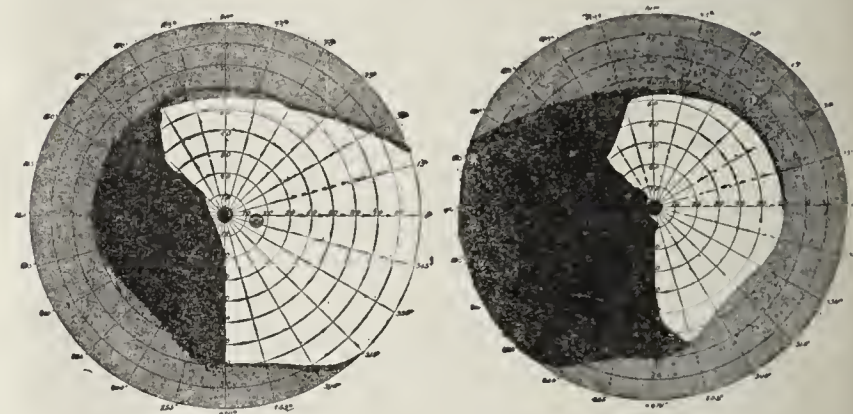


Figure 1.

Figure 2.

Figs. 1 and 2.—Case 1. Fields showing loss of a portion of visual field without retinal lesion.

plained of some headache and diminished urinary output. At this time the daily quantity of urine was 29 ounces, which contained no albumin and only 10 grams of urea. She was immediately put on a milk diet, and in the course of the next few days the urinary output had increased to 67 ounces, and the urea to 16 grams per day. Following this all symptoms disappeared. A 24-hour specimen, seen December 12, contained no albumin and 20 grams of urea. The patient went into labor on Jan. 1, 1903, and had an easy spontaneous delivery after eight hours of labor pains. The child was normal and weighed 7½ pounds.

"The third day after labor the patient began to complain of flashes of light in her right eye, and the next day of intense neuralgic pains, particularly on the right side of the head. (The defect in the visual field occurred two or three days later.) January 13 there was a feeling of numbness on the left side. Closer examination showed a complete hemianesthesia. At the same time the muscular forces were considerably diminished as compared with those of the opposite side. On the seventh day of the puerperium the urine was negative, but on the thirteenth day it contained a trace of albumin, but no casts. A 24-hour specimen on the nineteenth day amounted to 50 ounces, and contained 42 grams of urea and a marked trace of albumin, with a few casts." Blood examination showed 4,240,000 red cells, 11,500 white cells, hemoglobin 50 per cent.

She was put on iron and made a complete recovery, except for the hemianopsia and nervous symptoms on the left side.

3. Williams' Text-Book.

4. Proc. Am. Ophthal. Soc.

5. Brit. Med. Jour., Sept. 30, 1893.



There is still, five years later, marked impairment of sensation in the left hand and diminished muscular force, as compared with the right hand.

Dr. H. M. Thomas saw this lady in 1903, and I append a report he made in 1905: "She has, two years after the attack, marked sensory disturbance over the whole left side. Touch is perceived nearly normally, but painful stimuli with the point of a pin are not felt as sharp pricks, but at times are painful. There is marked disturbance in the perception of hot and cold stimuli. Heat is usually not perceived at all, and cold is only felt as pain and not as cold. Muscular sense is somewhat disturbed in the hand, and there is a complete loss of the stereognostic power. There is also some ataxia in the movements of the left hand. The symptoms, I believe, are the result of softening in the posterior part of the internal capsule and the region just posterior to it, probably due to a thrombosis of the posterior cerebral artery."

CASE 3.—The patient had had five miscarriages, but was delivered of a full-term dead child Sept. 26, 1906. The history suggests syphilis. Her physician being dead, no particulars of gestation, etc., are obtainable. However, she had never noticed any visual defect until she was up after this confinement. Then she found herself running into chairs, etc., on the right side,

shown in Figure 9. There was no albuminuria. Eleven months after abortion central vision was normal, and the field showed loss of vision in the right lower quadrant (Fig. 10). The reporter thought the case one of reflex amblyopia, and quotes this explanation from Mr. Priestly Smith, "A peripheral stimulus acting through the sympathetic nerve leads to a vasomotor effect within the eye, and the defects of sight are produced through the medium of the vessels of the capillary layer of the chorioid. . . . The amblyopia is due to the impaired nutrition of the rods and cones." Mr. Knaggs recognizes that the permanent loss of a field quadrant is against this explanation, but attributes it to commencing atrophy. It is noteworthy that in the discussion E. F. Drake Broekman took exception to a reflex explanation, and hinted strongly at what we now term toxemia, with resulting hemorrhage or thrombosis. He calls it "the altered character of the blood."

J. Herbert Fisher<sup>6</sup> reviews several cases of what he terms "Obstetric Neuritis," reported by Dr. H. G. Turney.<sup>7</sup> Fisher adds a case of paralysis of one pupil,

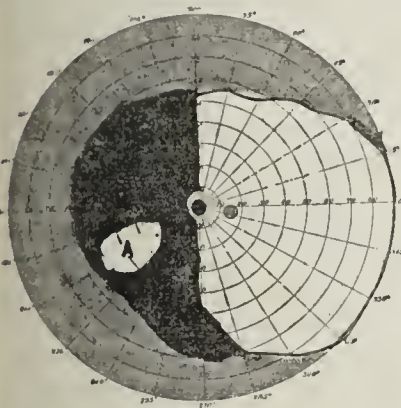


Figure 3.

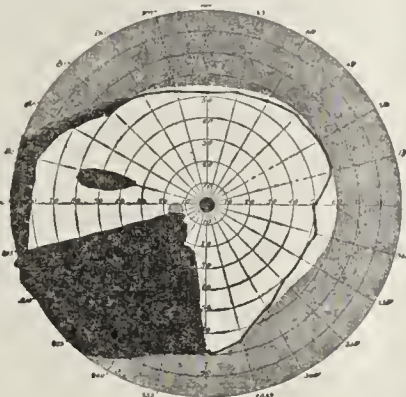


Figure 4.

Figs. 3 and 4.—Case 2. Showing visual fields as found in May, 1903. A, Dim area.

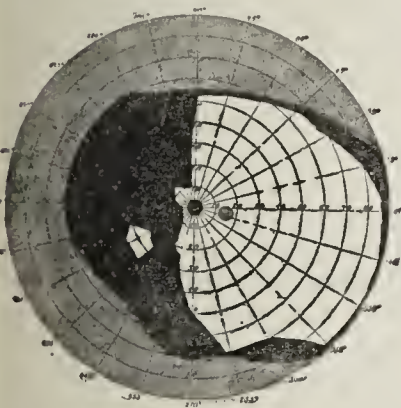


Figure 5.

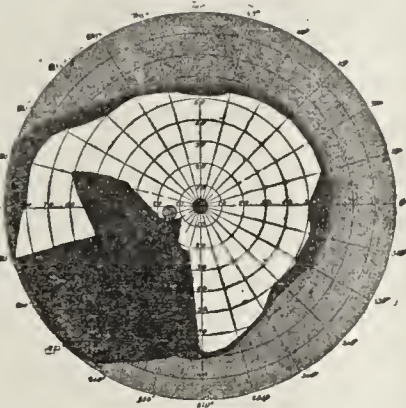


Figure 6.

Figs. 5 and 6.—Case 2. Showing visual fields as found in March, 1908. The light area within the solid black in Figure 5 indicates the dim area.

and consulted Dr. J. J. Carroll, of Baltimore, who found normal central vision and the fields shown in Figures 7 and 8. She was in excellent health.

As stated, when I reported my first case in 1902, I found but one case on record, and this showed temporary right hemianopsia. F. Piek, who investigated the case, thought the visual disturbance resulted from a toxic paralysis of the central tracts of the optic nerve, with more marked involvement of one hemisphere.

R. Lawford Knaggs<sup>5</sup> reported the case of a woman, 40 years old, who for eight years had been blind in the left eye. The blindness was first noticed after confinement. Though not stated in the report, it is evident that she was pregnant when she applied for refraction correction for the right eye. In the course of six weeks vision failed, while the field, taken before abortion, is

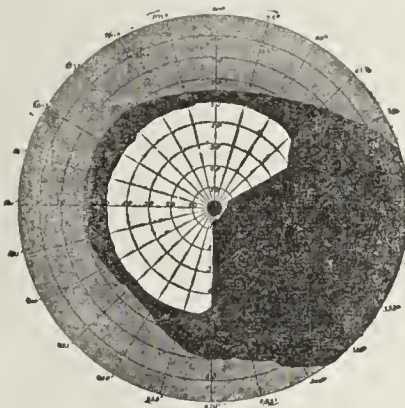


Figure 7.

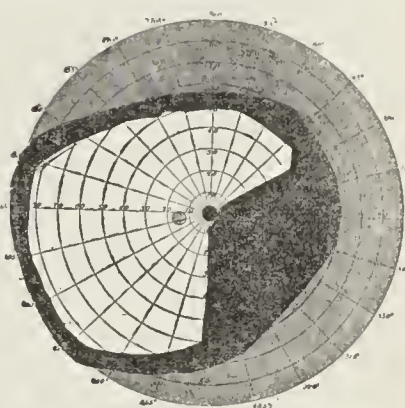


Figure 8.

Figs. 7 and 8.—Case 3. Showing visual fields as they appeared shortly after confinement.

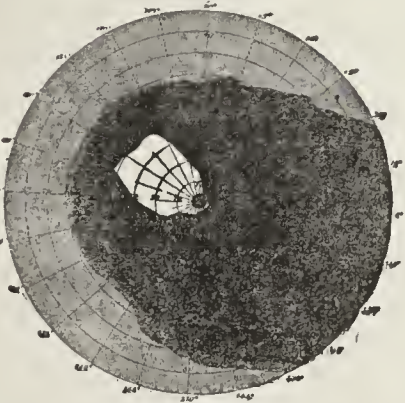


Figure 9.

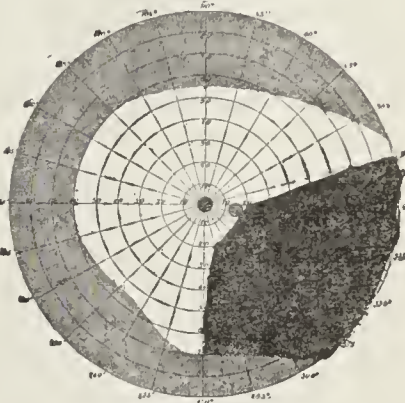


Figure 10.

Fig. 9.—Knaggs' case. Visual field taken just before abortion occurred.

Fig. 10.—Knaggs' case. Visual field taken eleven months after abortion.

occurring during pregnancy, in connection with other nerve derangement. Incidentally, he quotes Turney's criticism of Knaggs' case, Turney attributing the blindness to a retrobulbar neuritis of toxic origin.

Mention may be made, finally, of a case reported by Dr. Charles J. Kipp, of Newark.<sup>8</sup> The patient lost vision in the right eye after four pregnancies, in each of which there had been ocular trouble. Dr. Kipp saw her first after her third confinement. Except for a slight loss of transparency in the region of the disc the fundus was normal. Yet there was an absolute central scotoma. There was no albuminuria. In the fourth pregnancy,

6. Ophth. Rev., xvii, p. 317.

7. St. Thomas' Hosp. Rep., xxv.

8. THE JOURNAL A. M. A., June 30, 1906, p. 1986.



with reduction of vision to light perception, there was pallor of the disc, with indistinctness of outline. Later small hemorrhages appeared in the retina. The case ended in total atrophy. Dr. Kipp says that to him "it seems most probable that the pregnancies caused a disturbance in the vascular supply, a congestion at or near the apex of the orbit, and that this produced pressure on the optic nerve and its sheaths." He says that others have attributed such conditions to autointoxication.

In all these cases, I think, nephritis can be excluded. The vascular supply and reflex explanations do not seem reasonable. From what we now know of the toxemias of pregnancy, of the results of toxemia in producing edema, thrombosis, exudation and necrosis, of the frequency of involvement of the nervous system in this toxic process, it seems to me that we abandon an adequate and ready explanation when we leave this field. For instance, Dr. Kipp's case, with its central scotoma in the third pregnancy, partial recovery between pregnancies, preservation of peripheral vision throughout, seems to be a typical picture of a recurrent toxemia.

These fields are worthy of more than passing notice. In some of them the entire half is obliterated. In others, where part of the affected retinal half is spared, the tendency is decidedly toward permanent involvement of the lower quadrant. I do not know why this should be. But it has, possibly, some bearing on etiology. Assuming, as I think we should, that toxemia is the basis of the lesions, the fields indicating total obliteration of a retinal half are probably the result of a necrotic process, while those showing preservation of a quadrant are more likely the result of toxic neuritis, certain fibers ultimately escaping, while others were destroyed. Thrombosis, necrosis and neuritis are essential factors of deep toxemia. It is also interesting to compare Figures 3 and 5, and 4 and 6. These are taken five years apart, from the same eyes. The large "dim area" in the lower nasal quadrant of Figure 3, taken in 1903, is found in the midst of a large scotoma. Figure 5 shows some preservation of this seeing spot. Figure 4 shows that in 1903 there was a scotoma in the upper temporal quadrant, and five years later (Fig. 6) this has broken through and joined the obliterated lower temporal quadrant.

The last ocular complication of pregnancy of which I shall speak is a hemorrhagic, exudative retinitis, and does not suggest the type known as albuminuric I have seen only two such cases, and these within the past four weeks. I have not had time to make as complete a study of the literature as I should like, and hope at a later period to present the cases in a more thorough manner. However, the little research I have been able to make justifies classifying them as complications of pregnancy. Enough has been found to prove that others have observed this form of neuroretinitis during pregnancy.

There is a brief review<sup>9</sup> of an article by Paul Bar<sup>10</sup> on the poly- and mono-neurites of pregnancy. He cites two cases, one a young woman of 22, who lost both eyes in successive pregnancies from neuroretinitis. In this case there was albuminuria. In a second case, dimness of vision had been experienced toward the close of a first pregnancy, but little attention was paid to it. Later, Panas diagnosed optic neuritis. A second pregnancy destroyed both eyes. No mention is made of the urinary examination in this review, but Puyo,<sup>11</sup> states that the

second case did not present symptoms of kidney involvement. Groenouw<sup>12</sup> says: "But retinal diseases, and hemorrhages in the retina in particular, also occur in the pregnant woman whose urine is free from sugar and albumin and who has no cardiac disease. Te-Mais reports on four such cases, of which three were completely cured after delivery. In the fourth case, hemorrhages of the conjunctiva appeared in the third month of pregnancy, and two months later in the retina."

Puyo studied the neurites of pregnancy thoroughly and goes over some of the cases mentioned in this paper. He concludes that the underlying cause is a toxemia of unknown nature, and excludes the kidney. The renal lesions, when present, he thinks secondary.

With this brief review of published cases, which seems sufficient to establish the existence of a pregnancy-neuroretinitis, I want to give clinical notes of the two cases recently observed, with special reference to the methods of diagnosing their toxic origin.

**CASE 4.—History.**—Feb. 20, 1908, I was consulted by a lady, 35 years of age, from the South, for blindness of the left eye. She was the mother of five healthy children. In November, 1907, when she thought herself pregnant, she had, from some cause which could not be satisfactorily determined, a hemorrhage, which was diagnosed as a miscarriage. She made a prompt recovery. The December menstrual period was shorter than normal, and that in January was missed. Her own conclusion was that she had become pregnant shortly after her menstruation in the first week of December, and the usual appearance of morning sickness confirmed her opinion. In all her previous pregnancies she had been unusually well, but in this she had not felt well, with inclination to avoid exertion, etc. As nearly as she could place the date, her first eye symptoms had appeared on January 8, when she noticed that the lower field of vision was obliterated. She was sure that this was confined to the left eye. In a day or two this cleared up, but after an equal interval she became conscious that the left eye saw poorly, and soon sight was lost altogether. She consulted a local oculist, who correctly diagnosed neuroretinitis. Mercurial treatment had been without avail. The right eye was normal.

**Examination.**—I found extensive retinitis, with hemorrhages and large exudates over the entire fundus. There was also considerable swelling of the papilla. The veins were tortuous, thrombosed, broken in places, and there was no difficulty in determining that a venous thrombosis was at the bottom of the neuroretinitis. Syphilis was absolutely excluded. There was no reason to think that brain tumor or intracranial inflammation was the cause. Yet I felt that the salvation of the right eye, if possible at all, demanded discovery of the underlying cause of the thrombosis. In this connection I recalled Williams' work on toxemic vomiting of pregnancy.

Secondary results of the toxemia, which Williams claimed produced this condition, were found in the central nervous system, and I wondered if it were possible that, without the stage and symptoms of this sort of vomiting, serious nerve lesion might exist. I sent the patient to the University of Maryland Hospital for examination. Dr. Bull, of New York, to whom I submitted the history, agreed that this was the most promising line for investigation. While the urinary examinations were in progress, with the aid of Dr. Friedenwald, who saw the case with me, the literature was searched with the results already outlined.

The line of investigation may be best given by quoting from a paper on the Toxemic Vomiting of Pregnancy by Williams.<sup>13</sup> He first divides the subject into three varieties—neurotic, reflex and pernicious vomiting. The neurotic is often hysterical and when correctly diagnosed can be controlled by suggestion and various simple means. Reflex vomiting is due to some malposition or other lesion connected with the pelvic viscera, and is subject to amelioration, when the toxic variety

9. Ann. d'Oculistique, 1904.

10. Bull. de la Soc. d'Obstet., 1904, 4, 180.

11. Des Nevrites Gravidiques Par. Thes., 1905.

12. Graefe-Saemisch, p. 184.

13. Am. Jour. Med. Sciences, September, 1906.



is excluded. But physical examination, to determine a reflex origin, chemical, to decide toxic origin, are needed before the neurotic variety can be accepted as the diagnosis. He says: "The urine, while diminished in amount as the result of scanty intake of fluids, does not contain albumin or casts until shortly before death, and may apparently present a normal amount of urea, as determined by the Doremus method, so that its casual examination gives no clue to the gravity of the condition. In reality, on the other hand, more detailed chemical examination at an early period reveals changes which are indicative of a profoundly altered metabolism. These consist of a decided decrease in the amount of nitrogen excreted as urea and a marked increase in the amount put out as ammonia. Accordingly, while the total nitrogen output may be practically normal, the percentage of nitrogen eliminated as ammonia is greatly increased, and this so-called ammonia coefficient, instead of being 4 or 5 per cent. as in normal pregnancy, may rise to 20, 30 or 40 per cent. . . . In my experience, if the latter (i. e., the ammonia coefficient) exceeds 10 per cent., the diagnosis of toxemic vomiting should be made, and the pregnancy immediately terminated, as there is no likelihood that the process can be checked by therapeutic measures, if it once leads to the production of the characteristic hepatic lesions."

The urine of my patient was subjected to such examination. The daily output was measured, tests for albumin, sugar and casts were made daily, and the urea and ammonia estimated quantitatively. At no time was there a trace of albumin, or sugar, and once the examiner, Dr. Adler, of the University staff, found, as he thought, a few hyaline casts. For the first three days the output was only 21, 19 and 23 ounces. Forced intake of water made very little alteration. The total urea output during these days, from February 22 to 29, varied from 4.7 to 5.5 grams, while the ammonia coefficient was persistently 14 to 15 per cent. In a word, urinalysis gave exactly what Williams had described as the diagnostic basis of pernicious vomiting. Yet there was very little nausea and no vomiting. But there was a destructive neuroretinitis, dependent on venous thrombosis, and thrombosis is a recognized result of pregnancy toxemia.

I had little hope of improving the left eye, but, after consultation with Dr. Friedenwald and Dr. L. M. Allen, I advised premature delivery as the best method of safeguarding the right eye. This was accomplished by Dr. Allen on February 29. Recovery was uneventful. Dr. Allen thought the fetus indicated a pregnancy of at least three and a half months, which throws some doubt on the supposed miscarriage in November.

There was on March 5 a urinary output of 80 ounces, with 13.75 grams of urea. Since then the daily output has not fallen below 93 ounces per day, with excretion of urea varying from 7 to 13 drams. This is still below normal, but three examinations of the ammonia coefficient show 8.3 per cent., 5.6 per cent. and 6.1 per cent. The patient has improved generally, and it is worthy of note that from having in the left eye no light perception or pupillary reaction before delivery, both are now present in certain parts of the field. Incidentally, I may add that when I dilated the left pupil for ophthalmoscopic direct examination I found at the foveal region numerous spots which I would not have hesitated to attribute to albuminuria, but at no time was it present.

CASE 5.—The patient was 22 years of age, in her second pregnancy. I saw her through the courtesy of Dr. Williams. She was admitted to Johns Hopkins Hospital February 5. The history shows persistent vomiting from February 5 to 17. Rectal nourishment was employed. Slight jaundice on February 16. On the 7th the ammonia coefficient was 36 per cent. On the 10th it was 20 per cent., at that time still more than double the amount on which a diagnosis of pernicious vomiting could be made. I do not know why Dr. Williams did not operate then, but he postponed doing so until the 17th. On the 16th the ammonia coefficient reached 40 per cent., and the next day the uterus was emptied. Ammonia output continued high, and the patient was intensely septic for several days. The ammonia output fell steadily, reaching 11 per cent. on March 9.

The day of first involvement of the eyes is not given, but on February 28 it is stated that the patient "could just barely

count fingers when the eyes were worst." On March 2 Dr. R. L. Randolph found hemorrhagic neuroretinitis and large hemorrhages in both eyes, especially in the left eye. Exudates were scattered throughout the retina. On March 7 Dr. H. M. Thomas found definite symptoms of multiple neuritis, into which I need not enter for present purposes. Life was almost despaired of, but the woman has survived, and when I saw her on March 10 she seemed to have good promise of preserving both life and vision. The exudates were nearly absorbed, and so were the retinal hemorrhages. The nerves and retina showed no special abnormality, and there was good pupillary reaction. She saw objects in the yard and counted fingers at ten feet.

#### SUMMARY.

Apart from the various nervous symptoms incidental to pregnancy, which often affect the eye functions, there are four serious ocular manifestations seen more or less frequently during pregnancy or after parturition. These are: (1) The so-called uremic blindness, which is usually seen in connection with eclampsia. (2) What has always been termed the albuminuric retinitis of pregnancy. These are the most common complications. Rarer forms are (3) loss of central or peripheral vision, due, so far as symptoms point, to a retrobulbar neuritis, and (4), a form of neuroretinitis, not essentially suggestive of the albuminuric type, but showing numerous retinal exudates and hemorrhages. The clinical symptoms of these conditions are reviewed, and the classes are studied from the standpoint of recent pathological investigations in the obstetrical field. There is, in view of these investigations, doubt as to whether the term uremic should be applied to the blindness occurring in connection with puerperal eclampsia. The same is true regarding the renal origin of what is termed the albuminuric retinitis of pregnancy. There is good reason to think that both the renal and ocular complications are manifestations of the same process—a toxemia. The basis for this is set forth in the paper.

The third and fourth varieties of ocular complications of pregnancy are also, doubtless, the results of pregnancy toxemia, a toxic neuritis or toxic thrombosis probably being the active factor in causation.

#### DISCUSSION.

DR. CHARLES STEDMAN BULL, New York, said that modern pathology now taught that a number of ocular conditions, such as the amblyopia, occurring from excessive hemorrhage, or the sudden lighting up of latent syphilitic lesions, hitherto attributed to the pregnant state, were not due directly to pregnancy as a cause, but rather to the liability to disease induced by the lessening of the patient's powers of resistance. In certain other ocular conditions occasionally encountered in the pregnant woman, of serious prognostic significance both to vision and to life, Dr. Bull said that recent pathologic investigations made the relation of cause and effect practically certain. He believed it to be still an open question whether the so-called uremic amaurosis, or sudden and complete blindness without ophthalmoscopic lesion, usually confined to eclamptic cases, was really uremic and actually dependent on derangement of organic kidney structure and function.

In the hemorrhages, and the exudative and degenerative changes in the retina occurring in connection with albuminuria, designated as the albuminuric retinitis of pregnancy, Dr. Bull said, the prognosis as to the vision and the life of the patient depended on the duration of gestation. By the induction of premature labor a better prognosis as to the ultimate vision might be given. With the forced termination of pregnancy, the inflammatory process in the retina would subside and good vision might be restored, provided the inflammatory process had not lasted long enough to cause the secondary degenerative changes in the retina. In the retinitis of pregnancy, he said, the loss of vision appeared slowly and occurred chiefly in primiparae and in the latter half of pregnancy. There was



no contraction of the visual field, either for form or color. In subsequent pregnancies mild recurrences might be the rule.

Retinitis gravidarum, so-called, Dr. Bull said, appeared in the "pregnancy kidney" in from 1 to 20 per cent. of the cases. Unless labor were not induced, the majority of these patients, if they lived, would be permanently blind; and this persistent loss of vision, he said, pointed to the existence of some complication, such as detachment of the retina or atrophy of the optic nerve. Modern pathologists did not regard the kidney as the only pathway from the uterus to the eye. In fact, from the teachings of recent pathology, it seemed improbable that pregnancy could cause a real nephritis. Dr. Bull said that the kidney in pregnancy might be affected by lesions but they seemed to stop short of actual nephritis. It was a lesion of the renal epithelium which underwent a fatty degeneration. The "pregnancy kidney" should be regarded as a mild product of toxemia. The eclampsia, the nausea and vomiting, and the sudden partial or complete blindness, he said, must all be regarded as the results of an unknown toxic substance circulating in the blood, and not of the kidney lesion. It had been found that in these cases the liver was far more likely to be affected than the kidneys. Such a toxic substance might easily affect the optic centers also. He said that it was, therefore, incorrect and unscientific to speak of the albuminuric retinitis of pregnancy, for it did not exist unless the kidneys had previously showed the existence of interstitial nephritis.

So long as the blindness or retinitis of pregnancy was regarded as always associated with albuminuria and interstitial nephritis, doctors would run the risk of sacrificing eyes by not insisting on the induction of premature labor.

Dr. Bull added that if to regard a toxemia as the basis of all the lesions shown in the charts accompanying Dr. Woods' paper, Dr. Woods was correct in his explanation of them. For instance, when the chart showed a total obliteration of half of the field, the lesion was probably a thrombotic process. When the chart showed the preservation of a quadrant, the case was probably one of toxic neuritis of the optic nerve, certain fibers ultimately escaping, while others were destroyed.

DR. W. C. POSEY, Philadelphia, referred to a paper written by him in conjunction with Dr. John C. Hirst, of Philadelphia, entitled "The Importance of an Ocular Examination in Pregnant Women Manifesting Constitutional Signs of Toxemia," and published in *THE JOURNAL* March 14, 1908, 1, 865-868, which described certain ocular lesions which might arise in pregnancy as a consequence of a toxemia other than albuminuria. It was stated that this, a typical and often obscure form of toxemia, manifested itself in early pregnancy by pernicious vomiting, later in persistent headache, failing vision, *muscae volitantes*, epigastric pain and restlessness. Repeated examinations of the urine for albumin being negative, Dr. Posey said the obstetrician was thrown off his guard, and viewed the symptoms as local and of no particular import until convulsions occurred. He cited a case in which the patient, a young primipara, developed dimness of vision in the fourteenth week of gestation, an aching fulness in the back of the head having been present some weeks previously. The ophthalmoscope revealed pronounced neuroretinitis in both eyes, the blood vessels being full and tortuous, and a few small rounded fluffy lymph extravasations were found in the region of the disc. There were no hemorrhages. The urine was free from albumin. Active eliminative treatment was essayed, but the general and local signs of toxemia disappeared only after abortion had been successfully induced.

Dr. Posey agreed with Dr. Woods that a toxemia other than that of albuminuria might provoke ocular changes during pregnancy. The importance of an ocular examination in all doubtful cases, he said, could not be overestimated, as the detection of changes in the eye-grounds, even without the presence of albumin in the urine, should lead to the adoption of a line of treatment which might be the means of saving the life of the patient.

DR. CASEY A. WOOD, Chicago, remarked that Dr. Woods had very properly passed lightly over one of the exceptionally rare sequelae of pregnancy, namely, that form of metastatic panophthalmitis described by Hirschberg many years ago. Dr. Wood then read a report of a case of this septicemia which

he had had. He added that the patient recovered as far as the general condition was concerned, and that the case differed from the great majority of cases published by Hirschberg and others, in the facts that the patient survived, and that the condition was bilateral.

DR. E. C. ELLETT, Memphis, Tenn., mentioned two cases bearing on some of the points made by Dr. Woods. He said that in November, 1907, he had been asked to see a patient aged 35, the mother of three children. In each of the two first pregnancies she had suffered with a neuritis of the branches of the brachial plexus and toothache. She had had several sound teeth extracted for relief of the latter symptoms, without effect. Relief followed delivery. She had been delivered of a third child two weeks before Dr. Ellett saw her. In the early months of this pregnancy she again suffered from brachial neuritis, which disappeared. The urine was last examined two weeks before confinement, was of normal specific gravity, and contained no albumin. On the day of the confinement she was seen at 8 o'clock by the physician, and complained of reduction of vision to perception of light. She was then in labor. The abdomen was unusually distended, so that no fetal outlines could be distinguished. Delivery at about 10 o'clock was followed by the discharge of a considerable quantity of dark blood and clots, but no active bleeding. For the first twenty-four hours there was absolute suppression of urine. In the next twenty-four hours not more than an ounce of urine was passed, and this was highly albuminous. After this the secretion increased, and the albumin lessened. Two weeks after confinement Dr. Ellett found vision practically normal, fields normal, eye-grounds normal except as to color, which was affected by the intense anemia from which the patient still suffered. The urine was normal in quantity and specific gravity and contained no albumin. It was not examined otherwise or microscopically at any time. In February, 1908, it was proposed to do a curettage for an endometritis. Chloroform was administered, and the patient died on the table from the anesthetic before the operation was begun.

The second patient was seen in 1902. Three months previous to Dr. Ellett's examination she complained of a sudden blurring of vision, worse in the left eye. Nine years previously, during a pregnancy and for six months after delivery, she had had uremic symptoms and impaired vision. She had recently been told by a very competent abdominal surgeon, who had seen her at intervals during this time, that she was well of her kidney trouble. She had postneuritic atrophy of both optic nerves, with slight impairment of central vision, and while under Dr. Ellett's observation the fields, at first normal, in two years became markedly hemoptic. The urinalysis showed specific gravity 1.003, no albumin, no casts; all the organs were normal. The patient took strychnin at Dr. Ellett's advice and with the consent of a colleague, almost all this time. In April, 1905, she saw Dr. Ellett's colleague on a Saturday, and he advised stopping the strychnin. She died suddenly the following Tuesday.

Dr. Ellett said that the evidences of toxemia were plain in both of these cases. In case one, the brachial neuritis could not so readily be explained on any other ground. In both cases he believed that an enfeebled and degenerate heart muscle must have resulted from the toxemia, and that this muscle suddenly gave way, in one case under the depressing influence of chloroform, and in the other when the accustomed stimulant was withdrawn.

DR. ARNOLD KNAPP, New York, said that some of Dr. Woods' cases corresponded to the group he had reported last year before the American Ophthalmological Society, in which there was an optic neuritic atrophy. This was associated with the symptoms now taken to mean toxemia. Further manifestations of this condition were shown in the analysis of the urine in which a diminution of the nitrogenous element, a disturbance of the nitrogen ratio, was found. Dr. Knapp remarked that the findings in the urine offered a more promising field than in the case on which Dr. de Schweinitz had just reported. As to the form, neuroretinitis with hemorrhages, it seemed to Dr. Knapp that the cases which he observed were associated with sepsis and that it was not possible to say that the condition was not due to the septic state, especially as,



according to the obstetricians, the toxemia predisposed to sepsis and the association of the two conditions seemed not unusual.

DR. HARRY FRIEDENWALD, Baltimore, said that he had had an opportunity of observing several patients who had recovered from eclampsia but were blind for some hours or days after delivery. In one of them the recovery of vision was so interesting that he thought it worthy of mention in this discussion. He remarked that it was generally assumed that the visual impairment in eclampsia was due to the toxic effects upon the cerebrum. In this patient the vision gradually returned, but there was at first a very marked central scotoma; it was the periphery of the field of vision in both eyes that recovered first, and only after several days did central vision improve and gradually return to normal. Dr. Friedenwald assumed that in this case the toxic effect was on the optic nerve and not on the cerebrum.

DR. ROBERT RANDOLPH, Baltimore, agreed that the proper course to pursue in the treatment of this class of cases was to induce premature labor where it was evident that the integrity of the retina is in danger. He felt that one would probably be justified in believing that the retinal changes of pregnancy were due to the toxemia of pregnancy and not to renal disease, if in the majority of cases of retinitis observed in pregnancy no albumin were found in the urine, but such, he said, was certainly not the case. Ten years ago he reported five cases of albuminuric retinitis in pregnancy, all with marked ophthalmoscopic pictures; all had albumin in the urine, and in two the urine was loaded with albumin. In going over the literature at that time Dr. Randolph noted that all who reported on cases of this character had found more or less albumin in the urine. Since then he had seen two cases of retinitis albuminurica of pregnancy and in both cases examination of the urine revealed albumin and casts. To his mind there was no retinal change so infallibly suggestive as the picture called albuminuric retinitis, with its flaky superficially situated specks, not necessarily arranged in the classic way in the macular region, but distributed indifferently about the retina and impressing the observer by their evidently superficial location. He said that his own anatomic observations placed these changes for the greater part in the nerve-fiber layer, the ganglion-cell layer and internal granular layer. The toxemia of pregnancy might be responsible for the eclampsia, but it should be remembered that this question of the pathogenesis of eclampsia had always been and still was a debatable one and, he said, according to Hirst at least three-fourths of eclampsia cases had albuminuria. Dr. Randolph remarked that recent observations had rather lessened the importance of renal disease as a cause of eclampsia, yet in by far the majority of cases of eclampsia there was demonstrable proof of renal disease. This being the case one would have no more right to deny the agency of the kidney trouble in causing the retinitis than to deny the origin of the retinitis in a non-pregnant individual who presented the usual signs and symptoms of a chronic interstitial nephritis. Dr. Randolph felt that he hardly needed to call attention to the necessity of making repeated examinations of the urine before deciding to accept or reject the diagnosis of renal retinitis. Lucien Howe years ago reported a case where the typical picture of albuminuric retinitis was seen and it was not until three months later that albumin and casts were found in the urine. This would suggest the possibility of this form of retinitis being occasionally a prealbuminuric sign of renal disease.

Dr. Randolph said that a month ago he had seen a woman whose right retina was covered with a number of soft, white, superficially located specks, and he had felt almost instinctively that he was dealing with a kidney trouble. Yet examination of the urine at that time failed to reveal either albumin or casts. Two weeks ago the patient's family physician, to whom Dr. Randolph referred her, reported that nothing abnormal had been disclosed by repeated examinations till the last three, each of which showed casts and albumin, which, with a high blood pressure, suggested the presence of a contracted kidney. Dr. Randolph remarked that Dr. Woods had called attention to the fact that Dr. James Bordley, Jr., had observed the characteristic feature of albuminuric retinitis in sixteen

cases of brain tumor in which no albumin was found in the urine. He said that the occurrence of this condition was well known, but care should be exercised in drawing conclusions until the possible renal involvement had been completely excluded. Dr. Randolph had recently examined two cases of brain tumor in the Johns Hopkins Hospital in both of which there were choked discs and the so-called albuminuric retinitis, but in both of these cases casts and albumin were found in the urine.

DR. MARCUS FEINGOLD, New Orleans, said that if this classification of retinitis in pregnancy as being not the effect of the albuminuria but of the toxemia were accepted as correct, then the question would always arise in the mind of the practitioner, what to do when confronted with a case of retinitis in a patient never before examined? Could it be called a case of retinitis due only to the toxemia or a case of retinitis in a woman who had previously had nephritis? The question, he said, was of great importance from the standpoint of therapeutics; in a case due to toxemia it was the physician's duty to interrupt pregnancy at once so as to stop the toxemia; in a case due to albuminuria proper, the indication was not as plain, he believed, because obstetricians as a rule would not perform an abortion unless the nephritis produced eclamptic symptoms. Dr. Feingold believed that there was justification for the more radical measures in every case. He cited the case of a patient who during pregnancy became suddenly blind. She consulted Dr. Feingold some months after confinement and then presented a typical post-neuritic atrophy with remnants of hemorrhage in the eyes. Whether this was a case of albuminuric retinitis, or retinitis in pregnancy from toxemia was difficult to decide. Dr. Feingold advised in such a case the performance of an abortion. Another patient consulted Dr. Feingold for headaches. He found an error of refraction but also a condition of retinitis of pregnancy. He advised abortion; it was performed, and the patient recovered.

DR. HIRAM WOODS, Baltimore, replied to the problem outlined by the two last speakers, namely, how the diagnosis of toxic or renal origin was to be made in a case of exudative retinitis in pregnancy, or in a case of neuroretinitis without the spots thought characteristic of renal origin by saying that it was to be made by urinalysis along the lines suggested in Dr. de Schweinitz' paper of the same day, and illustrated in two of the cases narrated in Dr. Woods' own paper. If the contention of Williams and other obstetricians was correct—that liver changes were responsible for a general toxemia capable of affecting the kidneys and nervous system alike, that both were direct results of the toxic substance, and that the kidneys were not the pathway to the nervous system—then Dr. Woods said the diagnosis of this toxemia became a matter of grave importance. Further, if the contention was correct that the urea output was so altered as to produce an excess of elimination of urea in the form of ammonia—in other words, an increase in the ammonia coefficient—then there was a definite chemical line of investigation.

Dr. Randolph had said that in the cases of eclamptic blindness which had come under his observation, there had usually been albuminuria. The point Dr. Woods wished to make was that, even so, physicians were not justified in attributing this blindness solely to uremic poisoning as the text-books did. This form of blindness, he said, was observed in the uremic convulsions of chronic nephritis, and accompanied the usual symptoms of defective elimination. It was, moreover, a serious symptom in the course of chronic kidney lesion; but when occurring in connection with puerperal convulsions, it was but one part of a symptom-complex of which convulsions were another part. Owing to this frequent association with albuminuria, the whole eclamptic phenomenon had been laid at the door of albuminuria. Clinical observations, however, had often shown the absence of albuminuria, and the subsequent course of the puerperal cases usually negated the hypothesis of renal origin; at least the course was usually different from that in the true nephritic. Again, observations at autopsy showed insignificant renal changes often, and more constant characteristic liver lesions. These facts had led Edgar and other obstetricians



away from the renal origin of eclampsia, and made them attribute the whole phenomenon to some poison of unknown nature, but, according to Edgar, not uremic. Why, then, Dr. Woods asked, should ophthalmologists persist in picking out one symptom of this phenomenon as certainly uremic, especially when the obstetricians had taught that albuminuria could also be a secondary result of toxemia?

## THE RELATION OF OCULAR AND CARDIO-VASCULAR DISEASE.\*

MELVILLE BLACK, M.D.

Professor of Ophthalmology, Denver and Gross School of Medicine.  
DENVER.

This subject, I am sure, is not new to you, but since we are learning more about it every day, a few of my personal ideas and findings may prove of interest. The estimation of blood pressure has brought about a more comprehensive knowledge of cardiovascular disease. The remote disturbances which follow this important condition, and the etiologic factors which gradually lead up to it, are now receiving much attention. It is a well-recognized fact that a man may be on "his last legs," so to speak, from cardiovascular changes, and yet feel no serious bodily discomfort. He may have, therefore, no urgent reason for consulting his physician, but may have reason to consult his oculist, and we should constantly be on the lookout for ocular evidences of these vascular changes.

The recognition of these early changes in the retinal circulation may enable us to give many years of life to a considerable number of our patients. The "optometrist" will always be incompetent to recognize these danger signals in the eye, and it is one more urgent reason why he should not be licensed to practice his would-be profession. While the ophthalmologist keeps pace with the body of the medical profession in its new discoveries, the technical knowledge and the equipment required to make a thorough examination of the urine, the blood, and an all-round physical examination of the individual goes beyond his province. He has served a most useful purpose, however, in having recognized the ocular signs which warrant such a physical examination, and has done his duty by seeing that the patient had such an examination made.

It is no disparagement to the general practitioner to say that he also is incompetent to make this examination. It has been my policy to refer such a patient to some one capable of making this all-round examination, and then send him to his physician with the full report of our findings. I must confess that my efforts have been several times thwarted by the family physician making light of the entire matter. He thumps the patient a little, listens to his heart through a few intervening thicknesses of clothing and directs him to "go about his business." A dilated heart can only be mapped out by the most painstaking deep percussion. The presence of a low blood pressure, polycythemia, and dilated, tortuous retinal veins, uricacidemia and indicanuria all point to a clear diagnosis of general venous stasis, which tends not only to shorten life, but also opens the way to many physical mishaps before the end comes. The cases I am about to report show how these mishaps may affect the eyes.

I believe it is generally accepted that high arterial

pressure is a common cause of renal and arterial degeneration. It has been my observation that in chronic interstitial nephritis, with high blood pressure, where the retina is involved, the reduction of the blood pressure is all important, and that thereby several years can be added to the life of the individual (Cases 11, 12 and 13). Case 11 shows not only how life was prolonged when the patient was on the verge of uremic convulsions, but how useful vision was preserved until her death.

I have been especially impressed with the frequency with which general venous stasis was found present in many cases of degenerative ocular changes (Cases 1, 2, 3, 4, 5, 6, 7 and 9). Several of these patients I never saw again; consequently I am unable to report on the results of treatment, but they serve to show the relationship, as mentioned. If the vascular changes were not instrumental in causation, then the etiology was certainly indeterminable. At our altitude of one mile above sea level we undoubtedly see more cases of heart dilatation and venous stasis than do those living at lower levels. How much greater the relative proportion is I do not know.

It is now a recognized fact that four-fifths of the heart lesions are muscular and that one-fifth are valvular. The influence which impaired circulation, caused from a weakened heart, has on the economy is now being studied extensively. The ophthalmologist is in a position to see some of the very direct results of muscular heart lesions; he should, therefore, be thoroughly alive to the importance of this subject.

*CASE 1.—Retinal Hemorrhage, Due to Dilated Heart, General Venous Stasis and Polycythemia.*—Mrs. J. G. M., age 37, Aug. 8, 1907. Has been feeling well physically, with the exception of some shortness of breath on exertion. Two months ago she noticed a blurring of vision in the left eye, which has undergone no improvement.

*Status Præsens.*—The retina of O. S. is highly engorged. The veins are tortuous and greatly distended. Flame-like hemorrhages are present everywhere along the veins. The nerve head is red, outlines indistinct and somewhat swollen above.

The appearance of the fundus of O. D. is practically normal. The veins are somewhat larger than they should be. O. D. V. = 20/20; O. S. V. = 2/200. She was referred to Dr. E. C. Hill for physical examination, who reports as follows: Pulse, 92, sitting; 110, standing. Heart, one-half inch to left of nipple and one-half inch to right of sternum. Blood pressure, 105; 107 after exertion. Hemoglobin, 95 per cent. Red blood cells, 7,800,000. Urine, 1.027 e.c. in twenty-four hours. With the exception of a slight excess of indican and uric acid it is normal.

*Treatment.*—Fifteen drops tincture of strophanthus before meals, and 1/30 gr. strychnia after meals. Diet: Not more than two and one-half pints of fluid daily. Meat once daily. No coarse vegetables, such as cabbage, corn, etc. Potatoes and bread restricted. Fruit and green vegetables freely. Generally speaking, her diet is to be very simple and she must eat sparingly. Results two months later: O. S. V. = 20/30. Retinal hemorrhages all absorbed. Veins more normal in size and appearance; nerve head a little muddy. Dr. Hill finds her heart normal in size. Blood pressure, 108. This lady lives in Ohio and was seen by me while on a visit to Denver, consequently our altitude had nothing to do with the production of her venous stasis.

*CASE 2.—Optic Neuritis, Associated with Exophthalmic Goiter, Dilated Heart, General Venous Stasis and Autoinfection.*—Mrs. C. H., age 31, November, 1906. History of enlargement of the thyroid gland with some exophthalmic symptoms. The enlargement has about disappeared under electro-puncture. Eyes have been paining her for two years. Has had a number of transient blind spells. Vision became per-

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



manently affected eight months ago. It has gradually been growing worse. Has not been able to read for three months.

*Status Præsens.*—O. D. V. = fingers at four feet. O. S. V. = fingers at six inches. Left pupil larger than right, reactions for light and accommodation slow. Fields: Not enough vision to take left field; the right is contracted equally in all directions to the 5 degree line. With the ophthalmoscope, the nerve head of O. D. is swollen 5 D. No retinitis. The left nerve is almost completely atrophic. She was sent to Dr. Hill for physical examination, who reports as follows: Heart dilated to one and one-eighth inches beyond sternum and two inches beyond nipple. Blood pressure, 129. Pulse, 108. Urine, great excess of uric acid and indican. Red blood cells, 4,480,000. Patient disappeared.

*CASE 3.—Retinal Hemorrhage, Associated with Polycythemia and Autointoxication.*—Mr. B. D. S., age 44, Aug. 13, 1903. Very full-blooded, florid-looking man, who is apparently somewhat over weight. Claims to have always enjoyed good health. Is a heavy eater, but has no other dissipations. About six weeks ago noticed that vision of O. D. was poor; no improvement since.

*Status Præsens.*—O. D. V. = 3/40. O. S. V. = 5/6. The entire macular region of the right eye presents the appearance of numerous hemorrhages, with chorioiditis. The veins are very large and tortuous, and the nerve head is red. Sent him to Dr. E. C. Hill for physical examination, who reports that his heart is about normal, but that his red blood cell count is 8,200,000; that he is passing only about one-half the normal amount of urine in twenty-four hours, which contains a considerable excess of indican, and three times the normal amount of earthy phosphates. He advises that he drink twice as much water as he is now drinking, and that his diet be of the simplest form; that it be largely vegetable and that he be allowed only one full meal a day. He was given 10 gr. iodid of potassium, t. i. d., 1/32 gr. biniodid of mercury, t. i. d. In three months time his vision had improved to 5/15. The fundus shows a few scars. No new hemorrhages. I saw him last in February, 1906. He had O. D. V., 20/30. Almost no retinal signs of his former trouble. I had Dr. James Rae Arneill examine him physically for me. He found his blood pressure to be 135; hemoglobin, 105 per cent.; urine normal. A letter received from him a few days ago says the eye still remains well.

*CASE 4.—Retinal Hemorrhage, Associated with a Weak Heart and General Venous Stasis.*—Dr. J. M., age 53, Aug. 21, 1907. Has noticed a dimness of vision in lower field of right eye for ten days. He has been actively engaged in country practice for many years. Has no dissipations, unless it be in his eating. He is a hearty, rugged looking man.

*Status Præsens.*—The upper temporal quadrant of retina of O. D. is covered with flame-shaped hemorrhages. The veins are very full and tortuous. Nerve head congested. He was referred to Dr. E. C. Hill for physical examination, who reports as follows: Blood pressure, 99 sitting, and 107 after exertion; hemoglobin 90 per cent., red blood cell count, 5,350,000; heart is not dilated but degenerated and weak; urine 26 ounces in twenty-four hours; uric acid, one-third above normal daily maximum; no excess of indican.

*Diagnosis.*—Passive congestion.

*Treatment.*—Strychnia and hydrastinin hydrochlorid, and correction of his diet. Dec. 24, 1907, he reported that the vision in the lower nasal field is much improved. Is feeling well. Thinks blood pressure is higher than it was.

*CASE 5.—Recurring Retinal Hemorrhage, Associated with Dilated Heart, General Venous Stasis and Autointoxication.*—F. S. T., age 26, Sept. 26, 1905. Occupation, farm hand. Has always enjoyed good health. For the last three weeks he has seen a curtain hanging in front of left eye.

*Status Præsens.*—O. D. V. = 5/5. O. S. V. = 5/27. With the ophthalmoscope a membrane is seen lying in the anterior portion of the vitreous, which is fixed; also large floating pieces of membrane. The appearances are of a previous vitreous hemorrhage which is being absorbed. The fundus can not be seen. Sent him to Dr. E. C. Hill for physical examination, who reports: Blood tension, 165; heart normal; pulse, 88 sitting, 100 standing; hemoglobin, 90 per cent. The urine

shows considerable excess of indican, uric acid and earthy phosphates.

It was decided to reduce tension somewhat by the use of a very simple diet, also to correct intestinal fermentation by giving him 10 grains of sulphocarbolate of sodium, t. i. d., and 3 grains of calomel once a week. A month later the vitreous was found almost clear and V. = 5/9. No fundus lesion could be found. He was told to continue treatment for another month and report. He was not seen again for nine months, when he came because of another vitreous hemorrhage, which had occurred six weeks previously. I found his vitreous full of floating membrane, and a retinal spot could dimly be seen below the macula. Dr. Hill went over him again and found his blood tension 115; heart, much dilated; no indicanuria. He was given 10 drops each of tincture of strophanthus and nux vomica, t. i. d.

Two months later Dr. Hill found his heart still somewhat dilated and had him continue the heart tonics. I found a little floating membrane in the vitreous, and that the spot below the macula was becoming atrophic. I did not see him again until two months later, when he came in with a corneal ulcer caused by the diplobacillus, which quickly healed under zinc. The vitreous is now perfectly clear and O. S. V. is 20/20. There are three spots of atrophic retina to be seen, a small spot just to temporal side of disc, a large one below the macula and a third some distance below the disc.

Four months later he came in saying that the right eye had been blurring for ten days. O. D. V. = 20/70; O. S. V. = 20/20. The vitreous of right eye contained floating membrane and no fundus details could be made out. Dr. Hill found the heart so dilated that the heart border was one and one-quarter inches to the right of the sternum and one-half inch to the left of the nipple in the sixth interspace. Pulse, 92 sitting, 105 standing. Blood pressure, 132; hemoglobin, 100 per cent. Marked indicanuria. In four days the vitreous had so cleared that a retinal spot could be seen on the nasal side of the disc. He was seen again three months later, when vision in each eye was found to be normal. The blood vessels of the retina have not the appearance of sclerosis. Dr. Hill found the blood pressure 145 mm., and heart almost normal in size.

Three months later he had another attack in the left eye. The vitreous was muddy, but there were no large pieces of floating membrane. Dr. Hill found his heart again badly dilated with a blood pressure of 115. This case illustrates the relation in a young man between vitreous hemorrhage and venous stasis, and how between attacks of the latter his vascular condition was comparatively normal.

*CASE 6.—Asthenopia, Associated with Retinal Venous Congestion, Heart Dilatation and General Venous Stasis.*—Mrs. M. A. H., age 35, Jan. 9, 1906. Complained of eyes watering and tiring for near work. Thinks vision is poor.

*Status Præsens.*—The vision of each eye is 5/7.5, with —.50 cyl., ax. 180°. Both nerve heads are congested, and the medium-sized veins are tortuous. I sent her to Dr. Hill for physical examination, who reports as follows: Amount of urine passed in twenty-four hours is 8 ounces, which contains a trace of albumin. No excess of indican nor uric acid. No casts. Blood pressure, 121. Heart very much dilated and leaking all around. The right border one inch to right of sternum. Hemoglobin, 95 per cent. Diagnosis, general venous stasis.

She was referred to her family physician for treatment. Results, unknown.

*CASE 7.—Conjunctival Edema, Associated with Heart Dilatation, General Venous Stasis and Autointoxication.*—Mrs. F. H. B., age 52, February, 1906. Eyes have been inflamed and in about the present condition for three months. Has worn glasses for three years. Has always enjoyed good health.

*Status Præsens.*—The eyes look very red and watery. The ocular conjunctiva is edematous and rolls up in front of the lid margins when winking. The palpebral conjunctiva does not appear to be affected. Sent her to Dr. Hill for physical examination and for bacteriologic examination of the ocular secretions, who reports as follows: A smear of the ocular secretions shows fatty degeneration of the epithelial cells, some ordinary staphylococci and proteus bacilli, but no diplobacilli. Pulse, 87 sitting, 90 standing. Heart, one and three-eighths



inches beyond left nipple and one-half inch to the right of the sternum; the apical sounds were somewhat weak. Blood pressure, 121. Red cells numbered 6,200,000; hemoglobin about 95 per cent.; no excess of leucocytes. The urine shows an excess of uric acid and indican. He believes her eye trouble is partly due to uricacidemia, but mainly to stagnant circulation at this altitude. The treatment prescribed was strophanthus and nux vomica. Jan. 4, 1908, a letter from her stated that her eyes are better.

CASE 8.—*Asthenopia, Associated with Heart Dilatation, General Venous Stasis.*—Mr. G. M., age 42, April, 1907. Has been having so much pain in eyes and back of head that he has been compelled to stop work. His refraction was estimated to be  $+1.50 W - 50 \text{ cyl.}$  in each eye, with 20/20 vision. These glasses were ordered. In the macular region of each eye there were seen shimmering lines and irregular splotches of a yellowish color. The veins were greatly dilated and the arteries small. He obtained no relief from wearing the glasses. He was referred to Dr. E. C. Hill for physical examination, who found: Blood pressure, 111; right side of heart greatly dilated. Hemoglobin over 100 per cent. He was placed on appropriate heart tonics, and in the course of two weeks time his headache was relieved and he was able to return to work.

CASE 9.—*Episcleritis, Associated with Dilated Heart, General Venous Stasis and Autointoxication.*—Mrs. R. C. D., age 38, March, 1907. Her left eye has been subject to attacks of inflammation on the temporal side of the cornea. The eye becomes intensely injected over this portion of the globe, and is very tender and painful. The attack subsides in a few days and the eye becomes almost white; another attack follows in about a week or ten days. She was referred to Dr. Hill for physical examination who reports that she has a dilated heart, which is extended three-eighths of an inch to left of nipple and one-half of an inch to the right of the sternum. Pulse, 95 sitting, 106 standing. Blood pressure, 102. The urine shows a large excess of indican and uric acid. She was placed on strophanthus and sulphocarbolate of sodium and simple diet.

CASE 10.—*Retinal Hemorrhage, Associated with High Blood Pressure.*—Mrs. Henry W., age 72, Aug. 19, 1907. General habit, plethoric. Has no complaint to make physically. For three months she had had two spots before left eye and has been aware of a gradual failure of vision.

*Status Præsens.*—O. D. V. = 20/20 W + 2.00. O. S. V. = 20/70 W + 1.75. With ophthalmoscope numerous hemorrhages are seen scattered throughout the retina of left eye. There are no hemorrhages in the right eye, but the blood vessels show strong evidences of sclerosis. She was referred to Dr. F. W. Kenney for physical examination, who reports as follows: Blood pressure, 240; heart normal; no kidney disease. This patient is still under observation. Her blood tension is still high.

CASE 11.—*Neuroretinitis, Associated with Chronic Interstitial Nephritis and High Arterial Tension.*—Mrs. M. B., age 45, Jan. 19, 1907. Has been suffering of late with severe diffused pain in head. Eyes so sore she can scarcely move them. Has been aware of a central blind spot in right eye for several days.

*Status Præsens.*—O. D. V. = 20/40; not improved. O. S. V. = 20/20; not improved. With the ophthalmoscope a typical picture of albuminuric neuroretinitis, with hemorrhage, is seen in each eye. The condition was more advanced in her right eye. She was referred to Dr. E. C. Hill for physical examination, who found she was on the verge of uremic convulsions from chronic interstitial nephritis. Her blood pressure was 240. Active measures were taken to reduce the high blood pressure. When it came down to 200, her headache stopped. It was gradually brought down to 185 and 190. The neuroretinitis gradually improved. In two months time the retinal hemorrhages were all absorbed, but the striæ and spots of retinal degeneration, and the opaque sclerosed blood vessels were more marked than ever. Four months later there was scarcely a trace remaining of the retinal degeneration. Vision was 20/20 in each eye, with full fields. She died just a year after my first examination, and enjoyed a fair degree of comfort with good vision until the end.

CASE 12.—*Neuroretinitis, Associated with Chronic Interstitial Nephritis and High Arterial Tension.*—Mrs. J. I. G., age 50, March 27, 1905. Referred to me by an optician to have her eyes examined for glasses. Has little complaint to make about eyes or her physical condition.

*Status Præsens.*—O. D. V. = 5/9:5/6 W + 75. O. S. = 1/200; not improved. With the ophthalmoscope a typical picture of albuminuric neuroretinitis was seen in each eye, which was more advanced in the left eye. Numerous retinal hemorrhages in both. She was referred to Dr. James Rae Arneill for physical examination, who reports that she has a dilated leaking heart, blood tension 260. Urine shows albumin and hyaline casts. I never saw this patient again. She felt well and could not believe that she had chronic Bright's disease. Much could have been done to prolong her life had she been willing to follow directions. As it was, I learned that she died after a few months, and that she became almost blind before her death.

CASE 13.—*Retinal Hemorrhage, Hemorrhagic Glaucoma and Optic Nerve Atrophy, Associated with Chronic Interstitial Nephritis and High Arterial Tension.*—Mr. H. L., age 60, Nov. 16, 1903. Vision has been blurred for ten days. Has always enjoyed good health. Has been a dissipated man as regards alcohol and tobacco. Has not drunk any during recent years.

*Status Præsens.*—O. D. V. = 5/15. O. S. V. = 5/15. The field of O. D. is contracted temporally to the 5 degree line, the left is normal. The ophthalmoscope shows marked evidences of sclerosis of the retinal vessels in each eye. The disc of O. D. is cupped. In O. S. the nerve head is congested, the adjacent retina edematous, the veins engorged and tortuous, and numerous retinal hemorrhages occupy the inferior nasal quadrant. He was referred to Dr. Hill for physical examination, who reported as follows: Albumin, 1 2/5 per cent. by volume; hyaline, coarsely granular and disintegrated blood casts. Blood tension, 240. He was placed on a strict diet, and was given 3 grains sodium nitrite, t. i. d., and a pill composed of euonymus, aloes and belladonna.

Jan. 18, 1904.—Great loss of vision. O. D. = Fingers at two feet. O. S. = Hand movements. O. S. was inflamed. T + 1. Vitreous so hazy that fundus could not be seen. Iris sluggish and off color. Dr. Hill found the albumin in urine reduced to 1 1/8 per cent. by volume, and his blood tension was 215. The left eye went from bad to worse.

*Diagnosis.*—Hemorrhagic glaucoma. Enucleation. The vision of his right eye was now so poor that he could not see to get about alone. This was due to a scotoma which encroached on central vision and extended below temporally and nasally, about 20 degrees in each direction. He has been using eserine in oil in this eye, but I can not see that it has been of any service. It is doubtful if there has been, at any time, any increase of tension. For some months this eye remained about the same, and then the central scotoma increased until it occupied the entire temporal field. He has had numerous hemorrhages, but they have not caused hemorrhagic glaucoma as they did with his left eye. I saw him last in July, 1907. He had perception of light only, and numerous retinal hemorrhages were present. Dr. Hill estimated his blood tension several times, and found it to range from 135 to 145. He had a small amount of albumin in his urine. This patient is alive to-day because of the reduction of his blood pressure. His ocular mishaps were most unfortunate, and had he been seen a year or so sooner they might have been prevented.

The above cases serve to show how important are the ocular changes in pointing to the existence of cardiovascular disease. A greater number would needlessly prolong this paper.

#### DISCUSSION.

DR. LEWIS H. TAYLOR, Wilkesbarre, Pa., said that the profession was coming to recognize more and more the important fact that in certain cases treatment must be directed not to the eye but to the general system. It was hard for the oculist in the face of such conditions to say frankly: "This is a serious eye trouble but I am not competent to treat it." He need not say this if he were physician as well as oculist. Moreover, Dr. Taylor said it was not always convenient and



sometimes not possible to refer patients to expert heart specialists.

Dr. Taylor said that he had had more cases of vascular trouble ending in retinal hemorrhage in the past two years, than ever before in a corresponding period in his whole practice. He related part of the history of a case of retinal hemorrhage. The patient was a strong, hearty man, aged 44 in 1884. He was then fitted with glasses and again twelve years later. In this year he had his first hemorrhage. Two years later the vision rose to 20/XXX some in XX in the patient's right eye, and this was now his better eye. Two years later another attack came and vision of the right eye fell to mere perception of waving hand. Subsequent hemorrhages occurred, ending in hemorrhagic glaucoma for which condition Dr. Taylor enucleated the right eye. The patient's remaining eye had had retinal hemorrhages some years before and was for some time the poorer eye. The patient had always had a full pulse, but soft. His diet was regulated. Fresh hemorrhages, however, occurred in the remaining eye at intervals of two and one years and a severe one in 1907. The patient had been treated by local and general blood-letting, regulation of life, and various medicines. Following the hemorrhage in the spring of 1907, he was practically blind through the greater part of the summer, but rallied and recovered a considerable amount of vision so that he was able to go about alone, but was never able to read. In February, 1908, a day of considerable excitement brought on dimness of the eye, but no hemorrhage was visible. The patient was at once put to bed and placed on treatment to lower arterial tension and on March 2 twenty-four ounces of blood were taken from the arm. The hemorrhages increased with great intensity, causing great pain and high tension which eserine, pilocarpin and dionin could not relieve. The anterior chamber was filled with blood and an iridectomy or sclerotomy was out of the question. Even the skin around the eye was affected with hemorrhages, extending down to the neck. The patient suffered along for a month longer being kept part of the time under the influence of morphia, having at times some improvement to be followed by subsequent hemorrhages. He finally agreed to an enucleation, but in the morning of the day fixed for operation the ball ruptured. After enucleation the hemorrhages continued and were not forcibly checked because of the pain, and because Dr. Taylor considered that it would be better for the patient's head to allow the hemorrhage from the orbit to continue. Oozing of blood, at times free, continued for nearly three weeks, checked finally by adrenalin externally and internally. Dr. Taylor said that the patient had now fully recovered his general health and rode out daily. This patient had been seen by Drs. Knapp, Bull, Risley and de Schweinitz and all had predicted apoplexy as a possibility. Dr. Taylor thought it surprising that the patient had not had a rupture of a blood vessel in the brain before this.

Dr. GEORGE E. DE SCHWEINITZ, Philadelphia, said that Dr. Black's insistence on the point that early recognition of angiosclerotic changes might enable physicians to give many years of life to a considerable number of patients deserved to be emphasized. He said that it should also be remembered that even more important than the grosser changes were the early signs of cardiovascular disease, particularly the early signs of general arteriosclerosis, such as lesions of the arterial walls, alternate contractions and dilatations of the veins, indentation of veins by stiffened arteries, and later hemorrhagic extravasations, perivasculitis and silver-wire arteries. Dr. de Schweinitz called attention to still earlier indications, the curious corkscrew appearance of certain arterial twigs, notably those skirting the macula, the crinkled retinal vessels of Allemen's phraseology, the flattening of a vein in contact with an artery, resembling somewhat the appearance of a diminutive strap laid across a solid tube, most frequently evident in the inferior temporal retinal vessels, and the peculiar appearance of the nerve head; with its slightly dull red appearance, differing from a frank congestion precisely as the unhealthy flush of a cheek differs from the brighter color of the normal blush.

Dr. de Schweinitz said that the signs of angiosclerosis looked for by the general clinician—the condition of the pulse,

the character of the heart sounds, particularly that of the first sound at the apex and of the second sound at the aortic area, the increased tidal wave on the sphygmogram, and the elevation of tension recorded by the sphygmomanometer—might result from numerous and varied conditions of the system, organic and nervous in origin, and not necessarily connected with arteriosclerosis. The ophthalmoscopic signs, suggestive or pathognomonic—in their earliest or in their latest stages—he said were certain evidences of local angiosclerosis and frequently of persisting high arterial tension, either of general arteriosclerosis or of its manifestations in special organs, and therefore ophthalmoscopic examination was one of the most ready clinical means for the early detection of important arterial changes. Dr. de Schweinitz believed the ophthalmoscope equal in value if not superior to any of the well-recognized methods of the detection of such a condition; and he thought its findings, unlike those of the sphygmogram and even the sphygmomanometer, diagnostic, if positive. No one, he added, was prepared to say that in the absence of ophthalmoscopic changes there must be absence also of arterial degenerative changes, but in the presence of the former, other things being equal, and local changes in the eye being excluded, the findings, if positive, were diagnostic.

Dr. CHARLES H. WILLIAMS, Boston, wished to call attention to the necessity of a very careful ophthalmoscopic examination of these cases. He said that he had a case recently in which the pupils were small and there was general haziness of the vitreous so that it was very difficult to get a good view of the fundus. Under cocaine dilatation, however, he found abundant hemorrhages in the retina and a large number of changes in the retinal vessels, some being obliterated and some reduced to small white lines. This patient was about to sail for Europe. Dr. Williams advised strongly against it and wrote a letter to the patient's family physician. He received an answer taking him to task for having frightened the patient.

Dr. EDWARD JACKSON, Denver, illustrated the breadth of this subject and its importance to the ophthalmologist by citing the case of a man, aged 58, whose sight had been growing worse for three months, and who came with vision reduced to 4/22 and 4/12. Ophthalmoscopy showed dilatation of the veins, which were narrowed at the crossings of the arteries. Color-perception was markedly interfered with, but there was still fair perception for yellow and blue near the center of the field of vision. This patient had a blood pressure of 140 mm. Considering the condition of his veins Dr. Jackson inferred that the pressure though not absolutely low, was temporarily low for that particular individual. The patient was referred to Dr. Hill, who found marked dilatation of the heart. Here, Dr. Jackson said, was the practical point: that man was put on restricted diet and proper medicinal treatment, and in a week had improved decidedly. At the end of three months his vision was 4/5. His condition continued good until a year later when he died of some cerebral vascular lesion. Dr. Jackson said that he had seen several cases in which good vision was restored by paying attention to the temporary failure of circulation.

Dr. A. R. BAKER, Cleveland, spoke of the importance to the ophthalmologist of the sphygmomanometer. Dr. Baker said that for a great many years he was able to recognize the condition of the fundus in which he had a suspicion of high blood tension. Of course, when there were hemorrhages he could speak positively, but when he could simply say that there was a little tortuosity of the vessels and would urge on the patient the importance of changing his method of living, his advice was usually unheeded. Such patients often congratulated themselves on being particularly well; one, a doctor, slapped himself, and said, "There is not a healthier doctor in Cleveland." He died within the year. When this apparatus was applied to the patient's arm, and the patient was shown his definite high tension and it was explained to him that the life insurance companies would not take him as a risk, Dr. Baker said this offered a definite fact to emphasize the therapeutic measures. Dr. Baker used to try to refer these patients back to the general practitioner, but found that most of them had not such apparatus and didn't know how to use it when loaned to them. Dr. Baker



said that the instrument should be used every day, and that it was not necessary to refer patients to the general practitioner for its application.

Dr. G. F. KEIPER, Lafayette, Ind., said that he had found a great deal of angiosclerosis in the young as well as the old and had come to believe that the instrument for measuring blood pressure was just as essential as the ophthalmoscope. Dr. Keiper thought the contention of Janeway correct, namely, that instead of the narrow cuff the broad cuff should be used, and that observations should be based on the use of the broad cuff with the mercury manometer. He added that the kind of instrument used should be recorded because there was bound to be variation of any reading of the Riva-Rocci instrument in comparison with the others.

Dr. MELVILLE BLACK wished to emphasize the importance of determining the blood pressure by actual tests. He said that it was impossible to determine it by the appearance of the retinal circulation. High blood pressure or low blood pressure might cause the same appearance in the retina and one should not be positive in the belief that it was always high blood pressure; it might be as Dr. Jackson had said, low for that individual.

## HEMORRHAGE INTO THE VENTRICLES.

### ITS RELATION TO CONVULSIONS AND RIGIDITY IN APOPLECTIFORM HEMIPLEGIA.\*

ALFRED REGINALD ALLEN, M.D.

Instructor in Neurology and in Neuropathology in the University of Pennsylvania.  
PHILADELPHIA.

The question to what extent the upper motor neurons are initiative in their function must of necessity be speculative. But since the advent of the theory of definite cerebral localization for well-ascertained function, since the increase of our knowledge of the association tracts and their importance psychologically, the concept of the upper motor neuron as a free agent in initiating its own stimulus becomes more and more untenable. To-day it would seem that the normal motor impulses from the Rolandic region are set in motion from impulses from other parts of the brain transmitted through association tracts.

Now muscular movement—for example, of the right side of the body, face, arm, trunk and leg—may be volitional, in which case it can be considered reflex to psychic stimulation. It may be due to the local action of some circulating poison, either stimulating the perikaryon or its neurons directly, or rendering them so hypersensitive to afferent impulses that, whereas normally there would be no reflex action, in the hyperexcitable condition there is a discharge of motor impulse; this is probably the case in uremia. Intracranial pressure, unless very gradual, is able by direct irritation to cause a motor discharge; and intracranial pressure as well as irritative lesions acting on the right cerebellar lobe can cause stimulation of the motor neurons of the left motor cortex, as in Weber's cases.<sup>1</sup> Electricity applied to the motor cortex or the internal capsule is also capable of causing motor functional activity. Lastly, and from the standpoint of this work of most importance, stimulation or irritation of the high sensory system, either of their perikaryons in the optic thalamus or other basal ganglia, or of their axons in the white mat-

ter of the centrum, is in all probability capable of causing motor impulses—the pure cerebral reflex.

The subject of convulsions and rigidity in apoplectic form hemiplegia is mentioned in a casual unsatisfactory way by Déjerine,<sup>2</sup> Strümpell,<sup>3</sup> Brissaud<sup>4</sup> and Leube,<sup>5</sup> all of whom state that these symptoms point to the rupture of the hemorrhage into the ventricles. Nowhere have I been able to find any attempt at a physiologic explanation on this hypothesis.

Before considering my cases it is necessary to deal with the question of the possibility of stimulating the axons of the upper motor neurons when they are separated from their perikaryons. Weber<sup>1</sup> denies this possibility in no uncertain language:<sup>6</sup>

That a direct stimulation of the pyramidal fiber can cause convulsions or rigidity is against all experimental and clinical experiences.

Against this *ex cathedra* dictum of Weber's I would call attention to the work of Beevor and Horsley,<sup>7</sup> who succeeded in mapping out the internal capsule of the Bonnet monkey and the orang-outang by means of the secondary faradic current.

Hoche, in three articles,<sup>8</sup> discusses experimental work that he did on the cut end of the spinal cord in criminals who had just been beheaded. He used the faradic current, and although much of his work was negative and seemingly corroborative of Weber's statement, yet in the case where he made his test with least delay after decapitation his result speaks as positively in the affirmative as Weber's in the negative. Hoch's first article<sup>9</sup> says:

According to the previous accounts I had expected little action; therefore, so much the more surprising was the effect. The corpse, which was lying flat, raised both its arms, bent at the elbowjoint, and with clenched fists, up in the air, the thorax raised itself in inspiration (so that with repeated stimulation the stump of the neck began again to bleed, due to the pump-like action of the thorax) and both legs were in tonic extension.

Hitzig<sup>10</sup> called attention to the fact that the excitability of the central nervous system rapidly failed after exsanguination. This accounts, it seems to me, for many of Hoche's negative results. I have found the lateral column of the spinal cord in exsanguinated dogs incapable of stimulation. Morat<sup>11</sup> says:

2. Déjerine, J.: *Sémiologie du système nerveux*, p. 476.

3. Strümpell: *Lehrbuch der speciellen Pathologie und Therapie*, ed. 13, 1900, iii, 477.

4. Brissaud: *Traité de médecine*, 1894, vi, 53.

5. Leube, W.: *Specielle Diagnose der inneren Krankheiten*, ed. 6, 1901, ii, 225.

6. "Dass eine direkte Reizung der Pyramidenbahn Zuckungen oder Krämpfe hervorrufen kann, ist nach allen Experimentellen und klinischen Erfahrungen nicht anzunehmen."

7. Beevor, Charles E., and Horsley, Victor: An Experimental Investigation Into the Arrangement of the Excitable Fibers of the Internal Capsule of the Bonnet Monkey (*Macacus Sinicus*). *Phil. Tr. Roy. Soc. London*, clxxxi, B, 49-88; A Record of the Results Obtained by Electrical Excitation of the So-called Motor Cortex and Internal Capsule in an Orang-Outang (*Simia satyrus*). *Phil. Tr. Roy. Soc. London*, 1890, clxxxi, B, 129-158.

8. Hoche, A.: Zur Frage der elektrischen Erregbarkeit des menschlichen Rückenmarkes. *Neurol. Centralbl.*, 1895, No. 14, p. 754; *Neurol. Centralbl.*, 1900, p. 994; Ueber Reizungsversuche am Rückenmarke von Enthaupteten. *Berl. klin. Wehnschr.*, 1900, No. 22, p. 479.

9. "Nach den bisher vorliegenden Angaben hatte ich mir wenig Wirkung versprochen; um so überraschender war der eintretende Effect: der flach liegende Leichnam hob beide Arme mit gebogenem Ellenbogengelenk und geballten Fäusten in die Höhe, der Brustkorb hob sich inspiratorisch (so dass bei wiederholter Reizung, Dank der Pumpwirkung des Thorax, der Halsstummel wieder anfang, zu bluten) und beide Beine geriefen in Strecktonus."

10. Hitzig, Edward: *Physiologische und klinische Untersuchungen über das Gehirn*, Berlin, 1904, part 1, p. 23.

11. Morat, J. P.: *Physiology of the Nervous System*, 1906, p. 279.

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June 1908.

\* From the Department of Neurology and the Laboratory of Neuropathology of the University of Pennsylvania.

1. Weber, L. W.: Gleichseitige Krämpfe bei Erkrankung einer Kleinhirnhemisphäre, *Monatschr. f. Psychiat. u. Neurol.*, 1906, xix, 478.



Vulpian has devised an experiment on this disputed point which is decisive. In a rabbit or dog, after it has been put under the influence of ether, he lays bare the spinal cord for a length of six to ten centimeters above its lumbar enlargement; he cuts all the roots which correspond to this length (in order that he may not have to take into account the movements which would result from this stimulation by the diffusion of stimulating current). He cuts the cord in the most anterior portion of the region which has been laid bare and, throughout the extent of the latter, removes the posterior columns, a portion of the lateral columns, and as much as possible of the gray matter, in such a way that the anterior or anterolateral columns (according to circumstances) thus separated are only connected with the cord by their posterior extremity. If the anterior extremity of the columns isolated in this way be pricked or compressed, somersaults are provoked; that is to say, contractions of the muscles of the hind quarters of the animal and movements of the tail. If, by following the anterior fissure, the two anterior columns be separated with exactitude, the one from the other, by a longitudinal incision, it is observed, by stimulating one of them, that movements much stronger ensue in the corresponding limb than those arising in the limb of the opposite side.

Vulpian<sup>12</sup> gives a very similar experiment in his "*Leçons sur la physiologie générale et comparée du système nerveux*," but I have not been able to find the original of Morat's quotation.

I have been unable to cause convulsive movements by stimulating electrically the lining of the lateral ventricles of the dog.

The pathologic material of the following cases has been generously given to me by Dr. Spiller, to whose kindness I am very deeply in debt.

**CASE 1.—Patient.**—H. J., female, aged 44, while doing her housework on the morning of Jan. 4, 1905, became faint and sat down on a chair, shortly afterward, falling to the floor unconscious.

**Examination.**—At the Philadelphia Hospital on the same day a right hemiplegia was demonstrated. The right upper limb was flexed at the elbow joint and efforts to straighten it met with much resistance. Both limbs on the right side could be moved but much less freely than the limbs of the left side. The patient's speech was thick and unintelligible and her answers were made in monosyllables. Her mouth was drawn to the left. In testing the reflexes it was doubtful whether any patellar tendon jerk was present on either side. Ankle clonus could not be elicited. The Babinski reflex was present. Although the patient had a tendency to stupor when brought to the hospital, yet she could be aroused and answered questions sensibly.

**Clinical History.**—At 11 a. m., January 15, the patient began to have convulsive attacks with unconsciousness. The convulsions began in the right side of the face, then extended to the right arm, and after that to the right leg, the head being turned to the left and the eyes to the right. These convulsive seizures lasted from three to five minutes. Later the convulsions became alternate, first on one side and then on the other. The side which was not involved remained absolutely flaccid. Rarely the convulsion involved both sides at once. The tongue was bitten frequently. The levator palpebrarum muscles, the occipitofrontalis and all the facial muscles were implicated in these convulsive seizures. At times the mouth was drawn strongly to the left but never to the right.

At 5 p. m. of this day a lumbar puncture was performed and about 15 c.c. of a reddish cloudy fluid were withdrawn. This at first dropped quite rapidly but was not apparently under much pressure. By this time the convulsions had become milder, but were still alternating on each side. The patient died January 15, the day of the onset of the convulsions.

**Autopsy.**—On horizontal section a large hemorrhage of recent development was found in the left lenticular nucleus. It extended into the internal capsule and had broken into the lateral ventricle at its anterior end. The hemorrhage was found in both lateral ventricles but chiefly the left. The extent of the lesion posteriorly was such that it involved the entire posterior limb of the internal capsule and the posterolateral part of the optic thalamus.

The clinical history of this case would indicate that the hemorrhage was of very gradual development. The convulsions on the left side were probably due to irritation of the right motor cortex from increased intracranial pressure.

**CASE 2.—Patient.**—C. S., male, aged 50, laborer, white, was brought into the Philadelphia Hospital unconscious and without data as to past history. Soon after admission (Oct. 2, 1906) he began having general convulsions involving all limbs, but the left side somewhat more than the right.

**Examination.**—When tested between convulsive seizures the right arm would drop flaccidly when raised, but the left arm would be replaced by the patient. The notes recorded under date of October 4 state that there was present conjugate deviation of head and eyes to the right. When the right arm and leg were pricked with a pin there was no movement on the right or left side. On pricking either limb on the left side, the limb so irritated was drawn up. The patellar tendon jerks on the right side were marked + and on the left side ++. There was no ankle clonus on the right side and a quickly disappearing ankle clonus on the left. The Babinski reflex was present on both sides. The left leg tended to develop a general clonus when the tendon reflexes were examined. There were involuntary evacuations of the bladder and rectum. By testing the patient with his feeding-cup a right lateral, homonymous hemianopsia seemed to be present. The left pupil was larger than the right and both reacted to light.

**Autopsy.**—An horizontal section made through the left cerebral hemisphere, at a level just above the tenia semicircularis, showed an extensive hemorrhage entirely destroying the left lenticular nucleus at this region and breaking into the left lateral ventricle anteriorly and posteriorly and encroaching mesially on the optic thalamus. A section one centimeter below this showed the site of the hemorrhage moved outward, the head of the caudate nucleus at this level being uninvolved, the lateral part of the putamen being the farthest encroachment medianward on the lenticular nucleus. There was at this level a slight involvement of the posterior part of the posterior limb of the internal capsule.

**CASE 3.—History.**—J. E., male, aged 28 years, white, five weeks prior to his admission to the Philadelphia Hospital, Sept. 16, 1906, took a dose of quinin, he thought about fifteen grains, for "chills and fever" from which he had been suffering about one week. A "couple of hours" after this dose he felt very sleepy, lay down, became unconscious and remained so for three days. When he regained his consciousness again he was paralyzed on the left side, his speech was thick and he could not see clearly. He regained a fair amount of power in this paralyzed side. Although he had complete incontinence of bladder and rectum for one week after the attack yet it is recorded that his condition had so far improved in this respect that if he attended to himself at once when he felt the inclination he could control his sphincters. On Nov. 16, 1906, he began to have repeated convulsions. These followed one another with irregular intermissions until he died the same day. There is no description of the convulsions on his record.

**Autopsy.**—The brain bulged considerably in the right frontal and right frontoparietal regions with flattening of convolutions and obliteration of sulci. On horizontal section there was found a large hemorrhage which had in all probability started in the lenticular nucleus on the right and had torn its way both anteriorly and posteriorly into the lateral ventricle. The entire ventricular system, right and left, was filled with blood. The aqueduct of Sylvius and the fourth ventricle were distended and filled with blood. The anterior part of the callosomarginal region on the right had become greatly distended and had encroached on the left hemisphere. The destruction of tissue in the right cerebrum was very

12. Vulpian, A.: *Leçons sur la physiologie générale et comparée du système nerveux*, Paris, 1866, p. 360.



great and involved the anterolateral part of the optic thalamus. There was also some destruction of tissue in the left cerebrum, chiefly about the anterior extremity of the lateral ventricle.

**CASE 4.—History.**—W. L., male, aged 52, had an apoplectic attack in November, 1903, with unconsciousness, after which he was hemiplegic on the left side. He was taken to the Hospital of the University of Pennsylvania. The unconsciousness lasted twenty-four hours, during which time there was a convulsive seizure. In June, 1904, he had another attack of unconsciousness with convulsions and after this, three similar attacks about six weeks apart. He became able to walk afterward but had only a little control over his left hand. On Aug. 8, 1905, he had about fifteen convulsions in which the right arm was in clonic spasms, preceded by a conjugate deviation of the head and eyes to the right. The convulsive condition then affected the left arm and the lower limbs. The whole body was then the subject of clonic spasms followed by a brief period of tonic contraction. Apparently the facial muscles were equally involved. On Nov. 20, 1905, the patient slipped and struck the right side of his forehead against a door. He was put to bed in a perfectly conscious state, but gradually lost consciousness. In about half an hour after he was unconscious he began having convulsions starting in the left arm and extending to the left leg, left side of the face and finally over the entire body. He had a number of these convulsions following one another in rapid succession and lasting from one-half to two minutes. At times there existed almost a tonic condition. These convulsions commenced about 1:30 p. m. and the patient died at 5 p. m. The convulsions stopped some time before death and Cheyne-Stokes respiration set in.

**Autopsy.**—The hemorrhage probably started in the putamen of the right lenticular nucleus. Mesially it had encroached on and involved the internal capsule and optic thalamus. Posteriorly it had torn through the posterior part of the posterior limb of the internal capsule into the lateral ventricle. Externally it had torn through and completely obliterated the external capsule and was in close juxtaposition to the cortex of the island of Reil. Anteriorly it had torn through the white matter which forms the outer wall of the extreme end of the anterior horn of the lateral ventricle and had likewise passed externally, via the white matter, past the anterior extremity of the insula, to within one centimeter of the cortex of the foot of the third frontal convolution. All the ventricles were filled with blood.

**CASE 5.—Patient.**—C. H., male, aged 80, born in Germany, was brought to the Philadelphia Hospital unconscious on March 6, 1906.

**Examination.**—The right arm and leg were paralyzed, the face was slightly drawn to the left and the right nasolabial fold was almost obliterated. The right eye was not completely closed and offered no resistance when an attempt was made to open it. There was conjugate deviation of head and eyes to the left. The tongue in the mouth deviated to the left, protrusion, of course, being impossible. The right upper limb was flaccid but the right lower limb was spastic.

**Clinical History.**—At first there was right hemianesthesia but this was of only short duration, as Dr. Spiller made a note on March 7 to the effect that a pin prick was perceived in the right side of the face and in the right upper and lower limbs. By March 8, the right upper limb had become spastic. Slight involuntary jerkings in the right lower limb were also noted. The stupor was too great to make any test for hemianopsia. On March 10 the right hemianesthesia was again noted. The patient died March 11, 1906.

**Autopsy.**—The hemorrhage, which was in the left cerebral hemisphere was studied in three horizontal planes about one centimeter apart. The highest section was at the level of the top of the lenticular nucleus, and the hemorrhage here involved the external and posterior part of the thalamus and the white matter external to it. There was only a thin layer of white matter between the hemorrhage and the cortex of the highest part of the insula. The section one centimeter below this showed that the hemorrhage had involved the posterior half of the lenticular nucleus and had also cut the posterior two-thirds of the posterior limb of the internal capsule. In

the lowest section, one centimeter below the preceding, there still remained a small hemorrhagic area involving the posterior edge of the inner portion of the putamen and also the posterior edge of the globus pallidus and destroying the posterior extremity of the posterior limb of the internal capsule and here breaking into the lateral ventricle.

**CASE 6.—Patient.**—N. B., male, aged 60, white, was admitted to the Philadelphia General Hospital, April 4, 1903. The diagnosis of his condition on admission was pseudobulbar palsy and his previous history and examination are so foreign to the subject at hand that I shall omit them, passing at once to the record of relevant facts.

**Clinical History.**—On Sept. 4, 1904, the patient complained of feeling bad and was apprehensive that something was going to happen to him. On September 5, the orderly noticed that the patient was trembling much more than usual when being put to bed. At 6:30 p. m. of that evening the patient had a convulsion lasting about three minutes. There were several convulsive seizures following this first and lasting about the same time, but they are not described, so the question of consciousness, location and character can not be determined. At 7:15 p. m. the patient had an attack lasting about one hour, in which the entire right side of the body was in a state of clonic convulsion, the left side remaining free from movement. During this convulsion he was unconscious, bit his tongue and frothed at the mouth. After this seizure he remained quiescent until 1 a. m., Sept. 6, from which time to 7 a. m. of the same day he had twelve convulsions.

He had, in addition to unconsciousness, conjugate deviation of his head and eyes to the left. A pin prick on either side of the face caused movement of the face, but if the limbs were pricked there was no response. Dr. Spiller's notes record that when the right upper limb was raised and allowed to fall it did so as though dead. Both upper limbs were spastic, though the right was more so than the left. The biceps tendon jerk was exaggerated in both sides. When the left upper limb was stuck with a pin there was voluntary movement, but the right, under the same conditions, exhibited no motion. Both the lower limbs were spastic, both had exaggerated patellar tendon jerks and Babinski reflex. There was persistent ankle clonus on the right but not on the left side.

**Autopsy.**—Examination of the brain revealed a small cortical and subcortical hemorrhage just posterior and inferior to the angular gyrus. This lesion passed inward to within a few millimeters of the lateral ventricle. The optic thalamus was uninvolved.

**CASE 7.—Patient.**—J. W., male, aged 37, white, was admitted to the Philadelphia Hospital on May 10, 1905, suffering from tabes dorsalis. His previous history and physical examination as to his tabetic trouble I shall omit.

**Clinical History.**—He was allowed to go out on July 4, and next day, July 5, he was brought back by the police. He had been drinking and developed that evening a right-sided hemiplegia without aphasia or loss of consciousness. Until December there was nothing of moment to record except that his hemiplegic condition was much improved. On the evening of December 12 he fell unconscious. His head and eyes were rotated toward the right. On December 14, it is recorded that the face was drawn toward the right and that the left nasolabial fold was obliterated. A weakness in closing the left eye was also noted. The tongue had a fine tremor and deviated to the right. The power in the upper extremities was diminished. The grip was much weaker in the left hand than in the right. The left upper extremity was spastic and there was complete loss of power in the left lower limb with flaccidity. He was able to move the right lower extremity freely. The Babinski reflex was present on the left side. All the other reflexes of the lower limbs were absent presumably on account of the tabetic lesion. The patient gradually lost ground and without exhibiting any additional symptoms worthy of note died on December 26.

**Autopsy.**—A horizontal section through the cerebral hemispheres just below the highest part of the fornix showed a hemorrhage involving the fibers which in a section lower down, if the optic thalamus and lenticular nucleus were cut, would form the posterior part of the posterior limb of the internal



capsule. This hemorrhage had broken through into the lateral ventricle posteriorly. The center of this hemorrhage was evidently well above this level, possibly posterior and mesial to the roof of the body of the lateral ventricle. The posterior part of the corpus callosum was involved in this hemorrhage.

In a section one centimeter below this, there was found in the posterior part of the putamen of the left lenticular nucleus an old cyst which evidently caused the right hemiplegia. On the right side there was found a cyst the size of a kidney-bean involving the anterior part of the putamen of the right lenticular nucleus and encroaching on the external capsule.

**CASE 8.—Patient.**—G. R., male, aged 77, white, born in Germany, was admitted to the Philadelphia Hospital on July 19, 1904, with the history that he had had the night before a sudden attack of unconsciousness with a left hemiplegia. There was slight deviation of the eyes to the right, the left side of the face was smoother than the right and the tongue deviated toward the left. The reflexes were all lost on the left and the Babinski reflex was present on the left and absent on the right. He could not perceive when stuck with a pin in his left upper or lower limb. He died on July 25, 1904.

**Autopsy.**—A horizontal section through the right cerebral hemisphere just below the corpus callosum showed a hemorrhage destroying the posterior part of the lenticular nucleus and most of the posterior limb of the internal capsule, especially its posterior part. A section one centimeter below this showed the hemorrhage extending for about one centimeter into the temporal operculum. The optic thalamus was uninvolved.

**CASE 9.—History.**—I quote from two letters written to Dr. Spiller by Dr. Thomas R. Neilson, in regard to the patient, Miss H., aged 50: "I was called to see her between 9 and 10 o'clock on the evening of April 19, 1904, and found her in bed, completely unconscious. And from her brother and his wife I got the information that she had fallen down in her room some time earlier that evening. When I saw her, her condition, as well as I now remember it, was as follows: Complete unconsciousness, complete paralysis of all the extremities; no response to pricking fingers or toes with a pin; pupils did not respond to light and were moderately contracted, respiration puffing but not accelerated; pulse 84 with no marked degree of tension. The mouth was, I think, slightly drawn to the left, but I will not be positive of this. In a short time, say twenty to thirty minutes, I recollect that pricking the fingers of the left hand excited muscular contraction of that arm resulting in flexion of the elbow. I saw Miss H. a second time on April 21, at about noon; she was then unmistakably dying. Paralysis was complete, temperature elevated, pulse weak and frequent, respirations labored and stertorous. She did die that day." There was no history of convulsions in this case.

**Autopsy.**—I quote from Dr. Spiller's postmortem record: "A large hemorrhage was found filling the whole of the left lateral ventricle and not extending into the right ventricle; the substance of the brain was implicated in the lesion only near the anterior part of the left lateral ventricle. The attack had lasted forty-eight hours, and convulsions are said to have been absent."

**CASE 10.—Patient.**—W. U., male, aged 72, white, born in England, presented a history which does not bear on the question at hand except that he had been an excessive user of alcohol and had had sugar in his urine for the past fifteen years.

**Previous Attack.**—The patient retired at his usual time on the night of March 14, 1905, and was found next day at noon lying at the side of his bed in a semi-conscious condition with a left hemiplegia. In this condition he was sent to the Hospital of the University of Pennsylvania.

**Examination.**—Dr. Spiller's notes record that there was a semi-stupor and that the left side of the face was flattened, the nasolabial fold on that side having disappeared. The eyelids on the left could not be closed as firmly as on the right. The forehead wrinkled better on the right than on the left side. The tongue deviated to the left when protruded. The masseter contracted equally well on both sides. The left

upper limb fell lifeless. The patient made no movement with his left lower limb. He seemed to present a left homonymous lateral hemianopsia for when his feeding-cup was brought to him from his left side he made no attempt to take it. Sensation to pin-prick on left side was preserved. The biceps and triceps tendon jerks were not very prompt on either side. The patellar and Achilles tendon jerks were lost on both sides. The Babinski reflex was present on the left but not on the right.

Without any marked change except deepening stupor and Cheyne-Stokes breathing the patient died on March 26, twelve days after his attack. There is no record of convulsion.

**Autopsy.**—On horizontal section there was found a hemorrhage bounded anteriorly by a line passing through the genu of the internal capsule. Posteriorly the hemorrhage had broken through the posterior part of the optic thalamus into the lateral ventricle. The posterior limb of the internal capsule was destroyed.

#### SUMMARY.

Four patients (Nos. 1, 2, 3, 4) had convulsions, rupture of the hemorrhage into the ventricles and involvement of the optic thalamus.

One patient (No. 5) had rigidity, rupture of the hemorrhage into the ventricles and involvement of the optic thalamus.

One patient (No. 6) had convulsions, no hemorrhagic rupture into the ventricles but an involvement of the cortex and subcortical white matter of a sensory region.

Three patients (Nos. 7, 8, 9) had no convulsions and no optic thalamus involvement. Two of these (Nos. 7 and 9) had ventricular inundation; one of them had not.

One patient (No. 10) had no convulsion and had optic thalamus involvement. (It is but just to say that this last case was not sufficiently under observation so that it could be said with certainty that there was no convulsive action.)

My conclusions are:

1. Ventricular inundation in cerebral hemorrhage has no etiologic bearing on the convulsions or rigidity.

2. Purely tentatively and basing my opinion on the findings in these ten cases, I conclude that convulsions and rigidity in apoplectic hemiplegia are frequently due to an involvement of the optic thalamus, or the corticothalamic sensory fibers, with the necessary proviso that enough of the posterior limb of the internal capsule remain uninjured to convey the motor impulses.

3. Convulsions and rigidity in apoplectic hemiplegia may be caused by a sudden or rapid increase in intracranial pressure due to cerebral hemorrhage, even though the optic thalamus and the corticothalamic sensory fibers are uninvolved. In this case, as above, there must be a sufficient preservation of the motor part of the internal capsule for the transmission of impulses to the parts concerned.

4. It is altogether unlikely that pressure or chemical change acting on the motor axons of the centrum or internal capsule—these axons having been severed from their perikaryons by the hemorrhagic process—could exert a stimulating action sufficient to cause convulsions or rigidity.

#### DISCUSSION.

DR. WILLIAM G. SPILLER, Philadelphia: It has been a question in my mind for many years whether or not convulsions are caused by hemorrhage into the ventricle and may be considered as indicative of this lesion. I am glad, therefore, that Dr. Allen has studied this subject so carefully. I do not believe that a hemorrhage into the ventricles always produces convulsions and I doubt whether convulsions occurring with the onset of hemiplegia may be regarded as indicative of ven-



tricular hemorrhage. I am glad that Dr. Allen has brought out another point clearly, viz., that when the motor tract is completely cut across by hemorrhage, it is not probable that convulsions will occur. A case of this kind was presented by Dr. Boeck. A man had hemiplegia from cerebral hemorrhage, and convulsions occurred on the side on which the hemorrhage was, but not on the other. My explanation was that the motor fibers were cut on the side of the hemorrhage, and therefore convulsions occurred on the same side, but not on the opposite side, from general irritation of the brain.

DR. A. R. ALLEN, Philadelphia: In answer to Dr. Spiller's question as to the preservation of the motor tract in the cases that had convulsion: One case suffered considerable damage to the entire posterior limb of the internal capsule, which damage I think was late in the hemiplegic attack. I take it for granted that at the time the patient had the convulsions and rigidity, the hemorrhage had not been as extensive as it was found at the autopsy, that being indicated by the clinical history.

## ZONULAR OPACITY OF THE CORNEA.\*

F. C. HEATH, M.D.

Professor Clinical Ophthalmology, Indiana Medical College; Secretary Indiana State Medical Association.  
INDIANAPOLIS.

Zonular opacity of the cornea is described very briefly in the majority of text-books. Some do not mention it at all, a number dismiss it with a short paragraph, while a very few give it a page.

Nettleship contributed an article of about 25 pages on this subject to the *Archives of Ophthalmology*, in 1879, giving in detail 22 cases seen by various observers. Bock, Graefe, Usher, Best, Leber, and a few others have also investigated the subject quite extensively. The first description was given by Dixon in 1848, followed by Bowman, who went more deeply into the matter. Dixon called it calcareous film of the cornea, finding calcium carbonate and phosphate in the parts removed. Graefe named it band opacity, while Fuchs employs the term given at the heading of this paper. It has been more frequently designated as ribbon-like opacity, or keratitis, and calcareous keratitis.

Zonular opacity occurs in two forms, primary and secondary; the former in eyes otherwise normal, the latter in those blind from glaucoma, iridocyclitis or other intraocular affections. While neither form is common, the primary is much rarer than the secondary form.

It has been described as having the appearance of minute dots crowded together, "punctiform opacities," a gray stripe stretching across the cornea, most marked a little below the center, on the part exposed when the eye is open. The opacity usually begins about the same time at two points near the inner and outer corneal margins, meeting later in the middle line. Some cases have begun centrally. There is always a narrow, transparent zone about the margin.

The progress of the disease is extremely slow, usually continuing for years, although Wells saw one case develop in a few months. Sooner or later both eyes are almost certainly involved, but one may be affected quite a number of years before the other. In some cases there are spells of severe pain, while in others (probably the majority) there is no pain at all. There is no indication of ulceration, the corneal epithelium being smooth and unbroken, in the primary form.

This disease occurs principally in men and after middle age. In 14 cases tabulated by Nettleship, all but 4 patients were over 45 and only one patient was under 30.

The pathology of this affection consists in the deposit of hyaline masses and lime in the upper layers of the cornea, or, as it has been otherwise expressed, "hyaline degeneration of corneal cells that later become calcareous." Bowman's membrane may be the part first affected, and there may be also proliferation of connective tissue.

The etiology is obscure. The location of the trouble in the exposed portions of the cornea has led to belief in a local cause. But if this were true, why is it found in so few persons? Must there not be some predisposing tendency? In gouty subjects, or those with uric-acid diathesis, the nutrient fluid of the cornea, according to Leber, is supposed to be richer in lime salts and these may become deposited by evaporation. Swanzy says that in primary cases the cause of the degeneration is simply loss of vital energy in the cornea from vascular changes, attributed by Nettleship to gout, renal disorders and cardiac affections. Fuchs saw a case in a physician who had blown calomel into his eyes for years, and Toplanski met the disease in hatmakers whose eyes were irritated by flying pieces of hair. Graefe believed that, as the secondary form of this disease followed glaucoma, so the primary form was akin to the glaucomatous process or would eventually go over into glaucoma. As would be expected, these cases are made worse by atropin.

Sight has been restored or improved in some cases by scraping the cornea, the lime deposits coming away in flakes. In other cases iridectomy has proved of great advantage. May advises the use of carbonate of soda after scraping. Sclerobeeck advocated the hourly use of 5 per cent. hydrochloric acid, while Nettleship tried nitric acid in one case without effect. Noyes stated that these cases rarely are benefited by any method, and Fox, in his text-book, in 1904, says treatment is of no avail. Guillery, of Cologne, has recently tried ammonium chlorid, beginning with a 2 per cent. solution and gradually increasing to 20 per cent. While his article<sup>1</sup> is headed "Calcareous Opacity of the Cornea," it is evident that he means opacity from lime burns, a very different thing from the subject of this paper.

The following case from my records, the only case of primary zonular or calcareous opacity of the cornea seen in 17 years of eye-work, will serve to illustrate the points of this disease. It is also worth recording on account of its rarity and the gratifying result of operative treatment. Indeed, all cases of such a rare disease, about which there is so little definite knowledge, should be reported fully.

Mr. W. W., born in England; first seen by me Feb. 23, 1897, when he was 34 years old. There was, then, a slight haziness of left cornea to the outer side, and he suffered considerable pain. He was a bricklayer and engaged at this time in the construction of sewers. On the theory that the keratitis might be malarial, he was given quinin, followed by arsenic. (De Schweinitz<sup>2</sup> described a peripheral annular parenchymatous infiltration of the cornea, of malarial origin, separated from the margin by a zone of clear tissue.) Our diagnosis seemed to be confirmed by the fact that the pain soon yielded to the antimalarial treatment. He was seen only a few times in 1897 and 1898, and then passed from observation for a number of

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Arch. Ophth., Sept., 1907.

2. Philadelphia Polyclinic, 1895.



years. The opacity evidently increased very slowly in extent and density.

September 1, 1904, he returned, complaining of pain in the right eye, the vision of which was normal, but there was a faint, almost imperceptible, haze near the outer margin and rather low down. The opacity of the left eye was now very dense and covered most of the cornea, being surrounded by a zone or rim of clear tissue, very narrow, and nearly the same width in all parts of the circumference, except the upper margin, where it was a little wider. Vision in this eye was reduced to light perception only.

The opacity in the right eye progressed very slowly. Attacks of severe pain occurred at irregular intervals without a particle of redness of the ball. Tension was at all times normal. The pupil was round and responsive to light. He was given quinin and arsenic again, without any apparent effect. Analysis of urine showed no albumin or sugar. He had the appearance of being plethoric, was rather fleshy, with red cheeks. He was not a user of alcohol in any form, but was a great meat eater.

His internal treatment for a long time consisted in the alternate use of salicylate of sodium and iodid of potassium. Pilocarpin and holocain locally, with the addition of dionin a little later, seemed to modify the pain, and after a few months the attacks occurred at longer intervals and then ceased altogether. The dionin had no effect on the opacity. The cessation of pain and the long preservation of good vision led us to believe in the efficacy of the treatment. But it is more than likely that it was simply the naturally slow progress usually seen in such cases. A very weak solution of atropin was tried at the suggestion of one of my colleagues, who, however, advised its discontinuance at the next visit, noting some loss of vision. This accords with Graefe's view that atropin is contraindicated in zonular opacity. (In Nettleship's article mention is made of the use of atropin in several cases with no statement as to its effect further than that the pupils dilated readily.)

My patient was sent to Dr. James M. Ball of St. Louis, with a note asking if this were not a case of zonular or ribbon-shaped opacity, pictured and described on page 335 of his textbook. He replied that it was a typical case, and suggested an iridectomy downward and inward on the left eye. I could not see the advantage of this, as the rim of clear tissue in that direction was so very narrow. It looked to me that an upward iridectomy would be more promising, if any were done, as the rim was wider here than at any other part. But the patient was averse to any operation just then, the vision being still good in the other eye.

The faint opacity seen first in the right eye gradually extended upward and toward the center of the cornea, another band starting a few months later from near the inner margin and extending also toward the center. For a number of months the space directly in front of the pupil was not encroached on. Finally, a very faint haze appeared there, reducing distant vision from 20/20 to 20/40, where it remained for some time, falling to 20/70 for a while and then returning to 20/40. For nearly two years vision was good enough for his regular work as foreman in one of the departments of the Malleable Castings Company. But finally the opacity over the pupillary region deepened and extended a little higher, so that work had to be given up. He could not see enough to go about by himself.

Early in October, 1906, assisted by my colleague, Dr. F. A. Morrison, I proceeded to scrape off a space directly in front of the right pupil, and two weeks later made another scraping, this time assisted by Dr. W. N. Sharp, who examined some of the scrapings under the microscope, finding degenerated cells, probably hyaline, but no lime crystals. This did not flake out, as some have described it. Probably the other eye, in which the disease was more advanced, would have shown this. I regret that we did not try the effect of acids.

The scraping was followed by the use of weak carbonate of soda solution, as suggested by May, but, although we had scraped as much as we dared, there was no improvement of vision. In fact, it was temporarily made worse.

After the inflammatory reaction had subsided, he was sent

to the Indianapolis City Hospital, where I did an upward iridectomy, resulting in 15/40 vision with +6. sph. = +2. cyl., axis 180. This enabled him to return to work and earn as much as ever. This vision has been maintained now for more than a year.

About eight months ago he was helping a fellow workman, a sufferer from trachoma, drop medicine into his eye, and accidentally infected his own left eye, fortunately not the one I had operated on. Prompt treatment with strong solutions of silver nitrate at the office, and 1 to 4,000 bichlorid solution at home, controlled this well, and the good eye has never become infected.

It is interesting to note that there has been some improvement in the unoperated eye. At one time light perception alone existed, and in November, 1906, when the other eye was operated on, there was only faint shadowy perception of large objects, not enough to enable him to get about without being led, but the sight of this eye now is 10/200. Is this due to the internal use of salicylates and iodids? Has the local treatment for the trachoma or the irritation of that disease had any tendency to clear it up? Does the operation on one eye have any effect on the other? These questions are easy to ask, but very difficult to answer. I can give no satisfactory explanation. The opacity certainly looks less dense than formerly, especially directly in front of the pupil. In one of the cases given by Nettleship, Mr. Fairlie Clarke, under whose care the patient was, thought the central clear space in front of the pupil due to spontaneous chipping away of the film.

In view of the good result in this case, and in some of the cases reported by Bowman, Walton, Graefe, Nettleship and others, the statements of Noyes and Fox about the uselessness of treatment sound strange. Possibly they had in mind only the secondary form, occurring in eyes already blind, aside from the opacity, and therefore not amenable to treatment.

In conclusion, I would emphasize the interesting features of this case, the comparatively early age at which the affection began, the rather unusual pain in the first stages and the remedies therefor, the improvement in the vision of the unoperated eye, and the gratifying result of the iridectomy in the other. These circumstances, together with the rarity of this form of the disease and the paucity of the literature, seem to justify the detailed report of this interesting case.

427 Newton Claypool Building.

#### DISCUSSION.

DR. E. V. L. BROWN, Chicago: So far as I know, no cases of primary zonular opacity have come to anatomic study and therefore the etiology is not clear. The secondary cases are explained on the basis of the hyalin and calcareous degeneration of the anterior part of the cornea and Bowman's membrane; many of these cases have been studied. I have sections from four or five cases and have looked them over in connection with this discussion. The main point, it seems to me, is the clearing up of the left eye. There are two possibilities. First, the gradual clearing of the infiltrate about the areas of calcareous degeneration may have taken place from the absorption of the fatty degenerated infiltration, in the manner contended for by Wossius, who has recorded the findings of fatty substance in the anterior part of the cornea; yet there was no inflammation of this eye at any time. Gradual clearing might occur without any vascularization of the cornea, but any marked change would be accompanied by some so-called inflammatory phenomena. The other cause I have thought of is also accompanied by vascular changes attendant on the trachoma, which appeared in the eleventh year of the case. There is just a possibility that these calcareous infiltrations in the anterior part of the cornea were sequestered and thrown off just as any foreign body would be, and that enough of this took place in



the central area of the cornea to allow clearing. The case was followed up for some time after improvement of vision and there has been no decrease which would seem to make this an impossible explanation. When there has been such a defect, essentially an ulcer, and the epithelium grows over it again, there is invariably the development of connective tissue between the stroma and the depressed epithelium. The exhibition of fluorescein at this time would have determined if there was an ulcer and I would like to ask if it was used at any time for the determination of a defect in the epithelium. I only suggest this as a possible means of the clearing.

DR. L. H. TAYLOR, Wilkes-Barre: I have seen only one case of this kind and that not in my own practice. In this there were two bands, one in each eye; one at an axis of 45 and the other of 135 degrees. It was perfectly symmetrical, all the way of the same width, and the tissue above and below perfectly clear.

DR. EDWARD JACKSON, Denver: I have seen three cases of primary opacity of this kind at comparatively long intervals. The first was seen very soon after I entered practice. I saw this patient for some years and there was no change in the opacity up to death. The second one I saw once or twice at the Wills Eye Hospital and the third I have seen within the last two years. The opacity in all three was characteristic, involving the part of the cornea exposed in the palpebral opening, but showing a transparent position between the margin of the opacity and the margin of the cornea. There was no history of previous disease and no evidence of any other disease.

The last patient had noticed failing vision for seven or eight years; she had not attempted to do any reading or sewing for five years. When she came to me the best obtainable vision was 4/45. She had lived in Kansas and had been much exposed to dust for many years. The film was gray, slightly brownish and consisted of minute dots. The cornea reflex was absolutely perfect and the epithelium perfectly smooth. In all these cases I advised scraping the cornea. The first two did not submit. This one did and under holocain the film was scraped away. The central densest portion scraped away easily; it came away in flakes. Where the opacity was less dense it did not flake that way, and was more difficult to remove. The operation was done under local anesthesia and without pain, but was followed by severe pain, such as we have from abrasion of the cornea, which lasted some eight or ten hours, and gradually passed away. It was relieved a good deal by instillations of holocain. At the end of a week vision had fallen from 4/45 to 4/100. At the end of the second week, however, it began to improve, and at the end of three months the vision in one eye was 4/9 and in the other 4/12. The opacity appeared to be chiefly on the under surface of Bowman's membrane and consisted of isolated dots. I could not get any certain evidence that there was any calcium carbonate in the flakes.

DR. F. C. HEATH in answer to questions: Fluorescein was not used because the corneal epithelium was smooth, and I saw no indication for its use. There was no pannus following the trachoma. The film was grayish in color. I observed the same regularity of which Dr. Taylor speaks and the film was transverse.

**Treatment of Hydrophobia in Ancient Times.**—The *Tribune Médicale*, May 30, describes the old practice of immersing persons in the sea as a preventive and cure of hydrophobia, citing the legend that Euripides was saved by this means after having been bitten by a rabid dog. A number of cases are quoted from the historical records of the eighteenth century in which persons sought the sea as a preventive after having been bitten. One old chronicle comments on the death of an English lord from hydrophobia notwithstanding that he had been duly immersed in the sea: "This proves that there is no remedy for the imagination, and that people are cured less by the sea than by their imagination that they are cured." We learn from the case of a page of M. de Nevers, in the days of Henri IV., that when the thalassotherapy failed it was the practice to put a bullet through the head of the victim when the hydrophobia had declared itself. The page in question "died in peace just as they were on the point of firing a arquebus at his head."

## Clinical Note

### A TYPICAL CREST-SHAPED SEPTAL DEFLECTION,

WITH PRESENTATION OF SOME NASAL INSTRUMENTS.\*

O. T. FREER, M.D.  
CHICAGO.

In a deflected septum removed from a cadaver, the deflection was of the variety I have classified as crest-shaped (Fig. 1), because the apex of its angle of convexity consisted of a sharp, cartilaginous ridge ascending upward and backward parallel to the anterior border of the vomer, but lying about three-eighths of an inch below it. This variety of deflection I regard as the fundamental deformity in nearly all nontraumatic deviations, the anatomic condition consisting of a curving over of the incisor and superior maxillary crests and the anterior portion of the vomer into the naris of the convexity, associated with an overriding of these bony parts

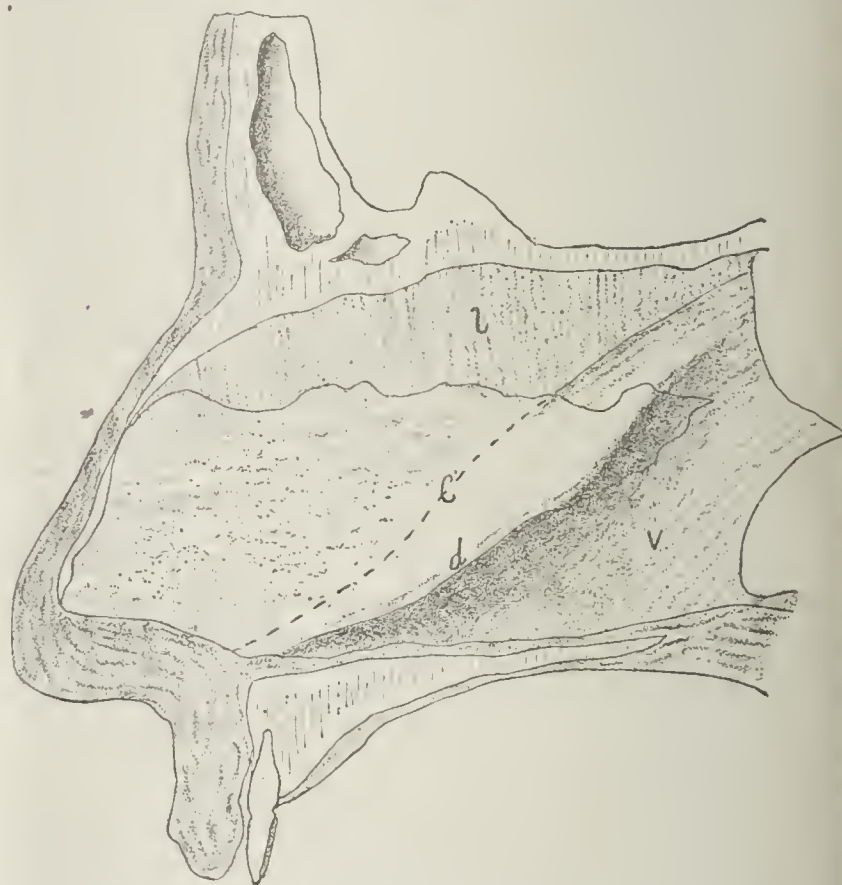


Fig. 1.—Lateral view of the nasal septum showing typical crest-shaped deflection with sharp cartilaginous crest. d: l. perpendicular plate of the ethmoid bone; v. vomer presenting convex surface of bony deflection towards observer; c. cartilage of the septum overriding the vomer downwards and backwards. The dotted line indicates the position of the anterior border of the vomer covered by the overlying cartilage. Drawn from specimen.

by an extension of the septal cartilage downward and backward, the lower limit of this cartilaginous extension forming the sharp crest referred to. It is this crest with a strip of the underlying bone which is so often sawed off, with but partial freeing of the patient's naris, while the more important obstruction due to the body of the deflection, of which the crest merely forms the sharp angle, is ignored. The cartilaginous strip mentioned is always found roughened on its inner surface where it is attached to the side of the bony septum, is present in most deviations of the nasal septum and has to be lifted off from the underlying bone before the latter can be found and resected. I regard the deviation in the bony septum as the main feature in the majority of non-

\* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



traumatic deflections, a bend in the cartilage being merely secondary to it and only made the most of in most operative procedures for the correction of deviations because its position in the front of the nostril makes it a striking condition, while the bony deviation, lying deeper in the naris, is often overlooked or else ignored because the operator thinks that he has done enough in resecting the cartilage or because he hesitates to enter into the difficult removal of the bone in the depths of the nostril. Nevertheless, the bony deflection is often the worst obstacle to breathing and if left will have to be taken away at a subsequent operation.

The retractors shown (Fig. 2) are for holding the naris open during the submucous resection as I perform it, the improvement consisting of the substitution of a smooth, rounded lip for the thinner, sharper edge

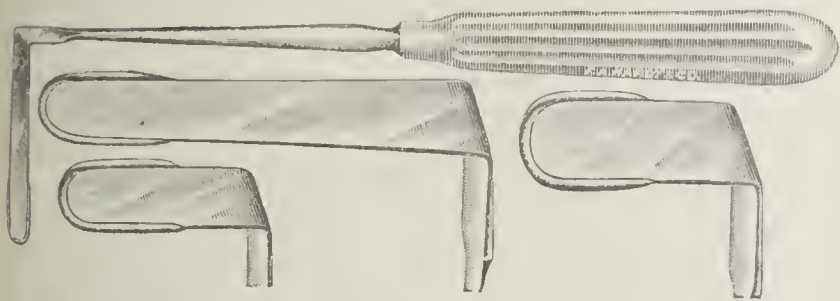


Fig. 2.—Freer's improved retractors for use in the submucous resection of the nasal septum.

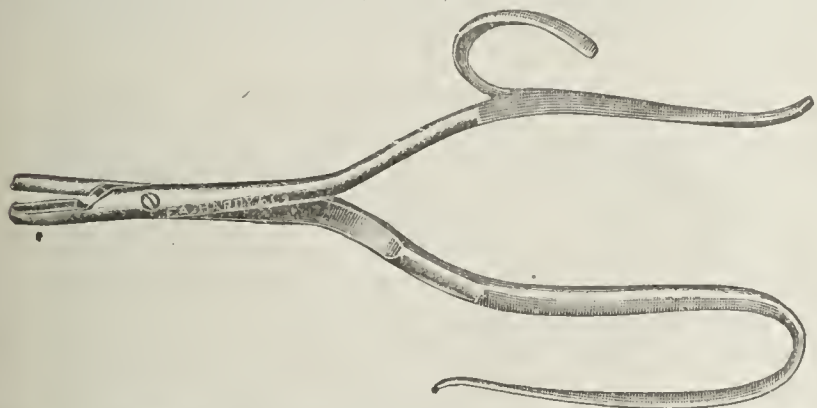


Fig. 3.—Freer's pernasal forceps for the removal of adenoid vegetations through the nose.

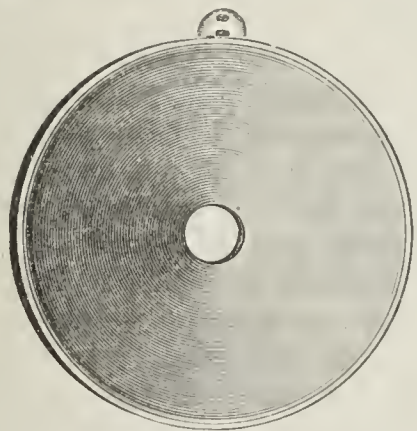


Fig. 4.—Short focus head mirror.

of the old style retractor which made it occasionally perforate the posterior flap on the side of the convexity of the deviation. In my method of operation three retractors are used for holding the nose open and I regard any form of nasal speculum as unsuitable for it.

The pernasal forceps (Fig. 3) for the removal of adenoid growths through the nose I use exclusively for the operation. I do not employ the curette at all and post-nasal forceps only where a marked deviation of the septum makes it impossible to use the direct nasal route.

There are three sizes of the forceps, the slenderer one being used on infants. The elasticity of the septum in children, their comparatively broad nasal channels and the rudimentary condition of their turbinated bodies

makes the passage of the forceps easy. I do not expect these forceps to supplant the curette in popularity, but recommend them to those who wish to be sure that all adenoid masses are removed from places inaccessible to the ring knife, such as the choanae, the posterior wall of the pharynx, or the fossa of Rosenmüller.

The short focus head mirror (Fig. 4) also shown permits a nearer approach of the eye to the ear and nose than is possible with the common longer focus laryngeal reflector found in the shops, as it has a focal length of but 8 inches. Common reflectors focus about 14 inches.

#### DISCUSSION.

DR. J. F. BARNHILL, Indianapolis: It has for a long time been my opinion that the curette, if properly constructed, is the ideal adenoid instrument, for with it the operator is enabled to remove, in nearly every instance, the entire mass of adenoid at one sweep. Since there is only one individual mass in any one person's throat, the term adenoids should be dropped for the reason that it gives the impression that there is more than one growth to remove and that, therefore, the curette or other instrument must be introduced more than once in order to be thorough. There is never but one adenoid and hence if the operator selects a curette as wide as will snugly fit into the nasopharyngeal space, and then follows out a proper technic as to the direction of making the sweep, one such sweep will cut away the entire growth and there should be absolutely no necessity of making a second or third sweep with the instrument. I will admit that rarely some portion of the growth remains in the choanae. When such is the case an instrument such as Dr. Freer has shown would undoubtedly be serviceable in removing it.

DR. E. FLETCHER INGALLS, Chicago: Dr. Freer spoke of an eight-inch reflector. I want to emphasize what he said about the necessity of having a short focus. I do not use a six-inch focus, but think an eight-inch focus essential for ordinary work. It should be remembered that the distance from the eye to the larynx is eleven inches in ordinary cases, and we have to use a reflector of eight-inch focus in order to concentrate divergent rays on the larynx. In using an ordinary light we must have this short focus. In using condensers it is better to have the lens and light so set that the rays are divergent, so that the same focal distance can be used. For daylight or parallel rays the focal distance of the reflector should be ten or eleven inches. With a three and one half-inch or four-inch reflector it is quite important that the ball for the ball-and-socket joint should be only an inch and three-eighths from the center of the opening. In many that are sold it is two inches or more. The forceps for removing adenoids is essentially the same that I have used for fifteen or twenty years in removing masses of the adenoids from the choanae, but I do not use them for the whole adenoid. I use MacKenzie's modification of Löwenberg's forceps. Dr. Barnhill suggests that with an ordinary adenotome Luschka's tonsil can be taken out with one sweep. A part of it can, but I think that the reason that there are 25 per cent. of recurrences is that the gland is not thus thoroughly removed. With this instrument the glandular tissue in the fossa of Rosenmüller is not taken out, and any portion pressing forward into the choana is also left. The forceps passed through the nose readily removes this mass and dilates any constriction of the choana. I once operated on a child, said to have adenoids, that had already been operated on by others three times for this condition. I found no adenoids but the choanae were closed. Former operators had evidently confined themselves to scraping the nasopharynx. I had a little chisel made for operating on the septum, with a small guard that projects about 5 mm. from one side. This is about 1.5 mm. in diameter and has a small knob on the end designed to work under the mucous membranes without allowing the chisel to cut them. I have found this chisel especially useful in opening the sphenoid. The projecting guard is so small that it will readily enter the opening of the sphenoid cell and it can easily be directed with the finger in the nasopharynx when the patient is under an anesthetic. This prevents the chisel



from slipping or cutting too far back and thus enables one quickly to cut away the front wall and the sphenoid cell so that any of the instruments designed for enlarging the opening may be introduced.

DR. OTTO T. FREER, Chicago: In an article read before the American Laryngological Association in 1906 and published in its transactions and the *Annals of Otology*, December, 1906, I fully explained the efficiency of my pernasal forceps and the ring knife. I regard the certainty of removing all of the adenoid tissue, no matter where located, in the posterior nares or nasopharynx as the chief merit of the forceps. In contrast to their thorough work the ring knife or curette in its endless forms is very apt to do an incomplete operation. I have repeatedly employed my forceps for the removal of adenoid masses which had been left behind after curettage by operators of experience and reputation. The forceps referred to by Dr. Ingals is the Ingals nasal bone forceps. It was the prototype of the pernasal forceps which I now employ, which, however, I have changed materially in form in order to adapt it to the removal of adenoid growths. Dr. Ingals spoke of his nasal bone forceps in his clinics as passed by him through the children's noses mainly in order to dilate the posterior nares but also for the purpose of removing fragments of the adenoid growths, which the Löwenberg forceps, employed postnasally by Dr. Ingals as his chief implement for the operation, had failed to take away. I regard myself as justified in claiming to be the originator of the idea of removing all of the adenoid vegetations pernasally by forceps, for which purpose I at first used the Ingals nasal bone forceps and later my present pattern of pernasal adenoid forceps, which seem to me much better suited for the purpose. The straight route through the nose employed in the operation is the one employed by Wilhelm Meyer, and its advantages lie in the greater precision obtained in operating with a straight instrument without confusing curves and in the thoroughness with which the work can be done because of the guiding presence of the index finger of the left hand in the nasopharynx, which indicates every vestige of the growths by the sense of touch and in addition protects the tubal prominences and lateral walls of the nasopharynx from injury. Adenoid masses in the fossa of Rosenmüller and posterior nares, inaccessible to the curette can be readily plucked away with the forceps. I know that the short-focus head mirrors are nothing new. Nevertheless, for some reason they have disappeared from the shops and a mirror of long focus, about fourteen inches, is the only thing obtainable and, while suitable for laryngeal work, it does not permit sufficiently close vision for the nose and ear, so I had a short-focus reflector made for that purpose. I use the Kirstein head lamp nearly exclusively in my work and hardly ever employ a head mirror.

## ***Therapeutics***

### **CROTON OIL.**

*Oleum tiglii*, U. S. P. (genitive, *olei tiglii*), is a yellow, somewhat viscid, fixed oil, expressed from the seeds of the fruit of a small tree which grows in Southern Asia and the Philippine Islands. The seeds contain from 30 to 40 per cent. of this oil. The oil contains glycerides of various fatty acids, crotonol (the vesicating croton resin), and crotonolic (or crotonoleic) acid (closely allied to oleic and ricinoleic acid). The croton resin is soluble in alcohol.

Croton oil is burning and acrid in taste, and an irritant to the skin and mucous membranes. On the skin it produces redness, papules passing into vesicles, and finally into pustules, which in healing leave white scars. Croton oil has been classed, for this action on the skin, as a "pustulent." Occasionally it may cause a general eruption resembling smallpox. Sometimes enough has been absorbed from the skin to cause purging.

When taken internally, unless very dilute, it is irritant to the stomach and intestines. It congests the mucous membrane of the intestines and increases peristalsis, causing copious stools accompanied by griping pains and a good deal of burning and irritation of the rectum and anus. It acts rapidly, a drop or two on the tongue causing a stool in one or two hours.

Large doses cause violent purging, griping, vomiting and collapse, and a few drops have been known to cause death. If it has been taken by mistake, a quickly acting emetic is indicated, with later mucilaginous, soothing drinks and a hypodermatic dose of morphin. If it has been in the stomach long enough to cause severe purging, the treatment is that of acute enteritis, and the collapse should be treated as usual, with external heat and cardiac stimulants.

Croton oil is used when a quickly acting cathartic is indicated, especially when there is difficulty in causing the patient to swallow, and a rectal injection of a cathartic is inefficient or too slow. Consequently, croton oil is used in uremia and in the coma of apoplexy where it is deemed advisable to reduce the blood pressure by purgation. It has been used in the constipation of lead poisoning and in other obstinate constipation, but it should be used with great care lest intestinal obstruction be present. It may be used at times in the constipation of maniacal patients who refuse to take other medicine, as the dose of this is so small it can be more readily administered.

Croton oil may be used externally as a counterirritant, and has been used for this purpose on the chest in various conditions, such as bronchitis, the dry pleurisies of phthisis, and as a counterirritant over the course of a painful nerve. However, it is now rarely used externally, other counterirritants being better and their activities being better controlled. To do any good, croton oil must be used in considerable strength, and then the pustulations are rather beyond control and the scars caused by such pustulation are objectionable. If it is used externally it should be diluted with two or three parts of a bland oil.

The dose of croton oil is one or two drops, and is well administered in a bread pill, made at the time, if the patient is able to swallow. If the patient can not swallow, a drop or two may be put on a little granulated sugar and this put into the patient's mouth, or, if necessary, a single drop may be placed on the back of the tongue. In conditions in which it is indicated a drop may be repeated every hour for several doses until purging takes place. It will rarely take more than two or three doses. Minute doses of croton oil are sometimes added to laxative pills to make them more active. This is inadvisable, however, as the tendency, as previously stated, of irritant cathartics to either cause inflammation of the intestines or at least increase the tendency to constipation should preclude their use.

Croton oil should not be administered to children, to debilitated patients, or to pregnant women except in desperate cases of uremic poisoning. Also gastrointestinal inflammation or peritonitis should prohibit its use.

### **GRUELS.**

As this is the season for intestinal disturbances, the medicinal and hygienic treatment of such disturbances can not be dissociated from the feeding and nutrition. Consequently a few suggestions from the book by Alida F. Pattee may not be amiss.



## FLOUR GRUEL.

Milk .....	1 cup.
Flour .....	½ tablespoonful
Salt .....	a speck
Raisins .....	1 dozen

"Scald the milk, mix the flour with a little cold milk and stir into the scalding milk. Cook in a double boiler for one-half hour or on back of stove in a saucepan. Stone and quarter the raisins, then add water enough to cover; cook slowly until the water has all boiled away; add to gruel just before serving, or eat with the raisins as desired. If there is much diarrhea the raisins should be left out."

## BARLEY GRUEL.

Barley flour .....	2 tablespoonfuls
Milk, scalded .....	1 quart
Salt .....	

"Blend the barley flour with a little cold milk and stir into the scalding milk. Cook in a double boiler two hours, salt to taste, and add sugar if desired; strain."

## BARLEY GRUEL WITH BROTH.

Beef broth .....	2 cups
Barley flour .....	2 tablespoonfuls
Cold water .....	2 tablespoonfuls
Salt .....	1 saltspoonful

"Mix barley flour and salt with the cold water to form a smooth paste. Add gradually to the boiling stock and boil one-half hour. Strain and serve very hot."

## EGG AND SHERRY GRUEL.

Egg .....	1
Sherry .....	1 wineglassful
Lemon juice .....	1 teaspoonful
Sugar .....	1 tablespoonful
Grated nutmeg .....	
Smooth hot gruel .....	1 cup

"Beat the egg, add wine, lemon juice and nutmeg, and pour on the hot gruel."

## ARROWROOT GRUEL.

Arrowroot .....	2 teaspoonfuls
Cold water .....	2 tablespoonfuls
Boiling water or milk .....	1 cup
Salt .....	
Sugar, lemon juice, wine or brandy as required.	

"Blend the arrowroot and cold water to a smooth paste, add boiling water or milk and cook in a double boiler for two hours. Add salt, strain, and serve hot."

Both the barley and arrowroot may be administered in diarrhea.

## INDIAN MEAL GRUEL.

Indian meal .....	1 tablespoonful
Flour .....	½ tablespoonful
Salt .....	¼ teaspoonful
Cold water .....	2 tablespoonfuls
Boiling water .....	1½ cups
Milk or cream.	

"Blend the meal, flour and salt with the cold water to make a smooth paste and stir into the boiling water. Boil on back of stove one and one-half hours, dilute with milk or cream, strain."

## RICE GRUEL.

Rice flour .....	1 tablespoonful
Cold water .....	2 tablespoonfuls
Boiling water .....	1 quart
Salt .....	

"Mix the rice flour with a little cold water to form a smooth paste, add the boiling water, and cook in a double boiler until transparent and thoroughly cooked."

Add salt to taste, sweeten, and add milk if desired; strain."

## OATMEAL GRUEL.

Coarse meal .....	¼ cup
Salt .....	½ teaspoonful
Boiling water .....	1½ cups
Milk or cream.	

"Add oatmeal and salt to the boiling water, cook four or five hours in a double boiler, adding more water if necessary. Strain, and dilute with hot milk to make it of the right consistency. Re-heat and serve. Sugar and a little port wine may be added if desired."

## FARINA GRUEL.

Farina .....	1 tablespoonful
Cold water .....	1 tablespoonful
Boiling water .....	1 cup
Scalded milk .....	1 cup
Salt .....	

"Mix the farina with the cold water, add to the boiling water and boil thirty minutes. Add the scalding milk, taste and season properly. A little sugar may be added if desired, or an egg may be beaten and the gruel added to it."

## BROWNEO FLOUR GRUEL.

"Tie one-fourth pound of wheat flour into a thick cloth and boil it in a quart of water for three hours. Remove the cloth and expose the flour to the air, or heat it until it is hard. Grate from it when wanted a tablespoonful, put into a half pint of new milk, and stir over the fire until it comes to a boil, add a pinch of salt and a tablespoonful of cold water, and serve. This gruel is excellent for children with simple diarrhea."

## FOR TOOTHACHE.

The *Druggists Circular*, March, 1908, gives the following suggestions for applications for toothache:

R.	c.c.	
Creasoti.		
Chloroformi.		
Olei caryophylli.		or
Olei menthae piperitæ.		
Olei camphoræ.		
Phenolis liquefacti, āā.....	5	āā, fl̄i
M. et sig.: Apply on cotton or pledgets of felt.		

Or,		
R.	gm. or c.c.	
Phenolis liquefacti .....	5	fl̄i
Camphoræ .....	10	or 3ss
Chloroformi .....	25	fl̄i
Olei cajuputi, q. s. ad.....	50	ad, fl̄i
M. et sig.: Apply on cotton or pledgets of felt.		

Or,		
R.	gm. or c.c.	
Phenolis liquefacti .....	60	fl̄i
Mentholi.		or
Thymoli.		āā, gr. xv
Collodii, āā .....	1	m. xv
M. et sig.: Jelly for toothache.		

Or,		
R.	gm. or c.c.	
Phenolis liquefacti .....	3	m. xlv
Capsici.		
Pulveris opii, āā.....	4	or āā, 5i
Olei caryophylli .....	8	fl̄i
Chloroformi .....	75	fl̄iiss
M. et sig.: Toothache tincture.		

## FOR LOCAL SWEATING IN TUBERCULOSIS.

R.	gm. or c.c.	
Mentholi .....	2	3ss
Acidi salicylici .....	4	or 5i
Spiritus lavandulae .....	200	fl̄i
M. et sig.: Sponge the affected regions with the solution.		



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, JULY 18, 1908.

## SUICIDE AND PROPHYLAXIS.

In recent years the problem of suicide has come to be looked on as a medical question, and this makes for real understanding of the situation as well as furnishing the best possible hope of its amelioration. It becomes important under these circumstances for the physician to know just what the situation with regard to suicide in this country is. In a recent article, Mr. George Kennan<sup>1</sup> has collected some valuable statistics that are probably the most authoritative figures on the subject at present obtainable and which, therefore, deserve consideration. Our annual suicide loss is enormous, for, according to Kennan, we are losing every year from this cause more than were killed on the Union side in the three great battles of Gettysburg, Spottsylvania and the Wilderness taken together.

The serious phase is that for twenty-five years the annual suicide rate has increased with large strides. In 1881 the rate in the United States was but 12 per 1,000,000 of the population and our total number of suicides in the whole country was only 605. Last year it had risen to 126 per 1,000,000 and our suicides numbered 10,782. If the present rate of increase be maintained—and there seems to be no reason that it should not be—we shall lose by suicide in the next five years nearly as many lives as were lost by the Union armies in battle in the five years of the Civil War. Since 1890 suicide has cost the United States over 120,000 lives. It is true that European countries have lost even more than we have, but far from being encouraging, this only adds to the blackness of the situation.

Certain features of the suicide situation deserve special attention. It has been asserted that the depression which accompanies dark days or prolonged periods of lack of sunshine is responsible for many self-murders. Three of the best authorities on the subject, however—Dr. Geck of Strasburg, who collected the statistics of about 100,000 suicides that took place in Prussia in the twenty years from 1876 to 1896; Durkheim of Paris and Dr. Gubski of St. Petersburg, who have investigated the subject more recently for the whole of Europe—assert that suicides invariably attain their maximum in June and their minimum in December. Geck found a

constant rise in the suicide curve from January to the end of June and a constant decline from June to the end of the first winter month. This does not mean, however, that climate is as important an element in suicide as it might seem to be, for it is not in the torrid zone but in the temperate zone that the highest suicide rate is reached. The maximum of 172 suicides annually to each 1,000,000 of inhabitants occurs between the parallels of latitude 50 and 55 in the north temperate zone—that is, just where climate is most salubrious and least annoying.

Perhaps the most interesting phase of this question of the relation of the weather to suicide is that advanced by Prof. Edwin G. Dexter.<sup>2</sup> He found by a comparison between the dates of nearly 2,000 cases in the city of New York and the records of the New York weather bureau on the days for which these suicides occurred, that not only is the tendency to suicide greatest in the spring and summer months, "but it is most marked on the clearest, sunniest and pleasantest days of these months. The clear dry days show the greatest number of suicides and the wet, partly cloudy days the least; and with differences too great to be attributed to accident or chance."

One other curious feature is that in times of stress the suicide rate always drops. During war time suicides are much less frequent than in peace. Other forms of stress, however, have the same favorable influence. Before the earthquake at San Francisco the suicides of that city averaged twelve a week. After the earthquake, when the whole population was homeless, destitute and exposed to hardships of every kind, there were only three suicides in three months. The decrease in the suicide rate was more than 97 per cent.

The all-important question for us is: What can be done to prevent the further increase of suicide? There are probably only two remedies practically available. The most important of these is, undoubtedly, the prohibition of the publication of the details of suicides, for this inevitably tends to suggest to certain weaker minds the imitation of the act described. This influence of suggestion due to the reading of the details of suicides is now generally recognized by those who have studied the question most and we feel sure is much more important than is sometimes thought. We unhesitatingly say that at least one-third of all suicides have some imitative element in them. Hence if we could secure the absolute prohibition of the publication of suicide details—the fact but not the manner might still be reported—and in addition could make it generally understood that suicide is a disease to be prevented and not a crime to be condoned or condemned, we doubtless would be able to do much to reduce the appalling increase in the suicide rate which is such a lamentable blot on recent social statistics.

1. Problems of Suicide, McClure's Magazine, June, 1908.

2. Popular Science Monthly, April, 1901.



## RELATION OF EDUCATION TO PREVENTIVE MEDICINE.

The triumphs of preventive medicine are a matter of just pride to the medical profession. But while we may congratulate ourselves on what has already been accomplished, we must admit that much remains to be done. Considered in the light of what is possible, that which has been done is so far behind what might have been done as to constitute after all an occasion rather for regret, coupled with a stimulus to renewed and greater effort, than for self-gratulation.

This aspect of the question is emphasized by an extensive monograph by Dr. N. E. Ditman<sup>1</sup> on "Education and Its Economic Value in the Field of Preventive Medicine," in which he urges the need of a school of sanitary science and public health. The present problems of the public health and of sanitary administration involve much more than a knowledge of bacteriology or the physical causes of disease. Politics, sociology and morality are all concerned. Effective measures for removing the causes of disease can be carried out only with the support of an enlightened public opinion, and this must be formed by education. As the activities of the physician—the natural educator of the public in such matters—have heretofore been directed mainly along the lines of curative medicine, he is often ill-prepared for the new duties thrust on him by the demands of modern sanitation. This education of the public, to be efficient, will necessitate in many instances a postgraduate education of the practicing physician, and also provision for a training of the medical student in sanitary science superior to that hitherto in vogue.

As for specialization in sanitary work among the members of the medical profession, the time must come when one who undertakes the functions of a health officer will be required to show evidence, either in the form of a diploma or otherwise, of special training. In Great Britain such diplomas have now for some years been granted by nearly all the universities and are an essential prerequisite, in most instances, for appointment as medical officer of health; nor is Great Britain alone in this. Some such qualification should be required here. Again, teachers in public schools and higher institutions of learning have excellent opportunities for imparting instruction regarding health and its relation to economics and social problems, and they must form an important agency in securing the proper basis for efficient sanitary action by public officials. It is vastly important, therefore, that all these classes should receive appropriate training. This can best be afforded by a school whose instructors are in close touch with the methods and aims of sanitation as represented by the advanced thought of the medical profession.

Philanthropic and social workers also need such an education, while the ministry, the legal profession, the prospective statesman and the public in general should

all receive instruction, suited to their respective needs, concerning the varied relations of disease to morals, crime, poverty, and economic questions. The needs of this class could be adequately met by special courses of instruction, both at the proposed school and in other large centers by lecturers appointed by, and under the control of, the school.

Ditman suggests that such a school should be in connection with a university having a well-equipped medical department and ample opportunities for scientific demonstration and research. It should be situated in a large city to afford practical illustrations of health department methods and of the various forms of unsanitary environment. It should provide a wide range of courses suited to the needs of its various classes of students, certain of which courses might well be required of applicants for a degree in the university. Ditman gives a list of thirty-five subjects adapted to this end, and the number of courses might easily be multiplied.

The great value of such a school will readily be admitted. There are opportunities for the establishment of several such in the United States. The economic results of the reduction of sickness and death thus made possible ought to be sufficient reason for establishing them, not to mention the higher interests served by the alleviation of suffering and the promotion of morality.

## NATIONAL DEPARTMENT OF PUBLIC HEALTH.

The Democratic National Convention adopted a plank in its platform endorsing the organization of all existing national public health agencies into a national bureau of public health. The Republican National Convention adopted a similar, but less specific plank on the same subject. With both of the leading political parties committed by their platform declarations to advance legislation along sanitary lines, there should be no difficulty in securing the introduction and consideration of a bill in Congress in the near future for an adequate national health bureau or department.

Recent advances in scientific medicine; public recognition of sanitary victories, such as the stamping out of yellow fever in New Orleans and Havana and the suppression of the bubonic plague in San Francisco; greatly increased public interest in health matters, as shown by the successful campaigns for pure food and against dangerous drugs; the increasing desire of the people for trustworthy information on all health topics, as shown by recent articles in the popular magazines, all combined with the epoch-making reorganization of the medical profession, unite to form an incentive to a popular movement for a national health organization such as has not heretofore been possible. The exact manner of organization, whether as a bureau or as a department; the question of a cabinet officer versus a bureau chief; the alternatives of the immediate organization of a new department or the gradual expansion of existing bureaus,

1. Columbia University Quarterly, June, 1908, x, No. 3, supplement.



all are subordinate to the general purpose of such a movement—the conservation of the lives and health of the people. The time is ripe for action, and the people are ready to support the movement.

To be successful, however, there must first be a careful study of all the conditions involved. It is no credit to our profession that we frequently approach legislators, urging the adoption of bills that are hastily and carelessly prepared without adequate understanding of the problems involved or of laws already existing. It sometimes happens, too, that a bill as drafted represents the prejudices or personal views of one or two men rather than the accumulated experience of the entire profession. It is time for us to realize that if we wish to be recognized as having a right to participate in law making and governing we must show ourselves worthy of such privileges. If we wish the support of law makers and law administrators, we must show that we can draft sound laws on broad principles. A bill for the establishment of a national department of health should not be drawn until accurate knowledge has been obtained regarding all national health agencies now existing, not only in this but in other countries. The practical and legal relations now existing between present health agencies, both state and national, should also be carefully studied, as well as the relation which the proposed bureau will bear to all our other executive and administrative departments. The cooperation of all existing public health and sanitary forces should, so far as possible, be enlisted. Above all, personal prejudices and animosities should be entirely discarded and the health of the public should be considered above all else.

If wisdom and tolerance be observed and careful investigation and public education precede the presentation of the bill, it will have the support of all parties and of all factions. An unprecedented opportunity now presents itself for the profession to show a spirit of broad and constructive statesmanship.

#### NOTABLE ANTITUBERCULOSIS LEGISLATION.

New York State has just passed a law declaring tuberculosis to be an infectious and communicable disease and providing for the reporting of all cases to the local health authorities. Its salient features comprise the free examination of sputum by the health authorities in all suspected cases; registration and the inviolability of all such records; the disinfection and renovation of premises after the death or removal of a consumptive, and the rendering innocuous of all tuberculous sputum. The physician must send to the health officer of his community a statement of the precautions he takes in a case of this disease; he must safeguard in every reasonable way those living in the same house with the consumptive patient; and for his report he receives a fee of \$1.00. Should the physician fail to report, this duty devolves on the health officer, who

will then receive the fee. Penalties<sup>1</sup> are imposed on physicians and others who fail to execute the duties required by this act.

All the measures incorporated in this law have become commonplaces of sanitary requirement, and they well epitomize the essential prophylaxis against tuberculosis. A positive finding in sputum examination places the diagnosis of the disease beyond question, but surely no physician will to-day wait for such evidence before reaching a conclusion. The disease has usually passed well beyond incipency before bacilli are discoverable in the sputum. Of all the steps toward communal protection registration is by far the most important; no adequate disinfection or renovation of premises is possible otherwise.

This New York state law was signed at about the same time as a similar statute for the District of Columbia to which the President has affixed his signature. In preparing the New York law those now in operation in Vermont, New Hampshire and Wisconsin were carefully considered; much was derived from them, from the sanitary code of New York City, and from the new federal law. A wise disposition is here being shown by government and humanitarian bodies to make observations and concessions, dictated, as Secretary Root notes, "by enlightened judgment for the common benefit." We may confidently hope that all our states will presently have similar statutes in force.

#### THE HEALING OF EXPERIMENTAL TUMORS BY TRANSFUSION OF BLOOD.

There occurs occasionally on the generative organs of dogs, and transmitted by coitus, a peculiar form of tumor that is generally designated as a lymphosarcoma, but concerning the actual nature of which there has been some difference of opinion. The readiness with which it can be transplanted from dog to dog, either experimentally or through coitus, makes it seem much more like an infective granuloma than like the true malignant tumors; but most of the more recent observations seem to indicate that this growth really is a lymphosarcoma which, as the result of repeated natural implantation through coitus, has become adapted in a high degree to this method of propagation. Although this is merely a canine disease, yet its proper classification becomes an important matter because of the use to which it is being put in connection with the experimental study of tumors, along with the transplantable carcinomas of mice and sarcomas of rats. The newest observations on the transplantable lymphosarcoma of dogs, by Crile and Beebe, are of particular interest because they demonstrate a method by which these growths can be made to disappear and leave the animal immune and well.

All the transplantable tumors so far studied in lab-

1. THE JOURNAL A. M. A., May 30, 1908, p. 1804.



oratory animals show a tendency to spontaneous retrogression, which feature might seem to indicate that they are essentially different from the malignant tumors occurring in man which are remarkable rather for the absence of any such desirable tendencies. However, this difference is perhaps rather apparent than real, depending on the fact that spontaneous tumors developing in man appear only in individuals in whom conditions favor the formation of neoplasms, while in the experimental tumors inoculations are made into normal animals that are entirely free from any such tendency to tumor formation, and which are possessed of a certain degree of natural immunity.

Be that as it may, it is an important fact that animals thus recovering spontaneously are immune to further inoculation with tumors, and their blood contains substances which inhibit tumor growths; these observations made by Gaylord and Clowes, and at first disputed by Bashford and Ehrlich, are now generally accepted in view of their abundant corroboration. Basing their experiments on these facts, Crile and Beebe<sup>1</sup> found that if an animal with progressing tumors were bled freely and then transfused with a considerably larger amount of blood from a dog immune to such tumors, the growth of the tumors was usually checked and they soon underwent complete absorption. These results were much the same whether the immunity of the dog furnishing the blood was evidenced by an insusceptibility to inoculation with tumors or was an acquired immunity manifesting itself by spontaneous retrogression of tumors that had been growing for a time. The authors consider that immunity to tumors is not strictly analogous to bacterial immunity. Nevertheless their results show that it is to some extent a blood condition which may be transferred to another animal, rendering it passively immune.

Interesting and suggestive as these experiments are, Crile and Beebe wisely refrain from any premature speculation as to their application to the treatment of human tumors, a subject that must be first approached only after a more extensive experience with animals has been obtained.

#### THE INDEX TO CURRENT LITERATURE.

When, in our issue for June 27, we appealed to our readers for an expression of their views with reference to the continuance of the Index to Current Medical Literature we realized that we were asking a good deal, in view of the season of the year and other factors, in calling for at least 500 replies. So also, apparently, thought many of those who wrote promptly in their anxiety to avert a threatened discontinuance, for they begged us to be content with less than the specified number of replies. It is, however, most gratifying to learn that the appreciation of the labor involved in the Index to Current Medical Literature is both widespread and

deep. The number of those who have responded to date is 586—and communications are coming in every mail—and of these only nine appear indifferent or half-hearted. Practically all beg us not to think of discontinuing the index, which large numbers seem to consider almost, if not quite, the most valuable feature of THE JOURNAL. This hearty response, moreover, besides effecting its purpose of dispelling any idea of abandoning the Index to Current Medical Literature, has had the effect also of stimulating to greater effort that portion of the editorial staff on whom the responsibility and labor fall. We thank most heartily all those who have replied to our questions, especially those who have offered suggestions for improvement. These suggestions are being carefully considered, and we assure our readers that if any change is made it will be toward making the index more useful and more practical.

#### MEDICAL COLLEGE MERGERS.

Last week we announced the merger at Cincinnati of the Miami Medical College and the Medical College of Ohio which promises so much for the future of medical education in that city and state. This is the eleventh merger of medical colleges which has taken place in less than three years, during which time twenty-three of these institutions have united their forces, leaving nine larger and stronger ones. In Indiana five colleges have finally been welded into one, in Kansas four were merged into one, and in Kentucky four into two, while in Missouri, in Ohio at Columbus, in Minnesota, and now again in Ohio at Cincinnati, two colleges in each instance merged into one. In every instance these mergers have registered a desire on the part of the faculties for higher educational standards, and the manner in which personal interests have been set aside that better institutions might result has revealed a magnanimity, an unselfishness and a public spirit that are most encouraging and commendable. It is this spirit which shows that the medical profession of this country will not be content until medical education in the United States is second to that of no other nation. There remain several other cities having from two to five separate colleges where mergers similar to the above are being contemplated. In some of these a strong public spirit already prevails and positive action will not be long withheld. It is evident that the merging of our numerous small and poorly equipped medical colleges into a less number of well-equipped and strong institutions is the most encouraging part of the movement for higher standards of medical education in the United States.

**Hot Horse Serum in Treatment of Burns.**—R. Petit's communications on the efficacy of hot horse serum in local treatment of wounds have been summarized in these columns from time to time. He now announces that it is proving the best topical application for extensive burns. The *Presse Médicale*, June 13, quotes some of his case histories, showing that healing was much more rapid in the burns treated with the hot horse serum than in other burned patches on the same child treated with picric or boric acids, etc. He believes that the horse serum revives the injured cells, possibly including the nerve cells, so that they recuperate and aid in the healing process, instead of dying and generating poisons. The serum also summons the leucocytes to the spot, while its harmlessness has been demonstrated.

1. Jour. Med. Research, 1908, xviii, 385.



## Medical News

### ILLINOIS.

**Free Treatment of Hydrophobia.**—Dr. J. A. Egan, secretary of the Illinois State Board of Health, requests us to announce, for the information of physicians and health officers, that in 1905 the General Assembly made provision for the care and treatment of poor persons duly certified by regular physicians to have been bitten by rabid animals, or otherwise put in danger of infection from hydrophobia, and that such persons unable to pay for treatment themselves will be cared for at the expense of the state, at the Pasteur Institute, 228 Dearborn Avenue, Chicago, the institution selected by the Illinois State Board of Health.

### Chicago.

**Medical College in Good Standing.**—We are informed by the Illinois State Board of Health that owing to a clerical error, the College of Medicine and Surgery, Physio-Medical, was omitted from the list of colleges in good standing, sent to us last week.

**Chicago's Health.**—According to the bulletin of the Chicago Department of Health, the city's health was never better than during the week ended July 11. The average death rate of the last ten years was 14.21 per thousand; the rate of the first eleven days of the present month was 10.88. Had the average rate of previous years obtained there would have been 928 deaths during the eleven days instead of the 710 which did occur. To the total of 510 deaths reported during the week ended July 11, violence contributed 62—a greater number than any of the diseases; consumption was second in order of highest mortality, with 57 deaths; the diarrheal diseases, 52; nephritis, 42; heart diseases, 40; pneumonia, 36; cancer and the nervous diseases, each 28. There was but one death from typhoid fever reported, as against 7 in the week preceding and 5 in the corresponding week of last year. A death from tetanus was recorded during the week, but not due to a Fourth of July injury.

**Mortality of Chicago During the First Half of 1908.**—According to the statistics of the Department of Health, 1,998 fewer people died during the first six months of 1908 than during the corresponding period of last year. The diseases in which the greatest improvements in the mortality rate is shown are pneumonia and pulmonary tuberculosis; the actual decrease in the number of deaths from pneumonia is 949, from tuberculosis is 174. On the other hand, deaths from diarrheal diseases in children have increased, especially in children under one year, the increase over last year being 183. June had the very low general death rate of 11.77 per thousand of population. This is 6.5 per cent. lower than the ten-year average for June and 13.4 lower than June, 1907. In the last fifty years there have been but two Junes with a lower rate. The total deaths reported during the month—2,095—were 348 fewer than the preceding month and 260 less than the returns of June, 1907. Of the diseases which show the greatest reduction, pneumonia leads, with 103 fewer deaths than the preceding month and 133 fewer than the corresponding month of last year. There were 24 fewer deaths from consumption than in the preceding month and 12 fewer than the compared period of 1907. The reduction in contagious diseases similarly compared was 27 and 42. A marked increase is noted in deaths from diarrheal diseases. The 153 deaths reported during the month exceed the preceding month by 22 and the corresponding month of last year by 38.

### INDIANA.

**Sex Relation and Social Hygiene.**—At a recent meeting of Marion County Medical Society, resolutions were adopted, setting forth that it would be wise to teach young people, with seriousness and dignity, the facts about reproduction and the almost certain evil effects of unchastity.

**Itinerant Physicians.**—The common council of Logansport has passed an ordinance providing for a license fee of \$50 per day for itinerant physicians or traveling vendors of drugs or remedies, the violation of the ordinance to bear a penalty or fine not less than \$50 nor more than \$100 for the first offense, and for not less than \$50 nor more than \$300 for each subsequent violation.

**Officers and Faculty of Medical School.**—At a meeting of the board of trustees of the Indiana University, held in Bloomington June 23, the following officers and faculty for the school of medicine were selected: Dr. Allison Maxwell, dean; Dr. Edward F. Hodges, vice-dean; Dr. Edmund D.

Clark, secretary; Dr. John S. Barnhill, treasurer, and B. D. Meyer, secretary of the medical department. Drs. Henry Jameson, Allison Maxwell and George W. McCaskey, professors of medicine; Drs. Louis Burkhart, Samuel E. Earp, George D. Kahlo, Theodore Potter, and Albert C. Kimberlin, clinical professors of medicine; Drs. Francis D. Dorsey and Robert H. Ritter, associate professors of medicine; Dr. Frank B. Wynn, professor of medical diagnosis; Dr. William T. S. Dodds, associate professor of clinical diagnosis; Dr. Simon P. Shearer, professor of gastrointestinal diseases; Dr. L. Park Daryer, professor of pediatrics; Drs. James H. Taylor and John A. Lambert, clinical professors of pediatrics; Dr. Amelia R. Keller and Dr. Oscar N. Torian, associate professors of pediatrics; Drs. Frank F. Hutchins, Ernest C. Reyer and Albert E. Sterne, professors of mental and nervous diseases; Drs. Charles S. Neu and Robert N. Todd, associate professors of nervous and mental diseases; Drs. William H. Foreman and C. Richard Schaefer, professors of therapeutics; Dr. Thomas W. Haas, associate professor of therapeutics; Dr. John N. Hurty, professor of hygiene and sanitary science; Dr. Samuel C. Norris, associate professor of hygiene and sanitary science; Drs. James H. Ford, John H. Oliver and Miles F. Porter, professors of surgery; Drs. Edmund D. Clark, J. Rilus Eastman and George M. Wells, professors of clinical surgery; Drs. Maynard A. Austen and David Ross, associate professors of surgery; Dr. Horace R. Allen, professor of orthopedic surgery; Drs. William N. Wishard and John A. Sutcliffe, professors of genitourinary surgery; Drs. Frederic R. Charlton and Harvey A. Moore, clinical professors of genitourinary surgery; Drs. George J. Cook and John C. Sexton, professors of gastrointestinal surgery; Drs. Alois D. Graham and Thomas C. Kennedy, clinical professors of gastrointestinal surgery; Drs. Walter S. Given and Homer H. Wheeler, associate professors of gastrointestinal surgery; Dr. Alembert W. Brayton, professor of dermatology and syphilology; Drs. Albert M. Cole and E. Oscar Lindermuth, professors of electrotherapeutics and dermatology; Drs. Albert E. Bulson, Thomas C. Hood and Frank A. Morrison, professors of ophthalmology; Drs. Harry C. Parker and Frederic C. Heath, clinical professors of ophthalmology; Drs. John S. Barnhill, Lewis C. Cline, John I. Kyle, and Kemp K. Wheelock, professors of otology, laryngology and rhinology; Drs. John L. Masters, Lafayette Page and Ernest DeW. Wales, clinical professors of otology, laryngology and rhinology; Dr. Orange G. Pfaff, professor of gynecology; Drs. Thomas E. Eastman, Thomas B. Noble and Hugo Pantzer, clinical professors of gynecology; Drs. Bernays Kennedy and Robert O. McAlexander, associate professors of gynecology; Drs. John T. Davis, Sidney J. Hatfield, David Tahn, Goethe Link, and John Pfaff, associate professors of gynecology; Dr. Edward F. Hodges, professor of obstetrics; Dr. Charles E. Ferguson, clinical professor of obstetrics; Dr. Henry F. Beckman, associate professor of obstetrics; Dr. Charles S. Neu, professor of pathology; Dr. John W. Fluss, professor of anatomy; Drs. John Morris, Norman E. Jones, Walter W. Barnett, W. B. Robinson, and Charles O. Durham, associate professors of anatomy; Drs. Gustave A. Petersdorf and Charles S. Woods, professors of chemistry, and Dr. William O. Gross, professor of toxicology.

### IOWA.

**Personal.**—Dr. H. J. James, formerly assistant physician at Muskoka Cottage Sanatorium, Canada, has been appointed assistant superintendent at the State Sanatorium for Tuberculosis, Oakdale.

**Epidemic Diseases.**—An epidemic of German measles is reported from Sloan.—Smallpox is reported to be prevalent in Washington Township, Atlantic County.—The secretary of the University Y. M. C. A., Iowa City, was stricken with smallpox, June 3. The building has been closed and fumigated.—Two cases of smallpox, said to be imported from Missouri, are reported in Davenport.—Rockwell City is reported to have 57 cases of typhoid fever, with 5 deaths.

**Medical Society Meetings.**—At the annual meeting of the Central Iowa Medical Association, held in Nevada, June 16, the following officers were elected: President, Dr. Alpheus A. Deering, Boone; vice-president, Dr. John W. Bailey, Nevada, and secretary-treasurer, Dr. James C. Walker, Boone. The next meeting will be held at Boone.—At the semi-annual meeting of the Iowa Union Medical Society, held in Iowa City June 23, the following officers were elected: President, Dr. L. Wallace Dean, Iowa City; vice-president, Dr. William R. Whiteis, Iowa City; secretary, Dr. Alexander Crawford, Mount Vernon; treasurer, Dr. George P. Carpenter, Cedar



Rapids, and censors, Drs. Edwin Burd, Lisbon, John W. Lorange, Marion, and Hollis W. Bender, Cedar Rapids. The next meeting of the society will be held in Cedar Rapids.—The thirty-seventh annual meeting of the Des Moines Valley Medical Association was held in Ottumwa June 18 and 19. The following officers were elected: President, Dr. Lewis A. Rodgers, Oskaloosa; vice-presidents, Drs. Frank T. Stevens, Mount Pleasant, and Charles B. Powell, Albia; secretary-treasurer, Dr. Fred W. Bowles, Ottumwa, and censors, Drs. Smith A. Spilman, Ottumwa, Henry C. Young, Bloomfield, and Clyde A. Boice, Washington. The next meeting will be held in Ottumwa.

#### MARYLAND.

**Medical Student Dies Just Before Graduation.**—William George Thomas died at Cumberland, Md., May 7, of tuberculosis, five days before his graduation from the Southwestern Homeopathic College, Louisville, aged 24.

#### Baltimore.

**Personal.**—Dr. Leo G. Scheurich, a recent graduate of the medical department of the University of Maryland, was given a banquet by the Holy Cross Lyceum and presented with a case of pocket instruments, July 9.—Dr. Cary B. Gamble has been appointed a member of the board of supervisors of city charities.—Dr. Henry Kenwood has gone to Bedford Springs, Pa., as resident physician for the season.—Dr. James H. Chestnutt of the Johns Hopkins Hospital staff was operated on for appendicitis July 10.—Former internes of the University Hospital have located as follows: Dr. G. W. Billupo, chief resident surgeon, Woman's Hospital, Baltimore; Dr. Joseph L. Valentini, Baltimore; Dr. Charles W. Roberts, southern Georgia; Dr. E. W. Glidden, Savannah, Ga.; Dr. Thomas Legg, western Maryland; Dr. Joseph A. Barry, New York; Dr. Salvador Giuliani, Vieques, Porto Rico; Dr. Rufus C. Franklin, Craymount, Ga.

#### MASSACHUSETTS.

**Course in Psychotherapy.**—Tufts Medical School announces it will add to its curriculum a course in psychotherapy, beginning October 1, in charge of Dr. Morton H. Prince and Rev. Albert E. Shields.

**Alumni Meetings.**—The fourth annual dinner and meeting of the New England Association of Jefferson Medical College Alumni was held in Boston, when Dr. John Q. A. McCollister, Waltham, of the class of 1856, was elected president; Dr. Angus McOdrum, Boston, of the class of 1889, secretary, and Dr. Henry J. Walcott, Concord, of the class of 1890, treasurer.—At the annual meeting of the Harvard Alumni Association, held June 23, Drs. Vincent Y. Bowditch, Boston, of the class of '79; Henry F. Lewis, Chicago, of the class of '88; and Malcolm Storer, Boston, of the class of '89, were elected to fill vacancies in the council.

**Society Meetings.**—At the annual meeting of the Barnstable District Medical Society at Hyannis, the following officers were elected: Dr. Stephen H. Sears, Yarmouth Port, president; Dr. Henry B. Hart, East Dennis, vice-president; Dr. John P. Nickerson, West Harwich, secretary; Dr. William D. Kinney, Osterville, treasurer; Dr. Ephraim Cutter, West Falmouth, librarian; and Dr. James H. Higgins, Marston's Mills, trial committee.—At the annual meeting of the Hampshire District Medical Society, held in Northampton, Dr. Worthington W. Miner, Ware, was elected president; Dr. Frank H. Smith, Hadley, vice-president; Dr. Arthur G. Minshall, Northampton, secretary; Dr. Alfred H. Headley, Northampton, treasurer; and Dr. Edward W. Brown, Northampton, librarian.—Worcester District Medical Society, at its annual meeting, elected the following officers: Dr. William G. Reed, Southbridge, president; Dr. Lemuel F. Woodward, Worcester, vice-president; Dr. George E. Emery, Worcester, secretary; Dr. George O. Ward, Worcester, treasurer; Dr. Michael F. Fallon, Worcester, orator; and Dr. Ernest V. Scribner, Worcester, commissioner of trials.—At the annual meeting of the Essex South District Medical Society, held in Salem the following officers were elected: Dr. Snow P. F. Cook, Gloucester, president; Dr. Frederic W. Baldwin, Danvers, vice-president; Dr. George K. Blair, Salem, secretary; Dr. George Z. Goodell, Salem, treasurer; Dr. Carolus M. Cobb, Lynn, librarian; and Dr. Ralph E. Bicknell, Swampscott, commissioner of trials.—At the meeting of the Bristol South District Medical Society, held in Fall River, the following officers were elected: Dr. William T. Learned, Fall River, president; Dr. Augustus H. Mandell, New Bedford, vice-president; Dr. Alanson J. Abbe, Fall River, secretary-treasurer; and Dr. George L. Richards, Fall River, commissioner of trials.

—Franklin District Medical Society, at its annual meeting, held in Greenfield, reelected the following officers: Dr. John W. Cram, Colerain, president; Dr. Charles L. Upton, Shelburne Falls, vice-president; Dr. Clara M. Greenough, Greenfield, secretary-treasurer; and Dr. Frances E. Johnson, Erving, commissioner of trials.

#### MICHIGAN.

**Antituberculosis Charity Fund.**—As a result of contributions in Detroit on Tuberculosis Charity day, a grand total of \$11,274.99 was received.

**Graduating Exercises.**—The graduating exercises of the American Medical Missionary College were held at the Battle Creek Sanitarium, June 17, when a class of four was graduated. The address to the graduating class was delivered by Rev. Robert H. Nassau, M.D., a veteran missionary from West Africa.

**Isolation Hospital and Tuberculosis Sanatorium.**—Work is soon to be commenced on the new Contagious Disease Hospital and Sanatorium for Tuberculosis, Detroit, a site having been selected on Hamilton boulevard. The tract contains 25 acres, and the plans call for a group of buildings for the care of acute contagious diseases and for a tuberculosis sanatorium.

**The Lake Michigan Water Commission.**—In THE JOURNAL, July 11, page 136, we stated erroneously that Dr. Oscar C. Breitenbach had been elected president of the Lake Michigan Water Commission. Dr. Breitenbach directs our attention to the mistake and states that he is president of the Michigan State Water Commission, a subcommittee to the other organization of which Dr. William Evans, Commissioner of Health, Chicago, is president.

#### MISSOURI.

**State Board Election.**—At the annual meeting of the State Board of Health, held in Springfield, the following officers were elected: Dr. Albert H. Hamel, De Soto, president; Dr. James A. B. Adecock, Warrensburg, secretary.

**Society Meetings.**—Macon County Medical Association, at its annual meeting, held in Macon, elected the following officers: Dr. P. S. Watson, president; Dr. Alfred B. Miller, Macon, vice-president; Dr. Daly, secretary, and William H. Miller, Macon, treasurer. The next meeting will be held in Keota.—At the annual meeting of the North Missouri Medical Society, held in Moberly, June 18 and 19, the following officers were elected: President, Dr. Edward A. Grum, Kirksville; vice-presidents, Drs. William L. Brosius, Gallatin, and Godfrey O. Cuppage, Moberly; corresponding secretary, E. C. Callison, Kirksville; recording secretary, Dr. Olion C. McEwen, Salisbury, and treasurer, Dr. Robert Haley, Brookfield.

#### St. Louis.

**Personal.**—Dr. Rodney J. Bunch has been appointed assistant superintendent of the City Hospital, vice Dr. J. Wilbur Shankland, resigned.—Drs. John W. Marchildon and R. L. Thompson have gone to Europe.

**Graduation Exercises.**—The degree of M.D. was conferred on a class of 60 at the commencement exercises of the Washington University Medical Department, May 25, by Marshall S. Snow, acting chancellor of the university.—Following the action of the State Board of Health in declaring the Medical Department of Barnes University an incomplete institution, permission was refused, June 1, to 75 members of the graduating class to take the state examination. At a meeting of the faculty of the college, it was decided to carry the controversy to the supreme court in a final endeavor to allow its graduates to take the state medical examination.—The seventy-ninth annual commencement exercises of the Medical Department of the St. Louis University were held May 22, when a class of 68 was graduated. Rev. J. P. Frieden, president of the university, delivered the commencement address.

#### NEBRASKA.

**Commencement Exercises.**—The sixty-first annual commencement exercises of the University of Nebraska College of Medicine were held in Omaha, May 21, when a class of 25 was graduated. The doctorate address was delivered by Dr. Harvey W. Wiley, director of the U. S. Bureau of Chemistry, Washington, D. C.

**County Society Organized.**—At a meeting of physicians of the county, held in Plainview, May 13, the Pierce County Medical Society was organized on the standard plan. The following officers were elected: President, Dr. James M. Alden, Pierce; vice-president, Dr. Frank H. Nye, Plainview; secretary-treasurer, Dr. Leon R. Pheasant, Pierce, and counselors, Drs. Erskine M. Barnes, Plainview, John T. Pringle, Pierce, and Mansen.



## NEW JERSEY.

**Charity Ball Receipts.**—The recent charity ball at Trenton, it is reported, will net each of the three hospitals in the city \$3,569.40.

**Hospital Corps for National Guard.**—In accordance with the provisions of the Dick bill, a hospital corps has been formed, the members of which will be borne on a separate muster roll prepared by the senior medical officer of the organization to which the individual members are assigned.

**State Society Meeting.**—At the one hundred and forty-second annual meeting of the Medical Society of New Jersey, held at Cape May, June 18-20, the following officers were elected: President, Dr. David St. John, Hackensack; vice-presidents, Drs. Benjamin A. Wadlington, Salem, Thomas H. Mackenzie, Trenton, and Daniel Strock, Camden; corresponding secretary, Dr. Harry A. Stout, Wenonah; recording secretary, Dr. William J. Chandler, South Orange, and treasurer, Archibald Mercer, Newark. The committee on prize essays announced awards to Drs. Thomas N. Gray, East Orange, and Floyd McEwan, Newark, whose essays were on "Infant Feeding During the First Two Years of Life."

**Health of New Jersey in June.**—The number of deaths reported to the Bureau of Vital Statistics during the month ended June 15 was 2,628, an increase of 26 over the previous month and 77 less than the corresponding period last year. The deaths under one year numbered 444; over one year and under five years, 249; sixty years and over, 768. The number of deaths from typhoid fever (18) is lower than for any period during the last twelve months. During the month tuberculosis caused 353 deaths; diseases of nervous system, 345; diseases of circulatory system, 289; diseases of respiratory system (pneumonia excepted), 153; pneumonia, 218; nephritis, 190; diseases of digestive system (infantile diarrhea excepted), 159; cancer, 121; scarlet fever, 48; suicide, 42; infantile diarrhea, 66; diphtheria, 41; measles, 23; cerebrospinal meningitis, 22; whooping cough, 21; typhoid, 18; all other causes, 519.

## NEW YORK.

**Personal.**—Dr. Charles Phillips Emerson, formerly of Baltimore, was inaugurated superintendent of Clifton Springs Sanitarium July 9.

**New Hospital for Buffalo.**—Owing to the lack of proper facilities for the care and treatment of contagious diseases, the Buffalo Academy of Medicine has appointed a committee to facilitate the building of a municipal hospital for contagious diseases. The Erie County Medical Society has likewise appointed a committee of fifteen to further this project.

**Officers of the Buffalo Academy of Medicine.**—At the annual meeting of this society officers were elected as follows: President, Dr. Charles Bowerman; secretary, Dr. William Irving Thornton; treasurer, Dr. Harry R. Trick; chairman of the section of medicine, Dr. Julius Ullman; secretary, Dr. Thomas J. Walsh; chairman of the section of surgery, Dr. Lawrence Hendee; secretary, Dr. Frederick J. Parmenter; chairman of the section of pathology, Dr. James A. Gibson; chairman of the section of obstetrics, Dr. Earl P. Lathrop; secretary, Dr. Edward Mann.

**Day Camp for Consumptives.**—Through the efforts of public-spirited citizens of Buffalo, an adequate sum has been subscribed for a day camp for consumptives and from thirty to forty individuals are given car fare to and from the camp and obtain scientific outdoor treatment with proper food supply under the direction of Dr. John Pryor and Dr. George Eckles on a farm tract within the city limits. The work is being carried on through the efforts of the Erie County Branch of the National Red Cross Society and the Tuberculosis Committee of the Charity Organization Society.

## New York City.

**Personal.**—Dr. David E. Hoag will accompany the annual tour of the American Automobile Association as its official surgeon. The tour began at Buffalo July 9.—Dr. Louis F. Bishop, Dr. and Mrs. S. O. Vander Poel and Dr. and Mrs. Albert Warren Ferris have sailed for Europe.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ending July 4, 472 cases of measles with 15 deaths; 374 cases of tuberculosis, with 150 deaths; 244 cases of scarlet fever, with 23 deaths; 243 cases of diphtheria, with 28 deaths; 37 cases of typhoid, with 8 deaths; 17 cases of whooping cough with 5 deaths; 54 cases of varicella and 2 deaths from cerebrospinal meningitis, a total of 1,441 cases and 231 deaths.

## PENNSYLVANIA.

## Philadelphia.

**Fourth of July Injuries.**—According to the reports of the various hospitals throughout the city, nearly 1,000 persons were injured by fireworks. Very few of the injuries sustained this year were of major importance; but one death has resulted since from tetanus.

**Suspended.**—At a meeting of the County Medical Society, June 17, Dr. Louis J. Lautenbach, accused of diverting patients from the Philadelphia Eye, Ear, Nose and Throat Institute, a project conducted by the doctor, to his office for treatment, was found guilty and suspended for two years. A motion was also adopted recommending to the State Board of Public Charities that the charter of his institute be revoked.

**Charity Society's Deficit.**—According to a report of the Society for Organizing Charity, the organization will close its fiscal year this summer with a deficit of \$10,000. It is claimed that the resources of the society have been exhausted by the financial depression. The following report shows the work accomplished by the society during the winter: Total applications, 11,015; number of families represented, 6,094; families under care, 1,539; permanent employment procured, 177; temporary employment, 362; employed under auspices of society, 1,097; relief to families, \$18,594.73; relief for families through other agencies, 2,312; visits to poor, 29,313; individuals cared for at lodges, 12,179.

**Health Report.**—The total number of deaths reported for the week ended July 11, aggregated 585, including 312 males and 273 females. This is an increase of 64 over the number reported the preceding week, and an increase of 117 over the number reported in the corresponding week of last year. The principal causes of death were: Typhoid, 7; measles, 7; pertussis, 5; diphtheria, 6; consumption, 38; cancer, 26; diabetes, 4; paralysis, 12; tetanus, 2; heart disease, 41; acute respiratory disease, 28; enteritis, 113; apoplexy, 11; hepatic cirrhosis, 5; appendicitis, 8; nephritis, 37; premature birth, 9; congenital debility, 20; suicide, 6; accidents, 19; sunstroke and heat, 29; and marasmus, 9. There were 119 cases of contagious diseases, with 14 deaths, as compared with 119 cases and 20 deaths reported in the preceding week.

## TENNESSEE.

**Smallpox.**—Dr. Philander D. Sims, city physician of Chattanooga, reports that, on June 5, there were 20 cases confined in the Isolation Hospital and that 2 other patients were under strict quarantine.

**Society Meetings.**—The Upper Cumberland Medical Society held its annual meeting at Sparta May 27. The following officers were elected: Dr. Byrd S. Rhea, Bon Air, president; Drs. John T. Moore, Algood, Thomas J. Potter, Smithville, and William M. Breeding, vice-presidents; Dr. Venable L. Lewis, Crossville, secretary, and Dr. R. E. Lee Smith, Doyle Station, treasurer.—At the twenty-eighth annual meeting of the Middle Tennessee Medical Association, held in Centreville, May 21 and 22, Dr. William M. Litterer, Nashville, was elected president; Dr. Leonard E. Ragsdale, Williamsport, vice-president, and Dr. R. Logan Jones, Nashville, secretary-treasurer (re-elected).—The West Tennessee Medical and Surgical Association held its annual meeting in Jackson May 21 and 22, at which the following resolutions were unanimously adopted:

*Resolved*, That we, as members of the West Tennessee Medical and Surgical Association, will discard the use of all secret formula products, and will decline to use proprietary medicines that are advertised either to the profession or to the public, through agents or otherwise, believing that as a rule, ready-made remedies are not conducive to the study of materia medica and the therapeutic action of medicines, and that such practice is contrary to rational medicine and results in routine practice without a due adaptation of remedies to diseases. We believe it to be more commendable to have a thorough knowledge of the action of a few drugs and know when and how to use them, than the careless habit of prescribing compounds, the effect of which we know but little or nothing.

*Resolved*, That, believing the National Formulary contains a sufficient number of drugs and combinations to meet the various indications in the treatment of disease, that we endeavor to confine our practice to the official products contained therein. And it is the sense of this society that students in medical colleges should not attempt to pass a final examination in materia medica until they apply for a diploma at the end of the course.

The following officers were elected: President, Dr. Frank D. Smythe, Memphis; vice-presidents, Drs. Joseph R. Nelson, Eureka, and Lorenzo L. Webb, Carroll, and secretary-treasurer, Dr. Isaac A. McSwain, Paris.



## TEXAS.

**May Vital Statistics.**—During May there were reported to the health department 5,111 births, with 1,768 deaths. Of the decedents, 353 were over 60 years of age and 330 under 1 year old.

**Endorses Amendment to School Law.**—The North Texas Medical Association, at its fifty-seventh semi-annual meeting, held in Denison June 17 and 18, adopted resolutions setting forth needed improvements in the county public school system and endorsing the pending constitutional amendment relating to public free schools. The association holds its next meeting in Dallas in December.

**Tuberculosis Fight.**—Dr. Hatch W. Cummins, Hearne, president of the State Medical Association of Texas, has written a letter to the councilors of the association, urging their support and help in selecting delegates to the International Meeting on Tuberculosis. He requests that each councilor furnish the names of five physicians of his district, who promise to attend, that these may be added to the list of delegates.

## UTAH.

**Verdict Against Physician.**—In the case of Mrs. Jane James against Dr. J. E. Robertson, in which damages of \$5,000 were claimed on account of alleged neglect by the physician which caused the plaintiff to lose one eye, the jury is said to have returned a verdict, June 12, for the plaintiff, assessing damages at \$1,500.

**Health Bulletin.**—During May, 361 deaths were reported in the state. There were 94 cases of scarlet fever, with 5 deaths; 33 cases of smallpox; 35 cases of diphtheria, with 3 deaths; 27 cases of typhoid fever, with 2 deaths; 581 cases of measles, with 3 deaths; 8 cases of chickenpox; 159 cases of pneumonia, with 58 deaths, and 16 cases of tuberculosis, with 10 deaths.

**Sentenced to Penitentiary.**—Dr. Edward S. Payne, an aged practitioner of Salt Lake City, indicted on eight counts for sending out literature and medicine contrary to law, is said to have pleaded guilty on two counts and to have been sentenced to imprisonment for two years at hard labor in the United States penitentiary at Fort Leavenworth.

## VERMONT.

**Vermont Alumni Meet.**—At the annual meeting of the Alumni Association of Vermont University Medical Department, Burlington, held June 23, the following officers were elected: President, Dr. W. Scott Nay, Underhill, '73; vice-presidents, Drs. U. A. Woodbury, Burlington, '59; Jacob C. Rutherford, Providence, R. I., '86; Donly C. Hawley, Burlington, '84; Matthew J. Wilson, Philadelphia, '83, and William H. Briard, Boston, '83, and secretary-treasurer, Dr. Lyman Allen, Burlington, '93.

**Soo Valley Society Election.**—At the thirteenth annual meeting of the Soo Valley Medical Association, held in Sioux Falls, S. D., June 19, the following officers were elected: President, Dr. Charles O. Wright, Luverne, Minn.; vice-presidents, Drs. Prince Sawyer, Sioux City, Iowa; Elwin F. Reamer, Mitchell, S. D.; secretary, Dr. Charles L. Sherman, Luverne, Minn.; treasurer, Dr. Samuel A. Brown, Sioux Falls, S. D.; and censors, Drs. Gilbert G. Cottam, Rock Rapids, Iowa; William P. Roberts, Sioux Falls, S. D.; John A. Dales, Sioux City, Iowa, and Arthur E. Cook, Randolph.

## VIRGINIA.

**Personal.**—Drs. Horace Hoskins, Frank G. Scott, Harry F. White, and Eugene Eggleston are the newly appointed internes at the City Hospital, Richmond.—Dr. Oscar Fletcher has succeeded Dr. I. J. Roper as surgeon in charge of the King's Daughters Hospital, Norfolk.

**Medical Staff Elected.**—The council committee on relief of the poor of Richmond have appointed the following consulting staff for the City Home: Surgical, Drs. George Ben Johnston, Charles R. Robins, H. Stuart MacLean, and James W. Henson; medical, Drs. William S. Gordon, McGuire Newton, Manfred Call, and John G. Trevilian, and eye and ear, Drs. Joseph A. White and Clifton M. Miller.

**Elections.**—At the meeting of the Alumni Association of the Medical College of Virginia, the following officers were elected: President, Dr. William C. Barker, Buchanan; vice-presidents, Drs. W. E. Evans, Noland, N. C.; L. A. Burke, Petersburg, and H. B. Mahood, Emporia; secretary, Dr. McCaw Tompkins, Richmond; assistant secretary, Dr. D. D. Talley, Jr., Richmond, and treasurer, Dr. Frank H. Beadles, Richmond.—The thirteenth semi-annual meeting of the Southwest Virginia Medical Association was held in Emporia, June 2, when the following officers were elected: President, Dr. Peyton B.

Green, Wytheville; vice-presidents, Drs. Thomas D. Hutton, Glade Spring, and James H. Dunkley, Saltville, and secretary-treasurer, Dr. A. B. Greiner, Rural Retreat.

**Report of the Smallpox Epidemic in Alexandria.**—Passed Assistant Surgeon Goldberger, in his official report to the surgeon-general of the U. S. Public Health and Marine-Hospital Service, states that cases of this disease had been occurring from time to time since early in January of this year, but on account of its mildness many of the laity had questioned the correctness of the health officer's diagnosis, and had accordingly been indifferent or actively opposed to taking the necessary sanitary measures for its suppression. In 13 cases of the disease in six families, 4 presented a well-marked discrete eruption which was clearly that of smallpox; the others were convalescent, evidently from the same disease. With only one exception, none claimed to have ever been vaccinated, although several were children of school age; the one exception was a young man presenting a well-marked discrete eruption who claimed to have been vaccinated in 1898, but a careful search for a scar failed to reveal any evidence of it. Practically nothing is being done to suppress the disease. The health officer stated that disinfection with formaldehyd was being practiced, but from his description of the method employed Dr. Goldberger believes that it is ineffective. There being no hospital where the sick and contacts can be taken for treatment and isolation, an attempt was made to isolate them in their homes by placing a guard outside. This guard was maintained during the day only. Manifestly this practice affords little, if any, protection to the community; on the contrary, by permitting a continuance of the intimate association in the household between the sick and the well (the latter, for the most part, unprotected children), there is a condition of affairs which is in the highest degree favorable to the multiplication in the number of cases and the indefinite prolongation of the outbreak.

## WEST VIRGINIA.

**Personal.**—Dr. Daniel J. Rudasill, Kingwood, has been appointed local U. S. pension examining surgeon.—Dr. Stewart, Wheeling, who has been physician for the penitentiary for several years, has resigned.

**State Society Meetings.**—The forty-first annual meeting of the West Virginia State Medical Association was held in Clarksburg, May 13-15, under the presidency of Dr. William W. Golden, Elkins. The following officers were elected: President, Dr. Fleming Howell, Clarksburg; president-elect, Dr. Vincent T. Churchman, Charleston; vice-presidents, Drs. Robert J. Reed, Wheeling; Rawley H. Powell, Grafton, and Henry D. Hatfield, Eckman; secretary, Dr. Thomas W. Moore, Huntington; treasurer, Dr. Timothy L. Barber, Charleston; councilors, first district, Drs. Henry P. Linsz, Wheeling, and Arthur O. Flowers, Clarksburg; second district, Drs. Richard E. Venning, Charleston, and John C. Irons, Elkins; third district, Drs. Peter A. Haley, Charleston, and George D. Lind, New Richmond; fourth district, Drs. Thomas J. McGuire and William N. Burwell, Parkersburg; fifth district, Drs. Joseph B. Kirk, Elkhorn, and Joseph E. Rader, Huntington; delegate to the American Medical Association, Dr. J. G. Walden, Wheeling, and alternate, Dr. Orra F. Covert, Moundsville. The next meeting of the association will be held in Elkins. In his presidential address Dr. Howell advocated the conversion of one of the state's hospitals for the insane into a detention sanatorium. The following resolution, introduced by Dr. Alva S. Grimm, St. Marys, was adopted:

WHEREAS, The study of alcohol from a scientific standpoint has demonstrated that its action is deceptive and that it does not have the medical properties that we once claimed for it, now, therefore, be it

Resolved, By the West Virginia State Medical Association, That we deplore the fact that our profession has been quoted so long as claiming for it virtues which it does not possess, and that we earnestly pledge ourselves to discourage the use of it, both in and out of the sick room.

## GENERAL.

**Examination of Rats.**—Passed Assistant Surgeon Currie reports that, during the week ended May 30, 475 rats were trapped in Honolulu and destroyed, but none was found infected.

**Yellow Fever.**—Acting Assistant Surgeon Wilson reports from Santiago that a case of yellow fever was reported in that city, June 4, in a Spaniard who died seven days later. The autopsy verified the diagnosis.

**Dock Goes to Tulane.**—Dr. George Dock, professor of theory and practice of medicine in the University of Michigan; a well-known writer and investigator in pathology and clinical



medicine, has accepted the chair of the theory and practice of medicine, and clinical medicine in the Medical Department of Tulane University, Louisiana.

**Coming Meetings.**—The American Academy of Ophthalmology and Oto-Laryngology will hold its annual meeting in Cleveland, August 27-29, with headquarters at the Hollenden Hotel. Dr. Seeord H. Large is chairman of the committee of arrangements.—The annual meeting of the Medical Association of the Southwest will be held in Kansas City, October 20 and 21. Dr. John Punton is chairman of the committee of arrangements.

**Marine Hospital Posts Open.**—The Public Health and Marine-Hospital Service announces an examination at 3 B Street S. E., Washington, D. C., Monday, Sept. 14, 1908, for assistant surgeons. Candidates must be between 22 and 30 years of age, graduates of reputable medical colleges, and free from any ailment which would disqualify them for service in any climate. The terms of service, etc., have been described in THE JOURNAL, or may be obtained on application to the surgeon-general at the above address.

**The Southern Medical Journal.**—The first number of this new medical journal, having Nashville, Tenn., for its place of publication, is very attractive. We are informed that "no 'hobby' or 'scheme' of any individual school or locality is promoted, and no advertisements of questionable character appear in it." The present issue, which is well printed on paper of good quality, contains a variety of excellent original articles besides editorial articles, abstracts of current literature, etc. The policy laid down for the journal by its promoters is clean, explicit, and courageous, and we wish it a hearty success.

**International Congress on Tuberculosis.**—Within the last few days Dr. John S. Fulton, the secretary-general of the International Congress on Tuberculosis to be held in Washington, D. C., Sept. 21-Oct. 12, 1908, has been notified of the formation of a committee of arrangements for Cape Colony in South Africa; and of the appointment of official delegates by the departments of state of Denmark, Spain, Newfoundland, Russia, England, Scotland and France. The chairman of the South African Committee is Dr. A. Jasper Anderson, Cape Town, medical officer of health for that district, and chairman of the council of the Association for the Prevention of Consumption and of Other Forms of Tuberculosis in Cape Colony. The committee includes, in addition to a number of representative physicians and laymen, the Rev. A. P. Bender, rabbi of the synagogue at Cape Town. The official delegates from Denmark are Prof. B. Bang, Professor Fibiger and Dr. H. Rørdam, a military surgeon and a member of the Danish parliament. Dr. Bang will deliver a lecture during the congress on the method of immunization of cattle which has been adopted by the Danish government and which bears his name. The Bang method has attracted favorable attention in the United States and is being tried by some dairymen. The system is a welcome substitute for the plan of killing all infected cattle. Instead of resorting to extreme measures, tuberculous cows are not required to be disposed of, but are separated from the main herd. The calves of these animals are removed from the infected herd; are carefully fed on sterilized milk; and if results justify it, are finally placed with the healthy herd. In this way the healthy herd gradually increases in size and the diseased one runs out. Dr. Camilo Calleja, Madrid, the Spanish official delegate, is a writer on scientific topics, and is the author of a number of well-known works. Dr. Ramon y. Cajal, Madrid, the winner of the Nobel Prize awarded in 1906, is a member of the Spanish committee of arrangements for the congress. The French official delegates reported so far include Prof. L. Landouzy of the Faculty of Medicine at the University of Paris, the president of the French committee of arrangements for the congress; M. Leune, inspector of the academy, who will represent the Department of Public Instruction of France; and Dr. Maurice Mignon, Nice, who will come from the Mediterranean Medical Society. Dr. S. S. Steriopulo, Moscow, will come as a delegate of the permanent Russian Tuberculosis Commission, and Mr. K. J. Kalning of Riga will represent the Baltic Veterinary Society. Dr. Henry G. Beyer, chairman of the committee on the exhibition to be held in connection with the congress, has been notified of the arrival in this country of the exhibits which have been assembled by the national committees of Germany, Sweden and Switzerland. The New National Museum in which the congress and the exhibition are to be housed, will not be finished by the time the congress convenes. The first and second floors, however, will be put into such a state as to house the congress and the exhibits conveniently. These two floors have a combined space of about

100,000 square feet. The use of this building was authorized by Congress, and \$40,000 was appropriated to make it available for the meeting and to accommodate the exhibits.

## FOREIGN.

**Transactions of International Hygiene Congress.**—The four volumes containing the official transactions of the Fourteenth International Congress for Hygiene and Demography, held at Berlin last September, are published by August Hirschwald, Unter den Linden 68, Berlin. The volumes can be bought separately at prices ranging from \$1.50 to \$5, or the whole set is sold for \$12.50.

**Cholera in India.**—Consul-General Michael reports from Calcutta that the work of inoculation against cholera in the coal fields is being pushed vigorously. Dr. Haffkine spent a day in Asansol for the purpose of meeting the residents with a view to affording those who wished the opportunity of protecting themselves. He has arranged to carry on inoculation at the Chota Nagpur and vicinity. The present epidemic has reawakened interest in cholera inoculation, which was carried on extensively and with a large measure of success between 1893 and 1896, and which, though continued for some years afterward, was completely overshadowed by the outbreak of plague.

**Personal.**—Dr. Samuel Gemmel, professor of clinical medicine in the University of Glasgow, has been appointed professor of practice of medicine in that institution to succeed the late Sir Thomas McCall Anderson.—The following medical men were among the recipients of "birthday honors" in Great Britain: Sir Thomas Lauder Brunton and Prof. Watson Cheyne have been created baronets; Col. David Bruce of the royal army medical corps, Mr. Robert W. Burnet and Mr. Peter O'Connell have been knighted; William Henry Power, C.B., has been promoted to knight commander of the Order of the Bath; Lieut.-Col. Francis F. Perry, Indian Medical Service, principal of the Medical College of Lahore, has been made a Companion of the Indian Empire; and Lieut.-Col. Johnston Shearer of the Indian Medical Service has been made a Companion of the Order of the Bath.

## LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, June 27, 1908.

### The Research Defense Society.

The inaugural meeting of this society, formed "to make known generally the facts about experiments on animals in this country," was held at the house of the Royal Society of Medicine. The president, Lord Cromer, delivered an eloquent address in defense of vivisection. He said that it had been shown that vivisection had yielded invaluable results and promised results still more invaluable. Experiments were conducted in such a way as to minimize, if not to abolish, pain. Nearly every discovery in medical science since Harvey discovered the circulation of the blood was, directly or indirectly, the result of experiments on animals. One of the greatest discoveries of modern times—transmission of malaria by mosquitoes—was going to make the tropics habitable. When Professor Osler was asked at the Royal Commission on Vivisection, now sitting, whether this discovery could have been made had it not been for previous experiments on animals, "Never" was the reply. "The men who made these investigations spent their lives in the laboratories and their whole work has been based on experiments on animals." The case of antitoxin was another example. The statistics of the Metropolitan Asylums Board of the percentage of fatal cases had sunk from 28 in the period which preceded the introduction of the antitoxin treatment to 2.8 per cent. Great misapprehension existed as to the extent to which vivisection was carried on. According to the latest figures about 73,000 experiments were made in 1907. But of these no fewer than 96.5 per cent. were inoculations, that is to say, did not involve operations of any kind. In the remaining 3.5 per cent. the operation was always carried on under an anesthetic. Speaking before the Royal Commission Professor Starling had said: "Though I have been engaged in the experimental pursuit of physiology for the last seventeen years, on no occasion have I ever seen pain inflicted in any experiment on a dog or cat, or, I might add, a rabbit in a physiologic laboratory in this country."

### A Doctor in the Arctic.

Dr. James F. Rymer will shortly gain the distinction of being the first qualified British medical man to take up his residence in the Arctic Circle. After serving eight years as medical officer at the Carthusian Monastery in Sussex, Dr.



Rymer went to Canada and for the past six months has lived at Edmonton, Alberta. Recently he left there on a lonely journey of 1,800 miles along the Athabasca and Mackenzie rivers, his destination being Fort Good Hope, which is about 100 miles within the Arctic Circle. He does not propose to return to civilization for at least three years. He has sufficient medicine in concentrated forms to last at least one year and has arranged for more to be forwarded. His patients will be the Indians and Esquimaux in the vicinity of Fort Good Hope and Fort Macpherson. Several diseases and fevers often break out among them, and, as they have no skilled attention, the loss of life has been enormous. The Doctor can speak French, which is the only language other than their own which the Indians understand, and intends to start the study of the languages of the Indians and Esquimaux directly he arrives. At his headquarters he will not have more than five white companions, these being connected with a Roman Catholic mission and trading post.

#### Craniologic Investigation by the Egyptian Government at the Royal College of Surgeons.

The director general of the survey department of the Egyptian government has written to the Royal College of Surgeons asking that facilities may be given to Dr. Elliott Smith and Dr. Wood Jones of the Cairo Medical School to carry out in the museum of the college an examination of a collection of material found in the course of excavations made in the Nile Valley and representing the varied races of people who inhabited Nubia in ancient times together with their pathology and the results of their surgery. The Egyptian government offers the museum of the college the material, which is sent for the purposes of comparative study. The president has informed the government that the desired facilities would be granted. The council of the college resolved that the government should be informed that they regarded the collection of specimens as a most valuable addition to the museum.

#### The Dangers of Motor Traffic in London.

The nuisance and dangers of the motor bus are much in evidence. At a protest meeting on the subject held in the city the Lord Mayor presided. Sir Dyce Duckworth, physician to St. Bartholomew's Hospital, objected to the motor buses and cars on the following grounds. They create a fearful noise and vibration. Their speed in many places is a perpetual danger. Fatal and other injuries to people and property are increasing. Dropping of petrol causes slipperiness to horses and damages varnish of carriages. The stench is insufferable. "In short locomotion in the streets of London has now become abominable and little short of a prolonged agony." The following are the official figures of the accidents which occurred last year: Accidents caused by motor buses, 4,723; fatal cases, 36; cases of personal injury, 1,068. Accidents caused by motor cars, 5,959; fatal cases, 66; cases of personal injury, 2,055. A resolution was carried calling for amended legislation in the interests of the public and declaring the excessive noise, speed and noxious smell of a large proportion of the motor traffic to constitute a great danger.

#### Survival After Rupture of the Spinal Cord.

A remarkable case of rupture of the cervical spinal cord in which the patient survived has just been brought to a close in St. Bartholomew's Hospital. In last October a lad, aged 17, was crushed across the shoulders while trying to get out of an elevator. His spine was broken and he was paralyzed below the neck. As he could not use his arms he was unable to feed himself. An operation was performed to ascertain whether bone was pressing on the spinal cord. The cord was found severed two inches from the brain. After lying in bed for four and one-half months the boy was able to twitch his fingers, but this was the only movement he ever regained. He received unremitting attention and everything was done to brighten his life. A special reading desk was fitted up above his bed. He lived for seven and one-half months.

#### London and Counties Medical Protection Association.

The annual report of the London and Counties Medical Protection Association shows that there is an increased tendency of people to claim compensation from doctors when the results of treatment are not as satisfactory as could be wished, and to make this fact a ground for not paying their bills. Thus a member who took proceedings to recover fees for medical attendance was met by a counter-claim for \$250 on the ground of alleged negligence and want of skill. The case was defended by the society. The judge gave judgment

for the plaintiff and said that the counter-claim was monstrous. The question whether the society should not only pay the expense of defending actions against its members (as it does now), but also undertake to reimburse members for adverse verdicts and costs, has been under consideration. To do so it would be necessary to raise the annual subscription from \$2.50 to \$5. A circular was issued to the members of the society requesting them to vote on the project. The result was very unsatisfactory. Two-thirds of the members did not vote and of those who did four-fifths were in favor of the scheme. The council was therefore unable to move any farther in the matter.

#### BERLIN LETTER.

(From Our Regular Correspondent.)

BERLIN, June 15, 1908.

#### An Antiquackery Bill.

That folly and the quackery which feeds on it, flourishes not only in the land of freedom under a republican system, but also in monarchies, even in states with an absolute government, is a fact with which we must reckon, and all regulations which have been devised or which can be thought of will not alter this fact. Neither legal restrictions nor education of the people, from which so much is expected at present, will banish quackery from the world. This conviction, however, must not hinder us from continually seeking new methods for repressing this evil which injures the sick, not only in purse, but often in life and limb. In this direction a duty is especially imposed on physicians. We do not wish to deny that in this matter we are contending for our own interests—on the contrary we may freely acknowledge that we do not patiently put up with an injury to our material interests, but are seeking to carry on a justifiable struggle for our means of livelihood. But this struggle on the part of physicians is justified in the eyes of the public by the fact that it is carried on also, to an equal extent or in a higher degree, in the interest of the community, and especially of its weaker part, those who are sick and suffering.

It may be already known to you that in Germany, up to the year 1869 there was a legal prohibition of quackery. This was abolished, not on the initiative of the government, but on that of the liberal party, which in its idealism was of the opinion that the German people were well enough educated always to prefer scientific physicians to quacks. To be sure, under these restrictive measures quackery prevailed to a not inconsiderable extent, but it must be admitted, on the other hand that since the removal of the prohibition, quackery has grown markedly in extent and in pernicious activity.

According to an official report for the year 1901, quackery has increased in Berlin 1600 per cent. in the last twenty years, and according to approximate statistics of the same year the number of professional quacks in Germany was 12,000. According to a compilation by Dr. Reissig, from 1888 to 1891, there were sold in Germany 1,724,000 books by quack authors, at a price of 14,500,000 marks (\$3,480,000). The sort of persons who make a business of treating the sick without a medical license has frequently been publicly established. Not only people of the most inferior education, but also persons of the lowest ethical standing, who have repeatedly been punished with imprisonment or sent to the house of correction, possess the confidence of the public to such an extent that care for the health is entrusted to them. To be sure the attempt has been made by police regulations and by instruction of the public to restrict quackery. Quacks have often been punished for violation of the sections of the law regarding injury to health and homicide by carelessness, and yet no recession of quackery has been observed. The material advantages which can be secured in this convenient way—convenient at a time when newspaper information is very widespread and everything which is printed is believed, not simply by the uneducated—are so enticing that the business is carried on boldly in spite of all threatened punishments and is constantly being taken up anew by still other people. On account of these facts the government, as I have already mentioned in a former letter, has determined to limit quackery or, as it is termed, the exercise of the healing art by unapproved (*nicht approbierte*) persons, by a special law. A law entirely prohibiting quackery is not contemplated by the government, chiefly because the prospect of such a law being accepted by the reichstag is very small. The radical (*freisinnige*) party would vote against it on the same ground as that on which their predecessors supported the abolition of the prohibition of quackery, namely from ideal principles, from their policy to leave every citizen as much freedom as possible. The social democrats are op



posed to it, because the majority of quacks belong to the lowest of the population, from which that party draws most of its adherents, and similar reasons would be influential with the other parties in bringing about the defeat of a law which contained a prohibition of quackery. The bill which the government published a few months ago, in order to obtain the opinions of the classes interested, contemplates placing the quacks under the strictest control so that they will be obliged to keep record books in which statements of their business shall be regularly entered. The so-called absent treatment (by letter, etc.), treatment of venereal diseases, and treatment by means of hypnosis and narcosis or by means of so-called mystical methods (magnetism, spiritualism, etc.), are forbidden. If the quack is convicted of a punishable offense in the exercise of his "profession" he may be forbidden to practice it. Whoever makes untrue statements in public advertisements regarding the treatment of the sick or remedies therefor is liable to punishment. These are the essential provisions. The German medical profession has expressed itself favorable to this bill in the professional press, and in some cases demanded stricter provisions. The German Medical Convention, which meets at the end of June, and which is composed of delegates who represent the majority of the organized physicians, will take up the question with the same intent. From the public, and especially from the parliamentary class, no considerable number of opinions regarding the bill have so far found expression. It is easy to understand that the quacks themselves, especially so far as they are organized in associations, vigorously oppose it. Whether the government will have the courage actually to introduce a bill into the reichstag and what success it will have, remains to be seen. In view of the composition of our reichstag, too great hopes are, unfortunately, not to be indulged in.

#### Value of Diphtheria Antitoxin.

While in your country certain states are already furnishing diphtheria antitoxin gratis to physicians (in a similar manner as the Italian government supplies its physicians with quinin for the fight against malaria), there are still in Germany, in the country where diphtheria antitoxin originated, a number of physicians who are not yet convinced of the effectiveness of the serum and who do not use it in their practice. They are supported by certain prominent medical statisticians who, on the ground of epidemiologic studies, sustain the view that the undoubted diminution in diphtheria mortality for the last fifteen years is to be referred to the natural variation of the so-called *genus epidemicus*, and that the antitoxin has had no share in this diminution of the death rate. Most practitioners, indeed, and particularly all pediatricists (in Austria, Prof. Kassowitz forms perhaps the only exception), are unconditional supporters of antitoxin. This position found expression in an address which the renowned Berlin pediatricist, A. Baginsky, delivered before the Berlin Medical Society, June 17. The speaker, as well as the pediatricists and surgeons who followed him, emphasized the importance of the antitoxin treatment. The fact that the diphtheria mortality in the hospitals has sunk from about 40 to 50 per cent. before the discovery of antitoxin to the present figure of 10 to 20 per cent., and that the death rate of tracheotomy cases which before the year 1894 was about 70 per cent. now reaches only about 20 per cent., is unconditionally attributed to antitoxin, and it was urged on physicians as a duty by all the speakers to employ the serum at the right time in every case of diphtheria. In Germany from 4,000 to 5,000 antitoxin units are injected as a maximum, while in America (as was repeatedly recalled in the discussion) in severe cases as much as 20,000 to 30,000 units are injected. Whether it is possible to lower the present mortality figures by the use of these large doses, further experience must decide.

#### Professor Behring.

While the antitoxin treatment of diphtheria is almost universally accepted in the entire civilized world, it is unfortunate that we can not report anything very encouraging regarding the health of its discoverer, E. Behring. To be sure the reports of a mental affliction or of progressive paralysis—which emanated from Paris and may well be called malicious—have fortunately not been confirmed; but for a number of months he has been in a sanatorium for nervous diseases at Munich, undergoing treatment for his marked neurasthenia. The extraordinarily exhaustive intellectual labor, the numerous severe disappointments which this too sanguine man has experienced in his various fields of work and especially in tuberculosis, the not inconsiderable material responsibilities necessitated by his establishment at Marburg planned on an unusually large scale (where he has spent several hundred thousand marks in organ-

izing the business of his investigations, and especially in the search for a remedy against tuberculosis), and probably still other causes have made severe demands on the elastic force of this laborious investigator and produced a certain degree of exhaustion. It is to be hoped that he may again recover his previous health and continue his researches in the service of science.

#### VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, June 25, 1908.

#### Accidental Infection with Glanders.

An unusual accident occurred recently in the public institute for the examination of food at Czernowitz. Dr. Luksch, the chief bacteriologist, while making some investigations on the *Bacillus mallei* put a large quantity of the bacilli, obtained from an animal from the slaughter-house, into a centrifuge. The tube containing the glanders bacillus burst and the contents were scattered over the laboratory. The fragments of glass were picked up by some of the persons working in the room, and, as it was believed that the bacilli were dead or inert, no great precautions were taken to prevent infection. In the course of a few days all those who were in the room at the time of the accident, developed symptoms of glanders, especially of the tracheal and pulmonary type, and two of the victims died within forty-eight hours of the onset of the disease. Dr. Luksch also fell ill but soon recovered; two days after apparent recovery he again developed some pustules on the ear and was brought to the serotherapeutic institute in Vienna.

#### An Accident Hospital.

In order to centralize the teaching of accident surgery the ministry for education has arranged with the two surgical clinics of the general hospital to convert certain wards into a special accident department. The ambulance corps, as well as the police, have been instructed to deliver, after October 1, all cases requiring hospital treatment to this department. The two clinics of von Eiselsberg and Hoehenegg will draw their material from it and special classes for students, both undergraduates and postgraduates, will be arranged, each group having to serve a term of fourteen days, several times a year, in the casualty ward. Part of the ward will be at the disposal of the military authorities who will institute special classes for the army military corps.

#### Proposed Reform in Sanitary Regulations.

A bill is before the Austrian parliament dealing with needed reforms in the sanitary regulations. The main points of the bill are: Completion of the scientific institutions, already erected, according to modern medical knowledge; centralization of all sanitary boards and the election of competent medical men as presidents of the local branches of the board; the erection of all such institutions as are required for the study and relief of disease; improvement of the position of the public health officers and larger powers for them (hitherto medical opinions have been overruled by the bureaucrats). The bill is strongly supported by the medical profession.

#### Professor Meyer Asked Not to Leave Vienna.

Prof. Hans Horst Meyer, the pharmacologist, who was called to Vienna about three years ago, has been asked by the senate of the Berlin University to accept the chair of pharmacology in that institution. In order to dissuade him from accepting this flattering offer a deputation of ten of the most eminent members of the profession, all professors of the Vienna medical faculty, waited on him and asked him not to desert Vienna, both for scientific and national reasons. This unusual act not only caused a widespread sensation in the profession, but also reminded the government that it is its duty to retain such eminent men at any cost. Professor Meyer will not leave Vienna.

#### Mortality from Tuberculosis in Austria.

The population of Austria-Hungary is about 45,000,000, and the annual mortality from tuberculosis is 750,000, or 14 per cent. of the total deaths from all causes. The northern parts of the empire show a ratio of 38 to 48 per 10,000 inhabitants, while the southern parts have only about 22 to 30 deaths from tuberculosis to each 10,000 inhabitants. The highest mortality is found in Bohemia with a mean of 54 in the north and 36 in the south, per 10,000. Vienna also has a high average mortality from this disease—42 per 10,000—but the hospitals as a center for a large area, are largely responsible for this high rate.



## Pharmacology

### THE BROADER AIMS OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

TORALD SOLLMANN, M.D.

Member of the Council, Professor of Pharmacology and Materia Medica at the Medical Department of Western Reserve University.  
CLEVELAND, OHIO.

(Continued from page 140.)

#### XVII. THE NON-PROPRIETARY UNOFFICIAL ARTICLES.

Another problem which has caused the Council some perplexity is that regarding the unofficial substances which have somehow escaped appropriation by proprietary manufacturing houses. There is the host of non-proprietary compound formulas, ranging from morphin-atropin tablets to Dr. X.'s favorite antigout pill or pneumonia mixture. With these the Council need not at present concern itself. Their ingredients are official substances; the combinations may be desirable or, more commonly, undesirable, according to the circumstances, which were discussed in the last chapter.

There are, however, many non-proprietary simple substances, chemicals, active principles, plants, etc. (such as digitalein, cholesterin, mercury salicylate and zinc permanganate), which are not in the Pharmacopeia, and which can not easily be made the subjects of monopoly. Their number is considerable, as a glance at Merck's index or at the fluidextract list of any manufacturing house will show. They have not been admitted into the Pharmacopeia, either because they are of little or no value and little used, or because they are too new. The majority belong to the former class; they might well be spared from the materia medica. Unfortunately, however, some enthusiast periodically resurrects one or the other of them; this then springs into sudden prominence, and becomes to all intents a "new" remedy. The physician who is impressed by these reports naturally desires some unbiased and reliable information about them, as well as about the remedies which are actually new. The ordinary reference books, however, give but very scanty data; they necessarily lack the elasticity which is essential for the proper presentation of a new subject. Above all, however, a physician who desires to try these new remedies should be assured that they are of a uniform quality; but with them, there are no established standards of any kind.

A variety of abuses naturally results. The enthusiastic, if disinterested, statements of the discoverers, or re-discoverers, are rarely subjected to that serious criticism which is indispensable for scientific progress. Incalculable harm may thus be done by extensive experimentation with a remedy in conditions in which it is not indicated. On the other hand, a really valuable agent may lie neglected because no one is paid to "push" it; or it may be seized on by a proprietor, "protected" by a coined name or disguised in a mixture, and sold at an exorbitant price, under doubly exaggerated claims, as happened with phenolphthalein. Most serious of all, the uncertain quality or loose nomenclature of these drugs may constitute a very serious danger, as in the case of the digitalis principles; or at least such may cause creditable remedies to fall into disuse.

It has seemed to the Council, therefore, that there is a very real need for the collection of authoritative data about the more important or commonly used of these non-proprietary unofficial articles, and a special committee has been appointed for the purpose. A list of some eighty of these substances is under discussion, and the Council will appreciate suggestions from the profession as to what substances should be included. It is not intended to confine this investigation to

those articles which the Council believes to be really valuable, but also to present the facts about those which have an unjustified popularity.

When it has been decided what substances should be taken up, the necessary data will be obtained as rapidly as possible. An abstract will probably be published in these columns, and a description, prepared on the general plan of the New and Non-Official Remedies, will be inserted in a proposed book. If, then, a physician desires to obtain these drugs of standard quality, he need only affix "N. N. O. R." to the name of the product. In the event that the drugs on the market are generally below this standard, the Council may mention the names of those manufacturers who have been found to supply the products of the required grade.

(To be continued.)

#### MARIENBAD TABLETS.

##### The Commercial Value of a Name.

What potentialities exist in a name! The great watering places and health resorts of Europe are household words and their names compel attention. Hence, when a physician receives in his mail a package bearing a foreign postmark and an unusual looking stamp, with the name "Marienbad" on the enclosure, he may possibly restrain his first impulse, born of experience, to throw the "sample" into the waste basket. He may be excused for expecting to find something of unusual merit in a medicine elaborated at such a world-renowned health resort as Marienbad. Especially is his enthusiastic expectancy pardonable when he learns that "Marienbad Tablets" are "prepared according to the prescription" of an individual with the imposing cognomen, "Prof. Dr. Med. Chevalier de Basch."

Then, too, accompanying the "sample" is a circular descriptive of the virtues of this great medicine, printed in parallel columns of massive German and picturesque English. In it he is informed that the "Marienbad Tablets act mildly, without pain on the bowels, and consequently effect their evacuation." Great stress is laid on the advantage of the "tablet-shape" which makes possible the "offering of a perfectly equal dose of the efficacious ingredients" and simplifies the administration "on account of their compendious shape." "Marienbad Tablets," he is told, are unexcelled for the treatment of that condition recognized by all physicians as "sanguiness and its after-effects, such as vergitiousness," and they are highly recommended in cases of "arteriosclerosis." As a sop to Cerberus, the circular suggests "the diagnosis should be made by the physician," the assumption being that the proprietors of "Marienbad Tablets" will take care of the treatment while the prognosis will naturally take care of itself.

And the composition of this "compendious" cure for "sanguiness" and "vergitiousness"? Well, if carefully looked for, the physician will find that "Marienbad Tablets" consist of extract of aloes, powdered rhubarb, podophyllin, extract of cascara sagrada and extract of belladonna. That is all; just a simple cathartic tablet such as physicians are prescribing for their patients daily. They do not even contain a picturesque, pharmacologic nonentity like caetan or "latalia rad." Wherein, then, lies the special virtue of their "efficacious ingredients"? We are forced to the conclusion that this must reside in the psychic effect produced by taking a silver-coated tablet from a gilt-trimmed box, labelled "Marienbad," rather than in the essential contents of the tablets themselves.

##### Frederick Stearns & Co., "Patent Medicine" Vendors.

Physicians who attended the Chicago session of the American Medical Association doubtless noticed while riding on the street cars the blatant advertisements of the headache remedy SHAC (Stearns Head Ache Cure). This nostrum, which seems to have been responsible for at least two cases of poisoning,<sup>1</sup> is

1. THE JOURNAL A. M. A., Dec. 15, 1906, 2012, and Nov. 16, 1907, 1675.



put on the market by Frederick Stearns & Co., Detroit—a fact that was noted in these pages a few months ago.<sup>2</sup> It was not unnaturally assumed that these Peruna-like advertising tactics had been adopted by an enterprising local representative anxious to make a “showing.” The June issue of the *New Idea*—a monthly journal published by Frederick Stearns & Co. and devoted to advertising their products to retail druggists—shows that this assumption was not well founded. In their journal they inform the druggist that “a new series of SHAC street ear cards are now ready for use in the large cities.”

The evils of the indiscriminate use by the public of such powerful and insidious drugs as are contained in the various headache remedies need no further iteration. The question has long since ceased to be an academic one and no casuistic reasoning nor specious arguments can hide the fact that enormous harm is being done by the exploitation of these acetanilid-containing nostrums, and the medical profession has expressed itself in no uncertain tone regarding the matter.

SHAC, however, is not the only “patent medicine” put on the market by Frederick Stearns & Co. Just as extensively advertised—and in the same mediums, the street cars—are Zymole Trokeys “for husky throats.” Then there is Pam for the dyspeptic, a “tiny tablet of wonderful power,” of which the modest statement is made that “every ferment of the digestive tract that is available is used in these tablets, fitting them for use in all kinds of indigestion.” Surely, with such drugs at their command, dyspepsia need give physicians no further cause for worry!

These are some of the products put on the market by Frederick Stearns & Co. and vigorously “pushed” by them in advertisements to the laity. A firm which, while soliciting the patronage of physicians through the pages of medical journals, is at the same time furthering the interests of self-drugging and dangerous nostrum-taking, will be looked on with distrust and suspicion by the medical profession.

#### Uranalysis by Quacks.

Four young persons in Germany recently sent a vial each, according to directions, to the “urine specialist,” J. Locher, who diagnoses disease from inspection of the urine. Each was informed that he had a catarrhal affection of the stomach, abdomen or throat, and each was instructed to buy a bottle of Locher’s remedy, costing \$1. They did not buy the remedy, as the vials they sent had contained nothing but diluted beer.

### Book Notices

THE HARVEY LECTURES. Delivered Under the Auspices of the Harvey Society of New York, 1906-07. Pp. 314, with illustrations. Cloth. Price, \$2.00. Philadelphia: J. B. Lippincott Co., 1908.

This volume is a monument to the success of the Harvey Society of New York, which was organized for the purpose of enabling practitioners of medicine to acquire at first hand from men engaged in research more knowledge concerning the scientific problems and principles underlying their profession. From the start these lectures have served as an inspiration, not only to those so fortunate as to be within the range of the Harvey Society, but also to those who have read the lectures in various medical journals. Their publication in a single volume will be welcomed by many, and their influence will be in this way extended. The benefits of such lectures as those of the Harvey Society and the various lecture associations and endowed lectureships are by no means one-sided. It often has happened that an investigator has been getting lost in the details and ramifications of his problem, when, suddenly called on to present the gist of his results in a semi-popular way, he has been obliged to look over his ground from an entirely new point of view, which has made visible new and straighter paths, or disclosed early strayings and blunders. In making his explorations clear to the uninitiated, the investigator often illuminates some dark part of the road

for himself. The scope of this second series of lectures of the Harvey Society is shown by the titles and the lecturers, which we quote below. Some of them appeared in THE JOURNAL, in which case they are followed by the date of the issue in which they appeared. “The Principles of Vaccine Therapy,” by Sir A. E. Wright (Aug. 10, 1907); “Bacteriologic Infections of the Digestive Tract and the Intoxications Arising Therefrom,” by C. A. Herter (March 23, 1907); “Vasomotor Relations,” by W. T. Porter; “The Myelins and Potential Fluid Crystals of the Body,” by J. G. Adami (Feb. 9, 1907); “The Factors of Safety in Animal Structure and Animal Economy,” by S. J. Meltzer (Feb. 23, 1907) “Metabolism During Inanition,” by F. G. Benedict; “Recent Studies of Heredity,” by E. B. Wilson (May 11, 1907); “Variations in the Genitourinary Tract,” by G. S. Huntington; “Changes in the Lymphoid Tissue in Certain of the Infectious Diseases,” by W. T. Councilman (March 30, 1907); “Nervous Disorders of the Heart,” by Friedrich Müller; “Problems of Sanitation,” by Edwin O. Jordan (Feb. 15, 1908). These lectures are all excellent and valuable. Every physician who reads Dr. Meltzer’s clarifying discussion of the factors of safety, by which the body is spared from harm through accident and disease, will have an insight into physiologic pathology that will greatly help his judgment in considering every ease of disease and accident he confronts.

PIROPLASMA CANIS AND ITS LIFE CYCLE IN THE TICK. By Captain S. R. Christophers, M.B., I.M.S., No. 29 of the Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. Paper. Pp. 83. Price 3s. Calcutta: Office of the Superintendent of Government Printing, India, 1907.

This is an excellent piece of investigative work showing conclusively that piroplasmiasis of the dog in India is transmitted by *Rhipicephalus sanguinis* (Latreille), whereas in South Africa it is transmitted by *Hæmaphysalis lachi* (Audouin), as determined by Lounsbury. The infection is hereditary in the tick, the fact being noted that only the nymphs and adults from an infected female are infective, the larvæ not being able to produce the disease. The probable methods of evolution of the parasite in the blood are discussed, the author being of the opinion that a quotidian evolution occurs, in many cases, at least. The course of infection and the evolution of the parasite in the tick was also studied. In the gut it soon assumes the club-shaped form. This form infiltrates the body generally, including the salivary glands, and in the meantime has been changed into the spherical “zygotes,” which commonly are intracellular. The latter form one or more “sporoblasts,” each of which generates a rather large number of “sporozoites,” this being the form inoculated into the dog by the tick. In relation to the parasite of coast fever, Koch had described long protoplasmic processes in the gut of the tick. Christophers failed to identify these forms in *Piroplasma canis*. The parasite is described as occurring in the ova of infected ticks, also in the larvæ, and its evolution during the molting process is presented. The works of Nuttall and Smith, and others, on *P. canis*, and the disease it causes, is confirmed in many respects, and certain new observations are added. In addition, the general features of piroplasmiasis of different animals are portrayed. Three excellent plates are included.

CLINICAL LECTURES, THIRD SERIES, THE BORDERLAND OF EPILEPSY. By Sir William R. Gowers, M.D., F.R.C.P., F.R.S., Hon-Fellow R. Coll. Phys., Ireland. Cloth. Pp. 121. Price, \$1.25. Philadelphia: P. Blakiston’s Son & Co., 1907.

Certain conditions more or less related to or resembling epilepsy in some of their manifestations are considered by Gowers in this volume. In cardiac syncope he sees considerable evidence of an essential identity of the process in the nerve elements with that in some epileptic conditions and that one may pass into the other in certain cases. Similarly those peculiar attacks which seem to depend on disturbance of the vagus functions, are considered by him as also sometimes on the borderland of epilepsy, and epilepsy and aural vertigo closely approach each other in some of their manifestations. In migraine, on the other hand, Gowers sees little to indicate any definite relations; though epilepsy may develop from migraine as an indirect consequence of the effect of the intense pain and associated cerebral disturbance. The disturbances of sleep, somnambulism, etc., also come under consideration

2. THE JOURNAL A. M. A., Oct. 19, 1907, 1381.



in this work as borderline states, though their connection with epilepsy is not very well defined. Some forms of tic, which have been reckoned by some as associated with or allied to epileptic conditions, are not here included, but the omission is hardly important. With the description of each borderland malady some remarks on treatment have been appended, which, coming from such an authority, will be appreciated.

**TREATMENT OF DISEASES OF CHILDREN.** By G. A. Sutherland, M.D., F.R.C.P., Physician to Paddington Green Children's Hospital. Second Edition. Pp. 311. Cloth. Price, \$2.00. New York: Oxford University Press, 1907.

This is a small book, necessarily superficial and therefore unsatisfactory. There is too little detail, so important in the management of infants and children. For example, only sixteen pages are devoted to the important subject of infant feeding. But while this lack of detail applies to the book as a whole, there are exceptions in certain parts of the work. Considerable attention, for instance, is devoted to the apparently trivial subject of a "cold in the head," with a view to preventing the establishment of a chronic rhinitis and the development of adenoids. Apropos of the latter subject, we can not agree with the author that in a considerable number of cases operated on there is a recurrence of the growths. The "let alone" treatment of pneumonia is much to be commended, as is also the surgical treatment of empyema. We regret, however, to see no mention of the "colony" management of epilepsy. The book closes with 4 pages of "shot-gun" prescriptions, always out of place in a work on pediatrics, and all the more to be regretted here when in the body of the book the author insists on diet and general measures.

**PROTOZOA AND DISEASE.** By J. Jackson Clarke, M.D. Lond., F.R.C.S., Formerly Pathologist to St. Mary's Hospital and Curator of the Museum, Demonstrator of Bacteriology, and Provisional Teacher of Biology in the Medical School. Part II. Cloth. Pp. 137, with illustrations. Price, \$2.50. New York: William Wood & Co., 1908.

This is the work of an enthusiast who feels keen interest in establishing the protozoan origin of certain infectious diseases. The point of view leads inevitably to a somewhat uncritical survey of the evidence. The enormous mass of recent work on diseases known, or presumed to be due to protozoa, is only incompletely represented. We note, for example, that in the chapter on ticks no mention is made of Rickett's important papers on Rocky mountain spotted fever. Misprints of proper names, such as "Stegomeia" (p. 3), "McNeil" (p. 23) and "Levatadi" (p. 65) are not uncommon.

**NURSING THE INSANE.** By Clara Barrus, M.D., Woman Assistant Physician in the Middleton State Homeopathic Hospital, Middleton, N. Y. Cloth. Pp. 409. Price, \$2.00. New York: The Macmillan Co., 1908.

The position of an attendant or nurse in an insane hospital is a peculiar one requiring not only special instruction, but also special aptitude. The first of these can be given, the latter is a natural gift. Lacking it, however, much can be done to produce fairly satisfactory attendants from well intentioned, though not specially adapted, individuals and this book includes much that is available for this purpose. The instructions are addressed particularly to women, but, as the author says, they can readily be made applicable to either sex. The information on the forms of insanity, etc., and the chapters on psychology, may seem superfluous for ordinary attendants, but their perusal will do no harm and may serve to sharpen the observing faculties.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### INCUBATION OF GELATIN AND CULTURE OF BACILLI.

MÉRIDA, Mexico, June 19, 1908.

**To the Editor:**—1. Will you please inform me how Dr. Rivas is able to incubate gelatin at 37 C. without liquefaction, as is mentioned in THE JOURNAL, May 9, 1908, page 1493? It would be most interesting to know the formula of the gelatin, as the solution of that problem would be welcomed by all bacteriologists, especially those who are working in tropical countries.

2. I should also want to be assured that I rightly understand the differentiation Test No. 1 of Dr. Rivas' that the culture of bacteria behaves exactly like the uninoculated dextrose bouillon.

HAROLD SEIDELIN, M.D.

**ANSWER.**—1. Incubation of gelatin is performed with the full knowledge that it will liquefy at 37 C., but the ferments produced by bacteria act more rapidly at that temperature and liquefaction will occur more rapidly. If liquefaction has occurred at the end of the incubation period, whatever that may be, it will be shown by the fact that gelatin tubes immersed in ice water will not solidify as the control tubes will, or as tubes of culture of non-liquefying organisms, for instance *Bacillus coli communis*.

2. Dextrose bouillon cultures of *B. coli communis* and uninoculated dextrose broth as a control will give a canary color after boiling about 0.5 c.c. of it in about 5 c.c. of a 10 per cent. sodium hydroxid solution, whereas the saccharolytics will produce a magenta or purplish color with the same reagent.

### MUSCULAR RE-EDUCATION IN TABES.

—, MAINE, June 29, 1908.

**To the Editor:**—Please give me references to articles describing Fraenkel's method of re-educating the muscular system in tabes.

X. Y. Z.

**ANSWER.**—The name of the author referred to is Frenkel and not, as erroneously given in some text-books, Fraenkel. One prominent author refers to him as Fraenkel of Berlin, when, in fact, Frenkel lives at Heiden, Switzerland. The following articles may be referred to:

Frenkel, H. S.: *Münch. med. Wchnschr.*, 1890, No. 52.

Frenkel, H. S.: *Deutsch. med. Wchnschr.*, 1896.

Hatschek, R.: *Wien. klin. Rundschau*, XVIII.

Frank: Mistakes in the Exercise Treatment of Tabes and Their Consequences. *Wien. klin. Wchnschr.*, xvi, 42; abst. in THE JOURNAL A. M. A., Jan. 23, 1904, p. 278.

Frenkel, H. S.: Principles of Exercise Treatment of Tabes, *Berl. klin. Wchnschr.*, xlii, 23, abst. in THE JOURNAL A. M. A., July 22, 1905.

### THE MORO TUBERCULIN TEST.

PASADENA, CAL., June 30, 1908.

**To the Editor:**—Please give references to literature on the Moro method of percutaneous introduction of tuberculin for diagnostic purposes.

JOSEPHINE A. JACKSON.

**ANSWER.**—Moro, E.: Diagnostic Cutaneous Reaction After Rubbing with Tuberculin Salve. *Münch. med. Wchnschr.*, Feb. 4, 1908; abstracted in THE JOURNAL, March 14, 1908, p. 924.

Lignieres and Benjamin, H.: Specific Reaction to Tuberculin Rubbed into Shaved Skin. *Bull. de l'Acad. de méd.*, Feb. 18, 1908.

Heinemann, H.: Harmlessness and Superiority of the Tuberculin Salve Reaction Over the Ocular Reaction, *Münch. med. Wchnschr.*, March 17, 1908.

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending July 11, 1908:

Bingham, E. G., capt., M. C., relieved from duty at Army Gen. Hospital, San Francisco, and ordered to Ft. Porter, N. Y., for duty.

Van Dusen, J. W., capt., M. C., granted leave of absence for one month, about October 1.

Snyder, H. McC., lieut., M. C., ordered from Army Gen. Hosp., San Francisco, Cal., to Ft. Rosecrans, Cal., for temporary duty during absence on leave, of Capt. P. W. Huntington.

Ford, J. H., capt., M. C., ordered to accompany troops from Ft. Wm. Henry Harrison, Mont., to duty at American Lake, Wash.

Dale, F. A., capt., M. C., ordered to accompany troops from Ft. Lincoln, N. D., to duty at American Lake, Wash.

Ashburn, P. M., Greenleaf, H. S., Webb, W. D., Gilchrist, H. L., Loving, R. C., Heysinger, J. D., Tefft, W. H., Culler, R. M., Humphreys, H. G., Truby, W. F., Hess, L. T., Winn, R. N., Pierson, R. H., Brown, O. G., Smith, L. L., Owen, L. J., Weed, F. W., Freeman, P. L., Wolfe, E. P., Marrow, C. E., Lyster, T. C., Snoddy, C. A., Siler, J. F., Miller, E. W., Zinke, S. G., Brown, H. L., captains, M. C., and Bruns, E. H., and Cole, C. L., lieutenants, M. C., ordered to report at Washington, D. C., for examination for promotion.

DeLaney, M. A., capt., M. C., will take station at Philadelphia, until further orders, to examine applicants for Medical Reserve Corps.

Ashburn, J. K., contract surgeon, ordered to accompany troops from Ft. Assiniboine, Mont., to duty at American Lake, Wash.

Parkman, W. E., contract surgeon, ordered to accompany troops from Ft. Missoula, Mont., to duty at American Lake, Wash.

Chambers, W. H., dental surgeon, granted leave of absence for one month.

Casaday, G. H., dent. surg., left Presidio of Monterey, Cal., and arrived at Army Gen. Hosp., San Francisco, for duty.



## Navy Changes.

Changes in the Medical Corps, U. S. Navy:

Urie, J. F., surgeon, detached from the *Pennsylvania* and ordered to report before a naval retiring board at the Navy Yard, Mare Island, Cal., July 10, for examination for retirement, and then to the naval hospital at that place for treatment.

Freeman, J. F., P. A. surgeon, detached from the Navy Yard, Boston, and ordered to the *Montana*, when commissioned.

Payne, J. H., P. A. surgeon, detached from the Naval Recruiting Station, Cleveland, Ohio, and ordered to the Navy Yard, Boston, and to additional duty in connection with fitting out the *Salem*.

White, E. C., asst.-surgeon, ordered to the Naval Recruiting Station, Cleveland, Ohio.

Hoen, W. S., P. A. surgeon, detached from the *California* and ordered to continue treatment at the Naval Hospital, Mare Island, Cal.

McDonnell, W. N., P. A. surgeon, detached from the *Serren* and ordered to Camp Perry, Ohio, July 5, for duty in connection with the Navy rifle team.

Allen, A. H., asst.-surgeon, Camp Columbia, will proceed to Sancti Spiritus, Cuba, for duty, relieving Asst.-Surgeon E. C. White.

White, E. C., asst.-surgeon, relieved from further duty in Cuba and ordered to comply with Navy Department orders of May 29.

Old, E. H. H., asst.-surgeon, detached from the Naval Hospital, Cavite, P. I., and ordered to Washington, D. C., for examination for promotion and then to wait orders.

Blackwell, E. M., and Snyder, J. J., surgeons, commissioned surgeons from March 4, 1908.

Stalnaker, P. R., P. A. surgeon, commissioned P. A. surgeon from May 3, 1908.

Smith, F. W., asst.-surgeon, detached from the *Wisconsin* and ordered to report to the Commander, third squadron, Pacific Fleet, for duty.

Koltes, F. X., asst.-surgeon, detached from the *Connecticut* and ordered to report to the commander, third squadron, Pacific Fleet, for duty.

Flint, J., asst.-surgeon, detached from the *Wilmington* and ordered to the *Connecticut*.

Evinge, E. J. O., asst.-surgeon, detached from the *Concord* and ordered to the *Illinois*.

Higgins, M. E., asst.-surgeon, detached from the *Illinois* and ordered to report to the Commander, Third Squadron, Pacific Fleet, for duty.

Winn, C. K., asst.-surgeon, detached from the *Villalobos* and ordered to the *Missouri*.

Steele, J. M., medical inspector, to be placed on the retired list Sept. 18, 1908, after completion of 30 years' service, in accordance with a provision contained in the naval appropriation act of May 13, 1908.

Taylor, J. L., P. A. surgeon, commissioned P. A. surgeon, from Dec. 17, 1907.

Mann, W. L., Jr., acting asst.-surgeon, appointed an acting asst.-surgeon from July 1, 1908.

Bishop, L. W., P. A. surgeon, detached from the Naval Recruiting Station, Indianapolis, and ordered to the Naval Recruiting Station, Denver.

Fiske, C. N., P. A. surgeon, ordered to the Naval Recruiting Station, Boston, and to additional duty in attendance on officers of the Navy and Marine Corps residing in Boston not otherwise provided with medical attendance.

## Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended July 10, 1908:

## SMALLPOX—UNITED STATES.

Alabama: Mobile, June 13-20, 7 cases.

California: Los Angeles, June 13-20, 1 case; San Diego, to June 13, 100 cases, estimated, and mainly in vicinity of the Pala Indian Reservation; San Francisco, June 13-20, 4 cases.

Iowa: Davenport, June 1-30, 3 cases; Sioux City, 2 cases.

Kentucky: Covington, June 20-27, 3 cases; Louisiana: New Orleans, June 20-27, 5 cases, 1 death.

Missouri: Conway, April 20-May 24, 29 cases; Kansas City, June 20-27, 1 case.

Ohio: Cincinnati, June 19-26, 4 cases; Dayton, June 20-27, 1 case; Troy, to July 3, 28 cases.

Rhode Island: Pawtucket, June 12, 1 case.

Tennessee: Dickson, June 12, 9 cases.

Texas: San Antonio, Jan. 20-27, 1 case.

Vermont: Whiting, May 5, 1 case.

Washington: Spokane, June 13-20, 17 cases.

West Virginia: Moundsville, June 17-July 2, 1 case.

Wisconsin: La Crosse, June 20-27, 3 cases.

## SMALLPOX—INSULAR.

Porto Rico: Mayaguez, June 6-20, 4 cases.

## SMALLPOX—FOREIGN.

Canada: Halifax, Jan. 13-20, 6 cases.

China: Amoy (Kulangsu), April 6-May 16, present; Foochow, May 23-June 6, present; Shanghai, May 18-24, 3 deaths.

Cochin-China: Cholon, May 23-30, 5 cases, 1 death.

Ecuador: Guayaquil, May 23-30, 4 deaths.

Egypt: Cairo, May 27-June 3, 6 cases, 2 deaths.

Germany: General, May 30-June 6, 6 cases.

Java: Batavia, May 2-30, 14 cases, 1 death.

Portugal: Lisbon, May 30-June 13, 10 cases.

Russia: Moscow, May 23-June 6, 69 cases, 27 deaths; Riga, June 6-20, 5 cases; St. Petersburg, May 16-June 6, 40 cases, 33 deaths.

Siberia: Vladivostok, May 5-14, 1 case.

Turkey: Bagdad, May 30-June 6, 20 cases, 2 deaths.

## PLAGUE.

Chile: Antofagasta, May 24, 24 cases, 2 deaths; Arica, May 27, present; Iquique, May 26, 11 cases, 1 death.

China: Foochow, May 30-June 6, present.

Cochin-China: Cholon, May 23-30, 5 cases, 3 deaths; Saigon, May 9-30, 16 cases, 15 deaths.

Ecuador: Guayaquil, May 23-30, 10 deaths.

Egypt: General, May 27-June 2, 42 cases, 16 deaths; June 3-9, 36 cases, 26 deaths; Alexandria, May 29-June 10, 5 cases, 3 deaths.

Mauritius: Port Louis, May 1-31, 2 cases, 2 deaths.

Peru: General, May 30-June 6, 38 cases, 11 deaths; Callao, 7 cases, 2 deaths; Lima, 3 cases, 4 deaths.

Straits Settlements: Singapore, May 9-16, 1 death.

Turkey: Bagdad, May 30-June 6, 11 cases, 6 deaths.

Venezuela: Caracas, June 10-12, 5 cases, 1 death.

## YELLOW FEVER—INSULAR.

Porto Rico: San Juan, July 8, 1 case on S. S. *Julia* from Santiago.

## YELLOW FEVER—FOREIGN.

Brazil: Manaus, May 23-30, 2 cases, 2 deaths; Para, May 30-June 6, 4 cases, 4 deaths.

Cuba: Dalquiri, July 6-9, 3 cases, 1 death; Santiago, July 4, 1 case.

Ecuador: Guayaquil, May 23-30, 1 case.

Mexico: Laguna de Terminos, June 27, 2 cases; Veracruz, July 7, 1 case, 1 death.

## CHOLERA.

Cochin-China: Cholon, May 23-30, 23 cases, 22 deaths; Saigon, May 9-30, 71 cases, 63 deaths.

Straits Settlements: Singapore, May 9-16, 2 deaths.

*Medical Economics*

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

## A State President on the Need of Public Instruction.

In his address as president of the Utah State Medical Association, Dr. H. D. Niles of Salt Lake City, Utah, said in part:

Before we can reasonably expect the public to seek or accept any counsel or opinions of the medical profession or to give us any substantial support, we must first make plain to them their needs and our ability to supply these needs. We must prove that we deserve their aid and support, and that they stand in urgent need of our technical knowledge. We have not only to preserve a high standard of education for ourselves, but we must share our education with the well-meaning, in these matters a misguided, public. The fallacious ideas and strange misconceptions that prevail concerning the medical profession and its work have influenced the laity to ignore our proffered assistance and to assume with apparent unconcern the sole responsibility of quickly settling or lightly dismissing some of the most vitally important technical questions the civilized world has ever been called on to consider.

After pointing out a number of instances in which the trained advice of physicians is needed but ignored, Dr. Niles says:

It must be admitted that we are to a large extent responsible for these unfortunate relations, and we must, so far as we are able, take prompt and effective steps to correct them. The public should know more of us, our work and progress, our achievements in science and our well-grounded hopes for the future. They have a perfect right to demand that we place before them our credentials before we insist that they give us their full confidence. For many generations the public has been taught to believe that a doctor's education was confined to the memorizing of numberless drugs and symptoms, and that the practice of medicine consisted, as its name implies, in an attempt to relieve distressing symptoms by the empirical administration of various medicines supposed to have mysterious remedial powers. They have thought of surgeons as men who cut up human beings and who were ready and willing to practice their art, with or without provocation, whenever and wherever the opportunity offered. Comparatively few of the laity have had any opportunity to learn even a measure of the truth concerning scientific medicine, and those who devote their lives to its study and practice. . . . Rarely has the public press contained any medical articles of real merit, and even these few have too often been written by those who sought personal notoriety rather than to instruct the public. . . . The quack advertisements that occupy so much space in our papers and magazines . . . exercise the most potent as well as the most pernicious influence in the molding of the opinions of the masses. All these demoralizing influences have served to strengthen people in their superstitious faith in the miraculous, and to weaken their confidence in rational medicine and scientific methods. . . . When the general public learn from trustworthy statistics that not less than 500,000 men, women and children died last year from preventable dis-



eases . . . they will surely be impressed that they stand in distressing need of the wisest counsel and most effective aid . . . and will welcome any plan of cooperation from the medical profession that promises to bring blessings to mankind. . . . Our duty is clear. A systematic educational campaign should be commenced at once and kept up until the public is brought into close sympathy with the medical profession. . . . The more we study these questions the more evident it becomes that a large portion of all human maladies are due to ignorance or wilful negligence. . . . The ignorant should be taught and the wilfully negligent be restrained by popular sentiment, if possible—by stringent laws if necessary. . . . The time has come in the evolution of scientific medicine when we must educate the people through that greatest of all educators, the public press.

#### Public Health Planks in Political Platforms.

For the information of those interested in the proposed national health department, we give the various planks adopted by the different political conventions which have taken action on this subject. The Ohio State Republican Convention, which met in Columbus in May, 1908, adopted the following:

##### INCREASED FEDERAL CONTROL OF THE PUBLIC HEALTH.

We advocate the organization of all existing national public health agencies into a single national health department with such improved status, increased powers and ample financial support as will give the Federal Government the strongest possible control over all national public health interests.

##### INCREASED STATE CONTROL OF THE PUBLIC HEALTH.

We advocate (1) the extension of the powers of the state in relation to the public health by the appointment in each county of a deputy health officer vested with powers to give safe and adequate sanitary protection to the residents of the country and village districts; (2) sanitary control of all sources of public water supply; (3) a complete system of registration of births and deaths; (4) the enactment of a stringent pure food law, including the rigorous control of all milk supply; and (5) a campaign against the prevalence of tuberculosis.

##### REPUBLICAN PLANK.

The following plank was submitted to the committee on resolutions of the Republican National Convention at Chicago:

We endorse the movement designed to secure the organization of all existing national public health agencies into a single national health department, and favor such legislation as will effect this purpose.

This plank was materially changed in the committee, and appears in the platform as follows:

We commend the efforts designed to secure greater efficiency in the national public health agencies, and favor such legislation as will effect this purpose.

##### DEMOCRATIC PLANK.

The following plank was submitted to the committee on resolutions of the Democratic National Convention at Denver:

Believing a vigorous, healthy population to be our greatest national asset and that the growth, power and prosperity of the country depend primarily on the physical welfare of its people and on their protection from preventable pestilences of both foreign and domestic origin and from all other preventable causes of disease and death, including the sanitary supervision of factories, mines, tenements, child labor, and other places and conditions of public employment or occupation involving health and life, we advocate the organization of all existing national public health agencies into a national bureau of public health, with such powers and duties as will give the Federal Government control over public health interests not conserved by and belonging to the states, respectively.

This plank also underwent considerable change before it appeared in the final draft of the platform. As adopted, the plank reads as follows:

We advocate the organization of all existing national public health agencies into a national bureau of public health with such power over sanitary conditions connected with factories, mines, tenements, child labor and other such places as are properly within the jurisdiction of the Federal Government and do not interfere with the power of the states controlling public health agencies

While the phraseology of both of these planks, and especially that one adopted by the Republican Convention, leaves much to be desired, yet it is encouraging to note that for the first time in our political history each of the two great political parties has added a public health plank to its national platform. The plank as first proposed for the Democratic National Convention is the most satisfactory of any yet drafted. Efforts should be made by all members of the profession, and particularly by all members of the Auxiliary National Legislative Committee, to secure the introduction of this plank into state conventions of both parties and to secure its adoption wherever possible.

#### The Work of One State Society.

In his presidential address delivered at the annual meeting of the Medical and Chirurgical Faculty of Maryland, Dr. Charles O'Donovan, after discussing the experience of this state society in securing legislation in Maryland during the past winter, refers to the number of physicians who are members of the legislature, and says:

It is to be hoped that this is the beginning of a worthy movement, which has been urged again and again on physicians in this country, and which should engage our attention most earnestly at this time when an immense wave of progress toward better conditions of health is sweeping irresistibly over the land, and the people are at last awakening to the full realization of the possibilities of preventive medicine. When they learn how much easier and cheaper it is to keep a man well and useful, than it is to treat and nurse him through a serious illness and long convalescence of enforced idleness, then will be heard an insistent demand for the improved administration of public health matters for which doctors have striven during the last fifty years. That time is surely coming, and we must prepare for it by placing ourselves in the vanguard of progress, ready to lead and direct the people in their groping toward the light of health. Inasmuch as a great deal of this must be accomplished through general or local legislation, there should be public-spirited physicians who stand prepared to do their share in the work at any personal sacrifice or inconvenience, either as advisors of those making or administering the laws, or even as law-makers themselves. . . .

Another thing of the utmost importance that became apparent this winter was the excellent solidarity of the medical profession throughout the state. With a few hours' notice, we were able to assemble before any committee that gave a public hearing a sufficient number of representative doctors at any time, and when we wished, we could bring men from every part of the state to speak for the various county societies. . . . The united medical profession has this winter exerted a greater influence in the legislature than ever before and what we have been able to accomplish has been entirely for the benefit of the citizens of Maryland. This work has only been begun, the foundation has been well laid, but the superstructure must be reared, over which trained men must watch as the building grows.

The experience of the profession in Maryland, where thorough organization obtains, is in striking contrast with that of its sister state of Virginia, in which, owing to lack of adequate organization, the much-needed vital statistics act, advocated by the medical profession, was defeated by a lobby of undertakers, who were unwilling to take the trouble to secure burial permits, and who, consequently, defeated the bill.

Referring to the public lecture course instituted by the state faculty in Maryland last winter, Dr. O'Donovan says:

The faculty embarked on this enterprise with considerable trepidation . . . but with the opinion that there was a demand for such a course. The result amply justified this conclusion, for on two occasions we had audiences of about 500 people, and at every lecture the attendance was sufficient to show that the public is anxious to learn more about health matters and is willing to patronize such efforts at enlightenment as we gave. I feel sure that a similar course of lectures next year will be even more popular.

This is in accordance with the experience of other medical societies in the larger cities. As reported in *THE JOURNAL* last week, the public lectures held in Chicago under the man-



agement of the Chicago Medical Society during the past year had an average attendance of 140 and a maximum attendance of 350.

#### POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.  
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

##### Eleventh Month.

##### DISEASES OF THE KIDNEY.

##### First Weekly Meeting.

Anatomy of the Kidney.  
Physiology of the Kidney.  
Composition of Urine.

##### Second Weekly Meeting.

Uremia.  
Etiology.  
Symptoms.  
Hematuria and Hemoglobinuria.

##### Third Weekly Meeting.

Movable Kidney.  
Acute Nephritis.  
Chronic Parenchymatous Nephritis.

##### Fourth Weekly Meeting.

Albuminuria.  
Chronic Interstitial Nephritis.  
Nephritic Colic.

##### Monthly Meeting.

Necessity of Routine Examination of the Urine.  
Differential Diagnosis of Coma.  
Early Diagnosis and Treatment of Chronic Nephritis.

##### FIRST WEEKLY MEETING.

##### Anatomy of the Kidney.

Exhibit Fresh Specimens.

Kidney: Situation, surface markings, important relations. Size, weight, surfaces, borders and extremities. Relation of structures entering hilum.

Structure: Capsule, hilum, sinus, pelvis, calyces, pyramids. Cortical portion, medullary substance.

Microscopic Anatomy: Uriniferous tubule; trace from capsule to pyramid. Structure of tubule, character of epithelium in different portions. Renal vessels; trace from renal artery to vein, three sets of veins. Difference in afferent and efferent vessels of Malpighian tufts. Relation of artery, vein and tubule in kidney.

Nerve supply of kidney. Lymphatics.

##### Physiology of Kidney.

Secretion of Urine: Ludwig's theory. Bowman-Heidenhain theory. Function of glomerulus, blood pressure and pressure of urine in capsule. Effect (1) of increasing general arterial pressure, (2) of obstructing venous outflow, (3) of obstructing ureter.

Function of convoluted tubule. Character of epithelium, secretory or absorptive. Facts in favor of absorption, in favor of secretion.

Action of diuretics. Due to increase of blood pressure or direct stimulation of epithelium? Vasodilator and vasoconstrictor nerves.

##### Composition of Urine:

Physical characteristics. More important elements found. Nitrogen: origin, per cent. of proteid intake. 1. Urea nitrogen: per cent. of total, origin, where produced, importance. 2. Ammonia nitrogen: per cent., significance. 3. Creatinin nitrogen: origin, effect of exercise. 4. Purin body nitrogen: chemical relation of purin nucleus, hypoxanthin, xanthin and uric acid. Exogenous and endogenous origin of purin material. Elimination of inorganic salts.

## Medical Education and State Boards of Registration

#### COMING EXAMINATIONS.

CALIFORNIA State Board of Medical Examiners, Cooper Medical College, San Francisco, August 4-6. Secretary, Dr. Charles L. Tisdale, Butler Bldg., San Francisco.

NEBRASKA State Board of Health, State Capitol Building, Lincoln, August 5-6. Secretary, Dr. E. J. C. Sward, Oakland.

#### Illinois April Report.

Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, April 15-17, 1908. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 54, of whom 48 passed and 6 failed. The following colleges were represented:

College.	PASSED.	Year.	Total No.
		Grad.	Examined
George Washington University.....	(1905)		1
American Med. Miss. Coll.....	(1903) (1906) (1907)		3
Chicago Coll. of Med. and Surg.....	(1908)		5
College of P. and S., Chicago... (1898) (1902) (1906)			
(2, 1907) .....	(1908)		6
Illinois Med. Coll.....	(1908)		2
Northwestern Univ. Med. School.....	(1907)		2
Rush Med. Coll.....	(1906) (18, 1908)		19
Indiana Med. Coll.....	(1906)		1
University of Michigan.....	(1871)		1
Detroit Coll. of Med.....	(1896)		1
Missouri Med. Coll.....	(1886)		1
University of Virginia.....	(1865)		1
Bohemian University of Prague, Austria.....	(1906)		1
National University of Athens, Greece.....	(1905)		1
University of Palermo, Italy.....	(1906)		1
Royal University of Naples, Italy.....	(1903) (1907)		2
FAILED.			
Indiana Med. Coll.....	(1907)		1
Jenner Med. Coll.....	(1906)		1
National Med. Univ., Chicago.....	(1906) (1908)		2
Medical College of Indiana.....	(1892)		1
University of Michigan.....	(1872)		1

#### Florida April Report.

Dr. J. D. Fernandez, secretary of the Regular Board of Medical Examiners of the State of Florida, reports the written examination held at Ocala, April 13-14, 1908. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 30, of whom 27 passed and 3 failed. The following colleges were represented:

College.	PASSED.	Year.	Per
		Grad.	Cent
Southern Medical College, Atlanta.....	(1894)		91.6
Atlanta School of Med.....	(1907)		77.6
Atlanta College of P. & S.....	(1906)		88.4
University of Georgia.....	(1906)		84.2
College of P. & S., Chicago.....	(1906)		78.6
American Med. Miss. Coll.....	(1900)		80.6
Illinois Med. Coll.....	(1901)		89.4
University of Louisville.....	(1907)		89.7
Tulane University of Louisiana.....	(1903)		85.2
University of Maryland.....	(1907)		91.7, 95.
Baltimore Medical College.....	(1890)		81.4
University of Michigan.....	(1902)		93.
Detroit College of Medicine.....	(1900)		78.1
Medical College of Ohio.....	(1895)		83.2
Miami Medical College.....	(1880)		83.
Dartmouth Medical College.....	(1896)		95.
Bellevue Hosp. Med. Coll.....	(1893) 86.7; (1898)		85.
University of the South.....	(1906) 81.2; (1907)		79.2
University of Tennessee.....	(1907)		80.1
Memphis Hosp. Med. Coll.....	(1901)		75.
Medical College of South Carolina.....	(1907)		86. 95.
University College of Medicine, Richmond.....	(1905)		86
Name of College not Obtained.....	(1907)		85.7
FAILED.			
Baltimore Med. Coll.....	(1907)		66.7
Memphis Hosp. Med. Coll.....	(1903)		67.7
Castleton Medical College.....	(1857)		35.

#### New Mexico January and April Reports.

Dr. J. A. Massie, secretary of the New Mexico Board of Health and Medical Examiners, reports the written examina-



tions held at Santa Fé, Jan. 13 and April 13, 1908. The number of subjects examined in was 12; percentage required to pass, 75.

At the examination held in January, the total number of candidates examined was 4, of whom 3 passed and 1 failed. Fifteen applicants were licensed on presentation of satisfactory credentials. The following colleges were represented:

PASSED.		
College.	Year.	Per
	Grad.	Cent.
University of Kansas.....	(1906)	75.
Louisville Med. Coll.....	(1907)	75.
Ft. Worth University.....	(1901)	75.
FAILED.		
Tennessee Med. Coll.....	(1906)	35.
LICENSED ON CREDENTIALS.		
College.	Year of Grad.	
Woman's Hospital Med. Coll., Chicago.....	(1890)	
Rush Med. Coll.....	(1904)	
Chicago Homeo. Med. Coll.....	(1889)	
Louisville Med. Coll.....	(1878)	(1886) (1889)
University of Louisville.....	(1893)	
Tulane University of Louisiana.....	(1896)	
University of Michigan.....	(1890)	
St. Louis Med. Coll.....	(1882)	
Kansas City Med. Coll.....	(1898)	
Bellevue Hosp. Med. Coll., New York City.....	(1894)	
Eclectic Med. Institute, Cincinnati.....	(1875)	
University of Tennessee.....	(1891)	
Jefferson Med. Coll.....	(1882)	

At the examination held in April the total number of candidates examined was 10, all of whom passed. Thirty-two applicants were licensed on presentation of satisfactory credentials at this meeting. The following colleges were represented:

PASSED.		
College.	Year of Grad.	
University of Alabama.....	(1904)	
Birmingham Med. Coll.....	(1908)	
Denver and Gross Coll. of Med.....	(1906)	
Northwestern Univ. Med. School.....	(1907)	
University of Kansas.....	(1906)	
University of the South.....	(1901)	
Chattanooga Med. Coll.....	(1901)	
Memphis Hosp. Med. Coll.....	(1900)	
Kansas City Hahnemann Med. Coll.....	(1907)	
Gate City Med. Coll.....	(1902)	
LICENSED ON CREDENTIALS.		
Georgetown University .....	(1896)	
College of P. and S., Chicago.....	(1903)	
Northwestern Univ. Med. School.....	(1901) (1902)	
Rush Med. Coll.....	(1878)	(1890) (1905)
Central College of P. and S., Indianapolis.....	(1904)	
College of P. and S., Keokuk.....	(1876)	(1898) (1900)
Drake University .....	(1886)	
Kentucky University.....	(1905)	
Baltimore Med. Coll.....	(1906)	
College of P. and S., Baltimore.....	(1894)	
University of Maryland.....	1878	
University of Michigan.....	(1889)	
Kansas City Med. Coll.....	(1899)	
College of P. and S., Kansas City.....	(1903)	
University Med. Coll., Kansas City.....	(1896)	(1904)
Missouri Med. Coll.....	(1880)	
Barnes Med. Coll.....	(1895)	(1898) (1899) (1907)
St. Louis University.....	(1903)	
Long Island College Hospital .....	(1893)	
Western Reserve University .....	(1888)	
Jefferson Med. Coll.....	(1884) (1900)	
Medical Coll. of Virginia.....	(1897)	

#### Nevada May Report.

Dr. S. L. Lee, secretary of the Nevada State Board of Medical Examiners, reports the written examination held at Carson City, May 4-5, 1908. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 4, all of whom passed. Six reciprocal licenses were issued at this examination. The following colleges were represented:

PASSED.		
College.	Year	Per
	Grad.	Cent.
Coll. of P. and S., San Francisco....	(1901)	80.7; (1907) 87.5, 91.7
Medical College of Ohio.....	(1883)	75.2
LICENSED THROUGH RECIPROCITY.		
	Year	Reciprocity
	Grad.	with
Northwestern University Med. School.....	(1899)	Wisconsin
Rush Medical College.....	(1890)	Illinois
Sioux City College of Medicine.....	(1900)	Iowa
University of Louisville.....	(1905)	Kentucky
University of Michigan.....	(1903)	Michigan
Wisconsin College of P. and S.....	(1905)	Wisconsin

## Marriages

WILLIAM L. WISE, M.D., to Miss Edna SoRelle, both of Lena, La., June 2.

OSCAR E. HEINS, M.D., to Miss Grace Brown, both of Maysville, Mo., June 14.

JAMES F. HILGENBERG, M.D., to Miss Grace Mix, both of Pesotum, Ill., June 17.

C. ROY JOHNSTON, M.D., Decatur, Ill., to Miss June Riggs, Saybrook, Ill., June 24.

HARRY V. KITZMILLER, M.D., to Miss Eva Lee, both of Smithshire, Ill., June 23.

WALLACE M. BURROUGHS, M.D., to Miss May Agnes Quilter, both of Chicago, June 27.

RALPH A. FENTON, M.D., to Miss Mabel Copley Smith, both of Portland, Ore., June 24.

C. M. JACK, M.D., Niantie, Ill., to Miss Charlotte Nelson, Bloomington, Ill., June 18.

EUGENE HENRY KELLY, M. D., to Miss Alice F. Sams, both of Kansas City, Mo., June 13.

JAMES CHISHOLM HILL, M.D., to Miss Sara Ellen Henry, both of Abbeville, S. C., June 24.

WILLIAM J. CARTER, M.D., Mattoon, Ill., to Miss Bessie Lockie of Galt, Ont., June 24.

JOHN MULLONEY, M.D., Philadelphia, Pa., to Miss Emily Evans of Easton, Pa., June 30.

ORAL S. ROBUCK, M.D., to Miss Margaret Gwladys Thomas, both of Gomer, Ohio, June 24.

LESTER PAGE HOOLE, M.D., to Miss Marjory Haydock Wills, both of Brooklyn, N. Y., July 1.

HENRY D. HULLEY, M.D., Griswold, Iowa, to Miss Cora O. Shelby, of Odebolt, Iowa, June 22.

ERNEST M. LING, M.D., Laporte, Mich., to Miss Ella Mande Moon, of Detroit, Mich., June 30.

LAWRENCE J. DERVIN, M.D., to Miss Alice M. Fitzmaurice, both of Somerville, Mass., recently.

JAMES ARCHER HERVEY, M.D., Traer, Iowa, to Miss Goldie Stiles of Des Moines, Iowa, June 23.

HENRY B. BRISTOW, M.D., to Miss Bonnie Gresham Tyler, both of Tappahannock, Va., June 28.

THOMAS HARMON DENNE, M.D., to Miss Mildred Alice Gregory, both of Waterloo, N. Y., June 24.

GEORGE W. LINCOLN, M.D., Camden, N. J., to Miss Ellie J. Garwood of Medford, N. J., June 24.

ELLSWORTH G. BEERS, M.D., Springfield, Mo., to Miss Ethel A. Lynn of Kansas City, Mo., June 18.

MASON GUILL, M.D., Nashville, Tenn., to Miss Amanda Lipscomb of Winchester, Tenn., June 23.

CHARLES A. LAMONT, M.D., Albion, N. Y., to Miss Eva K. Bowman, at Baltimore, Md., June 25.

WILLIAM HENRY BURMEISTER, M.D., Neilhart, Mont., to Miss Jose Bergin King of Chicago, June 24.

RASTUS RANSOM NORRIS, M.D., Baltimore, Md., to Miss Lillian Horsey of Crisfield, Md., June 24.

LAWRENCE H. PENDERGRAST, M.D., to Miss Margaret Cecelia Cullen, both of Memphis, Tenn., June 24.

RALPH ROLLIN CHASE, M.D., to Miss Belle Du Charme Ripley, both of Eau Claire, Wis., June 1.

CHARLES H. MUSCHLITZ, M.D., Philadelphia, Pa., to Miss Minnie F. Roper of Slatington, Pa., June 30.

ALLEN KERR BOND, M.D., Baltimore, Md., to Miss Louise Birekhead Gambrell, at Baltimore, Md., July 2.

THOMAS MULLIGAN, M.D., Grand Forks, N. D., to Miss Margaret McQuade of Seaforth, Ont., June 24.

THOMAS HOUSTON DOW GRIFFITTS, M.D., Springfield, Ill., to Miss Elizabeth Anne Glynn of Cairo, Ill., June 30.

JOHN McCAMPBELL, M.D., to Miss Maggie Thompson, both of Morganton, N. C., at Asheville, N. C., June 23.

JOHN WILSON FUQUA, M.D., Greeley, Colo., to Miss S. Elizabeth Mathias of Cincinnati, Ohio, at Denver, Colo., June 30.

JAMES MALCOLM MILLER, M.D., Villa Grove, Ill., to Miss Inez A. Whitworth of St. Louis, Mo., at St. Charles, Mo., recently.



## Deaths

Frank Hugh Montgomery, M.D. Rush Medical College, Chicago, 1888; associate professor of skin, genitourinary and venereal diseases, Rush Medical College; attending dermatologist to St. Elizabeth's, St. Anthony de Padua and Presbyterian hospitals; a member of the consulting staff of Oak Park Hospital; a member of American Medical Association, American Dermatological Association, Congress of American Physicians and Surgeons, Illinois State Medical Society, and of Chicago Medical, Pathological and Medicolegal societies; co-author of "A Practical Treatise on Diseases of the Skin," "A Manual of Syphilis and the Venereal Diseases," and other works on these subjects; who had achieved national prominence as an authority in his specialty; was accidentally drowned while boating on White Lake, Mich., July 14, aged 46.

James Porter Heavrin, M.D. Kentucky School of Medicine, Louisville, 1882; a member of the American Medical Association; physician to Owensboro City Hospital; president of board of examining surgeons for U. S. Pension Board at Owensboro; died suddenly at his home in Owensboro, Ky., June 30, aged 57.

Isaac A. Wintermitz, M.D. Miami Medical College, Ohio, 1882; of Colorado City, Colo.; a member of the Colorado State Medical Society; died in St. Francis Hospital, Colorado Springs, July 3, from blood poisoning, contracted while treating a patient similarly affected, aged 46.

Albert Watson Sterling, M.D. Jefferson Medical College, Philadelphia, 1871; a member of the West Virginia State Medical Association; one of the oldest practitioners of Fairmont, W. Va.; died at his home in that city, June 30, from locomotor ataxia, aged 59.

Florence Donohue, M.D. University of Georgetown, Washington, D.C., 1872; a veteran of the Civil War; first vice-president of the U. S. Historical Society; died at his home in Washington, D. C., June 24, after a long illness, aged 66.

Samuel Rothacker (Years of Practice, Ohio); of Richmond, Ohio, a veteran of the Civil War; died at his home in that city, June 25, as the result of injuries received in March, when he was trampled under the hoofs of a horse; aged 83

Samuel C. Primrose, M.D. Halifax Medical College, (N. S.), 1872; of Lawrencetown, N. S., one of the best known practitioners of Nova Scotia; died at the Victoria General Hospital, Halifax, of nephritis, July 1, aged 71.

Louis Avida Demers, M.D. Medical Department Victoria College, Toronto, 1874; a member of the medical faculty of Laval University, Montreal; died suddenly at his home in Montreal, June 24, from syncope, aged 58.

Hans L. Brynildsen, M.D. (Years of Practice, Minn.); a member of the American Medical Association; a practitioner of Vasa, Minn.; died at his home in that city from cancer of the stomach, June 29, aged 58.

William Monroe, M.D. Rush Medical College, Chicago, 1869; a prominent citizen of Monroe, Wis.; a veteran of the Civil War and Black Hawk War; died at his home in Monroe, July 3, of paralysis, aged 90.

Simon P. Snyder, M.D. Medical Department Wooster University, Ohio, 1880; a member of the Ohio State Medical Society; died at his home in Cleveland, Ohio, of heart disease, June 25, aged 56.

Alexander F. Joseph, M.D. Cincinnati College of Medicine and Surgery, 1862; of Cincinnati, who had been suffering from heart disease for some time, was found dead in his bed, July 1, aged 68.

Everett W. Woodson, M.D. University of Pennsylvania. Department of Medicine, 1854; formerly a practitioner at Cuero, Texas; died at the home of his son, in San Antonio, July 1, aged 77.

Atilla M. Hutchinson, M.D. Hahnemann Medical College, Chicago, 1883; formerly of Hutchinson, Kansas; died at his home in Winfield, Kansas, of paralysis, June 28, aged about 61.

Anna Wood, M.D. Northwestern University Woman's Medical School, Chicago, 1889; of Terre Haute, Ind.; died at her home in that city, July 1, after an illness of several months, aged 56.

Benjamin D. Braswell, M.D. Maryland Medical College, 1904; of Oscilla, Ga.; died at a private sanitarium in Atlanta, after an illness of several months' duration, June 24.

James H. Converse, M.D. United States Medical College, New York, 1880; of Danville, Ill.; died at his home in that city, June 28, after a short illness, aged 66.

Martin S. Rochelle (Years of Practice, Kansas); of Wichita; died at his home in that city, after an illness of eleven months, from paralysis, June 25, aged 66.

J. H. Woosley (Years of Practice, Kentucky); for forty years a practitioner; died at his home, Glasgow Junction, Ky., June 30, of heart disease, aged 83.

Frank O. Culter, M.D. Pulte Medical College, Cincinnati, 1888; of Gibson City, Ill.; died in Chicago, June 26, after an operation for gallstones, aged 48.

George W. Waggoner, M.D. Hahnemann Medical College, Chicago, 1882; of Corry, Pa.; died at his home in that city, June 25, of nephritis, aged 51.

Orville W. True (Years of Practice, Maine); a leading homeopathic physician of Farmington, Maine; died June 27, of carcinoma of the liver, aged 54.

William H. Warner, M.D. Ohio Medical College, 1871; of Crothersville, Ind.; died at his home in that city, July 5, of heart disease, aged 67.

Alexander E. Bowman (Years of Practice, Ill.), of White Hall; died at his home in that city, June 19, from senile debility, aged 91.

John Cook Shaw (Years of Practice, Mass.), of New Bedford, Mass.; died at his home in that city, July 2, of diabetes, aged 51.

William T. Hubbs, M.D. University of Louisville, 1879; of Camden, Tenn.; died at his home in that city, June 26, aged about 62.

Orrin I. Hall, M.D. University of Buffalo, 1873; of Zumbrota, Minn.; died at his home in that city, June 25, aged 66.

### Death Abroad.

E. Albrecht, M.D., director of the Institute of Pathologic Anatomy at Frankfurt a. M., died, June 20, aged 36. Notwithstanding his comparative youth, Albrecht had long taken a leading place among pathologists.

## Society Proceedings

### COMING MEETINGS.

American Public Health Association, Winnipeg, Can., Aug. 25-28.  
American Acad. of Ophthal. and Oto-Laryng., Cleveland, Aug. 27-29.  
Wyoming State Medical Society, Sheridan, Aug. 28.

### NEW HAMPSHIRE MEDICAL SOCIETY.

*One Hundred and Seventeenth Annual Meeting, held at Concord, May 14-15, 1908.*

*(Continued from page 163.)*

### A Gynecologic Report.

DR. H. L. STICKNEY, Manchester, described four very complicated cases, all in women, which came under his observation at Hillcrest Hospital. Dr. Stickney stated that it had always been his custom to remove the appendix at the time of any operation on the pelvic organs, if convenient to do so, and the condition of the patient did not make it unwise.

### The Loss to Physicians from Hospital Work.

DR. A. NOEL SMITH, Dover, said that hospitals are a blessing, indeed, a necessity, to the community. The large cities are well supplied with them, but the smaller cities and towns are also getting to be well equipped. It is all right for rich men to give of their abundance to found and maintain hospitals, however, but he is firmly convinced that it is wrong for the average physician to contribute so lavishly of his means, his time, and his ability toward the success of these institutions. Men and women give of their abundance a single gift, therewith furnishing a hospital room or ward, and their names are engraved on tablets to perpetuate the fact. And this is well. The physician or surgeon bestows his gifts of time and labor, which represent money, and does this perennially. However, no note is taken of it, except an occasional vote of thanks; and thanks never yet bought shoes for the babies,



or purchased horses, carriages, and automobiles which are the doctor's necessities. His only tablet is the possible gratitude of the patient who recovers, and a threatened suit for malpractice if the patient dies.

In the speaker's judgment, as in that of many other physicians, it is high time to consider and to act on the subject of some form of remuneration for the medical and surgical staffs of hospitals.

Dr. Smith cited several instances which had come under his observation, where well-to-do people had been treated and operated on free at hospitals. "And we physicians," said the speaker, "in whose hands the entire adjustment of this matter rests, stand foolishly helpless and witness our incomes thus depreciated!"

He stated that his work along this line had received the hearty approval and support of other physicians and read several letters from different members of the medical profession, indorsing his course of action in this matter; and he urged that something be done to remedy this situation by the members of the New Hampshire Medical Society.

#### DISCUSSION.

DR. LOUIS W. FLANDERS, Dover, said that there seems to have been from time immemorial an unwritten law that the physician should give more of his time to philanthropic enterprises than any other member of the community.

DR. JOHN W. PARSONS, Portsmouth, could discover no reason why a person should not pay for medical services rendered in a hospital the same as when furnished out of a hospital. In fact, in many instances, the services in a hospital are more valuable because of the environment. The physician can do better work, get better results for the patient and himself, and the physician should be paid by somebody. If a hospital has income enough to warrant it, the medical man could be paid by the corporation in the form of a salary, or, better, according to the work or its attending responsibility. It seemed to him, however, that it is a more business-like method for the patient to pay the doctor who works for him. But, before any step is taken, there should be a settled unanimity among physicians unflinchingly to support the proposition that physicians doing work at the hospital shall charge the same fees as in work outside of the hospital, collecting their bills, if they can, as in ordinary business. If the patient can not pay the standard prices, admit him or her on such terms as are just; likewise permit the physician to make similar arrangements; hospital and doctor to collect if possible. Emergency cases should be admitted without question, and the matter of pay settled according to the circumstances. But we must try to disabuse people of the notion that they can get everything for nothing from hospitals and physicians. In concluding, the speaker said: "When I do charity work, I wish to know it at the time. I do not like to find it out afterward. Compulsory charity is not charity, it is theft, and is obnoxious and irritating. Voluntary charity is felicitous and inspiring, and there is no class of men who give so much of their time and skill as the medical profession."

DR. A. H. HARRIMAN, Laconia, stated that in his town, by the aid of some philanthropic people, they had recently been able to start a hospital. But, before the hospital was started, all hands got together and made a solemn vow that they were not going to diminish their income, if they could help it, by reason of having a hospital, and he did not believe they had done so. Every person who had entered that hospital had been taken care of, and the charges had been just the same as if they had been taken care of at their homes or anywhere else. He did not think they had lost a great deal by charging fees, and he did not see why anyone should.

DR. A. C. HEFFINGER, Portsmouth, stated that at the Portsmouth Hospital he believed there was very little of the abuse of free hospital service, and that whether the patients went into the wards or into private rooms, if they were able to pay, they paid. There was no surgical staff or medical staff at this hospital, and no specific free treatment, but each physician goes on when his turn comes, a month at a time, and is supposed to treat free patients, but during the last period of Dr. Heffinger's service he had not had one such patient.

DR. JAMES T. GREILEY, Nashua, stated that at Nashua the suggestion of Dr. Smith and Dr. Heffinger had been followed out, the poor have always been treated gratuitously in Nashua, but it has always been insisted on that it shall be the poor who receive gratuitous treatment. Emergency cases are always received in the hospitals without question, but they are investigated afterward. Those people who receive gratuitous care are either of the city or county poor. All others pay their physicians independently of the hospital, according to their ability. In other words, there is an arrangement made directly between the attending physician and the patient, and it has worked very harmoniously. The speaker called attention to the fact that the patient who pays for his accommodation and selects his own physician to attend him, is not pauperized, which makes a difference in the feeling of the patient, and in the patient's relation to the doctor.

DR. A. W. MITCHELL, Epping, said that all the speakers so far had been doctors connected with hospitals. He happened to be, unfortunately, a little fellow out in a little town where there is no hospital, and he wanted to make a plea for himself and lots of others like him. He was situated about equal distance from Dover, Portsmouth, Nashua and Manchester, and so strong was the suction brought to bear from those places that he had only a little hair left on his head. The fact was that when they had sent patients into the larger towns to seek the larger and better men, great inducement had been—at least in the past, though, perhaps, not so much so now—brought to bear on those people to go into the hospitals, so that some of the physicians of those cities were now getting overburdened.

DR. FORREST L. KEAY, Rochester, suggested that if some means could be found whereby the rest of the profession could relieve some of those who were carrying so heavy a burden by doing the work for them when they had a patient to operate on, it might lighten it.

#### Movable Kidney.

DR. ERNEST L. BELL, Plymouth, stated that 85 per cent. of the cases of movable kidney occur in women. He suggested as a possible explanation the fact that the recess in which the kidney lies is deep and funnel-shaped in the male, while in the female it is shallow and more cylindrical. He also stated that the displacement of the right kidney is fifteen times more frequent than that of the left, and this, he thought, not to be a mere matter of coincidence, but probably due to the fact that the right kidney, with the liver superimposed, is slightly lower than the left, and is in intimate relation in its lower third with the posterior and extraperitoneal portion of the ascending colon. Through this contact with the colon a decided downward pull comes on the right kidney from the forced peristalsis of the loaded bowel during its constant effort to overcome the force of gravity in passing upward its fecal contents. Dr. Bell stated that movable kidneys are more often found in women from 30 to 40, who have worked hard and had many children, and that certain physical characteristics play an important part in predisposing to displacement, namely, abnormality, which may tend to flatten and make shallow the normal paravertebral fossæ, which explains the fact that palpable kidneys are found almost always in long-waisted, slender bodied women.

He described at length the symptoms of movable or displaced kidney, and the different methods of treatment, particularly the so-called Conant method of fixation, of which he said that the simplicity of the operation and its uniformly good results so appealed to him that he had recommended this procedure in all of his cases requiring an operation, and in none of the operations done by this method had he derived other than great satisfaction from its use. He further emphasized it as vital to the success of any operation that all the lesion coexistent with that of the kidney should be taken care of. To anchor a prolapsed kidney and leave a diseased appendix or gall bladder, a lacerated peritoneum or cervix was to invite failure. He described several cases.

#### DISCUSSION.

DR. GILE, Hanover, stated that he was somewhat more skeptical about the great frequency of symptoms than was Dr.



Bell: that is, as to whether the subjective symptoms the patient might have were due to movable kidney, even though the kidney should be found to have greater or less mobility. He agreed with Dr. Bell that whenever an operation was performed for movable kidney, the greatest care should be exercised in investigating all other organs to see if there was not other disease, stating that he believed a great many times when a movable kidney was detectible, the subjective symptoms the patient might have depended more likely on a diseased appendix than on the mobility of the kidney. He preferred the lumbar incision.

DR. FRANK BLAISDELL, Goffstown, said that personally he had never found anything better than the oblique lumbar incision for exposing the kidney, and for safe anchorage of the kidney after it had been exposed preferred one of the capsule-splitting methods. He explained the method fully. But while disagreeing with Dr. Bell as to the Conant method being the best, he acknowledged that Dr. Bell had had splendid success with it, and stated it as his opinion that individual preference had much to do with like or dislike of any particular method; that we liked a thing because we were familiar with it.

DR. WILKINS, Manchester, commended the usual lumbar incision, opening the fascial capsule and removing the fat from inside it, and stitching the capsule tightly around the lower half of the kidney, and then packing beneath it with gauze, leaving the gauze there for two weeks. He described the advantages.

DR. M. E. KEAN, Manchester, stated that the majority of men were discontinuing the fixation of the kidney in cases of movable kidney, unless other conditions exist at the same time which require it.

(To be continued.)

#### AMERICAN PEDIATRIC SOCIETY.

*Annual Meeting, held at Delaware Water Gap, Pa., May 25-26, 1908.*

(Continued from page 158.)

#### A Plan of Dealing with Atrophic Infants.

DR. HENRY D. CHAPIN, New York, presented this paper, the essential plan of treatment being that of fresh air. Most satisfactory results were reported in cases suffering from malnutrition because of bottle feeding. He advocated obtaining individual environment for these children. Institutions and hospitals should be only a "hold up" for acute conditions, and the children should be got out of the institutions as soon as possible; they should be boarded out in the country.

#### DISCUSSION ON FRESH AIR.

DR. AUGUSTUS CAILLE, New York, said that he was in full accord with everything expressed by the three essayists. Twenty years ago he had tried to get those in control to understand the importance of fresh air to children, but his attempts had been unavailing. At present they were using a roof garden. He believed that the breathing of fresh air was the most important therapeutic agent we possessed.

DR. A. JACOBI, New York, referred to his experience in 1870 when he had proposed boarding out infants and had shown those in charge that of 100 patients admitted to the institution and retained there over three months 100 died. He had been asked to resign for expressing such views and finally left the institution. He approved heartily of the endeavors of Dr. Chapin in this direction and was glad he had been more successful. He believed that rachitis was due more to bad air than to bad food and advocated the fresh air treatment for that disease, which he said 50 years ago was hardly known in the United States, before emigration and poverty had existed to such an extent.

DR. R. G. FREEMAN, New York, referred particularly to the fresh air treatment in measles; all the cases that had been put out had done remarkably well. He agreed with Dr. Jacobi as to rachitis.

DR. E. M. BUCKINGHAM, Boston, reported cases of pneumonia suffering with dyspnea in the hospital and relieved by

putting them out in the air even after the failure of administration of oxygen.

DR. C. B. PUTNAM, Boston, said that when he first became connected with the Massachusetts Infant Asylum, 35 years ago, they were just beginning to farm out a few of the children. Now, of 125 patients, less than 25 were kept in the hospital—the rest were boarded out in the country and there had been a remarkable reduction in mortality.

DR. L. E. LAFETRA, New York, said that the objections made to the treatment in private practice could be overcome by using the inside awnings which allowed the child to breathe the fresh air without being exposed.

DR. CHARLES G. KERLEY, New York, said that he had been surprised at the readiness with which intelligent people took up this feature of treatment.

DR. F. S. CHURCHILL, Chicago, thought the people were very ready to carry out this form of treatment—much more ready than the profession at large realized. He had no difficulty whatever in private practice and in dispensary work he had assistance by having one of the nurses follow up the cases—going directly into the home and looking after them.

DR. WILLIAM P. NORTHRUP, New York, in closing, said that as we had raised the standard of quality of milk and of the drinking water supply so we should bring into prominence this other hygienic consideration. Fresh air, he said, was so cheap that it was not appreciated. As Oliver Wendell Holmes had said:

God lent his creatures light and air and waters open to the skies;  
Man locks him in a stifling lair and wonders why his brother dies.

#### The Need of Postgraduate Instruction in Pediatrics.

DR. AUGUSTUS CAILLE, New York, said that there was still a lack of system and conformity in making a medical practitioner. As a pediatricist the average graduate was sadly deficient, unless he had had the good fortune to spend six months as an interne in a children's hospital. Practical instruction was urgently needed. A large ambulatory service was one of the essentials for such teaching. Bedside teaching, to be of value, should permit the student to visit the ward at a set time two or three hours each day. He thought that the broadening influence of pediatric study had not been sufficiently emphasized. There was urgent need for practical postgraduate study.

#### Modern Laboratory Feeding and the Wide Range of Resources Which It Provides.

DR. THOMAS MORGAN ROTCH, Boston, stated that what he wished to place before the profession was the result of his seventeen years' study of the advance through laboratory methods. He pointed out that the resources of the milk laboratories were such that physicians could prescribe combinations of any known food. He explained that it was no longer necessary to feed an infant with a patent or proprietary food because that food had seemed to agree best with an individual with a weak digestion. He stated that careful chemical analysis had now made us familiar with the food constituents of all the patent and proprietary foods. Consequently it was now possible to make at the laboratories exactly the same combinations as appeared in these patent foods and the prescription for these compounds could be written in percentages. He pointed out that each of the advances that had been made in the combination of the ingredients of the various food stuffs had really emanated from the chemists in charge of the milk laboratories. Of special importance, next to that of the work on the separated proteids, whey and casein, which now for some years had been obtained from the laboratories, was the possibility of prescribing the carbohydrates to a much wider extent than ever before. He explained why and how maltose was preferably used instead of lactose in cases where there was an over production of lactic acid, and how, on the contrary, where there was an over production of butyric acid, lactose was preferable to maltose. He showed how it was no longer necessary to make use of the mechanical action of the starches in making the casein precipitate final, since the divided proteid accomplished this much better and much more intelligently. He explained also how the supposed value of a well known patent food, whose chief ingredient was maltose,



could be obtained on a laboratory prescription by simply prescribing dextrinized starch and thus obtaining besides maltose a residue which corresponded to that in the above mentioned food; in both cases the residue being what was claimed for the food in regard to its laxative properties. He stated that it was a mistake to think that centrifugal cream must necessarily be used in the laboratory prescriptions, and that, on the contrary, the laboratory was always willing to make up the prescribed fat combinations from gravity cream when this was asked for by the prescribing physician. One of the greatest advances, he said, which had been made within the last year in regard to the possibilities of laboratory modifications on physicians' prescriptions, when wishing to use laboratory methods, was the use of the lactic acid bacillus in pure culture. It was well known that there were a great many different strains of the lactic acid bacillus, some good and some inferior; but a strain had now been obtained and was kept at the laboratories which was exceedingly successful in killing the special ferment which produced the fermentative diarrheas; and the physician could now prescribe the pure culture of lactic acid bacillus for cases of this kind and its use had been followed by the greatest success. He also showed how, by simply prescribing a certain percentage of lactic acid 'this degree of acidity could be used for purposes of digestion without necessarily allowing the process to go further.

Dr. Rotch finally said that he had attempted to prepare a prescription card for the profession at large, which could be used for prescribing any compound of foodstuffs and any of the ingredients in the required percentage, and this prescription card would have on one side of it explanatory notes which would enable the physician to see at once what percentages of the different combinations should be used. He expressed his appreciation of the information which he had obtained from Prof. Howe of the State Normal School in connection with all the good work which had been lately done under his supervision at the Walker-Gordon laboratories. The prescription blank represented on one side an explanation of why each of the several compounds which could be obtained at the laboratory were used; the name of the compound came in the next column, for instance, fat, lactose, maltose, lactic acid bacillus, etc., and then percentage columns came on the other side again, in which the definite figures could be placed.

Dr. L. EMMETT HOLT, New York, had also been working along these lines. He had found that gastric digestion went forward largely according to the amount of HCl present. In no single one of the experiments had there been found a deficiency of pepsin in the infant's stomach, but there had been found great variation in the amount of HCl.

Dr. HENRY D. CHAPIN, New York, also advocated the scientific application of the various diluents that had been found useful. He had also read a paper, written with the same object with which Dr. Rotch had prepared his paper, namely, to find if we could not as physicians utilize the good in them in a scientific way. He believed that the whole subject of infant feeding could only be satisfactorily studied from the biologic standpoint.

Dr. AUGUSTUS CAILLE, New York, respected the scientific methods but thought they could be managed only in the hands of a few persons.

Dr. J. P. CROZER GRIFFITH, Philadelphia, was a thorough believer in all that was being done in the matter of feeding scientifically but thought it difficult to teach it in a way that would enable the average student to comprehend it.

Dr. W. P. NORTHRUP, New York, said that the great triumph of the laboratory to his mind had been the lesson in the production of a pure milk with a known fat content of unvarying degree.

#### Status of the Kindergarten.

Dr. ISAAC A. ABT, Chicago, said that, in reply to inquiries sent out, he had 119 replies from physicians, 66, or 55.46 per cent., in favor of the kindergarten; 25, or 21 per cent., unfavorable, and 28, or 23 per cent., indifferent. In the hope of throwing some light on the medical aspect of the kindergarten question the investigation of which the paper was a report was instituted. He had sent questions to physicians in various parts of the country and to kindergarten teachers and mothers. From

the mothers there had been 70 replies; favorable 43 or 61.42 per cent.; unfavorable, 11, or 15.71 per cent.; indifferent, 16, or 22.85 per cent. Of 43 replies from superintendents, 32, or 74.41 per cent., were favorable; 5, or 11.64 per cent., unfavorable; 6, or 13.95 per cent., indifferent. Of kindergartners 26 replies; 25, or 96.15 per cent., favorable. Of 21 replies from primary teachers, 14, or 66.66 per cent., were favorable; 3, or 13.33 per cent., unfavorable; 4, or 19.03 per cent., indifferent. From the standpoint of physicians, 42 favorable and 15 unfavorable from the east; 17 favorable and 6 unfavorable from middle west; 3 favorable from the west; 2 favorable from the north, and 1 each favorable and unfavorable from the south. Twelve kindergartners wrote of proper or improper conditions existing. The best average age to commence was put at five years. Of all physicians 47.90 per cent. favored kindergarten for both rich and poor.

#### DISCUSSION.

Dr. THOMAS MORGAN ROTCH, Boston, said that the chronologic age of the child should be ignored. Children should not be classified in that way, but by their development.

Dr. WILLIAM P. NORTHRUP, New York, thought that in the future pediatricists would take more interest in the kindergarten.

Dr. F. S. CHURCHILL, Chicago, thought that the opinions about the kindergarten among medical men and a great many mothers arose from error as to its true object. The well regulated kindergarten tried to steer the mental development of the child. He feared there were too few kindergartners who properly grasped the idea. The kindergartner should be a very highly paid teacher so that a high class would be attracted to the work. The mother was not a professional trainer of children and he would prefer to put the child with a professional rather than with an amateur.

Dr. HENRY D. CHAPIN, New York, agreed with Dr. Churchill that the kindergartners should be better paid and have a better status. The same thing was radically wrong in the public school system; teachers were graded according to the size and age of the scholars; the early age was the critical time, and yet the younger scholars had the less experienced teachers.

Dr. CHARLES G. KERLEY, New York, thought the matter rested entirely with the nature of the child's surroundings at home; if the child could have proper outdoor life and attention at home that was by far the best place, but there was a class of children in every city to which the kindergarten was a Godsend.

#### The Hard Curds of Infant Stools; Their Origin, Nature and Transformation.

Dr. THOMAS S. SOUTHWORTH and Dr. O. M. SCHLOSS, New York, said that the discovery that the firm, rounded curds occurring not infrequently in the stools of infants fed on cow's milk were composed in part of fatty acids and soaps had led to considerable discussion and warranted a further inquiry as to the origin of such bodies. The claim had been made of late that these bodies were simply aggregations of soaps and fatty acids containing no proteid and by implication not entitled to be called curds. This was based largely on the statements of Czerney and Kellar. Typical firm curds occurring in 75 stools passed by 38 infants were subjected to qualitative chemical tests to determine the presence of proteids, soaps and fatty acids. All of these masses responded to the tests for protein, no matter whether they were hard or soft, and regardless of the presence of soaps, neutral fat, or fatty acids; the ordinary stool substance, in which these masses were embedded, when subjected to the same procedure and tests, did not give the protein reactions.

#### DISCUSSION.

Dr. I. A. ABT, Chicago, thought that there was no more fertile field for investigation than this, particularly in view of the reports from the Berlin and Breslau schools, which led to the belief that there was no such thing as proteid indigestion. He had fed babies that suffered from what he supposed to be fat indigestion on perfectly fat-free milk and had found that there was in the stools a curd that corresponded to the one described by the essayist.



DR. J. LOVETT MORSE, Boston, said that his assistant had been at work along the same line and had gone into it very elaborately, working the matter out quantitatively as well as qualitatively, and he had found that the basis of the large curd in every case was a proteid. He had also found that the amount of fat in the curd varied almost exactly with the amount of fat in the food, showing that the fat was merely caught in the meshes of the curd. They also found these large curds in babies that were taking barley water.

#### Fat and Proteid Content of Top Milk.

DR. CHARLES A. FIFE, Philadelphia, had used the Chapin dipper in obtaining the top milk. The results epitomized were shown by charts. The fats in the top quarts, in 17 analyses of 4 ounces, highest, 32.2; lowest, 17.8. In the lower grade milks the variation was much less than that. In the higher grade milks the variation was much greater. The proteids were very uniform throughout, but in the higher grades the proportion of proteids was very much less than was usually believed; considerably below 3 per cent.; about 2.75 per cent. As to variation between pints and quarts—the quarts were, as a rule, more uniform than the pints, but almost always a little higher; about  $\frac{1}{2}$  per cent. higher—not enough to make any practical difference in the modifications. As to the composition of the bottom milk there was very little difference between the lower 24 ounces and the lower 8 ounces, so that it was not necessary to depend on the lower 8 ounces to get a so-called fat-free milk. As to proteids there was very little difference.

#### The Urinary Findings in a Series of Infants Suffering from Intestinal Infection.

DR. J. H. MASON KNOX and DR. J. C. MEAKINS, Baltimore, said that they had taken 72 infants for the basis of this study, of which 19 were used as controls, in whom the urinary findings were negative and in whom there was no intestinal infection. Malnutrition, 6; diarrhea, 6; indigestion, 4; 53 cases of definite intestinal infection; of these 33 toxic cases and 29 ileocolitis. In 31 of the 53 no urinary changes had been found; in 32 definite abnormalities had been found. Of these 53, more than one-half were in the middle of the first year. Duration of illness had averaged about ten days to six weeks. There were 34 boys and 19 girls. Cases according to urinary findings were divided into three classes: (1) Those containing only albumin, or albumin and casts; (2) those in which pus was found; (3) those in which in addition to pus there were albumin, casts and bacteria and red blood cells. He concluded that infection of the urine occurred almost as frequently where the cases were toxic as where there was very definite intestinal lesion; that infection had its origin in the intestinal canal and then reached the kidneys secondarily.

DR. I. A. ABR, Chicago, said that these might not be purely or simply intestinal lesions but indications of perversion of metabolism with the production of toxic substances, much the same as certain constitutional diseases produce acidosis. This would seem especially true in view of the fact that the intestinal lesions were sometimes slight in comparison with the severity of the condition.

#### ARKANSAS MEDICAL SOCIETY.

*Thirty Second Annual Meeting, held in Little Rock, May 12-15, 1908.*

##### Election of Officers.

The following officers were elected: President, Dr. J. T. Clegg, Siloam Springs; vice-presidents, Dr. E. K. Williams, Arkadelphia; Dr. J. L. Hall, Pocahtontas; Dr. B. D. Luck, Pine Bluff; secretary, Dr. Morgan Smith, Little Rock; treasurer, Dr. J. M. Scales, Pine Bluff; delegate to American Medical Association, Dr. C. C. Stephenson, Little Rock; alternates, Dr. G. A. Warren, Black Rock, Dr. B. Hatchett, Fort Smith; new councilors; Second district, Dr. H. O. Walker, Newport; Fourth district, Dr. William Breathwit, Pine Bluff; Sixth dis-

trict, Dr. J. H. Weaver, Hope; Eighth district, Dr. C. P. Meriwether, Little Rock; Tenth district, Dr. F. B. Young, Springdale. Pine Bluff was selected as the place of meeting for 1909.

The question of admission of undergraduates was indefinitely postponed, and recognition of Southwest Medical Association was deferred.

The section of Article IV. of the constitution which permitted members of House of Delegates to hold office in the society was repealed.

DR. JOSEPH PRICE, Philadelphia, and DR. C. C. BROWNING, Los Angeles, were guests at the society.

#### Education of the Public and Progress in Medicine.

DR. JOSEPH PRICE, Philadelphia, made a plea for the wider dissemination of medical knowledge among the laity, especially among women and young children. Our women, he said, should be improved mentally and physically; to have big men we must have big mothers. The number of specialists should be multiplied and they should abound in every-day life. Arkansas has 75 counties; she should have 75 polyclinics and 75 postgraduate schools. She has 75 poor-houses and 75 jails full of good material which should be self-supporting. Untold good is done by teaching others. Recently he met an old pupil who reported 138 appendicectomies with one fatality. He scolded him for losing that one, which the practitioner admitted was most likely due to faulty technique. Dr. Price cautioned his audience not to despise the day of small beginnings, referring earnestly to the great work of McDowell, Sims, and others, who, at the outset, were compelled to use the very crudest of accessories, their clinics being organized in woodsheds, stables, etc., yet these humble beginnings marked the foundation of the greatest progress in the work of ameliorating the sufferings of mankind which the world has ever known. Much remains to be done and there is much that can be achieved by the assiduous hard worker along lines of original research work; poor facilities should not be viewed as insurmountable difficulties. He believes that the crying need of the hour is better general education, and he fears that the generosity of Mr. Carnegie is in great measure misapplied. Good common schools are sorely needed, while literature is plentiful and within the reach of the very poorest.

#### Progress in Treatment of Disease.

DR. C. C. BROWNING, Los Angeles, following out the theme of Dr. Price, referred to the progress made in the treatment of disease, and especially to the work of the Section on State Medicine and Public Hygiene. A few years ago this section was thought scarcely worth attending; now it is considered one of the most important. In California this subject is a live one, as is also true of Pennsylvania, where the last legislature appropriated one million dollars to fight tuberculosis alone; showing the great interest manifested in that state in one particular disease. This dread scourge carries off from one-tenth to one-seventh of the entire population of the civilized world. He urged on those present the extreme importance of educating the laity in public hygiene; its principles should be made clear to the people, and the little children in the public schools should be carefully taught and enlightened, that they may go out as missionaries to every home.

#### Medical Organization and Some Fallacious Notions Concerning It.

DR. C. C. STEPHENSON, the retiring president, in his address paid a glowing tribute to the late Dr. N. S. Davis, the founder of the American Medical Association, and to the work of the Association, and to what its recent efforts have accomplished in the way of securing better medical colleges, higher necessary requirements for the admission of students and the elevation of medical standards generally; medical legislation; medical practice acts; publication of a medical directory; organization of a Council on Pharmacy and Chemistry; organization of a Committee on Medical Organization, and the great work accomplished by Dr. McCormack, its chairman; the inauguration of a postgraduate course for county societies, etc. The



future possibilities of organized medicine, he said, are beyond the comprehension of even the most hopeful optimist. He declared that medical organization was never intended as a selfish enterprise, but as the best means for the alleviation of pain and suffering wherever found. Advertising quacks and nostrum vendors he handled without gloves. Commercialism and selfishness he emphatically denounced. He recommended the conversion of the old State Capitol Building into the State Charity Hospital, with suitable pathologic and bacteriologic laboratories, and that it should have a postgraduate course for practitioners and nurses. He asked that definite steps be taken to prohibit the publication of indecent advertisements in the press and on billboards; for compulsory vaccination and for restricting the issuance of marriage licenses to those mentally and physically sound; and that vigorous action be taken in regard to the discouragement of newspaper news items going the rounds of the press exploiting various wonderful results, e. g., those attained by the treatment of hydrophobia by the so-called madstone. He recommended that the expenses of the state secretary be borne by the society while attending the meeting of the Association of Editors of State Journals. He also asked that every honorable means be employed to secure the passage of a law requiring a higher standard of medical education and a law defining "a high school course." Finally he recommended that the State Board of Medical Examiners be made the board of visitors to report annually to the general session as to the efficiency of the medical schools of the state, and that a gold medal annually be given to the two medical schools of Little Rock for meritorious graduates.

#### Some Problems of Childhood.

DR. H. P. ROUTH, Hackett, referred to the many dangers and difficulties of childhood due to the ignorance of mothers, midwives, and meddling neighbors; to the unwarrantable substitution of artificial for breast feeding, thereby increasing the infant mortality; to contagion in the public schools, and to nostrums. It is the duty of the physician, he said, to safeguard childhood in every way possible, and the laity should be taught the lurking danger in baby elixirs, baby bowel remedies, cough syrups, etc., so attractively displayed in the druggists' windows and shelves and advertised in the press both secular and religious, as well as in certain medical journals.

#### The Race Suicide Problem.

DR. C. P. MERIWETHER, Little Rock, discussed the so-called race-suicide problem. He believes that the trouble in most cases is due to gonorrhea in the male, that education should begin at an early age in the home, and that sexual purity should be taught to the youth of the country by parents. In this way only may we expect the direful results to be averted.

#### The Diagnosis of Pelvic Diseases and Treatment of Inflammatory and Suppurative Conditions.

DR. JOSEPH PRICE, Philadelphia, said that a large percentage of these troubles are due to the irregular lives of the husbands before marriage. He urged that parents should watch over their daughters more circumspectly, and safeguard them in every way against these horrors. In the simple bucolic days these troubles were rare; but with the coming of increased facilities for transportation and the advent of railroads, vice made its inroads. When men who have led irregular lives marry, they contaminate their wives; few, if any, of whom bear children; and many come on the operating table. Dr. Price deplored this state of affairs and advocated strongly the single standard of morals and the free circulation of healthy and helpful literature among those of tender age. Americans, he declared, are in the front rank as regards gynecology, and are to be congratulated on their discoveries and improved methods, which are well understood throughout the world.

#### Prevention of Disease.

The chairman of the Section of State Medicine and Public Hygiene, in his address, declared that prevention of disease

is the highest duty of the physician, sanitary science having done more for mankind than any other department of medical achievement. More is being done now than ever before and he predicted magnificent results in the future. He referred to the ravages of pulmonary tuberculosis and pneumonia, deplored the lack of a state sanitarium, and urged that vigorous effort be made to secure such an institution.

#### State Examining Boards.

DR. M. FINK, Helena, described the good work accomplished in this and other states by the state examining boards, and described how efforts to obtain a better law were hampered at the last session of the state legislature. The measure was thwarted in large measure by the efforts of the "patent medicine" men.

#### Public Health and Vital Statistics.

DR. G. M. D. CANTRELL, Little Rock, called attention to the great value of public sanitation in fighting disease. He emphasized the need of more effective sanitary laws, and declared it the duty of the medical profession of the state to become leaders in the effort to secure an efficient board of health and to educate the laity in regard to lending a hand to secure better sanitary conditions. The people must be convinced of the important part sanitation plays in everyday life and they will not be slow to provide the necessary means, laws, and officers to carry on the work. He also alluded to the extensive work of Dr. Irion, secretary of the State Board of Health of Louisiana, in enlightening the laity of that state.

#### Hygiene in Tuberculosis.

DR. C. H. HOFFMAN, Little Rock, emphasized the importance of early recognition and prompt, energetic and courageous treatment. The first duty of the State is to educate her citizens, especially the laboring classes of both races in the general principles of sanitation. The milk supply should be carefully safeguarded and the health of those employed around dairies investigated, and persons found to be infected should be assigned to other duties. He warmly supported his colleagues in their effort to secure a state hospital.

#### Skin Lesions.

DR. NETTIE KLEIN, Texarkana, regards skin lesions as danger signals of great pathologic value whose importance is too often ignored. Boils, acne, dermal neuropathies, eczema and tuberculosis of the skin, are not local troubles, but the development of some underlying pathologic condition, which should be thoroughly investigated in diagnosis.

#### Case of Abdominal Pregnancy.

DR. A. G. DICKSON, Paragould, reported a case of abdominal pregnancy in a patient aged 26, health good, first pregnancy. In the tenth month of gestation she developed chills and fever. The amniotic sac was found partly adherent to parietal peritoneum on left side, and to the intestines. The fetus weighed eight pounds, and lay in the right oblique diameter. Down in the left iliac was a completely developed placenta attached to the parietal peritoneum and sigmoid; from it was reflected the decidua that formed the gestation sac. The uterus, ovaries and tubes were normal throughout; there was no attachment between these organs and the placenta. This, good authorities deem impossible. Fetus had been dead two or three months, and was in a good state of preservation; placental adhesions were easily broken and the placenta was removed, with but slight hemorrhage; no infection followed; recovery was rapid. This disproves the idea that in order to live and thrive after escape into the abdominal cavity, the fecundated ovum must retain its placental attachment to the tube.

#### The Management of Abnormal Labor.

DR. C. K. CARUTHERS advocated chloroform for rigid os, and quinin and strychnin for uterine inertia. There is minimum danger to mother and child by early use of forceps when indicated. The perineum is protected by retracting the mucous membrane at the anterior fourchette over the occiput, at same



time pushing up on the fetal head, thus increasing the diameter of outlet.

#### Surgical Treatment of Retroflexions.

DR. WILLIAM H. MILLER, Little Rock, has found the internal Alexander technic most useful in the majority of cases, and less likely to produce unpleasant sequelæ; he has employed it in over fifty cases without a single failure. He has had unsatisfactory results with the Wylie operation, especially in cases of subsequent pregnancy.

#### Puerperal Eclampsia.

DR. C. M. LUTTERLOH has experienced but few cases. One in 330 labor cases is said to be the ordinary proportion. He believes albuminuria the most probable cause. He recommended that the patient be encouraged by suggestion, and that no allusion whatever be permitted by any one to the previous eclamptic condition. This will usually abort the unfortunate sequelæ of insanity, which frequently occur, and mar a good recovery.

#### Puerperal Infections.

DR. G. A. WARREN, Black Rock, condemned too frequent or unnecessary vaginal palpations, and the use of douches. If douches are used they should be as hot as safety will permit; if the curette, it should be blunt, and sound tissues should be carefully guarded.

#### Diseased Conditions of Female Reproductive Organs.

DR. C. S. PETTUS, Eldorado, condemned hasty surgery and failure to observe strict asepsis; he paid a tribute to womanhood and attributed a large share of sterility to gonorrhea in the male.

#### Chairman's Address—Section on Surgery.

DR. A. G. DICKSON, Paragould, complimented the surgeons of Arkansas on their steady progress. He referred to the Cargile membrane and the "Runyan stitch" adopted and commended by the Mayos. Both were Arkansas products. He closed with a word of encouragement to still further efforts and discoveries.

#### Intestinal Obstruction.

DR. W. A. SNODGRASS, Little Rock, reported five cases of intestinal obstruction of which two were fatal; three patients recovered. He strongly recommended early surgical interference and condemned purgatives which tend to increase the tension in already weakened and inflamed bowel.

#### Drainage.

DR. C. R. SHINAVLT, Little Rock, referred to drainage as Nature's method, and strongly urged its use as a general rule; especially, when in doubt, we should take no chances, but drain.

#### Bone Tuberculosis.

DR. J. P. RUNYAN, Little Rock, said that in acute miliary tuberculosis the red marrow of the spongy, as well as the diaphyses of the infantile bones, is involved. The tela ossea proper does not undergo any change. Caries is not a special disease, although frequently the result of tuberculous disease of the bone. It may originate from hematogenous metastasis, or may arise from extension to the bones by continuity from adjoining tuberculous tissue. If due to direct extension from a neighboring focus, it involves the periosteum first. It spreads more rapidly in spongy than in denser tissues. In tuberculosis we find no new formation of bone in the diseased periosteum. In the other acute inflammations the bone forming function of the periosteum usually remains intact.

#### Appendicostomy in Treatment of Amebic Dysentery.

DR. OSCAR GRAY, Little Rock, reported the case of a young woman, aged 23; pulse 110 to 120; temperature 100. He made an abdominal incision; brought the appendix out and stitched it to the surface of the skin; inserted a catheter in appendix well into the bowel. First irrigation was one quart of solution of quinin sulphate, 1:500 rather cold. Subsequent irrigation was carried on with plain ice water. He closed the fistula at the end of the eighth week, but believed it should

have remained open six months. Diet was buttermilk, orange juice, a little broth and albumin water.

#### Rupture of Heart.

DR. M. C. HUGHEY, Knobel, reported a case of rupture of the heart, probably the result of a fisticuff encounter. Patient appeared well after the fight, but experienced a hard rigor the night following. On the third day he had severe headache; that night convulsions set in and death occurred the next day. Postmortem revealed pia mater swollen, inflamed, congested; no other cranial lesion. The pericardium was ruptured and there was a rupture in the right ventricle large enough to admit the little finger of an adult. Query: When did the rupture occur?

#### Medical Advertising.

DR. HENRY THIBAUT, Scotts, criticized severely irregular methods of securing practice by exploiting the laity, circulars, newspaper advertising, "interviews," or otherwise.

#### Cardiac Tonics.

DR. THOMAS HUNT STUCKEY, Louisville, Ky., contributed a paper on the use of cardiac tonics, with special reference to digitalis. In his opinion digitalis stands first; strophanthus, second; spartein, third; caffeine, fourth; strychnin, fifth, and adrenalin, sixth.

#### Intussusception.

DR. ST. CLOUD COOPER, Fort Smith, said that boys are more frequently affected than girls. He recommended a warm enema of sweet oil; inversion of patient, and gentle massage of bowel; after two hours' failure to get relief, laparotomy.

#### Obstipation.

DR. M. C. HOWTON, Osceola, believes that this trouble is, in a large measure, due to irregular stools and praerastination. It is unknown to American Indians, and is rare among the French.

#### Hydrophobia.

DR. J. S. RINEHART, Camden, reported fatal cases and deplored the absence of a Pasteur institute in Arkansas. Early and thorough disinfection of wound is of paramount importance.

#### Sciatica.

DR. G. E. CANNON, Magnolia, considers sciatica usually traceable to pressure, heavy lifting, sudden straining, hard seat in office, continued jolting over rough road, etc. Treatment: Rest and electricity.

#### Examination of Eyes and Ears of School Children.

DR. R. H. T. MANN, Texarkana, urged that every pupil should be examined on entrance: this would aid the teacher in selecting seats; those children with defective vision should be placed near the blackboard; those with poor hearing near the teacher. Inflamed eyes and headaches should be watched carefully for if unchecked they will produce baneful effects.

#### Pancreatitis.

DR. F. B. YOUNG, Springdale, said that pancreatitis is usually concomitant with gall-bladder lesions. It may arise from cholecystitis or complicate mumps: convalescence is tedious. Treatment: calomel, salines, sodium phosphate, and hot water enemata, with tonics in convalescence. Urinalysis did not show sugar in any of twelve cases of pancreatitis combined with mumps.

The following papers also were read: "A State Sanitarium for Tuberculosis," by Dr. C. E. Witt, Little Rock; "A Case of Calcified Fibroma of Ovaries in a Negress," by A. Watkins, Little Rock; "A Case of Abdominal Ectopic Pregnancy," by Dr. R. C. Dorr, Batesville; "Case of Hematocolpos and Hematometra," by Dr. L. E. Willis, Newport; "Perineal Lacerations," by Dr. W. A. Snodgrass, Little Rock; "Three Cases of Eclampsia," by Dr. H. C. Dunavant, Osceola; "An Obstetrical Case," by Dr. A. L. Whitecomb, Rogers; "A Hair Pin in the Uterus: A Case of Hodgkin's Disease," by Dr. C. J. Hughes, Walnut Ridge; "Several Cases of Sarcoma of Kidney," by



Dr. Carl E. Bentler, Little Rock; "Two Hundred Cases of Measles," by Dr. A. L. Carmichael, Little Rock; "Rheumatism," by Dr. M. G. Thompson, Hot Springs; "Sporadic Cases of Diphtheria," by Dr. C. C. Price, Douglas; "Progressive Pneumonia," by Dr. J. M. Stephens, Clover Bend; "Prophylaxis and Treatment of Pneumonia," by Dr. J. W. Melton, Alton; "Treatment of Pneumonia," by Dr. H. H. Niehuss, Wesson; "Malarial Hematuria," by Dr. J. G. Waldrop, Augusta; "Pulmonary Tuberculosis," by Dr. D. C. Walt, Little Rock; "The Unreliability of Heart Murmurs," by Dr. N. S. Word, Camden; "Reminiscences of the Civil War," by Dr. L. J. Wilson, Alma.

#### AMERICAN ASSOCIATION FOR CANCER RESEARCH.

*Meeting held in Buffalo, April 15, 1908, at the New York State Cancer Laboratory.*

*(Continued from page 159.)*

##### A Study of the Proteids of Tumors.

DR. S. P. BEEBE said that the methods of investigation which have been employed thus far in the study of tumor proteids have been faulty in many respects. The whole tumors have been compared to some normal organ and attempts have been made to draw conclusions regarding the relation which tumor proteids bear to those of normal organs. Pure proteids from the two sources have not been compared. Two methods are available for the latter object; viz., the pure proteid may be hydrolyzed by a mineral acid and the hydrolytic products separated quantitatively by the Fish esterification method, or the biological method, as exemplified in the precipitin test, may be tried. The first method is practically ruled out because of the large amount of pure proteid required to get satisfactory results. The second method has been tried in a number of instances during the last two years and the results show that normal organs may be differentiated, and also that tumors may be differentiated from one another as well as from normal organs. The work is still in progress but the indications are that tumors contain characteristic proteids.

##### Further Observations on Immunity in Lymphosarcoma in Dogs.

DR. BEEBE said that the transfusion of blood from an immune animal to an animal with growing tumors will cause the regression of the latter, with subsequent immunity to further implantations of the tumor. The question at once arises: To what extent is the subsequent immunity caused by the transfusion of immune blood, and to what extent may it be due to a change taking place during the regression of the tumors? To get further light on this point, a series of five animals was planted with the tumor and the latter was allowed to develop only to a sufficient extent to demonstrate that the animal was susceptible. At this point they were completely removed and the dog at the same time was given a large transfusion of blood from an immune animal. From a week to ten days later the susceptible animals were again planted with the tumor, with the result that they all gave positive growths. It would seem, therefore, that the regression of the tumor as a result of the action of the immune blood is an essential factor in the development of the subsequent immunity in susceptible animals.

##### DISCUSSION.

DR. H. R. GAYLORD said that these facts conform with the views held by Clowes and himself, that recovery from a tumor is essential to the establishment of immunity. They also tend to show, in his opinion, that transfusion with immune blood in animals acts by inaugurating a process similar to spontaneous regression in tumors. This is the essential difference between the interpretation placed on this phenomenon by Ehrlich and the point of view held by Clowes and himself.

##### Recurrent Liposarcoma of the Kidney.

DR. GUTHRIE McCONNELL reported the case of a man, 44 years old, white, who was admitted to St. Luke's Hospital, St. Louis, Mo., in Dr. H. G. Mudd's service.

About October, 1899, the patient noticed a lump about the size of a hen's egg in the right hypochondrium. It increased slowly in size during the year, becoming as large as a baseball by January, 1900. Eighteen months later, June, 1901, he came to the hospital for operation. At this time there was found a large freely movable cystic tumor filling the abdominal cavity. At the operation the colon was found lying on the left lower portion of the tumor in such a way as to indicate a retroperitoneal origin. The growth was found to surround and closely to incorporate the right kidney. It was yellow in color and resembled a lipoma; was cystic in places and weighed 65 pounds. Microscopically it was a fibro-lipoma with some mucoid degeneration.

The patient was not seen again till January, 1908, at which time a large growth was removed from the right hypochondrium. It weighed 27 pounds, was yellow and gray in color, and was lobulated. Its consistency varied in different places, but was nowhere cystic.

Portions of tissue were taken from three different areas. Section A consists of fat cells surrounded by quite wide bands of a very cellular connective tissue. At the periphery this tissue is firmly compressed and forms a distinct capsule. A small amount of elastic tissue is present in the capsule and around the capillaries.

Section C closely resembles the above, except that it is somewhat more vascular.

Section B consists almost entirely of solid tissue with very small collections of fat here and there. The groundwork of the specimen is composed of a slightly granular translucent material, evidently connective tissue, either edematous or myxomatous in character. The nuclei vary extremely, they differ so widely that it does not seem that they can all be of the same origin. They occasionally occur in groups, giving an impression of being giant cells, but in only a few instances are true forms of them to be seen.

In none of the sections are involuntary muscle fibers or mitotic figures seen.

In the specimens taken from the three different portions of the growth there is found in all instances a peculiar structure. It is composed of a ring of cells consisting of a large amount of protoplasm in which is a large, round, or slightly oval well staining nucleus. The center of the ring is clear, as a rule, and the lining of the lumen consists of the protoplasm of the above cells.

In Section B this structure appears to have been cut obliquely, and the character of the cells is more distinct. The cell is quite large, with a well marked cell wall, within which is a slightly granular protoplasm containing a bluntly oval, quite deep staining nucleus. The lumen is triangular in shape and contains on one side a slightly granular substance, but no blood cells. The appearance presented is that of a tubule lined probably by endothelium, considering the growth to be mesothelial in origin.

The question of origin brings up the subject of hypernephromata. Many of the so-called lipomata of the kidney have proved on microscopic examination to be adrenal rests. There are however many hypernephromata that contain large amounts of fat.

Keenan and Archbold report a case of fatty tumor and come to the conclusion that it is a lipoma resulting from the degeneration and metaplasia of the cells of an adrenal rest. As this tissue is a mesoblastic derivative such a process would seem possible.

In the case here reported the growth recurred and had certain of the peculiarities found in sarcomata.

By starting with the hypothesis that fatty changes are not uncommon in the normal adrenal we establish our premise. The presence of aberrant adrenal tissue, particularly in the neighborhood of the kidney, is a widely accepted fact. The first condition, then, to be expected is a hypernephroma, accompanied by fatty changes of varying degree. Then, as in the case of Keenan and Archbold, the fatty tissue greatly predominates, but here and there are found cellular areas believed to be derived from adrenal tissue. In the case now reported there is only a very slight remnant of early structures, the fatty tissue being overwhelmingly predominant.



Granting the possibility of the degeneration and metaplasia of the adrenal elements into fatty tissue, it would seem allowable to hold that this tumor was in reality a hypernephroma that had taken on a fatty change with a limited malignant tendency.

DR. F. B. MALLORY gave a demonstration of lantern slides used in teaching the histopathology of tumors at Harvard Medical School.

#### So-Called Rhythms of Growth-Energy.

DR. GARY N. CALKINS said that in 1906 Bashford Murray and Bowen published a paper on the experimental analysis of growth in cancer, in which so-called rhythms of growth energy were discussed. To represent these rhythms graphically the authors used for ordinates the percentages of takes upon transplantation and as abscissas the length of time in days taken by the tumors to develop to the point when ready for transplantation. In curves based upon such data there were evidences of more or less definite alternations of greater and less virulence. Similar results were described by Hertwig and Poll in a recent publication on the biology of mouse tumors.

Rhythms in activity of growth are characteristic of all rapidly growing tissues or of free living cells, and might well be looked for in rapidly multiplying cells, such as mouse cancer presents. But the rhythms should occur in the individual tumors and not in successive transplantations, for the factor of infectiveness of the cancer cells as confusing the real growth energy must be taken into account. The so-called rhythms of growth energy, therefore, should be further analyzed and the factors of infectivity and growth energy examined independently. This has been done for two of the tumors of the Buffalo laboratory, one the so-called Brooklyn tumor, the other the Springfield tumor. For comparison, two curves were made for each tumor, one representing the percentage of takes in successive transplantations, the other the rate of growth as measured by the length of time in days from the inoculation to death from cancer of the inoculated mice, in successive transplantations. Here is the real measure of growth energy unaffected by the factor of infectivity. The curves show no relation between the two factors after the tumor is well established, and show, further, that the rhythms described by Bashford Murray and Bowen are rhythms in infectivity and not in growth energy of the cancer cells.

#### DISCUSSION.

DR. LEO LOEB said that the differences between the curves representing the energy of growth and the inoculability of tumors were very interesting. He had had occasion in several publications to point out such differences and to draw attention to the fact that these differences are not favorable to Borrell's hypothesis in regard to cell growth. It was especially important that Dr. Calkins had been able to demonstrate that Bashford's rhythmical curves apply merely to the inoculability of tumors and not to the rate of growth.

In regard to Dr. Calkins' remarks about the possible duration of life of somatic cells, he would state that he had started experiments on this point about two years ago. The experiments had had to be temporarily discontinued but he hoped soon to be able to resume these investigations.

#### Laboratory Experiments on the Causation of Cancer.

DR. H. R. GAYLORD reported: 1. Transplantation results in 23 spontaneous tumors, all cancers of the breast in mice obtained from the same breeding establishment. Sixteen did not produce tumors in the first generation; 4 produced tumors in the first generation but did not transplant; 1 transplanted to the third generation; 2 of the 23 are still running.

2. Transplantation of established tumors into mice with spontaneous tumors. Bashford and Borrell have reported experiments of this sort, in which animals already suffering with spontaneous tumors were inoculated with spontaneous tumors or established transplanted tumors. Six mice with spontaneous tumors inoculated with established transplantable tumors gave six positive results. Four mice with spontaneous tumors inoculated with spontaneous tumors from other mice gave in each case a negative result. These results tend to confirm the con-

clusion of Bashford that mice suffering from spontaneous tumors are not in a condition of unusual susceptibility.

3. Experiments to control the observations of Schöne on the production of immunity by the injection of embryonic tissue into mice. Attempts were made to immunize 73 mice by repeated injections of mouse embryos and liver tissue, following carefully the method of Schöne. As control for these experiments 35 direct inoculations were made. Animals which received injections of embryonic tissue gave 51 per cent. of successful inoculations, controls 20.2 per cent.

4. Experiments with spindle celled sarcoma of the rat (primary sarcoma of the thyroid), designed to repeat the observations of Flexner and Jobling on the sensitization of animals before inoculation with tumors. Tumor used was in the fifteenth generation of transplantation, and showed an average infectivity of 15 to 30 per cent. The experiments were divided under three heads: Tumor material heated at 50 C. for one hour; at 56 C. for one hour, and 59 C. for one hour. Results of injecting rats with tumor material heated to 50 C. were as follows:

Five sensitized rats inoculated 3 days after sensitizing gave 4 tumors, 5 control rats 3 tumors.

Five sensitized rats inoculated 10 days after sensitizing gave 2 tumors, 5 control rats 3 tumors.

Five sensitized rats inoculated 16 days after sensitizing gave 1 tumor, 5 control rats 4 tumors.

Five sensitized rats inoculated 32 days after sensitizing gave 3 tumors, 5 control rats 3 tumors.

Five sensitized rats inoculated 38 days after sensitizing gave 1 tumor, 5 control rats 4 tumors.

Results of injecting rats with tumor material heated to 56 C. were as follows:

Five sensitized rats inoculated 6 days after sensitizing gave 1 tumor, 5 control rats 1 tumor.

Five sensitized rats inoculated 13 days after sensitizing gave 2 tumors, 5 control rats 3 tumors.

Five sensitized rats inoculated 19 days after sensitizing all died, 5 control rats gave 2 tumors.

Tumor material heated to 59 C. gave following results:

Ten sensitized rats inoculated 11 days after sensitizing gave 3 tumors, 10 controls no tumors.

Five sensitized rats inoculated 21 days after sensitizing gave 2 tumors, 5 controls all died before tumor development possible.

Ten sensitized rats inoculated 38 days after sensitizing gave 1 tumor, 5 controls no tumors.

Five sensitized rats inoculated 52 days after sensitizing gave 2 tumors, 5 controls no tumors.

Five sensitized rats inoculated 63 days after sensitizing gave 1 small tumor, 5 controls 1 small tumor.

Seven sensitized rats inoculated 84 days after sensitizing gave no tumors, 5 controls 2 tumors.

From these results the reporter finds that with the Buffalo spindle cell sarcoma of the rat it has not been possible to demonstrate any sensitizing effect or any definite influence, as the result of injecting heated tumor material before inoculation.

5. Further report on a breeding establishment in Massachusetts where cancer of the breast in mice is endemic. This is the same establishment which was reported in Toronto, in 1906, and in November last at the meeting of the Association for Cancer Research. From June 1, 1906, to Nov. 15, 1907, this breeder had raised, according to her own approximation, 7,500 mice. During the same period she sold to this laboratory 53 tumor mice, to other investigators 16; and 6 had died, making a total of 75 tumor mice. Since Nov. 15, 1907, the laboratory has received from her 24 tumor mice, and based on the same approximation she has raised since that time 1,700 mice. On the basis of several thousand animals examined, Bashford has estimated the incidence of cancer in mice at 1 in 3,500. The occurrence of cancer in this establishment is more than 1 in 100, at least 35 times more frequent than the average, according to Bashford.

6. Experiments directed to the control of Moore and Walker's experiments on the resistance of mouse tumors to freezing with liquid air at a temperature of  $-195^{\circ}$  for a period of from 20 minutes to half an hour. To control this observation we used an active transplantable mouse tumor, dividing it into equal portions, freezing one portion 40, and the other 80, minutes. Tumors developed after each of these periods of freezing as follows: Nine mice inoculated with material frozen 40 minutes gave two tumors; 14 mice inoculated with material frozen 80 minutes gave two tumors. Five controls inoculated directly gave five tumors.

From each series six mice were killed on, respectively, the third, fifth, seventh, tenth, thirteenth and eighteenth days. All of these failed to show any evidence of proliferation in the in-



jected cancer epithelium with the exception of one, a mouse inoculated with material frozen 40 minutes and removed on the eighteenth day. Four controls, removed, respectively, on the fifth, seventh, thirteenth and eighteenth days, showed rapidly proliferating and infiltrating tumors. Of the tumors which were allowed to develop to maturity, one, material frozen 40 minutes, made its first appearance 17 days after inoculation. Tumor grew for this period of time, retrograded, ultimately began to grow again, and at date, three months after inoculation, it is growing slowly and is about the size of a hazelnut. In the series where the material was frozen 80 minutes three tumors developed. They appeared, respectively, in 21, 21 and 39 days after inoculation. Two retrograded, and one, that appearing latest, grew with great rapidity, the animal dying from the tumor in 54 days after inoculation. The two controls which were allowed to develop, developed rapidly growing tumors of great size, which killed in 23 days after inoculation. It will thus be seen that freezing with liquid air for so long a period as 80 minutes does not prevent the development of tumors. The number of successful inoculations is, however, markedly reduced, the tumors appear later, tend to retrograde, and show in every particular lessened vitality. As control, were used young mouse embryos removed aseptically, chopped fine, frozen for 20, 40 and 80 minutes with liquid air, injected subcutaneously through a coarse needle with syringe, with the result that evidence of growth could be found in the controls but in none of the implantations made with frozen material could undoubted evidence of growth be determined. For further control was used the spleen from animals infected with *Trypanosoma gambiense*. This organism had reached a state of virulence by which it killed inoculated animals in three days. Material frozen for 20 minutes with liquid air produced the disease in inoculated animals, killing them in nine days. The organisms were found in the spleen, other organs and in the circulation. Material containing the organisms frozen for 40 minutes and for 80 minutes gave negative results. The tumors which developed from material frozen with liquid air for the periods mentioned, present the histological characteristics of the transplanted tumor from which the material was taken. The reporter holds that these experiments demonstrate the great resisting power of cancer cells to low temperatures and can not agree with Moore and Walker that these experiments demonstrate the presence of a virus, although he believes in the existence of such a virus.

#### Observation on the Inheritance of the Susceptibility to an Inoculable Tumor.

DR. E. E. TYZZER reported from the laboratory of the Caroline Brewer Croft Fund Cancer Commission of Harvard University that an adenocarcinoma which occurred spontaneously in a Japanese waltzing mouse was successfully inoculated into other mice of the same variety. This tumor has been propagated for nearly a year and a half by transplantation from mouse to mouse. It is characterized by its slow rate of growth and the ease with which it is transplanted in waltzing mice. It grows in practically 100 per cent. of the waltzing mice inoculated, but has not grown in a single instance after inoculation into common tame mice.

Since waltzing mice may be bred with common mice, it seemed desirable to determine how the susceptibility to this tumor is inherited. The first experiment has afforded results of such a nature as to make it important to investigate further along this line.

Hybrids were obtained by mating Japanese females with common males. These hybrids resemble common mice, and do not waltz. For the first experiment the transplantable tumor in question was inoculated into ten Japanese mice, ten hybrids of the sort just described, and ten common mice. In the ten Japanese mice the tumor grew slowly in the usual manner, in the ten hybrids it not only grew in all, but its rate of growth was much more rapid, while in the ten common mice it failed to grow and became wholly absorbed. Thus the hybrids obtained by mating susceptible Japanese females with nonsusceptible common males are fully as susceptible as the pure Japanese mice. The remarkable feature of these results is that the growth of the tumor in the hybrids outstripped its growth

in the Japanese mice in every case. There is a possibility, however, that this difference is to be explained on the basis of a difference in the amount of nutrition afforded the tumor by the two sorts of mice.

The next point to be determined is whether hybrids derived from Japanese males and common females are susceptible. The subject may be also attacked from another side, by employing the inoculable tumors of the common mouse in a similar series of experiments. Several such series of inoculations have already been made, so that it is now only a matter of time before it will be determined whether the susceptibility to a given inoculable tumor is inherited according to Mendelian principles or in some other manner.

#### Relation of Simple and Mixed Tumors of the Testicle.

DR. JAMES EWING said that the common malignant tumors of the testicle present in very clear light some of the important principles of the theory of cell autonomy. There are several rather distinct histological varieties of these tumors.

1. A rather slowly growing circumscribed solid tumor of teratomatous character, exhibiting derivatives of one or more embryonal layers, such as connective tissue, muscle tissue, cartilage, stratified squamous epithelium, hair, enamel organs, cystic spaces lined by cuboidal or ciliated epithelium, and occasionally nervous elements.

2. Malignant tumors composed of large, round or polyhedral cells, diffusely arranged and variously designated as carcinoma, alveolar sarcoma, or endothelioma.

3. Malignant tumors composed of complex anastomosing systems of large polyhedral cells inclosing blood sinuses or small cavities or alveoli, with cellular stroma resembling sarcoma. The formation of syncytial masses with peculiar vacuolation occurs in some of these tumors and they produce polypoid hydatidiform metastases in blood vessels. These facts led to the suggestion, first by Schlagenhauser, that this class of growths is the analogue of chorioma in the female.

Numerous plans for classification of these tumors have been suggested, the latest being that of Debernardi (Ziegler's Beiträge, 1908, xliii, 89), who believes that the complex tumors form two distinct groups: (a) True teratomata, containing tissues and organs which require involvement of all three germ layers in their origin; and (b) less complex teratomata, or mesodermal mixed tumors, whose structure seems to require the involvement of mesoderm only. Yet Wilms was inclined to suppose that all three germ layers were involved in both these groups.

Choriomatous characters have been observed in portions of the complex tumors, so that their teratomatous nature is evident.

Coming to the simpler carcinomata, sarcomata, and endotheliomata, their relation to the teratoma has not been determined, and considering their relatively simple structure, it would be natural to suppose that they originate from simple groups of cells, or even from the epithelium of the tubules. There is, however, an impression based on the general history and embryonal character of the cells of these simple tumors, that they are in some way connected with the teratomata, but this impression has been in need of the support of definite observations. Ribbert refers, however, to cases of testicular tumors in which teratomatous and carcinomatous structures were combined, and he expresses the opinion that the simple malignant carcinoma or sarcoma of the testicle is usually a one-sided development of a teratoma. It is in support of this view that the following case is reported:

In the specimen, for which the author is indebted to Dr. Samuel Alexander, appearances were found which indicate that the usual forms of carcinoma of the testicle, as well as the so-called chorioma, are merely rapidly growing tumors of highly complex origin, in which one or another element gains ascendancy and suppresses the development of other elements which, under other circumstances, may go on to produce the complex structures of the true teratoma. In this case the tumor was secured very early, the growth, consisting of a rounded, circumscribed mass, 1 cm. in diameter, with a single outlying nodule  $\frac{1}{2}$  cm. in diameter. These lay in the body of the testicle. In the larger mass three distinct structures ap-



peared. (1) A diffuse growth of large cells of the type seen in the so-called pure carcinoma or endothelioma of the testis; (2) characteristic chorioma of Schlagenhauser; (3) cystic cavities lined by columnar epithelium, such as are seen in the complex teratoma. The outlying nodule was composed exclusively of the carcinomatous structure. There was every indication that if this small complex tumor had been allowed to grow it would have produced a tumor composed of an increasing proportion of the carcinomatous element, and that the other elements, especially the epithelial lined cysts, would have been suppressed. At such a stage the tumor would have to be classed as a simple carcinoma or alveolar sarcoma; or, if the main growth were confined to the large epithelial masses which sometimes take on syncytial characters, the result would be a large cell alveolar carcinoma, which is not an uncommon type of tumor in the testis.

If this conclusion is correct, as the author believes it to be, then one must suppose that this entire group of testicular tumors, from complex teratoma to diffuse large cell carcinoma or sarcoma, has essentially one origin, viz., a misplaced cell group or tissue mass resulting from one definite and frequently recurring accident in the course of development of the testicle. This hypothesis places no limitations whatever on the variations in the period at which the embryological accident occurs, or in the composition of the misplaced tissue, or in its capacity for subsequent growth, but merely emphasizes the common genesis of a large group of tumors of very diverse histological structure. It may also slightly strengthen the application of Cohnheim's theory in a single field.

There are other tumors of the testicle besides the above series, but they are much less common. One of these arises from the interstitial cells, but this growth has nothing in common with the teratoid group. It is possible that tumors may arise from the adult epithelium of the tubules, but the author has never seen, except in the dog, any which suggested this origin.

In the case here reported the interstitial cells showed a remarkable degree of hyperplasia, appearing between many tubules as sheets of tissue, 10 to 30 cells in breadth. Many of these cells were of unusual size and contained an excessive admixture of granules, staining poorly with eosin, indicating a functional hyperplasia. These appearances, together with a well developed structure resembling chorioma, might suggest that here was a parallel between chorioma of the uterus with hyperplasia of the lutein cells and chorioma of the testicle with hyperplasia of the interstitial cells. In a comparison of this case with other teratoid tumors of the testicle and with normal testicles the author was unable to obtain any definite support in favor of this hypothesis for he found that the development of interstitial cells varies greatly in different animals, and in different portions of the same testicle in man and dog.

It is only possible to state, therefore, that this particular teratoma of the testicle with pronounced choriomatous characters was associated with marked hyperplasia of the interstitial cells. In one other case of large cell alveolar carcinoma of the testis with many vacuolated syncytial masses he has found the same hyperplasia of the interstitial cells.

## Medicolegal

### Landlord not Liable for Requiring Person with Erysipelas Staying with Janitor to Leave.

The Supreme Court of Michigan says, in the case of *Tucker vs. Burt*, that while the plaintiff was caring for her young son, who was taken ill in rooms occupied by her son-in-law as janitor of a building, she was taken ill with erysipelas. It was not regarded by the physician as a very serious case. But he told the tenants in the building that the disease was infectious, and warned them to be careful. Finally, the defendant, the owner of the building, having learned, on a Sunday, of the plaintiff's illness and the infectious character of it, notified the janitor that he must take the plaintiff out of the flat. The janitor said he would try and see what he

could do about having her removed before Monday afternoon. On the following forenoon the defendant called the janitor by telephone, and informed him that he must get the plaintiff out by noon, or he would bring an officer and put them all out. The janitor communicated this message to the plaintiff. The plaintiff then left the place, and afterwards brought this action to recover alleged damages. She introduced evidence tending to show that she was worse after leaving the defendant's premises. When she rested her case the trial judge directed a verdict for the defendant, on the ground (1) that the defendant had violated no duty which he owed to the plaintiff; and (2) that there was no evidence that her physical condition after she left was traceable to the alleged wrongdoing on the part of the defendant.

In affirming the judgment of the lower court, the Supreme Court says that the question here involved was one of legal, not of moral obligation. The law imposes no duty on the individual citizen to care for the sick or the unfortunate who are poor. The public in this country assume that obligation, and each citizen has performed all that the law requires of him when he has paid his share of the expense imposed on him by taxation for that purpose.

The Priest and Levite violated no rule of law when they passed by on the other side of the wounded man. The Good Samaritan was not acting in obedience to a legal duty when he took compassion on him, took care of him, and removed him to the inn.

What legal duty, if any, did the defendant owe the plaintiff? Unless the law imposed the duty on the defendant to shelter her and her son in his house, it was clear that he could not be held liable. The janitor was the defendant's employé, not his tenant. He possessed none of the rights of a tenant. He had no right to bring into his employer's house to live with him any one, whether well or ill, without his employer's assent. The defendant had not invited the plaintiff to his house, neither had he authorized his employé to do so. The disease was infectious and dangerous to the tenants in the house, especially, perhaps, to one woman, who shortly before had given birth to a child. The physician had notified the tenants of the danger. The defendant was under no obligation to keep the plaintiff in his house if she could be removed, without danger of serious injury. He might lawfully request those who were responsible for her being there to cause her removal. He might not, neither did he, turn her into the street. He first requested his employé to cause her removal. When that employé failed he insisted and threatened to take prompt legal steps with an officer to accomplish it.

The plaintiff was not confined to her bed. There was testimony to show that the defendant knew that the plaintiff had a house of her own, but none to show that he knew where it was located. There was no evidence to show that she might not with comparative safety have been taken to her home in a cab or hack without danger. But, even if there was some danger incident to her going, there was also danger to the other occupants of the house incident on her remaining, and it was as much the legal duty of the defendant to look out for them as to look out for her.

Whatever aggravation of illness was caused in consequence of the plaintiff's removal, the physicians agreed that it was due more to excitement than to any other cause. There was no evidence from which the defendant might have inferred that such a result would follow, or that he had any intimation that the removal would excite the plaintiff, or that the excitement would aggravate her illness. The defendant was guilty of no legal wrong.

### Injuries from Fright and Indirect Physical Impact.

The Court of Appeals of Maryland says, in *Philadelphia, Baltimore & Washington Railroad Co. vs. Mitchell*, a personal injury case brought by the latter party, that the weight of authority, both of text-books and decided cases, supports the view that there can be no recovery of damages for mere fright or mental suffering, caused by negligence, unconnected with physical impact or injury. This conclusion has generally been reached in reliance on the remoteness of the damage as well as the inexpediency of opening the door to claims



difficult of precise proof or disproof, and from their nature easy of simulation and liable to exaggeration. Many of the cases hold not only that there can be no recovery of damages for mere fright without impact or injury, but also that there can be none for actual physical injury resulting from such fright because such results are merely evidence of the degree of the fright or the extent of the damages resulting from that cause. From the last-mentioned proposition there has been a positive dissent in some recent cases which hold that there can be a recovery for physical injuries which are shown to be the natural and proximate result of mere fright caused by negligence, provided there be an unbroken connection between the negligent act and the injury without the agency of any intervening and independent cause. And whether the evidence establishes such an unbroken connection has been held to be generally a question for the jury.

But the court holds that there was in this case sufficient evidence to go to the jury of such physical impact and injury to the plaintiff contemporaneous with her fright as to take the case out of the classes referred to. She testified that while walking under an overhead bridge in the course of construction a hammer fell and struck her umbrella and she threw herself away from it and felt something tear in her side. By the time she got home she was suffering much pain and was compelled to lie down at once. She continued to suffer greatly, and on the next day, spit five or six large mouthfuls of blood. In a few days she was compelled to go to bed and remain there for about three weeks, and was ever afterwards in poor health and subject to frequently recurring spells of violent internal throbbing, which incapacitated her from performing her ordinary domestic duties. She also testified to having been in an early stage of pregnancy when injured, and to having suffered a miscarriage five days thereafter. There was also the testimony of four physicians who had attended or examined her professionally after her injury, tending to show that she had an aneurism of the abdominal aorta of a serious and incurable character, which was first recognized about a week after her injury and might have been caused by it.

The court holds that the striking of the umbrella in her hand by the falling hammer constituted a physical impact. While the physical impact or injury requisite for the purpose under discussion must be actual, it need not be such as to occasion an external wound or bruise. Indeed, it is not necessary that the person of the individual injured in such cases be struck. It is sufficient if the blow fall on the clothing worn by him, or even on the vehicle in which he is riding.

## Current Medical Literature

### AMERICAN.

#### Boston Medical and Surgical Journal.

July, 2.

- 1 Theodore Tronchin, 1709-1781. F. C. Shattuck, Boston.
- 2 \*Unusually Extensive Milk-Borne Outbreak of Typhoid. C. Harrington, Boston.
- 3 A Glomerular Lesion of Experimental Nephritis. H. A. Christian, Boston.
- 4 \*Menace of the Swimming Tank. C. M. Cobb, Boston.
- 5 Alphamonobrom-Isolvalerylurea. A New Nerve Sedative and Somnifacient. (Concluded.) W. H. Porter, New York.

2. **Milk-Borne Typhoid.**—Harrington gives an account of an epidemic of typhoid that broke out March 31, 1908, in Jamaica Plain, which had been free from the disease for many months. In about six weeks no fewer than 410 cases were reported. The milk supply was early suspected and investigated. Of the 410 cases, in 348 primary and in 23 secondary cases the individuals were supplied by dealers F. and Q. In common with eight other milkmen, F. and Q. obtained their supply from the car of a contractor who derived his particular carload from eight towns, in none of which had typhoid occurred during the preceding three months. Investigation of this dairy showed no sickness there, and no sickness had arisen in other places supplied by it; the infection, therefore, did not arise there. The milkman F., however, who had been ailing since March 20, was found on April 2 to be suffering from typhoid, and the

diagnosis was confirmed at autopsy on April 10. This adequately explains the typhoid in the train of F.'s milk supply, as he had been handling the milk himself up to April 2, when he took to his bed. It is suggested that the contamination of Q.'s supply may have resulted from the fact that F. and Q. returned their cans only washed but not sterilized to the car, and that an interchange of cans may repeatedly have taken place, for there was nothing to prevent Q. from subsequently receiving cans that had formerly been supplied to and handled by F.

4. **Ethmoiditis and Otitis from the Swimming Tank.**—Cobb warns against the danger of diving in swimming tanks, whereby cases of ethmoiditis and acute otitis media are not infrequently transmitted. He reports three cases in support of his view.

#### New York Medical Journal.

July 4.

- 6 \*Dissecting Aneurism of the Aorta and Pulmonary Artery Following Rupture of the Arch of the Aorta. L. Brown, Saranac Lake, N. Y.
- 7 \*Relation of Locomotor Ataxia and Paresis. J. R. Hunt, New York.
- 8 Glioma of the Brain. E. E. Mayer and F. Proescher, Pittsburgh, Pa.
- 9 Light in the Treatment of Disease as Used at Boulder Lodge Sanatorium, Fort Dodge, Iowa. J. W. Kime, Fort Dodge, Iowa.
- 10 \*Another Method of Regulating Pressure in the Bier Treatment. R. Grace, New York.
- 11 Broken Jaws. D. B. Frenndlich, New York.
- 12 Treatment of Tuberculosis of the Upper Air Passages. J. W. Gleitsmann, New York.
- 13 Postdiphtheritic Multiple Neuritis with Vesical Involvement. C. D. Camp, Ann Arbor, Mich.

6. **Dissecting Aneurism of the Aorta and Pulmonary Artery.**—Brown reports a case of rupture of the arch of the aorta in which the usual course of the blood along the thoracic and abdominal aorta was interfered with, probably by certain scars on the transverse and descending portions of the aorta, so that the blood was forced toward the heart and along the pulmonary artery. Why it pursued this course instead of following the vessels of the neck is difficult to state.

7. **Locomotor Ataxia and Paresis.**—Hunt considers that there is no question concerning locomotor ataxia of greater importance than the relation which this affection bears to general paralysis of the insane. The importance is not merely clinical, but bears also on the nature and the etiology of both diseases. He confines his remarks to the combinations of the two diseases and the nature and significance of the so-called tabo-paresis, which he discusses as regards its clinical type and pathology. He further considers the relation of locomotor ataxia with other psychoses—paranoia, manic-depressive insanity, dementia præcox, and various mental states following drug addictions. He concludes that tabes dorsalis, dementia paralytica, and the combined form of the two affections, all have the common etiologic factor of an antecedent syphilis. The pathologic alterations in the cerebral cortex and the spinal cord are essentially the same in both the isolated and the combined forms. The clinical combinations of tabes and paresis are so varied and so numerous that a gradual transition may be traced from locomotor ataxia, on the one hand, to general paralysis of the insane on the other. In fact, it may be said that the more our knowledge of these parasymphilitic affections of the brain and spinal cord increases, the more significant appears their combination, and the stronger becomes the tendency to regard them all as essentially of the same nature and origin.

10. **The Bier Treatment.**—Grace describes, with an illustration, a method of using Bishop's hydrostatic sphygmomanometer for regulating pressure in the Bier treatment.

#### Medical Record, New York.

July 4.

- 14 \*Miracles at Tomb of B. François de Paris. J. Collins, New York.
- 15 Recurrent and Abductor Paralysis of the Larynx. J. W. Gleitsmann, New York.
- 16 Dietetic Treatment in Dilatation of the Esophagus. M. Eichhorn, New York.
- 17 Inflammation of the Circumflex Nerve. C. F. Disen, Minneapolis.
- 18 Cerebrospinal Meningitis Treated with Antimeningitis Serum. H. N. Moeller, New York.
- 19 \*Collapse After Injection of Diphtheria Antitoxin. F. L. Taylor, New York.



14. **Miracles at Tomb of François de Paris.**—Collins relates a series of the miracles reported by de Mongeron as having occurred at the tomb of François de Paris in the early part of the eighteenth century, and shows how explicable they are in the light of modern knowledge. Mongeron's work, "*La Vérité des Miracles opérés à l'intercession de M. de Paris et Autres Appelés démontrée contre M. l'Archevêque de Sens*" (Paris, 1737-1741), "contains the most graphic accounts of major hysteria that have ever been depicted by the hand of a layman. . . . Taken altogether, they depict practically every form of physical incapacity and disorder which are now called the stigmata of the disease." Collins reproduces several of the more notable miracles, with the accompanying illustrations from Mongeron's work. He concludes with an account of the "convulsionists."

19. **Collapse After Injection of Diphtheria Antitoxin.**—Taylor reports a case in which the injection of 6,000 units of antitoxin was followed in ten minutes by tingling and numbness of extremities, cough, ghastly pallor, cyanosis, rapid and feeble pulse, absolute stoppage of breathing and unconsciousness, with rigidity, throat rattle and clammy sweat. Recovery took place under artificial respiration and hypodermic injections of atropin and strychnin, and was accompanied by diffuse erythema and giant urticaria. There was slight recurrence of some of the symptoms on the following three days.

#### Lancet-Clinic, Cincinnati.

June 27.

- 20 Race Suicide: Quantity or Quality—Some Economic Suggestions. E. E. McGriff, Portland, Ind.
- 21 Race Suicide: The Mothers' Side of the Question. E. Charles, Summitville, Ind.
- 22 Modern Conception of Tuberculosis and Its Treatment. B. F. Lyle, Cincinnati.
- 23 Limitations of the Laboratory in Medical Colleges. C. F. Hegner, Cincinnati.

#### Journal of Infectious Diseases, Boston.

June.

- 24 \*Specificity of Opsonins in Normal Serum. L. Hektoen, Chicago.
- 25 \*Interaction of Thermolabile and Thermostabile Opsonic Substances in Normal Serum. H. E. Eggers, Chicago.
- 26 Opsonic Index in Erysipelas. R. Tunncliffe, Chicago.
- 27 Phagocytability of Pneumococci in the Sputum in Pneumonia. E. A. Graham, Chicago.
- 28 \*Treatment of Gonococcus Arthritis by Injections of Dead Gonococci and the Clinical Reaction Which Follows the Injections. E. E. Irons, Chicago.
- 29 Nature of Opsonic Immunity. A. W. Sellards, Baltimore.
- 30 \*Amebas in the Intestine of Man. C. F. Craig, U. S. Army.

24. **Opsonic Specificity.**—Hektoen's results indicate that the opsonins for bacteria and for red corpuscles in human, rabbit and dog serum may be distinct substances, at least in part, and that normal serum may contain several more or less distinctly specific opsonins for alien red corpuscles. Absorption experiments with heated serum give results that point to the thermostatic opsonic elements in normal serums as the carriers of the specific affinities. Following the injection of antigen there is a specific fall in the index, even when determined with heated serums. The claim that normal serum contains specific opsonic substances is supported by the demonstration that soon after infection or inoculation there occurs a fall in the opsonic index, which is specific for the infecting or inoculated microbe. This specific depression of the index in acute infections must be regarded as the result of infection rather than as an antecedent condition favoring infection, as suggested by certain writers. The presence in normal serum of several more or less specific opsonic substances, and the specific depression of the opsonic index on the entrance into the body of the antigenic material, accord well with the conception that on immunization there is called into existence an increase in the quantity of certain chemical agents which are already preformed in the body.

25. **Opsonic Substances.**—Eggers verifies the observation of Dean and others, to the effect that diluted fresh normal serum may increase greatly the opsonic power of heated serum. In a large percentage (75), however, of the different sera examined, intractable thermostabile elements were found, at least with respect to pneumococcus.

28. **Gonococcal Injections in Gonococcus Arthritis.**—In chronic cases of gonococcus arthritis the mechanism of immunity fails to rid the body of gonococci which persist either in the original lesion or elsewhere, and cause now and again new points of localization. In such cases the injection of dead gonococci may cause a clinical reaction, constitutional as well as local, not unlike the tubercular reaction, and one which probably will prove of much diagnostic value. As a rule, this reaction is followed by a period of improvement. Irons points out that repeated injections of the same dose—100 to 500 million dead gonococci—are followed by less and less marked reaction, and this fact is a strong argument in favor of concluding that the injections hasten the development of immunity. In full accord with this conclusion is the further fact that in a number of cases injections of dead gonococci were of distinct therapeutic value. While Irons is conservative, and recommends that many further series of cases be studied before final opinion is drawn, the results present warrant the statement that, at least in certain cases of gonococcus arthritis, recovery is hastened by the injection of dead gonococci. At the same time marvelous cures should not be expected, and rest, aspiration of distended joints, massage of the prostate and other surgical and hygienic means should be employed.

30. **Intestinal Amebas.**—In a note Craig criticizes the conclusions of Walker who said (*Jour. Med. Research*, 1908, 17, p. 379) that Schaudinn's classification was incorrect. According to Craig, Walker, studying cultural forms only, had no right so to conclude.

#### University of Pennsylvania Medical Bulletin, Philadelphia.

May.

- 31 Undergraduate Medical Association, Univ. Penna., President's Address. O. H. P. Pepper, Philadelphia.
- 32 Opsonic Therapy in Tuberculosis of Bones and Joints. H. B. Miller, Philadelphia.
- 33 \*Determination of the Excretory Efficiency of the Kidney. H. J. Howard, Philadelphia.
- 34 Diagnosis and Treatment Based on Visceral Reflexes. M. A. Murray, Philadelphia.
- 35 \*Blood Pressure in Eclampsia. R. C. Davis, Philadelphia.
- 36 Psychotherapy. L. B. Allen, Philadelphia.
- 37 Case of Intermittent Lameness. J. A. Kolmer, Philadelphia.
- 38 Policephalitis Superior. Report of Case with Autopsy. E. B. Krumbhaar, Philadelphia.
- 39 Histologic Changes in Endometrium Incidental to the Menstrual Cycle. G. L. DeWald, Philadelphia.
- 40 Study of the Bile in the Experimental Production of Colitis in Animals. G. J. Saxon, Philadelphia.
- 41 Etiology of Empyema. A. I. Murphy, Philadelphia.
- 42 Lengthening Shortened Bones of the Leg by Operation. P. B. Magnuson, Philadelphia.

33. **Excretory Efficiency of the Kidney.**—Howard describes the method devised by Sir Almroth Wright based on Koranyi's theory of renal efficiency, for testing the blood and urine, and tabulates the results of a series of thirteen physiologic and pathologic cases in which this method was used. He concludes that salt retention is shown by the excretory quotient method; that this method is superior to that of testing for albumin, and possesses the following special advantages: 1. It may assist in differentiating between a physiologic and a pathologic albuminuria. Life insurance examiners may find it of special value. 2. It may help us to ward off the onset of true nephritis by giving an early diagnosis. 3. It may be an advantage in arranging a patient's diet. 4. In case of kidney disease we may inform ourselves at any time as to the condition of renal excretory efficiency.

35. **Blood Pressure in Eclampsia.**—Davis arrives at the following conclusions: In all cases of eclampsia there is a marked elevation of blood pressure. Under treatment when a fall in blood pressure is noted, there is also seen a fall in the amount of albumin. The most efficient agencies for reducing blood pressure have been found to be vapor baths, puncture of the membranes, nitroglycerin and venesection. The most successful factors in the treatment of eclampsia have been found to be the blood pressure depressors and toxin eliminators.

#### American Journal of Surgery, New York.

May.

- 43 \*Modern Aspects of the Cancer Problem. R. Park, Buffalo.
- 44 Simplified Equipment and Management for the Operating Room. W. S. Schley, New York.
- 45 Roentgen Ray in Dermatology: Truth and Fallacy Concerning X-Ray Dermatitis. A. C. Geyser, New York.



- 46 Submucous Operation on the Nasal Septum, with Plea for More Rapid Technique. J. E. Mackenty, New York.  
47 Blood Examination in Surgical Diagnosis; Study of Scope and Technic. I. S. Wile, New York.  
48 Rectal Don'ts. J. M. Lynch, New York.

43. **The Cancer Problem.**—Park discusses the history of the various views as to the nature of cancer; that it is due to local inflammation, to heredity, to embryonal remains, to traumatism. These have all been found absolutely unsatisfactory and should be discarded. The intrinsic theory, which attributes it to cellular action, fails to explain the essential features. Park insists that cancer and the so-called cancer cells are to be explained on the theory of some extrinsic cause. He insists on a parasitic theory. He refers to its much greater prevalence among women, and insists that there is a real and not a seeming increase in cancer. In Buffalo, every house in which cancer deaths have occurred is noted, and it is found that in numerous instances several deaths from cancer have occurred in the same house. He insists that the disease is actually contagious; in evidence of which he notes such instances as the development of cancer along the tract of a trocar that has accidentally wounded a cancerous liver in paracentesis for ascites, and linear scar cancers, when a knife that has touched cancer tissue is used in healthy parts. Transmission takes place in surfaces constantly in contact. He refers to inoculation experiments, especially those at the Butler Laboratory. There is absolutely no special carcinoma cell, he asserts; the parasites of cancer seem to be practically omnipresent. He enumerates the possible courses of transmission through contact with our neighbors. The very term metastasis implies that some infectious element is transported from one part of the body to another. The theory by which the cancer cell is erected into being its own parasite is far more revolutionary, and taxes the imagination far more than the theory which seeks to find the explanation in some extrinsic agent and which is already receiving such striking corroboration from both clinical experience and the experimental laboratory. Cancer begins as a result of local conditions. It may be that there are several organisms capable of producing it. Cancer, with all its local characteristics and its fatal termination, is a disease without a symptomatology of its own. The finding of a tumor is the first sign, in cancer of the stomach, for instance, not a symptom. The symptoms are not distinctive of cancer. He believes that it would be far better if condemned murderers could be subjected to legitimate experiments—such as have been made with animals, for instance, into the production of retrocession of malignant tumors—than to electrocute them.

#### Yale Medical Journal, New Haven.

May.

- 49 Medical Treatment of Cystitis. F. H. Reilly, New Haven.  
50 \*Infantile Scurvy. H. M. Steele, New Haven.  
51 Examination of Venereal Patients. E. Bishop, Brooklyn, N. Y.

50. **Infantile Scurvy.**—Steele reports a number of cases supporting the view that a prominent factor in the causation of infantile scurvy consists in the use of dried, devitalized, proprietary infant foods, and to the fact that the knowledge of the danger of bacteria in milk has led to boiling and sterilization.

#### Albany Medical Annals.

May.

- 52 Two Cases of Acute Ascending Paralysis, of the Type of Landry, with Recovery. H. C. Gordinier, Albany.  
53 The Bier-Klapp Suction Method as an Aid to Treatment in Suppurative Conditions of the Neck. J. M. Berry, Troy, N. Y.  
54 Relation of the General Practitioner to the Specialist and Laboratory Worker. R. H. Irish, Troy, N. Y.  
55 \*Observations Made in 300 Consecutive Cases of Severe Traumatism with Especial Reference to Fractures. A. Holding, Albany.  
56 Personal Experiences of a Patient in a Hospital for the Insane.

55. **Traumatism with Reference to Fractures.**—Holding summarizes 300 cases of traumatism, 87 per cent. being complicated with fracture. He calls attention to the following points: 1. The inadequacy of routine methods of treatment of fractures according to their location, without knowing the exact shape and position of the fragments and allowing for the distortion of muscular spasm. 2. It is noticeable that the more perfect

the coaptation of the fragments, the less is the amount of the callus. 3. Neglect of proper approximation leads to non-union, and skiagraphy would not only enable one to avoid non-union in a majority of cases, but a skiagraphic examination will frequently enable the surgeon to overcome the non-union by modifying the position of the parts so as to allow the fragments to come into apposition. 4. Radiographic examination after the bone is set is of as much or more importance than radiographic examination before the bone is set. 5. Circumflex neuritis is a common result of traumatism of the shoulder, and it frequently simulates a dislocation of the shoulder. 6. A common fracture at the shoulder is one in which the greater tuberosity of the humerus is pulled off by muscular violence. This fracture produces no palpable deformity, but is characterized by great bone tenderness, swelling and late ecchymosis.

#### Archives of Pediatrics, New York.

May.

- 57 Case of Anorexia Nervosa in an Infant. J. P. C. Griffith, Philadelphia.  
58 \*Pathologic Aspects of Kidney Lesions in the Infant. R. L. Thompson, St. Louis.  
59 \*Clinical Aspects of Kidney Lesions in the Infant. J. M. Brady, St. Louis.  
60 The Calculation of Milk Percentages, with Rules and Examples. H. E. Hale, New York.  
61 Empyema and Gangrene of the Lung Complicating Typhoid in a Child of Six. D. J. Miller, Philadelphia.  
62 \*Indication for Stimulants in Pediatric Practice. S. Welt-Kakels, New York.  
63 \*Hydrotherapy in Childhood. F. Grosse, New York.  
64 Use of Analgesics in Pediatric Practice. L. G. Kerr, Brooklyn, N. Y.

58. **Pathology of Kidney Lesions in Infants.**—Thompson describes the autopsy result in 50 cases of infants that came to autopsy, undertaken to investigate the idea advanced that nephritis is commoner in infants than is generally supposed. In 23 cases death was due to bacterial infection, in 27 cases not to bacterial infection. From a pathologic standpoint all lesions of the kidney are grouped primarily as (1) acute, (2) chronic; and secondarily as (a) degenerative, (b) exudative, and (c) proliferative. Errors of development were represented by occlusion of the ureter by congenital narrowing of its bladder insertion, and a unique fetal anomaly consisting of abnormal hyperplasia of the pyramidal portion of a fetal lobule in one kidney. The tubules of cortex and pyramid failed to join, and there was a zone of undifferentiated tissue between the two segments, with resulting cystic dilatation of tubules. Thompson considers the case to offer strong evidence of the dualistic theory of kidney development. Uric-acid infarcts were frequently found, calculus only once, kidney cysts were present in 10 per cent. of the cases. Congestion was often extreme. With regard to inflammation he finds that marked disturbances of the circulation and slight or moderate degenerative processes are exceedingly common in the infant kidney. These processes, while they undoubtedly give rise to albumin and casts in many instances, are of a type that is easily repaired, and probably do not influence the permanent integrity of the kidney. Severe kidney lesions, such as permanently injure the kidney parenchyma or lead to death, are rarely found in routine autopsies in infants.

59. **Kidney Lesions in Infant.**—Brady refers to the so-called physiologic albuminuria of the new-born, for which he has not found a satisfactory explanation in the literature. He suggests that it may be explained in part by the excessive desquamation of epithelial cells from the urinary tract frequent in the first days of life. Nucleoalbumin is a product of epithelial cells lining the mucous membrane. This condition should not be termed albuminuria at all. The routine examination of urine of infants should be more frequent than it is. In males, the urine may be secured by tying a rubber bag about the penis; in females, by placing a glass vessel over the vulva and causing contraction of the bladder by a cold hand. Nephritis can not be based in infants on the presence of casts and albumin in the urine, since slight degenerative changes may cause them. Nephritis in infants is usually mild and secondary to pathologic processes elsewhere. Slight nephritis can not be diagnosed *intra vitam*.

62. **Stimulants in Pediatrics.**—Welt-Kakels says that recovery from acute disease is dependent largely on the relative in-



tegrity of the heart muscle. The prevention of its impairment is accomplished rather by avoiding depressing drugs than by the early administration of cardiac stimulants which are not indicated until weakness of the heart becomes evident. Alcohol is one of the best heart stimulants. Children tolerate it well and the author would not like to be without it at the bedside of a feverish child. It may be given earlier in lobar pneumonia than in other acute fevers; good brandy or whisky, 2 to 4 grams (30 to 60 minims), well diluted for a child of one year, or twice that amount for one of from 3 to 4 years. It is valuable in septic cases with asthenia, in erysipelas, and in septic varieties of diphtheria or scarlet fever. Digitalis, strophanthin or strychnin, besides alcohol, is indicated in acute fevers by weakened first sound, exhilarated pulse and reduced arterial tension. Cumulative effect is more frequent in children than in later life. In extreme cases of heart failure, in addition to the drugs named, camphor or caffeine is at our disposal. The author also discusses the uses of nitroglycerin, oxygen, venesection and hypodermoclysis.

63. **Hydrotherapy.**—Grosse describes the uses of hydrotherapy in childhood. It is particularly a useful and ready measure in summer complaints and chronic digestive disorders, and in all cases of faulty metabolism. No hydratic measure is possible, however, without a thermometer or a watch, for exactness is important.

#### American Journal of Urology, New York.

May.

- 65 Symptomatology, Diagnosis and Treatment of Impacted Renal Calculus. F. M. Johnson, Boston.
- 66 \*Prostatic Disease in the Diabetic. H. Stern, New York.
- 67 Treatment of Movable Kidney. S. Metrovitch, Odessa, Russia.
- 68 Pyuria. F. Leguen, Paris.
- 69 \*Plea for Prompt Use of Retrograde Catheterization in Surgical Treatment of Impassable Stricture of the Urethra. E. Jonas, St. Louis.
- 70 Prostatectomy and Bladder Stone. R. Harrison, London, Eng.

66. **Prostatic Disease.**—Stern says that prostatic disease in the diabetic is commonly overlooked by the family physician, who is wont to ascribe certain symptoms of the former to the diabetic syndrome. A prostatic state may ensue in the diabetic ten, twenty or more years earlier than in the normal individual. Early prostatism in the diabetic may be the result of gonorrheal prostatitis in which the sugar-laden urine has participated in the perpetuation of the inflammatory process, or it may be due to another infection; or the pathologic changes in the gland may have been evoked by the direct action of the urinary glucose, its yeasts and fungi; or, finally, nutritive or secretory disturbances of the gland may have been the cause. The early prostatic state in diabetics is much akin to the same condition consequential to senile hypertrophy, except that in early non-infectious hypertrophy all three lobes of the glands are usually involved. The pre-senile prostatic state in the diabetic appears at the onset in the form of transitory seizures. Gradually the attacks diminish in severity and attain a certain degree of chronicity. Prostatic disease of infectious origin may antedate the diabetic state; senile hypertrophic changes in the prostate may exist prior to the outbreak of diabetic phenomena; the prostatic disease may be the result of the diabetic urine; the condition may be the consequence of the self-same causes which give occasion to the diabetic deterioration, or it may be a direct result of the latter. Constitutional prostatism, the form of chronic prostatic disease due to systemic disorder or decline, is probably the mediate consequence of an inflammatory process starting in the blood vessels and connective tissue structures of the gland itself. The changes in the prostate in constitutional prostatism are of similar character to those found in other organs of the affected individual. Unless antidiabetic treatment is applied, prostatic disease in the diabetic will not improve, in spite of all local therapy.

69. This article was published in the *Medical Fortnightly*, June 10, and was abstracted in *THE JOURNAL*, July 11, p. 167.

#### Western Medical Review, Omaha.

May.

- 71 \*Clinical Manifestations of Ileus. A. F. Jonas, Omaha.
- 72 \*Treatment of Ileus. B. B. Davis, Omaha.

- 73 Conservative Treatment of Frontal Sinus Disease. G. H. Bicknell, Omaha.
- 74 Fibroids Complicating Pregnancy, Labor and Puerperium. P. Findley, Omaha.

71. **Ileus.**—Jonas says that it is often difficult to distinguish between the dynamic and mechanical ileus, but one can determine with a fair degree of accuracy many cases wherein the fecal current has been stopped by mechanical causes. In a case of postoperative bowel obstruction, in which paroxysmal pain, especially if localized, is a prominent feature, particularly where there is active local or general borborygmus, a recurring peristalsis that seems to cease at a given point—determinable by a stethoscope and sometimes visible through thin abdominal walls—and when the movement of intestinal gases can be heard by the unaided ear, a mechanical ileus is more than probable; but when an operation is followed by obstinate bowel obstruction that can not be relieved by the usual means, when such an obstruction is manifested by a general abdominal tenderness and pain, an absence of local tenderness, increasing tympanites, an absence of all peristalsis, with an elevated temperature, an increased pulse rate, restlessness of the patient and an anxious and distressed facial expression, it is certain that we have to deal with dynamic ileus.

72. **Treatment of Ileus.**—Davis holds that late operations are the cause of the former high mortality in mechanical ileus. The stomach should always be washed out before operating. Rapidity, without haste, and gentleness are required, and not too much should be attempted. When the coils of intestine are greatly distended they should be emptied of toxic contents as completely as possible. If resection is required it should be undertaken at the primary operation only when the patient's general condition warrants it.

#### Wisconsin Medical Journal.

May.

- 75 Effects of Upper Respiratory Obstruction. E. M. Turner, La Crosse.
- 76 Case of Korsakoff's Psychosis. U. O. B. Wingate, Milwaukee.
- 77 \*Drinking Water—Its Use and Abuse. J. H. Voje, Oconomowoc.

77. **Drinking Water.**—Voje discusses the need of drinking water, and says that if water, cold or hot, is recommended but for a short time it certainly may do a great deal of good, especially also if the diet is corrected and plenty of exercise taken. The drinking of very cold water is certainly harmful. He sums up his observations practically as follows: An ideal drinking water is clear, tasteless, gives no nitrate reaction, contains a small amount of earthy and alkaline salts, some carbonic acid gas, and has a temperature of about 50 degrees. The continuous use of ice water is harmful; it paralyzes the gastric and duodenal nerves. Filtered lake, river and rain water come next to pure spring or well water in wholesomeness. Boiled water is repulsive, non-refreshing, and should only be used when good natural water can not be obtained. Distilled water is harmful to the system because it abstracts from our cells vital salts, especially iron salts, thus disturbing electric equilibrium and reducing the power of resistance. Distilled waters have long been discontinued in eyewashes on account of the irritation of the conjunctiva resulting from their use. Any drinking water, if persistently taken in excess, is harmful; it produces hydremia, which interferes with proper oxidation. The cell tone is gradually lessened, the power of resistance is reduced, and the door is opened to infection and chronic ailments of an asthenic nature; it overburdens the circulatory apparatus and aids in producing arteriosclerosis. Water is an excellent vehicle for medicines and minerals. An excellent example of this we have in the natural mineral waters of the earth. As a remedial agent the mineral waters, if properly selected according to indications, are superior to the drugs in many ailments. Mineral waters should be used and taken at their origin. Many springs have compositions, gases or radioactive elements, or contain even radium, all of which qualities would be destroyed or altered in bottling and shipping. For a number of years physicians have made use of water to carry chlorid of sodium into the blood or tissues, with happy results, as a reviver.



## New Orleans Medical and Surgical Journal.

May.

- 78 \*Operations on the Tubes and Ovaries. G. R. Fox, Moreauville, La.  
 79 \*Cases of Infantile Scurvy. E. D. Fenner, New Orleans.  
 80 Laryngeal Tuberculosis. H. Dupuy, New Orleans.  
 81 Early Symptoms of Pulmonary Tuberculosis. G. S. Bel, New Orleans.  
 82 Electricity in Medicine. N. F. Thiberge, New Orleans.  
 83 Medical Consideration in Cases of Mental Defect or Disease. E. M. Hummel, New Orleans.  
 84 \*Is Sexual Continence Compatible with Health? C. Chassaignac, New Orleans.  
 85 Malarial Hematuria. O. M. Patterson, Bastrop, La.  
 86 Trachoma. W. L. Egan, Shreveport, La.  
 87 Hypodermic Treatment of Syphilis. C. J. Gremillion, Alexandria, La.

78. **Operations on Tubes and Ovaries.**—Fox describes the indications for operation on the ovaries and tubes, respectively, and summarizes the arguments in favor of conservatism. He discusses the internal secretion of the ovary and the question of ovarian transplantation, summarizing his conclusions as follows: A majority of gynecologists favor conservatism. The number of pregnancies occurring after tubal operations is very small; the results after plastic work on the ovaries are better; age, the presence of pus, tuberculosis and malignant disease indicate, as a rule, radical work; the prolapsed ovaries, generally speaking, should be elevated in the pelvis by suspension operations on the uterus, by shortening the ovarian ligament, or by placing the ovary in front and on top of the broad ligament; the functions of the tube and the ovary should be conserved whenever consistent with health; the artificial induction of the menopause brings serious disturbance into the life of the patient, and, finally, ovarian transplantation, experimentally and clinically, has in a limited field been productive of satisfactory results.

79. **Infantile Scurvy.**—Fenner discusses the pathology and symptomatology of infantile scurvy and its relation to feeding. He describes cases to indicate the variety of the clinical manifestations that it may present.

84. **Sexual Continence.**—Chassaignac discusses the question whether sexual intercourse is a physiologic necessity in the adult, abstinence being *per contra* injurious in health, and answers in the negative. He adds: I have noticed only three classes of individuals who are apt to be noticeably disturbed by continence: those who have been indulging in intercourse regularly and who without inhibitory interposition of some physical ailment or mental shock, are suddenly deprived, but the effect in these is only temporary and they can adjust themselves to the new condition, as is evidenced by the gradually diminishing frequency of involuntary nocturnal emissions; secondly, those who are to a great extent idle or dissipated, and who, while they are continent for some probably compulsory reason, do not avoid temptation or try to keep their minds free from impure thoughts; lastly, those whose sexual organs are to a certain degree in a pathologic condition.

## Northwestern Lancet, Minneapolis.

June 15.

- 88 \*Indications for Craniotomy. R. E. Farr, Minneapolis.  
 89 \*What Is Constituted in Insanity? H. A. Tomlinson, St. Peter, Minn.  
 90 Ideal Medical Education. F. F. Westbrook, Minneapolis.

88. **Cranial Surgery.**—Farr urges a careful scrutiny of all head injuries and the elevation of all depressed fractures, whether simple or compound; craniotomy in the presence of focal symptoms after an injury to the head, and in epileptics in whom the evidence points to the possibility of trauma as a cause. In cases presenting evidence of brain tumor, trephining should be done, either to remove the tumor, or, if that is impossible, to prevent blindness.

89. **Insanity.**—Tomlinson says that primarily, in determining what is constituted in insanity, we have to deal with the cerebral potentiality of the individual, as influenced by the conditions in his environment which exhaust his potentiality directly by overtaxation, or indirectly by the influence of impaired vitality in the general organism on the limited mental capacity of the individual. He calls attention to the fact that general conditions are practically uniform for all persons

subjected to their influence, and that if they are harmful to some it is because of an inherent weakness in the individual that unfits him to adapt himself to them. The result is apparent to all, but strangely enough, Tomlinson says, it has not been recognized that the lack of mental capacity that shows itself in imperfect control, and incapacity for persistent effort and definiteness of direction is the evidence of instability and defect, and, therefore, the expression of a limited potentiality.

## Therapeutic Gazette, Detroit.

June 15.

- 91 \*Local Use of Magnesium Sulphate Solution in Erysipelas. H. Tucker, Philadelphia.  
 92 Hypersusceptibility of Man to Horse Serum. F. Royer, Philadelphia.  
 93 Pathology in Its Practical Bearings on the Treatment of Certain Diseases of the Skin. L. D. Bulkley, New York.  
 94 Opium Habit in North China. J. H. Ingram, Tungchow, China.  
 95 \*Abuse of Arsenic in the Treatment of Diseases of the Skin and the Deleterious Results That May Occur from Its Indiscriminate Employment. J. F. Schamberg, Philadelphia.

91. **Magnesium Sulphate Solution in Erysipelas.**—Tucker reports the good results obtained at the Philadelphia General Hospital, in his ward, in 19 exceptionally severe or complicated cases of erysipelatous infection. In 35 uncomplicated cases all patients recovered in from two to seven days, the pain and local discomfort being relieved in a few hours. No other treatment was given. He describes the technique as follows: The application consists of a saturated solution of magnesium sulphate in water. This is applied in facial cases on a mask consisting of from fifteen to twenty thicknesses of ordinary gauze, of sufficient size to extend well beyond the area involved, a small opening being made to permit breathing; no opening, however, is cut for the eyes. The mask is then thoroughly saturated with the solution, applied and covered with oiled silk or wax paper, and wetted as often as necessary to assure a moist dressing—usually once in two hours, depending on the time of year or the temperature of the room. The dressing should not be removed oftener than once in twelve hours, to permit an inspection of the parts, and then should be immediately reapplied; the infected area should not be washed while the treatment is employed.

95. **Dangers of Arsenic.**—Schamberg considers the uses of arsenic in medicine and discusses its toxic symptoms. He considers the drug unreliable and in a large number of skin affections of little or no utility. It is most useful in psoriasis, lichen planus and acute pemphigus, but it is excessively and indiscriminately prescribed by many practitioners. It may produce profound structural changes in the nerve, aggravate inflammatory dermatoses, give rise to various erythematous, papular and vesicular eruptions, simulating dermatoses, and cancer of the skin has been reported as following its long-continued use. Practitioners should, therefore, exercise greater care and not prescribe it in the absence of specific indications, and such prescriptions should not be renewed without sanction.

## Journal of the Tennessee State Medical Association, Nashville.

June.

- 96 \*Medical Organization; Its Purposes and Possibilities. A. B. Cooke, Nashville.  
 96. Abstracted in THE JOURNAL, April 25, 1908, p. 1372.

## Texas State Journal of Medicine, Fort Worth.

June.

- 97 \*Progress of Medicine in Texas. C. E. Cantrell, Greenville.

97. **Progress of Medicine in Texas.**—Cantrell, among other things, gives a ten years' retrospect of Texas medicine and discusses sanitary measures in relation to boards of health and the industrial value of public health protection. In order to show results of boards of health, he gives graphic representations of deaths from typhoid, tuberculosis, malaria, diphtheria, scarlet fever and measles in various states, showing the decrease in these diseases under efficient sanitary administration.

## Annals of Surgery, New York.

June.

- 98 \*Reminiscences of the Early Days of the American Surgical Association. J. E. Mears, Philadelphia.  
 99 \*Psychical End-Results Following Major Surgical Operations. J. G. Mumford, Boston.



- 100 \*Surgical Aspects of Exophthalmic Goiter with Reference to the Psychic Factor. G. Crile, Cleveland.  
 101 \*Late Results After Operations for Benign Diseases of the Stomach and Duodenum. B. G. A. Moyulhan, Leeds, Eng.  
 102 \*Gastric and Duodenal Ulcers. W. J. Mayo, Rochester, Minn.  
 103 \*End-Results Following Operation for Benign Diseases of the Stomach and Duodenum. J. B. Deaver, Philadelphia.  
 104 \*How Frequently Do Gastric Ulcers Become Carcinomata? W. L. Rodman, Philadelphia.  
 105 \*Gastric and Duodenal Ulcers Secondary to Wounds of the Urinary Bladder. J. B. Roberts, Philadelphia.  
 106 \*Melanotic Sarcoma of the Common Bile Duct and the Ampulla of Vater. F. J. Shepherd, Montreal.  
 107 \*Experiments in Flushing the Intestinal Canal with Salt Solution Through Multiple Enterotomy Openings. G. H. Monks, Boston.  
 108 \*Primary Carcinoma and Sarcoma of the Appendix. R. H. Harte, Philadelphia.  
 109 \*Carcinoma of the Appendix with Metastasis to the Ileocolic Glands. R. G. Le Conte, Philadelphia.  
 110 \*Splenectomy in Banti's Disease. J. E. Summers, Jr., Omaha.  
 111 \*Stone in the Bladder with Intermittent Pneumaturia for Three Years and Subsequent Formation of Fecal Fistula. A. T. Bristow, Brooklyn, N. Y.  
 112 \*Nephrolithiasis. D. Barrow, Lexington, Ky.  
 113 Treatment of Fractures of the Femur. O. H. Allis, Philadelphia.  
 114 \*Modern Medicine and Surgery in the Orient. J. E. Mears, Philadelphia.

98. Abstracted in THE JOURNAL, May 23, 1908, p. 1718.

99, 106 and 111. Abstracted in THE JOURNAL, June 20, 1908, pp. 2102, 2103 and 2104.

100 and 107 to 110. Abstracted in THE JOURNAL, June 27, 1908, pp. 2150 and 2151.

101 to 105 and 112. Abstracted in THE JOURNAL, May 30, 1908, pp. 1822, 1823 and 1825.

114. This article also appeared in the *Boston Medical and Surgical Journal*, June 11 and 18.

#### Journal of Cutaneous Diseases, New York.

May.

- 115 Hydroa Puerorum (Unna). M. Haase, Memphis, and R. Hirschler, Philadelphia.  
 116 Framboesia Tropica (Yaws, Pian, Bouba). A. Castellani, Colombo, Ceylon.  
 117 A Palliative Treatment of Elephantiasis. Id.

#### Maryland Medical Journal, Baltimore.

May.

- 118 Growth of Our Knowledge of Infectious Diseases. J. H. M. Knox, Baltimore.  
 119 Postoperative Complications of Peritonitis. R. Winslow, Baltimore.

#### Progressive Medicine, Philadelphia.

June.

- 120 Hernia. W. B. Coley, New York.  
 121 Surgery of the Abdomen, Exclusive of Hernia. E. M. Foote, New York.  
 122 Gynecology. J. G. Clark, Philadelphia.  
 123 Diseases of the Blood. Diathetic and Metabolic Diseases. Diseases of the Spleen. Thyroid Gland and Lymphatic System. A. Stengel, Philadelphia.  
 124 Ophthalmology. E. Jackson, Denver.

#### Iowa Medical Journal, Des Moines.

May.

- 125 Points in the Differentiation of Organic and Functional Nervous Diseases. F. T. Stevens, Mount Pleasant.  
 126 Chorea Gravis. F. A. Ely, Des Moines.  
 127 Laryngeal Diphtheria. H. G. Langworthy, Dubuque.  
 128 Anesthetics. C. M. Linehan, Chicago.

#### Monthly Cyclopedia and Medical Bulletin, Philadelphia.

May.

- 129 Autoprotective Resources of the Body—A New Foundation for Scientific Therapeutics. C. E. De M. Sajous, Philadelphia.  
 130 Therapeutics in the Light of Ecology. J. V. Shoemaker, Philadelphia.  
 131 United States Pharmacopoeia from a Physician's Standpoint. J. M. Anders, Philadelphia.

#### Colorado Medicine, Denver.

May.

- 132 Infant Feeding Methods. F. P. Gengenbach, Denver.  
 133 Solutions of the Problem of Infant Feeding. E. S. Pratt, Denver.  
 134 Food Adulterations in Relation to Health. E. C. Hill, Denver.  
 135 \*Torsion of the Omentum. W. W. Grant, Denver.  
 136 Case of Congenital Syphilis. F. W. Kenney, Denver.  
 137 Case of Interstitial Punctate Infiltration of the Cornea. F. R. Spencer, Boulder.

135. Abstracts in THE JOURNAL, Feb. 1, 1908, p. 397.

#### Journal of Outdoor Life, Saranac Lake, N. Y.

May.

- 138 Suggestions to Ex-Patients. H. S. Goodall, Lak: Kushaqua, N. Y.

- 139 Maryland State Sanatorium. H. W. Buckler, Baltimore.  
 140 A Fresh-Air School. E. A. Stone, Providence, R. I.  
 141 Fresh-Air Methods at the Home for Consumptives, Chestnut Hill, Pa. M. Topham.

#### FOREIGN.

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

#### Lancet, London.

June 20.

- 1 Melitensis Septicemia. J. W. H. Eyre.
- 2 \*Congenital Dislocation of the Hip and Its Treatment. H. A. T. Fairbank.
- 3 \*Supports-in-Chief of the Female Pelvic Viscera. R. H. Paramore.
- 4 \*Thirty Consecutive Cases of Appendicitis with Diffuse Peritonitis. C. A. R. Nitch.
- 5 Measurement of the Stereoscopic Visual Acuity. G. T. B. James.
- 6 Acidity of the Urine. F. A. Watkins.
- 7 Sarcoma of the Right Os Innominatum Simulating Appendix Abscess. E. H. R. Harries.

2. Congenital Dislocation of the Hip.—Fairbank says that the condition of the hip joint varies according to the age of the patient; the older the child, the greater the alteration in all structures composing the joint. He describes the changes in the acetabulum and capsule. The femur is often well formed, the most obvious thing about it being the size of the head, which is disproportionately large as compared with the acetabulum. The upper end of the bone is almost invariably imperfectly ossified; the neck is short and may be depressed. An increase of the angle made by the axis of the neck of the bone with the transcondylar line is very common. The pelvic deformity, apart from the change in the acetabulum, is not of much practical importance, as even in bilateral cases little, if any, obstruction to delivery is offered during labor (congenital dislocation of the hip is far commoner in females than males—about 86 to 14 per cent). The conjoint rami of the pubis and ischium show imperfect ossification. The head of the femur may be displaced upward and backward, or upward and forward, or forward only. A general laxity of ligaments may be present, and occasionally a number of other deformities. Of signs and symptoms, even before the child walks, something may be noticed wrong with the position or shape of the leg. When walking is begun, a progressive limp and swaying over the hip are noticed, the patient gets tired easily, there is a difference in contour of the trochanteric region. Lordosis is present only in unilateral cases in older children. The affected leg is shorter, the trochanter displaced upward and usually backward. Fairbank doubts whether Nélaton's line is of any assistance, and hardly ever makes use of it in children. The movements of the limbs are commonly limited in abduction and internal rotation. The "telescopic movement," he thinks, is more difficult to make sure of and less reliable than that of feeling the head of the femur in its abnormal position, but it is a valuable confirmatory sign and should always be looked for. In bilateral cases the symptoms and signs are similar, and in most cases more marked, the gait is worse and quite characteristic. As to treatment, he discusses in considerable detail the Lorenz, or bloodless method, and the open methods of Hoffa-Lorenz and Burghard. The dangers of the Lorenz method—which the author describes in detail—are avoidable, but must never be forgotten; they are, fracture of the femur or pelvis and injury to the peroneal, anterior crural, and sciatic nerves. As to the ultimate results, the walk is not likely to be a good one until some time after the leg has come down to its normal condition. It must be remembered that every anatomic cure is not necessarily accompanied by a perfect functional result, though it is so in the majority of cases.

3. See Abstract No. 36.

4. Appendicitis with Diffuse Peritonitis.—Nitch points out that by lavage of the peritoneum the protective phagocytes are washed away and myriads of highly infected bacilli are carried by the stream to remote parts of the abdominal cavity, there to infect fresh areas of the peritoneum and cause degeneration of the few remaining protective phagocytes. He



shows, by a table contrasting the results of cases dealt with by general irrigation and by dry sponging or local irrigation respectively, that the mortality has fallen from 82 per cent. under the former method to less than 10 per cent. under the latter. He records 30 cases with 3 deaths in patients treated by the dry sponging method. On returning to bed after operation the patients were placed in the Fowler position, and in addition, the pillows were so arranged as to tilt them well over to the right side. Continuous rectal infusion, only attempted in one case, was soon discontinued owing to the alleged discomfort which it caused. Four patients who were very ill, with a rapid pulse, frequent vomiting, and abdominal distention, received immediate relief from subcutaneous injections of anti-colon bacillus serum. A large dose of calomel was always administered twelve hours after operation, and if necessary, followed in another twelve hours by large turpentine enemata. In the majority of cases convalescence was rapid and uninterrupted.

#### British Medical Journal, London.

June 20 (Hospital Number\*).

- 8 \*Nine Hundred Cases of Tuberculous Disease of the Hip. A. A. Bowlby.
- 9 \*Functions of an Out-Patient Department. W. Osler.
- 10 The Future of the Voluntary Hospital and Its Relation to a Reformed Poor-Law Medical Service. L. E. Shaw.
- 11 General Hospitals and the Provident System. E. C. Beale.
- 12 Home Hospitals for the Middle Classes. G. Rankin.
- 13 Notes on the Construction of Cottage Hospitals. H. P. Adams.
- 14 Separate Operating Rooms and Their Management. G. G. Hamilton.
- 15 Promotion of Uniformity in the Registration of Diseases in Hospitals. R. F. Tobin.
- 16 Dental Needs of the Poor of London. J. G. Turner.

\*Hospital Number.—In addition to the original articles listed above—of which eight refer to hospital affairs—this number contains a series of fifteen editorial articles on various matters connected with hospitals, e. g., the administration of operating theaters, the evolution of the hospital, hospital management, hospitals and taxation, the hospitals of Germany, Paris, Manchester, Edinburgh, Dublin, etc., the neurologic and psychiatric clinics of Germany, and others of more local interest.

8. Tuberculous Hip Disease.—Bowlby discusses 900 cases of tuberculous hip joint treated at the Alexandra Hospital without operation (other than the opening of abscess) by rest and extension, good nursing and food, with a mortality of less than 4 per cent. In about 40 cases both hips were affected. There used formerly to be a rule excluding incurable cases, but since Bowlby has been connected with the hospital, he has not refused admission to any case, because he does not think that any cases are incurable, however bad the children are. For twenty-one years he has not treated one of these cases, in either hospital or private practice, by excision of the hip or amputation. He discusses the treatment, complications and condition on discharge, and the importance of treating the patient, not merely the disease, for all tubercle can not be removed from all parts of the body. No child is allowed to walk on the bad leg for at least a year after he is well enough to be up and about on crutches. Bowlby's cases are kept under observation for many years after their discharge. The treatment employed by Bowlby makes no claim to originality. It is described as follows: First, there is absolute rest in the recumbent posture; the child must not even be allowed to sit up at all, because sitting up causes movement at the hip-joint. The joints involved are kept absolutely quiet, and, if necessary, splints are used to insure this at first. Extension is applied in the long axis of the limb in the position in which that limb lies most easily. In many cases when a child is put to bed the joint may be kept fixed, in other cases it may be slightly adducted, and in still other cases it may be abducted; but at first, extension is applied in the axis of the displaced limb. As the muscles allow the limb to come into a better position the leg is to lie flat on the bed, the object of this being to put the limb into the best position for subsequent progression, supposing that, as will happen in many cases, the joint is stiff ultimately. The amount of weight to be applied to the limb to effect ex-

tension is small. Very few children require more than two pounds, and they are often comfortable with only one pound. A few cases have required three or four pounds. He does not think any child under 12 years of age will require more than a four-pound weight for the purposes of extension, and that only for a short time. As to abscesses, he insists on these being opened aseptically, cleaning out the contents thoroughly but gently, and draining for a few days. He thinks that there is too great a tendency to numerous incisions. The general treatment means good food, great care in dressing wounds, iron and cod liver oil, and free use of open-air treatment. Lately he has used the new tuberculin treatment and has seen quite a definite improvement in many cases under its use. He discusses excision and concludes that "excision of the head of the bone is never required in the treatment of tuberculous disease of the hip," and holds himself justified in this conclusion by the results he has seen without operation.

9. Hospital Out-Patient Department.—Osler describes the functions of the hospital out-patient department as, (1) first aid to all emergency cases, of whatever kind; (2) attendance on those too poor to pay a minimum physician's fee; (3) a free source of consultation for practitioners in respect of their poorer patients who can not afford to pay consultant's fees; (4) relief of the "occasional poor," those who pay ordinary medical bills, but whose means are altogether inadequate to the cumulative expenses of a serious operation, e. g., for appendicitis; (5) as a training school for younger members of the profession; many great reputations have been built up almost entirely on out-patient work. Osler considers it a radical defect of the English system that as a rule no provision is made for pay patients.

#### Clinical Journal, London

June 17.

- 17 Descending Testis. C. M. Moullin.

#### Medical Press and Circular, London.

June 17.

- 18 How to Distinguish Different Varieties of Chronic Deafness. A. Malherbe.
- 19 \*Dangers and Treatment of Myoma of the Uterus. C. Martin.
- 20 Alcoholism and Cruelty to Children. R. J. Parr.
- 21 Published in the *Lancet*, June 6, 1903.

#### Practitioner, London.

June.

- 21 Progressive Muscular Atrophy. G. Rankin.
- 22 Suprapubic Prostatectomy. B. G. A. Moynihan.
- 23 \*Cholecystitis. K. W. Monsarrat.
- 24 Diagnosis and Treatment of Empyema of the Maxillary Antrum. J. G. Connal.
- 25 \*Puerperal Eclampsia Treated by Renal Decapsulation, with Remarks on the Treatment of Eclampsia. R. J. Johnstone.
- 26 Retrodeviations of the Uterus and Their Treatment. W. B. Bell.
- 27 \*X-Rays in the Treatment of Cutaneous Tuberculosis. J. G. Tomkinson.
- 28 Henoch's Purpura Associated with Angioneurotic Edema. A. Don.
- 29 Review of Clinical Pathology. W. D. Emery.

23. Cholecystitis.—Monsarrat points to the necessity for further clinical study of cholecystitis as a well-defined abdominal inflammatory lesion, and more particularly for its separation from the other affections of the bile-channels with which gallstones are associated. Further, he suggests that its proper method of study must be based on the conception of infection as the causative agent from beginning to end, and on the recognition that, although gallstones modify, by mechanical influences, the course and persistence of the inflammatory process, yet they are not in any proper sense the cause of this process. Gallstone disease is a term that should disappear.

25. Puerperal Eclampsia Treated by Renal Decapsulation.—Johnstone reports a case and concludes that the value of decapsulation is not proved, but he would not hesitate to recommend an operation so easily performed, and with many theoretical considerations in its favor, in any severe case of eclampsia which did not yield readily to other remedies. As regards the disputed question whether it is better to empty the uterus at once on the onset of the fits, or to wait for full dilatation of the os, his opinion inclines to the view that the sooner the uterus is emptied the better for the patient.



27. **X-Rays in Cutaneous Tuberculosis.**—Tomkinson describes a combined method of treatment for lupus vulgaris of the face, etc., which, having in view relative shortness of treatment and esthetic effect, has, so far, given very encouraging results. It is as follows: Crusts are removed with salicylated ointment; a tentative exposure of from three to five minutes is made on a small area of the lesion. In a few days the rays are directed for five minutes daily on a somewhat wider area unless contraindicated. After three or four exposures embracing the entire surface, in divided doses, it is plastered with Unna's 50 per cent. salicylic acid and creosote plaster-mulle, renewed daily, previously swabbing with 10 to 20 per cent. cocain, if necessary. In ten days or thereabouts much of the tuberculous tissue will have come away and the lesion, after swabbing with cocain and drying, is painted with the following:

R.  
Phenol ..... 50  
Lactic acid ..... 15  
Salicylic acid ..... 15  
Alcohol, absolute ..... 20  
Well agitated before application, as there is a considerable sediment.

A few minutes later the lesion is painted with the following:

R.  
Phenol ..... 80  
Alcohol, absolute ..... 20

Where the lesion is extensive it should be cauterized piecemeal. After cauterization it is dressed for a day or two with sterilized lint and carbolic oil (1 in 30); thereafter with a 20 per cent. aqueous solution of ichthyol until healing has taken place. After healing, x-ray treatment is recommenced with short exposures of from three to five minutes. At the end of three or four months treatment is discontinued for a considerable time, the patient being subjected to periodic inspection. Tomkinson discusses the disadvantages and advantages of this treatment and says that many cases of a markedly virulent character and of many years' duration have yielded to it.

#### Quarterly Journal of Medicine, London.

April.

- 30 A Study of Fifty-two Cases of Rheumatism in Children Under Five Years and an Analysis of One Hundred Cases of Fatal Suppurative Pericarditis in Childhood. F. J. Poynton.
- 31 \*Chloroma and Acute Lymphatic Leukemia, Account of Four Cases, and Discussion of the Pathology of the Diseases. C. H. Treadgold.
- 32 \*Parathyroid Glands: Part II; Their Pathology in Man. D. Forsyth.
- 33 \*Persistent Hereditary Edema of the Legs with Acute Exacerbations. Milroy's Disease. W. B. Hope and H. French.
- 34 \*Inheritance of Certain Human Abnormalities. A. M. Gossage.
- 35 \*Caisson Disease. A. E. Boycott.

31. **Chloroma and Acute Lymphatic Leukemia.**—Treadgold reports four cases and summarizes their interesting pathologic points of similarity and difference. After discussing the subject at length he states that there is no more evidence in favor of the leukemias being infective in origin than there is in the case of neoplasms in general. He sums up his results as follows: Acute lymphatic leukemia is a tumor of malignant nature, arising in the marrow of bones. The growth usually consists of amphoblasts, but leucoblastic and mixed types may occur.

Chloroma is chiefly a tumor of myeloblasts, and arises in the red bone marrow. Perhaps in some cases all the undifferentiated marrow cells are affected, yet myeloblasts always form the majority. The condition lasts longer than acute leukemia, owing to the narrow lesion remaining focal for a longer time, thus allowing these cells to form metastases before the marrow is generally affected.

Acute myelogenous leukemia, a rare condition, is of a similar nature. If the disease were more focal in origin, and therefore clinically less acute, we should get chloroma. We thus have the apparent paradox of a tumor which is pathologically less malignant, but clinically more malignant.

Chronic myelogenous leukemia is a tumor affecting myelocytes and to a far less extent the undifferentiated marrow cells which produce them.

Chronic lymphatic leukemia also originates in the marrow. The glands and spleen, however, can not be positively ex-

cluded is every case. It is chiefly a disease of the lymphocytes, but amphoblasts occasionally predominate in the subacute cases.

Pseudo-leukemia is a disease affecting the lymphocytes of lymphatic glands.

Myelogenous lymphosarcoma occurs sometimes and is analogous to the cases described by Birk, Leber, Wende and Miller. Possibly it occurs sometimes without co-existing leukemia, the modes of egress becoming blocked, as is the case in glandular lymphosarcoma.

The present nomenclature of these diseases is confusing and does not indicate the true origin of the affected cells. Yet it is hard to suggest an undoubted improvement. Perhaps the following scheme will make the inter-relationships of these diseases clearer:

*Lymphosarcoma.*—Glandular, tonsillar, thymic, and myelogenous.

*Leukoblastoma.*—Amphoblastoma, mixed. (These correspond to acute lymphatic leukemia.)

*Lymphocytoma.*—Myelogenous and glandular. (These correspond to chronic lymphatic leukemia and pseudo-leukemia, respectively.)

*Myeloblastoma.*—(This condition includes acute myelogenous leukemia and chloroma.)

*Myelocytoma.*—(Chronic myelogenous leukemia.)

32. **The Parathyroids.**—Forsyth considers, in this continuation of his paper from the last number, the pathology of the parathyroids in man. He arrives at the conclusion that observations on the morbid states of the parathyroids are not yet sufficiently numerous or concordant to justify the opinion that the glands bear a pathogenic relationship to any known disease. Their condition in the several affections of the thyroid gland is variable, and further research is needed in this direction.

33. **Hereditary Edema of Legs.**—Hope and French describe a case of "Milroy's or Meige's disease" in a girl aged 18, and follow up their observations with a careful genealogic research, showing the malady to have been present in 13 out of 42 individuals in five generations. The following points in which the present cases resemble those recorded by others are given by the authors: 1. The restriction of the edema entirely to the legs. 2. The absence of any traceable cause for the edema, general or local. 3. The strong family predisposition to the complaint. 4. The painlessness of the pale swollen legs (apart from the acute attacks in the author's cases). 5. The absence of constitutional symptoms. 6. The sharpness of limitation of the upper level of the edema. 7. The incidence in both males and females. 8. The permanence of the edema when once it has appeared. The following are points of difference between the authors' cases and those of others: Meige lays stress on the absence of "acute attacks," which occurred on more than one occasion in most of the authors' cases. Milroy emphasizes the fact of the edema being present at birth; Meige calls attention to its appearing at puberty; in the authors' cases not once was it actually noted at birth, and the age at which it first attracted attention was sometimes in infancy, sometimes in boyhood or girlhood before puberty, sometimes not until the teens were passed. Finally, the authors state that the condition differs objectively very much from Raynaud's disease, factitious urticaria, and angioneurotic edema, but they think that there is evidence that underlying both these three conditions and their own cases of Milroy's disease there is a common pathology, namely that of a vasomotor neurosis.

34. **Mendelian Inheritance.**—Gossage discusses Mendelian inheritance in families showing tylosis palmaris et plantaris, multiple telangiectasis, epidermolysis bullosa, curly hair, heterochromia of iris, monilithrix, general ichthyosis, diabetes insipidus, and a congenital lock of white hair. He emphasizes the importance of the medical profession recognizing that in the study of these family complaints the normal individuals are quite as important as the abnormal, and that it is advisable that as many members as possible of the family should be personally examined.



**35. Caisson Disease.**—Boycott discusses the circumstances and pathology of the disease, and dwells on the phenomena of bubbles in liquids on which the results of decompression depend. In regard to prevention, the *rationale* of safe, quick decompression is (1) never to allow the nitrogen pressure in the tissues to be more than twice the air pressure, and (2) to make the fullest use of the permissible difference of pressure to get the nitrogen out of the tissues. He discusses the fallacies of uniform slow decompression. As to treatment he says that the only specific treatment of caisson disease is recompression, which should be undertaken immediately symptoms appear, so as to compress the bubbles again before they cause irreparable damage. For this purpose some small chambers supplied with compressed air should be very readily accessible; in its absence divers may be put back under water. The subsequent decompression must be conducted with great caution. Bubbles once formed are not easily reabsorbed.

**Journal of Obstetrics and Gynecology of the British Empire, London.**

June.

- 36 \*Supports-in-Chief of the Female Pelvic Viscera. R. H. Paramore.  
37 \*Pathology and Operative Treatment of Displacements of the Pelvic Viscera. W. E. Fothergill.  
38 \*Excretion of Creatinin in Lying-in Women, with Remarks on Involution of the Uterus. C. N. Longridge.  
39 \*Chorea During Pregnancy. W. F. Shaw.

**36. Supports of the Female Pelvic Viscera.**—Paramore maintains that the pelvic viscera are maintained in their position by two sets of forces. The one acts from above and pins, so to speak, the viscera in their places. This is the intra-abdominal pressure. The other acts from below, supports the viscera and prevents them from being displaced by any excessive force from above. These two forces, therefore, vary directly with each other; increase of the one reflexly produces increase of the other. This mechanism is under a nervous control, which determines any desired end (coughing, defecation, etc.). The force from below is supplied by the levator ani muscle. This is the essential element in the maintenance of a normal visceral position. When the pelvic floor is inhibited during defecation, the visceral connective-tissue is capable of supporting the viscera temporarily, but it is not capable of more than this. When the muscle has become insufficient this connective tissue is unable to maintain the viscera in position.

**37. Displacements of Pelvic Viscera.**—Fothergill discusses the anatomy of the parts involved, and describes the different results of relaxation of different parts of the perivascular connective tissue as follows:

Relaxation of upper part alone—retroversion.

Relaxation of both upper and lower parts—classic prolapse.

Relaxation of lower part alone—cystocele and vaginal prolapse.

He summarizes the operative treatment as follows:

**Classical Prolapse.** 1. Anterior colporrhaphy, with union in the middle line of the parametric and paravaginal tissues; posterior colporrhaphy and perineorrhaphy. 2. Ventrofixation in addition to the above, if the anterior colporrhaphy does not support the uterus in a position of anteversion.

**Cystocele and Vaginal Prolapse.** Anterior colporrhaphy and perineorrhaphy.

**Retroversion demanding Treatment.** (a) Uterus movable. Alexander's operation as an alternative for pessary. (b) Uterus fixed. Laparotomy, separation of adhesions, treatment of appendages and securing of uterus in anteversion.

**38. Involution of the Uterus.**—Longridge formulates the following conception of the process of evolution: During labor the powerful contractions of the uterus lead to the development of sarcotatic acid in the uterine wall. This acid is neutralized by the circulating blood. When the uterus contracts down after the expulsion of its contents, it is probable that the formation of sarcotatic acid still goes on, but now there is no blood to neutralize it. The uterus is, therefore, left in a condition of anemia and diminished alkalinity, two factors which favor rapidity of autolysis. No recent opportunity of testing the reaction of a normal involuting uterus has offered

itself, but the wall of an autolyzing uterus removed by the Porro-Cesarean operation was found thirty-six hours after the operation to be of a distinctly acid reaction. During the first stage of involution when the circulation through the uterus is slight, or even completely absent, the products of autolysis are retained in the uterus. After four or five days the uterus becomes considerably softened, and the blood begins to percolate more freely through the organ. The products of autolysis are then washed out, and owing to the presence of alkaline blood, the rate of autolysis is very much diminished, and the second or slow stage of involution begins.

**39. Chorea in Pregnancy.**—Shaw reports 3 cases which confirm the following previously expressed conclusions: 1. The chorea of pregnancy is due to a toxin which appears to be identical with, or closely to resemble, that found in acute rheumatism. 2. It affects human subjects under two circumstances, both of these being characterized by instability or irritability of the nervous system, namely, childhood and pregnancy. 3. The cause of the instability or irritability of the nervous system in pregnancy, bringing it down to the level of childhood, is the toxemia of pregnancy. 4. In the chorea of pregnancy, therefore, it is more important to remove the predisposing cause than to apply merely symptomatic treatment. 5. The treatment must be eliminative as in the other toxemias of pregnancy. 6. The pregnancy should not be arrested as a rule, as this is generally unnecessary and harmful to the patient as well as to the child.

**Bulletin de l'Académie de Médecine, Paris.**

June 9, LXXII, No. 23, pp. 615-673.

40 \*Self-Inflicted Gangrene. (Pathomimie.) Dieulafoy.

41 Multiple Aneurisms of Aorta. E. Boinet.

40. See Abstract 44, page 174, in THE JOURNAL, July 11.

**Presse Médicale, Paris.**

June 13, XVI, No. 48, pp. 377-384.

42 Emergency Treatment of Acute Osteomyelitis in Adolescents. P. Hardouin.

43 \*Purgative Properties of Phenolphthalein. M. Berthoumeau and A. Daguin.

**43. Purgative Properties of Phenolphthalein.**—This article reviews the literature on this subject and reports extensive personal experimental research. The results show that phenolphthalein increases, on direct contact, the contracting power and the secretion of the intestines. Beyond this action on the intestine, the drug does not seem to induce any noticeable modification in the other functions. In the dose of from 0.5 to 0.8 gm. (7½ to 12 grains) it purges without griping. The laxative dose is 4 or 5 grains.

**Revue de Chirurgie, Paris.**

June 10, XXVIII, No. 6, pp. 735-889.

44 Epithelioma of Heel. (Epithéliome du talon.) P. Berger.

45 Total Colpohysterectomy by Perineal-Abdominal Route. E. Quénu and P. Duval.

46 \*Congenital Goiter. (Goître chez le nouveau-né.) J. Fabre and L. Thévenot.

47 \*Typhoid Cholecystitis and Its Treatment. (Cholecystite typhique.) E. Quénu.

**46. Goiter in the New-Born.**—Fabre and Thévenot have found 130 cases on record. The symptoms are practically the same as in adults, and section of the isthmus or exothyropexy gives good results. These techniques not only relieve the threatening compression of the air passages, but lead to the retrogression of the goiter. An inherited tendency to goiter was observed in a number of cases; preventive treatment should always be instituted; this includes good general hygiene, iodids, etc., when a woman with goiter or with goitrous children becomes pregnant. The newly born baby should be given medical treatment. If notwithstanding the attempts to relieve the congestion in the thyroid, the child still has difficulty in breathing, or if there is danger of suffocation, the surgeon should be summoned. Tracheotomy should never be considered. The goiter may appear as a severe or mild affection or fulminating, but the mild form is by far the most frequent. In the cases on record syphilis among the parents was scarcely ever noted, and no signs of syphilis could be found in the children later. The drinking



water taken by the mother may be responsible for the goiter, although predisposing causes may be provided by persistence of the fetal circulation, compression during delivery and congestion from screaming or writhing.

47. **Typhoid Cholecystitis.**—Quénu tabulates 45 cases in which cholecystitis was operated on during typhoid fever. In 34 cases in which operation was done, the mortality was 22.3 per cent. Cholecystostomy answers the indications as it is rapid and simple and drains the gall bladder sufficiently. In case of danger of perforation the gall bladder should be removed at once, he declares.

**Archiv für Verdauungs-Krankheiten, Berlin.**

June, XIV, No. 3, pp. 241-367.

- 48 Histology of Human Stomach. (Histologie des menschlichen Magens.) E. Schutz.
- 49 \*Chronic Ulcerative Colitis. W. Zweig.
- 50 Poisonous Properties of Test Meals and of Stomach Rinsing Water. (Giftigkeit der Probemahlzeiten und der Spülwässer des Magens.) A. Borri.
- 51 Toxicity of Stomach Content, Lactic Acid and Certain Foods. (Bestimmung der Toxizität des Mageninhalts, der Milchsäure und einiger Speisen.) E. Palier (New York).
- 52 Etiology, Initial Symptoms and Treatment of Rumination. F. Schilling.
- 53 A New Gastroscope. (Ein neues Gastroskop.) H. Elsner.

49. **Chronic Ulcerative Colitis.**—Zweig reviews the literature on this subject. He discusses the indications for various methods of operative treatment, but advises first what he calls rectoscopic treatment, which often proves effectual alone. The rectoscope is inserted as far as possible and then a mixture of a mild astringent and a disinfectant powder, with half the amount of salt, is insufflated. The insufflation is continued as the rectoscope is withdrawn until the walls of the sigmoid and rectum are covered with a thick, even layer of the dry powder. He adds the salt on account of Grützner's observation that salt induces antiperistaltic movements which carry small particles from the rectum up into the duodenum. He has never seen any benefit from administration of bismuth and tannin preparations, but Rosenheim has reported good results from repeated small doses of calomel in the febrile recurrences of colitis. Zweig advocates flushing the lower bowel with a mild disinfectant but warns that tannin and silver nitrate are too irritating.

**Centralblatt für die Grenzgebiete der Med. und Chir., Jena.**

June 5, XI, No. 10, pp. 369-400.

- 54 \*Suture of Nerves. (Nervennaht.) E. Oberndörffer. Review of the Literature, 1896-1907. Commenced in No. 8.
- June 17, No. 11, pp. 401-448.
- 55 \*Erysipelas. (Neuere Arbeiten über Erysipel.) V. Bunzl. Commenced in No. 9.
- 56 \*Inflammation of the Omentum. (Epiplöitis.) O. Lederer.

54. **Suture of Nerves.**—Oberndörffer has collected from the literature 287 cases of injury of the nerves requiring surgical treatment, with 340 operations. In 105 out of 128 cases in which the nerve was cut the injury was the work of broken glass. In regard to the outcome of operative treatment the sensibility and the motor functioning are less reliable criteria than restoration of the earning capacity. This was restored in 72 per cent. of the 340 cases of suture of the nerve; partially restored in 15 per cent. and results unknown in 13 per cent. Speiser's compilation of 208 cases in 1902 showed 66.5 per cent. fully restored, and 15.5 per cent. partially, with 18 per cent. failures. The proportion of successes is larger with secondary than with primary suture. The location of the injury does not seem to affect the ultimate results. After the fourth year not much benefit from operative treatment need be anticipated. Complete restitution of the sutured nerve is scarcely possible at any time. In conclusion, he discusses 31 cases of nerve grafting or transplantation. The technic is still far from satisfactory although Létiévant's method of crossing or anastomosing nerves seems essential progress. The gap is bridged with a flap from each of the stumps. This "flap autoplastics" has been applied in seven cases, with good results in all.

55. **Erysipelas.**—Bunzl reviews 307 articles that have been published on erysipelas during recent years, giving the details of treatment according to various authors, both with drugs and antistreptococcus serum and diphtheria antitoxin.

56. **Inflammation of the Omentum.**—Lederer reviews seven articles that have appeared recently as a sequel to his extensive review summarized in THE JOURNAL, Feb. 29, 1908, page 735.

**Deutsche medizinische Wochenschrift, Berlin.**

June 11, XXXIV, No. 24, pp. 1041-1080.

- 57 Occurrence of Bacteria of Paratyphoid Group in Man, in Animals, Food, Etc. Hübener.
- 58 Distribution of Paratyphoid Bacilli. W. Rimpau.
- 59 Nasal Reflexes. A. Koblanck.
- 60 \*Nasal Dysmenorrhea. A. Kuttner.
- 61 Stomach Secretion After Test Meals. (Vergleichende Studie über die Magensekretion nach Riegelscher Probemahlzeit, Ewaldschem Probefrühstück und Sahlischer Suppe.) Würz.

60. **Nasal Dysmenorrhea.**—Kuttner presents arguments to show that the results of application of cocain to cavernous tissue in the nose are exclusively due to the general action of the cocain and the improvement in the general health which follows restoration of normal permeability in the nose, plus the conscious or unconscious influencing of the patient's imagination.

**Münchener medizinische Wochenschrift.**

June 9, LV, No. 23, pp. 1217-1264.

- 62 \*Paratyphoid and Melena in the Newly Born. C. Nauwerck and E. Flinzer.
- 63 \*Absence of Reaction to Old Tuberculin in Persons Free from Tuberculosis. (Wirkung des Alttuberkulins auf den tuberkulosefreien Menschen.) F. Hamburger.
- 64 Goiter. (Der Kropf und seine Behandlung.) G. Hesse.
- 65 \*Vaginal Cesarean Section in General Practice. (Vaginaler Kaiserschnitt.) Lunckenbein.
- 66 \*Graser's Operation for Large Umbilical and Abdominal Hernias. (Nabel- und Bauchbrüche.) K. Port.
- 67 Gastric Crises Simulating Stenosis of Pylorus. O. Eschbaum.
- 68 Trauma and Appendicitis. K. Vogel.
- 69 Silk Tendon as Substitute for the Peroneus. (Peroneusersatz durch Seidenplastik.) E. Kirsch.
- 70 Apparatus for Lavage of Bladder. (Blasenwaschung.) O. Kraus.
- 71 Gargling with Mouth Closed. (Therapie der Ozaena.) H. Schmidt.

June 16, No. 24, pp. 1265-1320.

- 72 Physiologic Tests of Drugs. (Physiologische Wertbestimmung von Arzneimitteln.) K. Gottlieb.
- 73 \*Action of Passive Hyperemia in Animal Experimentation. (Wirkung der Stauungshyperämie im Tierexperiment.) P. Frangenhelm.
- 74 \*Cytologic Findings in Conjunctival Tuberculin Reaction. (Ophthalmozytodiagnose.) R. Dietschy.
- 75 Bang's Method for Titration of Sugar. (Bangsche Methode der Zuckertitration.) P. Dilg.
- 76 \*Pubiotomy and Induction of Premature Delivery in the Home. (Hebeosteotomie und künstliche Frühgeburt im Privat-hause.) A. Mueller.
- 77 \*Rupture of Rectum. (Berstungsrupturen des Rektums.) L. Burkhardt.
- 78 \*Technic for Roentgen Treatment of Deep-seated Processes. F. Dessauer.
- 79 Insufflation of Calomel in the Nose in Syphilis. (Zur Syphilis-therapie.) A. Eysell.
- 80 Method of Arresting Acute Otitis Media. (Kupierung der akuten Mittelohrentzündung.) H. Obermüller.
- 81 Epidemic of Cerebrospinal Meningitis. (Genickstarreepidemie in der Pfalz. Frühjahr, 1907.) J. M. Huber. Commenced in No. 23.

62. **Paratyphoid and Melena in New-Born Infant.**—The case reported is the first on record in which the specific paratyphoid bacillus was transmitted by the mother to the fetus; the latter at birth presented the signs of severe paratyphoid infection. The lesions were multiple foci of necrosis of the stomach, with inflammation and ulceration, enlargement of the spleen, otitis and cholecystitis and hemorrhagic diathesis. The child lived for 36 hours. The mother's sickness commenced four weeks before its birth. The predominance of the gastrointestinal lesions in this case warns against concluding as to the portal of entry of the germs from their most prominent localization in any given case.

63. **Action of Tuberculin on Children Free from Tuberculosis.**—Hamburger relates that 43 children, injected with from 10 to 100 mg. of "old" tuberculin—after negative response to the cutaneous test—never responded with the slightest general reaction of any kind. One girl of 6 tolerated an injection of 500 mg. without the slightest general reaction. On the other hand, there was always a very slight local reaction, but nothing specific. He adds that it is remarkable that the "old" tuberculin seems to be entirely harmless for persons free from tuberculosis. It is also remarkable that the sensitive-



ness of tuberculous individuals can be increased by injections of tuberculin, while in the non-tuberculous even injections of large amounts do not produce this specific sensitizing effect.

**65. Vaginal Cesarean Section.**—Lunckenbein advocates this operation as so simple and harmless that it can be considered in private practice, especially for not too extreme cases of contracted pelvis. In many cases it is sufficient merely to incise the anterior wall of the uterus without detaching the vault of the vagina or exposing the bladder, a mere anterior hysterotomy with extraction of the fetus by the foot or with forceps.

**66. Operative Treatment of Umbilical Hernia.**—Port has applied Graser's technic in seven cases which he describes in detail, and extols the fine results, especially for very large hernia. After reduction of the hernia the superficial fascia is incised across and mobilized. The rectus muscles are then sutured, followed by transverse suture of the fascia.

**73. Passive Hyperemia in Animal Experiments.**—Frangenheim reports extensive experiments with abscesses induced on rabbits and treated with cupping glasses or application of a constricting band above the lesion. The results all seem to show that the hyperemia thus induced had no bactericidal action, while infectious processes in the bone marrow and joints were unfavorably influenced. Early or immediate application of the measures to induce hyperemia never succeeded in preventing the development of the infectious process after inoculation. The formation of pus was much increased under the constricting band and with the cupping glass, while infiltration in the vicinity of the pus focus was the rule. Suppuration, sequester formation and pigmentation were much more pronounced with the induced hyperemia than without it.

**74. Cytologic Findings in Ocular Tuberculin Reaction.**—Dietschy calls attention to the results of numerous tests which show that microscopic examination of the secretions of the eye during the conjunctival reaction to tuberculin shows a leucocyte formula which varies in the course of the reaction in a specific and typical manner. He thinks that the study of the leucocyte curve may demonstrate a reaction, sometimes, when there is no reaction to be detected by the naked eye. He, therefore, commends the "ophthalmo-cytodiagnosis" as a further improvement of the ordinary ocular reaction.

**76. Pubiotomy in the Home.**—Mueller reports a case which shows that pubiotomy can be done safely in a private house if there is no suspicion of infection and if the preparations can be made properly, with trained assistance and good conditions for after-treatment. As a rule, he advocates premature delivery as the standard operation for contracted pelvis in private practice, if it is possible to wait till the thirty-fifth week of pregnancy. If too late for this, and if the pelvis is not too small, he regards pubiotomy as a justifiable and promising operation even in the home.

**77. Rupture of the Rectum.**—Burkhardt has found fourteen cases on record of rupture of the rectum without direct external injury. In a case he reports the rectum was sound and ruptured during excessive straining at defecation. The patient was a healthy youth of 17. Laparotomy the next morning allowed the escaping fecal masses to be cleaned out, but suture of the ruptured anterior wall of the rectum could not be thoroughly depended on as the region was so difficult of access. For this reason he made an artificial anus in the iliac fossa, and the patient soon recovered. All the other cases on record terminated fatally.

**78. Roentgen Treatment Far Below the Surface.**—Dessauer suggests that it might be possible to act effectually on deep lying processes by exposing them to several tubes at different points. The rays from a tube in front focussed on the process would cross the rays from a tube at the side and another at the rear, the deep process thus feeling the effects of the three tubes, while the surface nowhere is exposed to the rays from more than one tube. Another point he emphasizes is that the longer the interval between the tube and the lesion, the less the proportion of loss of radiant energy by absorption into the superficial tissues. He describes some technical improve-

ments in Roentgen instrumentation on these principles which, he says, allow exposure of deep seated processes as effectually as of superficial lesions.

#### Therapeutische Monatshefte. Berlin.

June, XXII, No. 6, pp. 275-328.

- 82 \*Diabetic Acidosis and Treatment of Diabetic Coma. J. Baer.  
83 Treatment of Chronic Obstipation. O. Simon.  
84 The New Edition of the Swiss Pharmacopoeia. (Die neue Pharmacopoe Helvetica (Editio quarta), vom medizinisch-praktischen Standpunkt betrachtet.) C. Bachen. 1d. P. Fleissig.

**82. Treatment of Diabetic Acidosis.**—Baer reviews the present knowledge in regard to severe diabetes, and remarks that the injury is chiefly from loss of nourishing material, which is eliminated in the acidosis bodies unutilized, and from the excessive production of inoxidable acids. When the production of acids surpasses the amount which the ammonia is able to neutralize, coma is liable. If it is possible to neutralize the acids by administration of alkali, enough to render the urine alkaline, this is logical treatment, although it does not reach the source of the metabolic disturbance. Large doses of sodium bicarbonate for several days have frequently arrested the coma in children, but success is rare in adults. His experience has shown that in the fatal cases of coma in adults, notwithstanding enormous dosage of the bicarbonate, the urine never had been rendered alkaline. Injection of sodium glutate in dogs with severe phloridzin diabetes reduced or banished the acidosis, and the application of this measure in the clinic has given good results in a number of cases, although in others it failed. The question of the action of the glutaric acid is identical with the question of its oxidability in the diabetic organism. Baer and Blum are now studying this subject.

#### Therapie der Gegenwart, Berlin.

May, XLIX, No. 5, pp. 193-240.

- 85 \*Two Cases of Megacolon in Children. (Hirschsprungsche Krankheit.) Kohls.  
86 \*Affections in Which the Pneumatic Cabinet Is Indicated. (Welche Krankheiten sind im pneumatischen Kabinette zu behandeln?) E. Aron.  
87 \*Symptomatology. Prognosis and Therapy of Acute Veronal Poisoning. (Veronalvergiftungen.) E. Steinltz.  
June, No. 6, pp. 241-288.  
88 Treatment of Severe, Chronic, Unilateral Pulmonary Affections by Compression of the Lung. (Behandlung chronischer Lungenkrankheiten durch Lungenkollaps.) L. Bauer.  
89 \*Interference with Heart Action by Stopping, Etc. (Beeinträchtigung des Herzens durch schlechte Körperhaltung.) M. Herz.  
90 \*Origin and Treatment of Asthma. A. Moeller.  
91 \*Dietetic Treatment of Gastric Ulcer. (Behandlung des Ulcus ventriculi mittels rationeller Küche.) W. Sternberg.  
92 Influence of Phosphorus-Cod-Liver Oil on Metabolism of Lime. (Phosphorlebertran in der Therapie der Rachitis. Sein Einfluss auf den Kalkstoffwechsel.) J. A. Schabad.  
93 \*The Continuous Bath in Surgery. (Das permanente Bad in der Chirurgie.) R. Mühsam.  
94 Case of Gout of Testicle and Prostate. (Zur Kasuistik gleichtlicher Affektionen von Hoden und Prostata.) Becker.  
95 Preventive Treatment of Gonorrhea in Women. H. Loeb.  
96 Inflatable Pessary for Hemorrhoids and Prolapse. (Pneumopessar.) E. Schlesinger.

**85. Megacolon.**—Kohls describes two cases in boys of 3 and 6, respectively, both fatal, although great benefit followed measures to combat the coprostasis. The prognosis depends on how soon treatment is commenced. Regular evacuation of the bowels is the main point in treatment, and glycerin and oil enemas are the main reliance. Bossowski resected 50 cm. of the sigmoid flexure and the child has been well since. Biedert has stated that recovery is known in only 2 out of the 41 cases on record; 23 died while under observation, and the outcome in 11 cases is not known.

**86. Affections in Which the Pneumatic Cabinet Is Indicated.**—Aron cites in his list chronic bronchial catarrh, the relief of pleurisy, and chronic infiltration and atelectasis after caseous pneumonia. Febrile processes always contraindicate the use of compressed air. In chronic asthma and emphysema the pneumatic cabinet is not to be recommended, but it may aid in increasing vital capacity in persons of the phthisic habitus. A therapeutic influence is also not to be denied in some cases of anemia and chlorosis. The pneumatic cabinet should be merely an adjuvant to other measures; the best results are obtained in combination with a change of climate.



**87. Veronal Poisoning.**—Steinitz reports a case of chronic intoxication plus idiosyncrasy, the symptoms being both nervous and an exanthema and oliguria. In three others the typical intoxication was manifested by profound unconsciousness with relatively good respiration and heart action, complete extinction of the corneal reflex, with retained reaction to light of the pupils, and relaxation of the limbs with retained tendon reflexes. The symptom-complex resembles hysteric unconsciousness. The somnolence may range from apparently natural sleep to deep coma. Especially remarkable is the absence of the corneal reflex with retained pupil reflex. The absence of contractions and the lack of a history of hysteric attacks in the past help to differentiate the condition. Chemical tests of the urine will confirm the diagnosis. In the 13 cases of veronal poisoning on record, 4 of the patients died, the amounts ingested ranging from 11 to 20 gm.; the others, who had received from 2.5 to 9 gm., all recovered. The principal danger is past after 48 hours, although in the severe cases there is danger from consecutive pneumonia. The patients in the mild cases recover without treatment. Otherwise, elimination of the poison should be promoted in every way. If the patient is seen within a few hours the stomach should be rinsed out. Still more important is the evacuation of the bowels, preferably by castor oil by the mouth and by enemas. Diuresis should be promoted, and the patient should be fed through a tube as long as swallowing is difficult. Saline infusion subcutaneously or by the rectum may be needed. If the respiration is not satisfactory, tepid baths with cold douching are advisable, especially to ward off the threatening aspiration pneumonia. Camphor and caffeine will probably be superfluous but may be given as a precautionary measure. The agitation liable to develop during convalescence can be controlled by morphin, which has been called the antagonist of veronal, and can usually be given in adequate doses without apprehension.

**89. Interference with Heart Action by Stooping.**—Herz remarks that writers generally confine their study of this subject to the general circulation, rather than to the effect on the heart itself. He here describes a case in which a man of 47 presented symptoms of arteriosclerosis and myocarditis, but the trouble proved to be merely the result of long continued stooping over a desk. When the patient was trained to hold himself upright and the muscles were strengthened the pseudo heart affections vanished permanently.

**90. Treatment of Asthma.**—Moeller explains asthma as the result of irritation of the respiratory center from certain circumscribed swollen spots in the upper air passages. These spots are the source of irritation of this center. Treatment of asthma, therefore, should include tranquillization of the respiration center by suggestion, and the asthmogenic points must be sought in the nose and throat, and by cauterization made less sensitive to irritation. If they are in the bronchi this can be accomplished by inhalation of compressed air. In case cauterization is refused, potassium iodid may be tried with some sedative as indicated.

**91. Improved Dietetic Treatment of Gastric Ulcer.**—Sternberg believes that mechanical conditions, rather than chemical, are of the greatest importance in treatment of ulcer of the stomach. He gives 13 illustrations of various improved kitchen utensils which allow the food to be ground and strained while yet retaining a consistency that favors mastication. He would banish the spoon for stirring and use only the pestle. For hospitals he recommends a marble mortar worked by power or by hand for grinding the food, raw or cooked, passing it then through a hair sieve, working it through the sieve with a broad masher, not a spoon. Still more effectual is the passing of the food through a cloth. Two men hold the ends of the large cloth and force the substance through it with two heavy wooden ladles with great force. The substance then is smooth as velvet and melts in the mouth—this renders the food exceptionally digestible in the stomach. This is the way the famous French dishes "crème de gibier" and "crème de volaille" are made. The demands on the physiologic functions of the stomach are reduced to the

minimum. By this preparation of the food it is practically predigested, but not in the generally accepted sense of chemical predigestion, but in the physical direction. This physico-mechanical predigestion is much more important than the chemico-physiologic, at least for the upper part of the intestinal tract and most certainly for the stomach. He is confident that the introduction of high art cooking in this line would represent a great advance in the treatment of gastric ulcer.

**93. The Continuous Bath in Surgery.**—Mühsam lauds the favorable action of partial or total baths in treatment of fistulous wounds, especially after appendicectomy, and in hernia suspicious of gangrene, erysipelas with much suppuration and necrosis, especially of the testicles, and necrosis from decubitus, open tuberculosis of the joints, compound fractures and burns. He relates a number of examples in each group, warning only that the patients must be protected from drafts, and the treatment kept up until granulations develop to avoid danger of erysipelas. The continuous bath can be applied in private houses as well as in hospitals.

#### Virchows Archiv, Berlin.

May 7, CXCII, No. 2, pp. 193-384.

- 97 Pathogenesis of Traction Diverticulum of the Esophagus. G. Riebold. Concluded.
- 98 Etiology of Amyloid Degeneration. C. Davidsohn.
- 99 Neoformation of Bone at a Distance from the Periosteum. (Parostale Knochenneubildung.) H. Takata.
- 100 Pneumonia Plus Yellow Atrophy of Liver in Girl of 10. (Eigentümlich Form totaler produktiver interstitieller Pneumonie neben subakuter Leberatrophy im Kindesalter.) F. Klopstock.
- 101 Two Cases of Cirrhosis of Liver in Children. (Leberzirrhose im Kindesalter.) W. Vix.
- 102 Experimental Tuberculosis of the Kidney with Induced Venous Hyperemia. (Tuberkulose und Blutströmung.) J. Meinerz.
- 103 Origin of Thrombosis in Portal Vein. (Entstehung der Pfortader-Thrombose.) L. Lissauer.
- 104 Nodose Periarthritis as Consequence of Staphylococcus Sepsis After Angina. H. v. Bomhard.
- 105 The Kidneys in Pernicious Anemia. L. Paszkiewicz.
- 106 Histologic Findings in Suprenals in Arteriosclerosis. (Nebennieren bei Arteriosklerose, sowie Befund in Nebennieren und Aorta von Kaninchen bei intravenösen Adrenallinjektionen.) J. Hornowski and W. Nowicki.
- 107 Croftan's Method for Differentiating Suprenal Tissue by Biochemical Tests. E. Koerber.
- 108 Monster with Rudiments of Heart and Head. (Holoacardius acephalus.) R. Meyer.

#### Wiener klinische Wochenschrift.

June 4, XXI, No. 23, pp. 823-860.

- 109 Experimental Postponement of Delivery in Rabbits. (Experimentell erzeugte Verlängerung der Tragdauer bei Kaninchen.) A. Kreidl and L. Mandl.
- 110 Diverticula in Trachea. (Zur Kenntnis der aus den Schleimdrüsen der Trachea hervorgehenden, divertikelartigen Bildungen.) R. Maresch.
- 111 Etiology of Molluscum contagiosum. W. Pick.
- 112 Biochemical Reactions as Clinical Tests. (Anwendung der biochemischen Reaktionen für klinische Zwecke.) Wiczowski, M. Selzer and G. G. Wilenko.
- 113 Precipitin Reaction for Serum Diagnosis of Syphilis. (Methodik und Verwendbarkeit der Ausflockungsreaktion für die Serodiagnose der Syphilis.) H. Elias, E. Neubauer, O. Porges and H. Salomon.
- 114 Technic of Amputation of Penis. O. Förderl.
- 115 \*Efficacy of Intravenous Adrenalin-Saline Infusion. (Wert der intravenösen Adrenalin-Kochsalzinfusionen.) T. Meissl.
- 116 Atoxyl in Malaria. (Atoxylversuche bei Malaria-kranken.) R. Gonder and F. Dapas.
- 117 Lipoids in Pyocyanase. (Sind die bakteriziden Bestandteile der Pyocyanase Lipide?) R. Emmerich and O. Löw. Id. H. Raubitschek and V. K. Russ. Id. K. Landsteiner.

June 11, No. 24, pp. 861-892.

- 118 Temporary Suspension of Tuberculous Allergy During Measles. (Verlauf der tuberkulösen Allergie bei einem Falle von Masern und Miliartuberkulose.) C. v. Pirquet.
- 119 \*Diarrhea in Exophthalmic Goiter. (Durchfälle bei Morbus Basedow.) H. Salomon and M. Almagia.
- 120 Indications for Operations on Nasal Septum. (Indikationsstellung der Nasenschleimwandoperationen.) L. Rethi.
- 121 \*Trigeminal Neuralgia from Changes in Teeth. (Trigeminusneuralgien hervorgerufen durch Veränderungen an den Zähnen.) W. Wallisch.
- 122 Connection Between Cutaneous Tuberculin Test and Presence of Antibodies. (Beziehung der Pirquetreaktion zum Gehalt an Antikörpern. Perlsucht-Pirquet.) W. Czastka.

**115. Intravenous Adrenalin-Saline Infusion.**—Meissl has applied this measure in two cases of severe collapse after puerperal hemorrhage. The results were excellent, tiding the patient past the danger point in acute anemia. The effect is transient, but the infusion can be repeated, thus stimulating the heart action and the vasomotor center until the organism



can bring up its reserves. The prospects are naturally better in acute anemia than in infectious diseases, but even in the latter, intravenous adrenalin-saline infusion is liable to prove a life-saving measure. He repeated the infusion two or three times in his cases. The patients were young women who had recently aborted; one was a septic case.

**119. Diarrhea in Exophthalmic Goiter.**—Salomon reports two cases of fat diarrhea in the course of exophthalmic goiter. In one it was referable to concretions obstructing the smaller passages in the pancreas. In the other case it was evidently the result of disturbance in the absorbing faculty of the intestine. The conditions in the stools in regard to the fat were similar to those in isolated disturbances of the absorption of fat in neurasthenics.

**121. Trigeminal Neuralgia from Changes in Teeth.**—Walisch regards neuralgia in younger persons, when the pain is restricted to one branch of the second or third branch of the trigeminal nerve, as suspicious of a dental origin. The pains are more diffuse than in ordinary neuralgia; they do not seem to follow the track of the nerve, and they vary in intensity without ever disappearing completely. He relates a number of instances in which a tooth was responsible for severe neuralgia, although the dentist could discover nothing wrong in the teeth. Teeth with a filling in the root are peculiarly suspicious, even when they are apparently entirely free from all reactions; he does not exclude them until removal of the filling and leaving the cavity open for a time—inserting a little cotton during eating—fail to give relief. In one severe case the pain was in the temple and vertex. The more the neuralgia is restricted to the smaller ramifications, the more one is justified in assuming a peripheral cause, possibly an unsuspected non-irrupted tooth. Inflammation in the maxillary antrum is often a source of facial neuralgia as also rheumatic, hysterical and similar disturbances. The neuralgia is often referred to the ear.

#### Zentralblatt für Chirurgie, Leipsic.

June 13, XXXV, No. 24, pp. 729-752.

- 123 Improved First-Aid Package for the Field. (Verbesserung des Verbandpäckchens für den Feldsoldaten.) Deeleman.

#### Zentralblatt für Gynäkologie, Leipsic.

June 6, XXXII, No. 23, pp. 761-784.

- 124 \*Puerperal Pyemia Cured by Ligation of Pelvic Veins. (Fall von puerperaler Pyämie geheilt durch Unterbindung der Beckenvenen.) G. Friedemann.  
125 \*Etiology of Retroflexion of Puerperal Uterus. R. Ziegenspeck.  
126 Indications for Pubiotomy. H. Peham.  
June 13, No. 24, pp. 785-816.  
127 \*Scopolamin-Morphin Anesthesia in Gynecology. H. Sieber.  
128 High Forceps for High Transverse Facial Presentation. (Zum hohen Querstand der Gesichtslage.) R. Ziegenspeck.  
129 Protection of Perineum. (Dammschutz.) Nacke.

**124. Puerperal Pyemia Cured by Ligation of Pelvic Veins.**—This is the second case reported by Friedmann. The patient was a para of 27 with pyemia after abortion. The ligature was applied in the midst of the thrombosed region; it was impossible to apply it higher. The operation lasted two hours, although merely the hypogastric vein was isolated and ligated. The case teaches that the operation may accomplish its purpose, even under unfavorable conditions. There seems to be an aseptic thrombosis preceding the spread of the septic process in the vessels; this would have become infected if it had not been for the ligature, unless the newly formed thrombus had become organized in time before infection had reached it. This might possibly have allowed spontaneous recovery.

**125. Etiology of Retroflexion of Puerperal Uterus.**—Ziegenspeck calls attention to the unsuspected frequency of retroflexion in young women and girls and of retroflexion due to inflammation and adhesions in the vicinity, and also to the frequency of cases in which the retroflexion is the result of too long lying on the back or of overfilling of the bladder or of both combined. All these causes may cooperate in the first childbirth. He thinks it wise to have the parturient woman lie on her side. In regard to getting up early he knows of two recent fatalities in a country district the result of getting up at once after delivery. In the clinic the overfilling of the bladder and incipient parametritis are discovered

and remedied at once, but this is not the case in private practice. He has made it a rule to examine every puerpera in from eight to twelve weeks after delivery, and has thus been able to detect many displacements and cases of retroflexion, and by prompt treatment to restore conditions to normal. This would have been impossible a few weeks later on account of the stronger adhesions. He insists on the examination, even when the patients are entirely free from symptoms or inconveniences of any kind. The first childbirth requires special attention in this respect, and he agrees with Olshansen that every primipara should be examined at the fourth week and again later to detect any tendency to retroflexion. He finds massage useful in treatment.

**127. Scopolamin-Morphin Anesthesia in Gynecology.**—Sieber states that at the Marburg gynecologic clinic scopolamin and morphin were used in 88 cases for general anesthesia or as a preparation for it. It was noticed that in 32 cases the pulse was increased from 20 to 50 beats a minute, and this acceleration lasted into the second or third day. If all the cases were included in which the pulse was increased by 10 or 20 beats, it would make a proportion of 65.6 per cent. in which this anomaly was observed. He ascribes this protracted effect on the pulse to injury of the heart by the scopolamin. He has since abandoned this technique; for one reason because the high pulse and frequent elevation of temperature render it impossible to differentiate the action of the scopolamin from a beginning infection. He advocates subcutaneous injection of 0.01 gm. (0.15 grains) morphin twenty minutes before spinal anesthesia as the preferable technique. He thinks that two poisons are enough at a time instead of the four sometimes used with scopolamin technique, exclaiming: "Away with this unreliable, generally useless, dangerous poison for general anesthesia."

#### Gazzetta degli Ospedali e delle Cliniche, Milan.

May 24, XXIX, No. 62, pp. 649-664.

- 130 Pulse in Peritonitis and Ileus. (Polso nella peritonite acuta e nell'occlusione intestinale.) A. Rossi and D. Maragliano.  
131 Radioactivity of Mineral Waters. (Fonte Bracca.) U. Prati.  
132 Tricuspid Incompetency and Compensation. G. Binetti.  
133 \*Intoxication from Quinin. (Prove e deduzioni pratiche sulla intossicazione clinica del Tomaselli.) G. C. Matarazzo.  
134 \*Exophthalmic Goiter. (Gozzo esoftalmico.) A. Cantieri.

May 31, No. 65, pp. 681-696.

- 135 Disturbances in Portal Circulation from Mere Congestion of Bile. G. Ghedini.  
136 \*Oatmeal in Treatment of Diabetes. (L'avena nella cura del diabete mellito.) G. A. Pari.  
137 \*Pathogenesis of Gout. (Gotta.) T. Silvestri.

June 7, No. 68, pp. 713-728.

- 138 Immunizing Properties of Diplococci Cultivated on Organ Extracts. (Proprietà immunizzanti del diplococco coltivato su estratto organico.) A. Barlocco.  
139 Diagnosis and Prophylaxis of Lead Poisoning. (Saturnismo.) G. Massini.  
140 Negative Results of Stretching the Nerve for Perforating Ulcer of the Foot. (Stiramento dei nervi plantari come preteso metodo di cura dell'ulcera perforante del piede.) G. Alessandro.

**133. Intoxication from Quinin.**—Matarazzo has found that persons who react to quinin with serious hemoglobinuria and other alarming symptoms are able to tolerate effectual doses of quinin if it is administered by the hypodermic route, as he shows by six examples from his own experience and some from others'. He has observed cases of serious quinin intoxication in persons free from malaria. In one instance the entire train of symptoms of threatening quinin intoxication occurred spontaneously in an attack of malaria; no quinin had been taken for a month. In severe quinin intoxication he gives tonics for the heart and kidneys, rejecting ergot, believing that it "tetanizes" the kidney functioning.

**134. Exophthalmic Goiter.**—Cantieri reports a severe case in which a cure followed repose, tonics, electricity and the use of the milk of thyroidectomized goats. He operated on the animals himself, not trusting to commercial preparations as no benefit seemed to be derived from their use in this case. The patient was a woman of 30, unmarried.

**136. Oatmeal in Diabetes.**—Pari reports a case of diabetes with the metabolic findings while oatmeal was being taken according to von Noorden's technique. They show the advantages of the oatmeal. The patient was a young man. It



seems evident that the starch of the oatmeal has some specific physiologic action different from other starches.

137. **Pathogenesis of Gout.**—Silvestri presents arguments to prove that gout is the result of perverted functioning of the lymph-producing apparatus. The consequence is disturbance in the metabolism, especially in that of nuclein. He explains the acute attack as an accident intercurrent in the slow, chronic development of tophi. It is distinguished from acute articular rheumatism by its special site and by the more intense participation of the soft parts in the inflammatory process. The prodrome, the general symptoms and nitrogen metabolism show that there is toxigenic destruction of albumin, as in any acute infectious disease. The presence of uric acid gives the inflammation its specific character. The big toe has the most weight to bear and it is farther from the heart than any other joint, which favors the deposit of urates, while it is particularly exposed to trauma and constant pressure. The urates are deposited where the circulation is most sluggish, and thus prepare the soil for the joint lesion, so that gout affects predominantly the smaller, remote joints while acute articular rheumatism settles in the larger joints. He regards the perverted functioning of the lymph-producing organs as a congenital anomaly. The acute attack of gout is not a necessary effect, but an episode favored by the uric acid diathesis.

#### Policlínico, Rome.

June 7, XV, *Practical Section*, No. 23, pp. 709-740.

- 141 Anastomosis and Transplantation of Vessels. (Anastomosi e trapianti dei vasi sanguigni.) V. Nicoletti and A. Curcio.  
*June 14, No. 24, pp. 741-772.*
- 142 Picric Acid in Trachoma. M. Scellino.  
*June, Surgical Section, No. 6, pp. 241-288.*
- 143 Case of Isolated Comminuted Fracture of Atlas. V. Quercioli.
- 144 Primary Sarcoma of Liver. (Sarcomi primitivi del fegato.) G. Bertelli.

#### Hospitalstidende, Copenhagen.

May 6, LI, No. 19, pp. 521-552.

- 145 Case of Secondary Abdominal Pregnancy with Living Child at Term. (Sekundært Abdominalsvangerskab med levende, fuldbaarent Barn.) S. Horneman.
- 146 Head Holder for Autopsy Work. (Apparat til at fixere Hovedet med ved Sektioner.) O. Horn.

#### Nordiskt Medicinskt Arkiv, Stockholm.

April 30, XL, *Internal Medicine*, No. 4.

- 147 \*Syphilis of the Lung in Adults. (Lungensyphilis bei Erwachsenen.) G. Hedren.
- 148 \*Diagnosis of Uterine Cancer and of Late Syphilis of the Uterus. (Diagnose du cancer utérin et de la syphilis tardive de l'utérus.) F. Howitz.

147. **Syphilis of the Lung.**—Hedren describes the autopsy findings in a case of syphilis with multiple gummata on the skin, fibrous endocarditis and interstitial pneumonia of the right lung, the latter evidently a syphilitic process as there were no signs of tuberculosis or other explanation for the unilateral lesion.

148. **Syphilis of the Uterus.**—Howitz comments on the serious consequences that might be entailed by mistaking a gumma of the cervix for cancer. In a recent case a woman of 32, with three children, the youngest 4 years old, had a small tumor on the cervix which was excised and declared to be an epithelioma. Less than three years later she returned with an apparent recurrence of the tumor but on the opposite side of the anterior lip of the external os. This tumor was also excised and again the microscope confirmed the assumption of epithelioma, although the shape and consistency suggested rather a fibroma. The fact that the recurrence had developed at another point was suspicious, and Howitz then discovered that the patient had acquired syphilis at 17. She had been thoroughly treated and had been in perfect health since. The most minute examination failed to reveal any signs of it except, possibly, the uterine affection. A course of potassium iodid was instituted and the woman has since passed through a normal pregnancy. No spirochetes could be found in the placenta or any signs of syphilis. He mentions parenthetically Bergh's statement that during the thirty-eight years in which he was in charge of the hospital for prostitutes he encountered only one case of cancer of the uterus among them. Howitz suggests that this seems to indicate that

thorough and repeated specific treatment of the syphilis—such as these prostitutes received, nearly all having contracted syphilis early in their careers—may have a prophylactic action against the development of cancer later. In the case described, Howitz decided to regard the uterine tumors as a tertiary manifestation of syphilis and has had no cause to regret his action during the three years since. The mother and children are in the best of health and the woman was saved a severe mutilating operation. The tumors were hard, resistant, circumscribed and indolent.

## Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

PRACTICAL MEDICINE SERIES (VOL. V). OBSTETRICS. Edited by Joseph B. DeLee, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School. Cloth. Pp. 228. Price, \$1.25. Chicago: Year Book Publishers, 1908.

CONTRIBUTIONS TO THE SCIENCE OF MEDICINE AND SURGERY. By the Faculty in Celebration of the Twenty-fifth Anniversary of the Founding of the New York Postgraduate Medical School and Hospital. Paper. Pp. 485.

FIFTY-FIRST ANNUAL REPORT OF THE WILMINGTON INSTITUTE, Wilmington, Del., Including the Fourteenth Annual Report of the Wilmington Institute Free Library. Paper. Pp. 36. Wilmington: Charles L. Story.

NEW HOSPITALS NEEDED IN GREATER NEW YORK. Recommendations by the Standing Committee on Hospitals of the State Charities Aid Associations. By Mr. Phil P. Jacobs. Paper. Pp. 83.

TWENTY-SECOND ANNUAL REPORT OF THE OHIO DAIRY AND FOOD COMMISSIONER for the Fiscal Year Ending Nov. 15, 1907. Paper. Pp. 72. Columbus: F. J. Heer.

AMBULANCE SERVICE IN GREATER NEW YORK. A Report on Present Conditions. By Mr. Phil P. Jacobs. Paper. Pp. 36.

SIXTH, SEVENTH AND EIGHTH ANNUAL REPORTS OF THE HAHNEMANN HOSPITAL, Scranton, Pa. Paper. Pp. 77.

TRANSACTIONS OF THE FLORIDA MEDICAL ASSOCIATION for the Year 1908. Paper. Pp. 304.

## NEW PATENTS.

Recent patents of interest to physicians:

- 889171. Formic-aldehyde preparation and making same. H. S. Blackmore, Mount Vernon, N. Y.
- 888869. Inhaler. F. I. Clark, Baltimore.
- 888477. Urinary apparatus. V. D'Incognito, Chicago.
- 888996. Vibrator. M. K. Golden, Chicago.
- 888490. Flexible corrective brace and brace-frame. G. W. Haas, Los Angeles, Cal.
- 889022. Syringe. J. Kinsel, Philadelphia.
- 889154. Medical appliance. S. Rolfsen-Schmidt, Fairground, N. Y.
- 889156. Physician's case. P. Ruehlmann, Philadelphia.
- 888758. Making medicinal composition. J. C. Slack, Clayton, N. Mex.
- 889424. Spraying nozzle. S. H. Adams, Fulford, near York, Eng.
- 889203. Medicine dropper. J. A. Clifton, Orangeburg, S. C.
- 889662. Surgical instrument. C. N. Coulter, Traverse City, Mich.
- 889361. Suture and ligature container. H. A. Flanders, Boston.
- 889541. Crutch. G. B. McConnell, Houston, Pa.
- 889542. Electromedical battery. E. T. Otto, Jersey City, N. J.
- 889810. Medicating and massaging appliance. H. Robinson, Waco, Texas.
- 889827. Elastic woven bandage. W. J. Teufel, Stuttgart, Germany.
- 889738. Medicine measure. A. R. Weber, Hammond, Ind.
- 890484. Apparatus for administering oxygen or the like. G. von Ach, Newark, N. J.
- 890018. Dose stopper. A. W. Burt, Roselle Park, N. J.
- 890407. Invalid bed. G. B. Colles, Harriman, Tenn.
- 890029. Massage instrument. W. H. De Camp, Fort Wayne, Ind.
- 890068. Fracture apparatus for stretching parts of the human body. M. Koehler, Hohenlohehutte, Germany.
- 890289. Oxygen-cutting apparatus. H. P. Merriam, New York.
- 889964. Therapeutic apparatus. T. Powell, Los Angeles, Cal.
- 890452. Truss. J. Q. A. Remine, Greenville, Tenn.
- 890580. Ophthalmometer. J. H. Sutcliffe, London, Eng.
- 890842. Clavicular apparatus. R. H. Cheatham, Denver.
- 890975. Breast pump. J. S. Gilbert, Portland, Ore.
- 890650. Combined wardrobe and disinfecting cabinet. A. S. Hitchcock, Franklin, Pa.
- 891176. Metabolizer. J. von der Kammer, Washington, D. C.
- 890912. Soda fountain. C. F. Kurz, Cleveland, Ohio.
- 890990. Syringe. A. E. Macdonald, San Francisco.
- 891181. Inflatable bandage. P. Mitchell, Rock Island, Ill.
- 890681. Bed-pan. M. Moore, Marble Rock, Iowa.
- 890709. Liquid actuated vibrator. C. H. Richmond, Boston.
- 890883. Burner nipple pricker and cleanser. S. Spiller, Rockhampton, Queensland, Australia.
- 890885. Device for turning nursing-nipples. E. L. Stuart, and S. A. Conine, New Hamburg, N. Y.
- 890822. Therapeutic vibratory apparatus. J. M. Tourtel and G. L. Hogan, London, Eng.
- 39362. Design. poison bottle. W. V. Johnston, Thermopolis, Wyo.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOLUME LI

CHICAGO, ILLINOIS, JULY 25, 1908.

NUMBER 4

## Original Articles

### AN ANALYSIS OF FOUR HUNDRED CASES OF EPIDEMIC MENINGITIS TREATED WITH THE ANTIMENINGITIS SERUM.\*

SIMON FLENNER, M.D., AND JAMES W. JOBLING, M.D.  
NEW YORK.

We have already reported concerning the effects of the employment of an antimeningitis serum, prepared in the horse by inoculation of *Diplococcus intracellularis* and its products, on the course and termination of a small number of cases of epidemic meningitis.<sup>1</sup> The results first presented were, on the whole, so satisfactory that we believed the employment of the serum on a wider scale not only justified but clearly called for, and we are now in position to present a second series of figures which are based on an analysis of about four hundred cases of epidemic meningitis in which the serum has been used.

The cases of meningitis on which this analysis rests have arisen in different and widely separated parts of the United States and Canada and in Great Britain. They have occurred sometimes as small epidemics, as in Castalia and Akron, Ohio, in Porterville, California, and possibly in other places in the United States, and in Belfast, Ireland, and Edinburgh, Scotland; and sometimes as sporadic outbreaks of considerable extent, as in Cleveland, Boston, Baltimore, Cincinnati and Philadelphia. Moreover, it is now evident that so-called epidemic meningitis is widely prevalent throughout the United States, and it would appear to be questionable whether or not any parts are really free from the disease. In view of the fact that we have demanded that the bacteriologic diagnosis be made in every case of meningitis for which we have supplied the serum, and which we have accepted for analysis, and that in doubtful instances we have ourselves examined slides and sometimes cultures prepared from the spinal exudates, we can speak with positiveness on this important subject.

It is an important matter, and one to be carefully pondered, whether the wide distribution of sporadic epidemic meningitis in the United States is the outcome and residue of the epidemic that raged in New York and vicinity from 1905 to 1907, or whether the disease tends to exist and has long existed in a sporadic state in this country, from which the severe epidemic outbreaks have occasionally taken their origin. There is some reason to suppose that the diagnosis of sporadically occurring cases of the disease may fail to be made

unless attention is specially directed to the unusual symptoms by the simultaneous occurrence of several such cases, or by a wider publicity which the disease sometimes attains as through the existence of obvious epidemic foci, or, as in the present instance, by the interest excited by the publications relating to the anti-meningitis serum.

The analysis which is to be presented is based on histories of cases of epidemic meningitis in which the diagnosis has been established by bacteriologic examinations as well as by the usual clinical tests. The histories have been supplied by physicians in hospitals and in private practice, who have employed the serum. It will not be possible in this place to acknowledge duly and by name the physicians who so generously gave their time to the study of the effects of the serum. But we hope soon to publish a full report of this investigation, when the awarding of due credit will be attempted.<sup>2</sup>

In making up the figures on which the tabulations are based, account has been taken of the age of each patient, the period of the disease at which the serum was first injected, the number of injections of the serum made, the dosage of the serum, the effects on the temperature and the subjective and objective symptoms of the disease, on the number and viability of the diplococcus in the spinal exudate, the general leucocytosis, the duration of the fever and other symptoms, the manner of recovery—that is, whether by slow improvement or lysis or by abrupt termination of the symptoms or crisis—and some other details of the disease. Not all the points that have been developed can be brought out in this shorter article. But we wish to state that in one way only has any selection of cases been made, namely, that all cases which survived the first dose of serum less than twenty-four hours have been excluded from the tabulations. We consider that it may be accepted as probable that any marked benefit which the serum may be assumed to exert could hardly be effectively exhibited before the first twenty-four-hour period following its administration had elapsed. It has chanced that of the histories here analyzed the eliminations include chiefly patients who were moribund at the time of their admission to hospitals and the first serum injections and who survived only a few hours—from one hour to five or six hours—and, in addition, a certain, although small number of rapidly fatal fulminating cases.

#### RESULT ACCORDING TO THE AGES OF THE PATIENTS.

The total number of cases subjected to tabulation is 393.<sup>3</sup> The total number of recoveries among these cases was 295 and the total number of deaths 98. Hence

\* From the Rockefeller Institute for Medical Research.

1. Jour. Exper. Med., 1908, No. 1. Independent publications have been made by Robb, Brit. Med. Jour., Feb. 15, 1908; by Dunn, Boston Med. and Surg. Jour., March 19, 1908; and by Chase and Hunt, Arch. Int. Med., April, 1908.

2. Jour. Exper. Med., 1908, No. 5.

3. Representing the number after the moribund and fulminant cases have been subtracted.



there were 75 per cent. of recoveries and 25 per cent. of deaths. Tabulated according to the ages of the patients the following is the result obtained:

Patients.	Total number.	Re-covered.	Died.	Percent. of deaths.
Under 1 year . . . . .	22	11	11	50
Between 1 and 2 years. . .	19	11	8	42.1
Between 2 and 5 years. . .	68	52	16	23.5
Between 5 and 10 years. . .	79	70	9	11.4
Between 10 and 20 years. . .	105	80	25	23.8
Over 20 years . . . . .	87	64	23	26.4
Age not given. . . . .	13	7	6	46.1

The youngest child which recovered was 1 month old. The latest case of the disease, in a child under 1 year of age, which was treated was in its fourth month when the injections were begun: the child died. The highest mortality was among patients over 20 years of age, which we think can be explained in part by the fact that a large number were treated by scattered physicians who had no experience with the serum. If this is not the reason, and adults past 20 are less subject to the action of the serum than younger persons, the fact will of course come out finally; but with one exception—Cincinnati—wherever a series of patients of these ages has been treated by one observer the percentage of recoveries to deaths has been high—Johns Hopkins Hospital (Baltimore), Cleveland, Belfast (Ireland).

#### RESULTS ACCORDING TO THE PERIOD OF INJECTION.

We have also analyzed the histories according to the earliest period of the disease at which the injection of the serum was begun. Not all the histories are perfectly definite on this point, and hence we have used in the analysis only those that are definite. In not a few cases the onset of the disease was insidious and the prodromata appear to have been indefinite and more or less overlooked. At other times, and this seems to have been the more frequent experience, the onset was abrupt so that no special doubt surrounded the beginning of the disease. Under the circumstances, therefore, the danger is that the period elapsing between the onset of the symptoms of the disease, their recognition and the first serum injection will be calculated too short rather than too long. It is very rare, except in the fulminant cases, that one can assure himself that he is dealing with the disease on the first day of its existence.

The histories of 328 cases were sufficiently explicit to enable us to approximate the periods in which the first serum injection was made. We have arbitrarily chosen the three periods that follow in which to group the cases:

Period of injection of serum.	Number of patients.	Re-covered.	Died.	Percent. of deaths.
First to third day. . . .	121	103	18	14.9
Fourth to seventh day. .	100	78	22	22
Later than seventh day. .	107	68	39	36.4

In spite of the uncertainties surrounding the period of onset of the symptoms which affect the accuracy of the calculation of the period, the beneficial influence of early injection is rendered sufficiently obvious by the table. The period embraced in the last group is, of course, highly irregular, since not a few patients came under treatment when they were in a semi-chronic or chronic state after many weeks of illness. On the whole, therefore, the outlook even for the latter class of cases is not wholly discouraging, and, indeed, we are of the opinion that so long as the diplococcus is still present in the meningeal exudate and the mechanical damage to the anatomic structure is not irreparable, the employment of the serum holds out hope of considerable benefit.

#### MANNER OF TERMINATION OF THE SYMPTOMS.

The histories have been sufficiently explicit in 270 instances to enable us to determine the manner in which the disease terminated, that is, whether by lysis or crisis. We do not think that our decisions on this point have been uniformly correct and the figures are given, therefore, merely as an approximation of what may be found later to be the true data. Of the 270 cases described in the histories, 201 terminated by lysis and 69 by crisis. Hence we have assumed that from 25 to 30 per cent. of the cases treated with the serum terminated abruptly in the manner to which we previously applied the term "crisis."

Closely connected with the question of the manner of termination of the symptoms is the question of the duration of the active symptoms of the disease in serum-treated as compared with non-serum-treated cases. Without entering into a discussion of this point we wish to state that we have analyzed 220 histories of recovered patients with reference to the duration of the active symptoms and found the period to be about eleven days.

#### INFLUENCE ON DIPLOCOCCI, SPINAL EXUDATE AND LEUCOCYTOSIS.

In our first publication on the serum treatment of epidemic meningitis we drew attention to a fact which impressed us as remarkable and significant, namely, that soon after the serum injections were begun the diplococci tended to be greatly reduced in numbers, to disappear from the fluid part of the exudate, to become wholly intracellular (unless they were now entirely absent), to present certain changes in appearance, as swelling and fragmentation, and to stain diffusely and indistinctly, and coincidentally to lose viability in cultures. The later and far wider experience has tended to confirm the views we first expressed based on the effects observed; and, while exceptions occur in which the diplococci disappear or become engulfed and change in morphology or lose viability more slowly, yet the general fact seems securely established. There seems little doubt that part of the beneficial effect of the serum injections must arise from the restriction of multiplication and from the greater phagocytosis of the diplococci.

Attention was previously directed to the rapidity with which the exudate in the meninges loses turbidity under the influence of the serum injections. This fact has been noted again and again in the subsequent cases in which the treatment was carried out. Indeed, it would now appear as if the fear we expressed that the cases with strictly purulent exudates might be less amenable to the action of the serum was premature. A fair number of patients in whom the notes state the spinal exudate to have been purulent have recovered, and the rapid clearing of the exudate was observed even in them. Whether there is complete anatomic restitution of the meninges in these cases can only be determined by postmortem examinations, but that complete functional restoration can take place may be regarded as certain.

Closely connected with the rapidity with which the cerebrospinal exudate loses pus cells and returns to a limpid condition is the state of the general leucocytes of the blood. If the inflammatory emigration into the meninges is arrested, then the number of circulating leucocytes should tend rapidly to return to the normal.



The facts at hand, based on many counts of the circulating leucocytes before the injections of serum were begun, and afterward at regular intervals, show, as was to be expected, a fall, often very rapid and even critical, in the number of leucocytes in the general blood stream with which the disappearance of the diplococci and the clearing of the spinal exudate are correlated.

The obverse of the phenomena here mentioned is encountered in those cases not responding to the serum, or responding imperfectly, in which death is the result. Although the data bearing on this topic at our command are less numerous and perfect than the other, yet the general statement can be made that the diplococci, the spinal exudate and the circulating leucocytes are less influenced in the resistant cases, and that progressive increase in turbidity of the exudate and rise in leucocytosis, and greater persistence of the diplococci with retention of viability after several injections of the serum, are unfavorable indications.

The data at hand bearing on the meningeal phenomena that precede and attend the relapses so far as diplococci, exudate and leucocytosis go are also imperfect. Here, again, the general statement can be made that the relapse is attended or ushered in by increased exudation of leucocytes into the meninges, higher systemic leucocytosis, and reappearance of or increase in the numbers of diplococci, although the diplococci may not regain power to grow outside the body in cultures. Relapses in the course of the treatment are not very frequent and rarely has the case terminated fatally during relapse when the treatment with the serum has been resumed without delay and vigorously pushed.

There remains one more topic to be mentioned. The indications given by the first series of serum-treated cases were to the effect that in the great majority of instances recovery from the disease would be complete. The facts brought out by the far larger series of cases on which this article is based confirm the earlier view which we expressed. The number of complications which arose in them was small, and the only persistent defect noted was deafness. This lamentable condition occurred in a few instances only, and it was more often than not noted early in the disease before the serum injections were begun.

## INJURIES OF CRANIAL NERVES FROM FRACTURES OF THE SKULL.\*

JOHN JENKS THOMAS, A.M., M.D.

Assistant Professor Neurology, Tufts College Medical School;  
Physician for Diseases of the Nervous System, Boston City  
Hospital; Assistant Neurologist, Children's Hospital;  
Consulting Neurologist Quincy Hospital.  
BOSTON.

At most large metropolitan hospitals which lie near the manufacturing and business districts there are treated many cases of accidents. In the Boston City Hospital, with which I have been connected as one of the staff for diseases of the nervous system for nearly fifteen years, many cases of injuries of various kinds are treated each year. Over 700 patients of this class were admitted to the wards during the year ending Feb. 1, 1908, in addition to those treated at the Relief

Station, a branch hospital, and as out-patients at the Relief Station and the main hospital.

In many of the cases of injuries of the head the neurologic staff is called in consultation by the surgeon in determining the question of the nature and extent of the injury to the brain. In these cases I have been struck by the frequency of involvement of one or more of the cranial nerves when there has been a fracture of the base of the skull. This injury often enables one, in cases that are doubtful or in fracture of the vault, to make the decision that there is a fracture of the base. In looking over the neurologic and surgical literature I have found relatively little on this aspect of the subject, and it seemed worth while to call attention again to what is a well-known fact and to state my own experience in regard to the frequency and character of these injuries.

### FREQUENCY OF COMPLICATION.

In the text-books on surgery these facts are usually mentioned, but I have failed to find any statement as to the frequency of the complication. This is probably due to the inherent difficulty in collecting reliable statistics about the subject. In conversation with Dr. Nichols, one of the surgeons of the Boston City Hospital, he has expressed the opinion that one case in seven of fracture of the base of the skull shows an involvement of the cranial nerves, and this estimate corresponds very closely with my results. Let me state at once that no one knows better than I the unreliable character of statistics drawn from records in which the point investigated has not been in mind at the time the records were made. This is especially true of hospital records, in which the house surgeon, in the multiplicity of detail in caring for large numbers of serious cases, often neglects to have notes made by his junior—who is responsible for the records—even of conditions which he himself has noted, and this, too, aside from the fact that in many of the more serious cases the examination necessarily must be incomplete, to say nothing of difficulties with unconscious patients in detecting involvement of nerves of sensation, or those subserving movements of the eyes. Still, while admitting these difficulties and sources of error, the figures I have obtained are striking.

I have taken from the surgical records of the Boston City Hospital only the cases of injury of the head in which a diagnosis of fracture of the base of the skull was made, or in which bleeding from the orifices of the head, ecchymoses of the conjunctiva, or the escape of cerebrospinal fluid from the ear or nose has made the diagnosis certain. Up to Jan. 1, 1908, I found 511 such cases had been admitted to the wards. Of these cases there were 69 in which the records showed peripheral involvement of one or more cranial nerves; that is, 1 in 7.8 cases, or a percentage of 12.75.

### FREQUENCY OF INVOLVEMENT.

When we consider the frequency with which the various nerves are injured, either alone or in combination with others, we find the seventh, or facial nerve, by far the one most frequently involved. This, however, is very likely not only because it is actually more frequently injured, but also probably in part because affections of this nerve are more striking and can be more easily discovered in unconscious or partially conscious persons. I have found the facial nerve affected alone or in combination with other nerves in 44 cases, in 2 of which the trouble was bilateral.

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



The nerve which is next in frequency of involvement is the sixth, or abducens, which was paralyzed in 12 cases, once bilaterally. The auditory, or eighth, nerve was affected 10 times, and of these cases 4 were bilateral. It is possible that this nerve was partially affected in more cases, but I have excluded all cases in which the deafness was moderate, and in which there had been rupture of the membrum tympani, or where it could have been due to the injury of the middle ear. It was, of course, impossible to differentiate between the cases of deafness due to injury of the nerve trunk and those from fracture through the cochlea. Dr. Bullard,<sup>1</sup> in 70 cases of fracture of the skull investigated, found deafness in 9 cases, in 2 of which it was slight, and in 1 was diminishing and in 1 bilateral. The fracture was at the base or showed in the bony wall of the ear in 6, was at the occiput in 2, and in the frontal region in 1, while tinnitus was found only twice and in both cases without deafness.

The third nerve was next in frequency of affection in our series, namely 9 times. Most often all branches were affected, but at times the trouble was only partial, as in 1 case in which the movements of the eye up and down were impaired. In another there was ptosis only, while in a third the superior rectus was the only muscle supplied by this nerve that was affected.

The optic nerve was the one next most often involved. This occurred in 8 cases, and here I have included only the cases of blindness in which the diagnosis was confirmed by the discovery of optic neuritis or optic atrophy on ophthalmoscopic examination. Of the remaining nerves the olfactory, patheticus, trigeminal and hypoglossal were each affected once.

#### FREQUENCY OF COMBINED INVOLVEMENT.

The combinations of nerves injured were not very frequent in this series. Once the second, seventh and eighth were affected together. Both eighth nerves twice. Both seventh nerves once, and both seventh and the left sixth once. Both olfactory nerves, with the left fourth and partial left third was another combination. The second, third and sixth on one side were involved together once. The third and seventh twice, once on the same side. The third and sixth occurred together once. The right optic nerve and both sixth nerves were affected once. The optic and auditory twice, once on the same side and once crossed. The seventh and eighth together appear twice. The seventh and sixth twice, and the seventh and twelfth once. In eight cases nerves on both sides of the skull were affected.

I will give in condensed form some of the histories of these cases in which it was possible to observe the patients for some time after discharge from the hospital. It should be noted, however, that in a number of the cases included in these statistics the affection of the nerve disappeared while the patient was still under observation in the hospital for the original injury. This was particularly noted in three cases in the hospital records, two being of the facial nerve and the other of the abducens. In other cases it was noted in the records that the paralysis was improving. In these histories the numbers in parentheses are those of the records of the neurologic department, and I wish to express here my thanks to my colleagues, Drs. Prince, Knapp and Bullard, for permission to use their notes.

#### ILLUSTRATIVE CASES.

CASE 1.—*History*.—John S. (13288), was seen first at the Out-patient Department on June 21, 1907. Four weeks before he had been struck in the left eye by the point of an umbrella, at the junction of the eye and nose, and was unconscious for half an hour, and dazed for two or three days.

*Examination*.—On examination there was slight divergent strabismus of the left eye, due to partial paresis of the third nerve, and also primary optic neuritis in the left, according to the report of the ophthalmic surgeon, and the left pupil did not react to light. Further examination showed paresis of the right extremities with ankle clonus but no Babinski's sign, and slight diminution of the sense of touch on the right side of the body. The palate, face and tongue were unaffected.

CASE 2.—*History*.—(This case is from my private records.) Grace T., aged 5, was first seen by me on April 8, 1903. Four weeks before she fell down stairs striking the head, though there was no open wound. She was unconscious, and remained so for five days, and it was nine days before she spoke. There was no bleeding from the ears or nose, but swelling and ecchymosis of the right eye. There was vomiting at the time of the injury. She remained in the hospital under the care of Dr. Conant, who referred her to me, for two weeks, and then returned home. During her stay at home, she had only complained of headache once, but she had been unable to open the right eye.

*Examination*.—On examination there was a slight depression of the skull in the neighborhood of the right occipitoparietal suture. The vision seemed fair in both eyes. There was complete paralysis of the right third nerve with ptosis, and dilatation of the pupil, and probably also paralysis of the superior oblique muscle. The fifth, sixth, seventh and eighth nerves were normal, as well as the extremities. The paralysis of the third nerve improved, so that by July the ptosis had almost disappeared, and the eye could be turned in nearly to the full extent, and somewhat up and down, her vision had failed in the right eye, so that she could not make out the form of quite large objects, and the disc showed beginning atrophy. The fourth nerve seemed to have recovered, as the eye could be turned down and out very well. The vision improved slightly from counting fingers only till when last seen on Jan. 18, 1908, it was 1/200, while in the left eye it was 10/10. The pupil was moderately dilated on the right, and there was partial ptosis on this side and the eye was not moved up, and in, with quite normal range.

CASE 3.—*History*.—E. I. (10969), was admitted to the Boston City Hospital, Oct. 24, 1903. He had been struck by a piece of a bursting emery wheel, and showed a lacerated wound of the bridge of the nose, extending towards the left into the forehead, into which a finger could be inserted three-quarters of an inch, and splintered bone felt. The lid of the left eye was ecchymosed. No paralyses were noted. Fragments were removed from the frontal bone, as well as a large part of the ethmoid, and the inner third of the roof of the orbit. He vomited blood and was unconscious. He was discharged from the hospital on Nov. 10, 1903, and for three weeks after this had severe headaches, but when seen in the out-patient department on Jan. 11, 1904, this had been gone for two weeks, and he was complaining of diplopia and loss of sense of smell.

*Examination*.—This showed the right pupil larger than the left, though both reacted well. There was paresis of the left superior rectus, and left superior oblique muscles only, with diplopia on looking up and in, and down and in, with the characteristic inclination of the images. The hearing, facial movements, sensation, and the condition of the extremities were normal.

CASE 4.—*History*.—Edward B. (13866), on Oct. 6, 1907, had his head crushed between two cars. When he entered the hospital the same day he was conscious and rational, and showed a horizontal scalp wound, seven inches long, over the right ear, which exposed the bone. There were loose fragments of bone in the wound, and much laceration of the brain, with moderate external and internal bleeding. A crack extended forward from the anterior end of the wound. Both

1. Permanent or Later Results of Fracture of the Skull, Boston Med. and Surg. Jour., 1897, cxxxvi, 404.



eyes were ecchymosed. On October 18 it was first noted that there was paralysis of the left superior rectus, and a paresis of the external rectus of that eye, while the fundi were normal. On March 25, 1908, when he was again seen after discharge from the hospital, at the end of nine weeks stay, he complained of some pain and vomiting till about six weeks before, disturbed sleep, attacks of vertigo, and tinnitus and diplopia.

*Examination.*—The sense of smell was not affected. Sensation was diminished over the area supplied by the first and second branches of the fifth nerve, there was paresis of the left levator palpebrarum superioris, and of the left external rectus. The examination was otherwise negative. He improved while under observation, but was not entirely well when last seen.

*CASE 5.—History.*—James B. (9654), entered the hospital March 23, 1899, having been injured while oiling the engine on a boat. He was conscious, but suffering from shock, and bleeding from the nose and both ears, and on examination it was found that the left eye could not be moved out, nor the eyelids closed, and he was somewhat deaf. There was a lacerated wound in the left temporo-occipital region, 5 inches long, with the bone exposed, but no fracture seen. He vomited several times, the vomitus containing blood. The next day it was noticed that both sides of the face had become paralyzed.

*Examination.*—Examination at the out-patient department on May 17, 1899, showed that the eyes and pupils were normal except for paralysis of the left external rectus, and slight nystagmus on the right on looking in. The watch was heard on the right side on contact only. Tuning fork air conduction better than bone, and about alike in the two ears. In the right ear there was a cicatrix in the anterior superior quadrant of the drum membrane, with some thickening and retraction. In the left ear there was deformity of the canal posteriorly in the region of the facial nerve, and the membrane was ruptured posteriorly. The aural surgeon reported that there was enough change in the middle ear to account for the condition of the hearing, and he thought the left facial nerve was injured in the canal, while on the right there was no evidence of this. There was some improvement and in November, 1905, it was noted that by a great effort he could wrinkle the brows a little, and could close both eyes completely though with very little force. The muscles of the lower part of the face on the right had very little voluntary motion, while on the left they moved fairly well. There was considerable fine spasm of the facial muscles after voluntary motion.

Both sides reacted to faradism, and galvanism without polar change, but with diminished irritability to both currents, this being slightly more marked on the right than the left side. There was still internal strabismus of the left eye with diplopia.

*CASE 6.—History.*—Albert L., (vol. 447, p. 214), entered the Boston City Hospital July 24, 1905, having been struck on the head by a falling timber. He was partially conscious, bleeding from ears, nose and mouth, and there was a hematoma on both sides in the frontal region, and above the left ear. There was no paralysis at that time, either of the face or elsewhere. Three days later a paralysis of the left side of the face, involving all three branches, appeared, and the next day this appeared on the right side also, and did not improve up to the time of his discharge from the hospital, when he was lost from observation, although he was told to report.

*CASE 7.—History.*—Joseph H., (12368), entered the Boston City Hospital, Feb. 1, 1906, having fallen from the seat of his cart. He was conscious but irrational. There were ecchymoses about both eyes, bleeding from both nares, and the right ear, and a lacerated wound  $1\frac{1}{2}$  inches long in the right parietal region, with no depression, and the bone not exposed. There was no paralysis till the eighth day when a slight right facial paralysis was seen.

*Examination.*—He was examined on February 19 at the out-patient department. There were then slight exophthalmos and slight greenish ecchymosis under each eye. The pupils

were equal and reacted, though a little sluggishly. Smell, taste, hearing, sensation and the eye movements were all normal. There was paralysis of the right side of the face, though the eyelid could be closed completely, with diminished reaction of the muscles to the faradic current, and some polar change to galvanism in both facial nerves. The aural surgeon reported that there was probably fracture of the superior meatal wall with effusion in the middle ear, while the auditory nerve was not markedly affected. He thought the facial nerve probably affected by a fracture through the foramen at its entrance into the attic. On March 26 he could move the two sides of the face nearly equally well, but there was still slight quantitative diminution on the right to electric stimulation by both faradic and galvanic currents.

*CASE 8.—History.*—John B. (12937), entered the hospital Jan. 13, 1907, having been knocked down and robbed. He was unconscious and had a hematoma on the right behind the mastoid, and there was blood in the right ear, and the nose, and also a discharge of cerebrospinal fluid from the ear. The left pupil was larger than the right, and there was a facial paralysis on the right.

*Examination.*—He was examined Feb. 13, 1907, and there was paralysis of the right side of the face, all branches being involved. The pupils and eye muscles were normal except for nystagmus on looking laterally. The watch was heard on the right at 4 inches and on the left at 20 inches. Fork (512) was heard on the right at 8 inches and on the left at 18 inches; air conduction better than that by bone in both ears. Weber, positive on right. The facial muscles on the right showed no reaction to faradism, and to galvanism the reaction of degeneration with slow contraction and  $\text{CaCC}$  greater than  $\text{AnCC}$ . The aural surgeon reported a fracture of the glenoid fossa into both external canals, also probably a fracture of the posterior wall of the external canal into the mastoid process, as well as a probable fissure of the Fallopian canal on to the seventh nerve. When last seen, March 27, there was a response to strong faradism in the muscles, but not on stimulation of the nerve, while to galvanism there was still a marked reaction of degeneration.

*CASE 9.—History.*—David G. (12993), was admitted to the Boston City Hospital March 7, 1907, with a lacerated wound  $1\frac{1}{2}$  inches long over the left eyebrow, bleeding from the left ear, where the drum was ruptured, but no note was made of any paralysis at that time. He had been struck on the head by a falling bale of cotton, and was dazed, but not unconscious. For twenty-four hours he had intense headache, and occasionally afterwards. On March 13, 1907, when he was seen in the out-patient department, one week after his discharge from the hospital, he complained of vertigo with a tendency to fall to the left. There was no nausea or vomiting, but on lying down there was a constant noise in the left ear, but not in the right, and pain in the left ear if he lay on that side of the head. He had also noticed deafness in the left ear and inability to close the left eye, while the mouth drew to the right.

*Examination.*—There was a facial paralysis on the left, complete in all the branches, while the left side of the face seemed slightly less sensitive to touch, pain and temperature stimuli, but there was no affection of the motor portion of the fifth nerve. The pupils were normal, and the vision equal in the two eyes. There was no diplopia, but a slight slow nystagmus on lateral movements of the eyes. Smell was normal, and taste was not affected. The watch was not heard on the left. Forks, with high and low pitch were heard on the left, but less plainly than on the right, while air conduction was better than that by bone in both ears. The tuning fork on the vertex was heard better on the right. The left ear showed an absence of the light reflex, and dull membrane with the landmarks obscured. On electrical examination the muscles of the face responded on both sides to faradism, but the left side required a stronger current than the right. To galvanism on the left the muscles showed a slowed contraction and diminished irritability, while  $\text{CaCC}$  was greater than  $\text{AnCC}$ . The muscles about the eye and forehead were most affected. The examination was otherwise negative.



## THE COURSE OF FISSURES.

Walton<sup>2</sup> has studied the course of fissures of the skull, and Cushing<sup>3</sup> of Baltimore gives an excellent sketch of the present knowledge of these bursting fractures. He quotes Bruns,<sup>4</sup> who in 470 cases of fracture of the skull found it basal in about one-half the cases and the base involved in from 70 to 75 per cent. of fractures of the vault. Cushing shows that in bursting fractures of the skull the cranium is compressed and the fissures tend to run vertically in the direction of the meridians passing through the poles at which the pressure is applied, resembling the direction of the segments of an orange, and illustrated by the method of separation of the parts of the bulb of a urethrometer. As he states it, the fissure takes a direction parallel to the polar diameter and tends to follow one of the meridians of the sphere.

Other things being equal, it would begin in the equatorial zone of one of the meridians and follow the line of least cohesive resistance toward the pole of impact. As the base, however, is weakened by the foramina, no matter in what direction the polar diameter of the impact lies, the portion of the meridian which passes through the base will be the one to give way first, whether it happens to be near the pole or the equator, and most of the fissures cross the basal fossæ anterior, middle or posterior. He also quotes Hilton, who called attention to the fact that portions of the base are strengthened by processes such as the zygoma, and called these buttresses.

Felizet says that fissures pass down between the buttresses of Hilton to the nearest basal fossa, of which the middle is more often affected than the anterior or posterior. Cushing also states that it is a matter of dispute still whether the fissures avoid the foramina or not, and thinks this probably depends on the relative strength of the rim of the foramen and the neighboring bone, so that in cases in which the rim is thick, as at the foramen magnum, the base of the skull is not necessarily weak. He says that the posterior lacerated space, foramen ovale, facial and acoustic foramina are the ones most frequently involved. Later, in speaking of the relative frequency of involvement of the various cranial nerves, he says that the facial is the most often involved, the abducens next, or the third nerve, followed by the olfactory, optic, trigeminal, glossopharyngeal, vagus, spinal accessory and hypoglossal.

In my cases the order of involvement was nearly the same, namely facial, then the abducens and auditory. Cushing does not separate the injuries of the seventh and eighth nerves, which should be done, my cases showing that either nerve may be affected alone, the facial especially frequently without an involvement of hearing, only a deformity of the bony canal of the ear, or a rupture of the drum being present. Next in my cases come the third and then the second nerve, one of the most serious injuries, followed by scattered cases of affection of the olfactory, patheticus, trigeminal and hypoglossal. This series presented no cases in which injury of the glossopharyngeal, vagus or spinal accessory was observed.

## COMBINATIONS OF NERVES INJURED.

In regard to combinations of the nerves which are injured Cushing speaks only of groups of the seventh,

eighth and sixth; of the fifth and third; and of the ninth, tenth and eleventh. In my series, though the number of combinations is too small to admit of any inference as to the frequency of any particular combination, the most frequent were seventh and eighth; both eighth nerves; both seventh nerves; seventh and sixth; second, seventh and eighth; second, third and sixth; both seventh nerves and one sixth; both first nerves and one third and fourth; the third and seventh nerves, both crossed and on the same side; second and eighth nerves, crossed and unilateral; and the seventh and twelfth nerves. The only inference which I think we are justified in drawing from these facts is that, aside from the combinations in which the nerves lie very close together, so as to be liable to injury by a single fissure, as in the case of the seventh and eighth nerves, and the second, third, fourth and sixth nerves, the frequency of multiple fissures makes the groups, both as to the nerves involved and the side affected, much more irregular than one would expect.

## METHOD OF PRODUCTION.

In regard to the method of production of those paralyzes of cranial nerves, we probably have to deal with varying conditions. In some cases a meningeal hemorrhage may compress one or more nerves within the skull. In other cases we probably have to deal with the effects of increased intracranial pressure, such has been shown by the studies of Bullard, Cannon, Crile, Cushing and others to occur in cases of trauma to the skull. An analogy to this condition is seen in the frequency of affections of the optic nerves and the abducens from simple increase of intracranial pressure such as in cases of hydrocephalus and tumor of the brain.

It is quite possible that the fairly frequent involvement of the sixth nerve in fracture of the skull, which in most cases recovers, is due to this cause. The other and probably most frequent cause is undoubtedly the injury of the nerve by compression, or in rare cases laceration from the displacement of the walls of the foramen, such as has been seen in the deformities of the walls of the external auditory canal in some of these cases and those reported by others. In cases with no displacement of the bone of the foramen we probably find the more curable cases in which there is a more or less severe reaction of the nerve sheath to the bruising and laceration received at the time of the injury.

## PROGNOSIS.

The prognosis for recovery differs very markedly in these cases. In a good many the paralysis had disappeared before the discharge of the patient from the hospital, which usually took place within two or three weeks from the time of admission. In these cases we probably had to deal with simple edema of the sheath of the nerves. In other cases the recovery was very slow, and in many incomplete. This is especially true of the affections of the optic nerve which seem to have all gone on to partial or complete atrophy. These results coincide with our knowledge of the difficulty of repair in the neurones of this nerve, which act in this respect like the central neurones rather than like the peripheral neurones of the other cranial and spinal nerves.

This is possibly true also of the auditory nerve, though the frequency of involvement of the internal

2. Ann. Surgery, 1904, xl, 642.

3. Keen's Surgery, iii, 68.

4. Beiträge z. klin. Chir., 1903, xxxviii, 192.



ear in cases of fracture, and also in the cases of deafness following cerebrospinal meningitis, makes it difficult to make any positive statement in regard to this nerve. The severer cases of injury of nerves which pass through a long canal in the bone, which is more liable to show displacement of bone, as in the case of the facial nerve, are also much more unfavorable, and the same was true in a number of my cases of injury to the third nerve.

#### TREATMENT.

The treatment, aside from the use of drugs, such as strychnin, for the arrest of atrophy, as in cases of affection of the optic nerve, consists of the use of various forms of electricity and massage as in other forms of peripheral nerve injury, in which this can be used. In severe cases of injury, as of the facial nerve, which do not show decided improvement within a reasonable time, such as six months or a year at most, nerve suture with some other nerve such as the hypoglossal or spinal accessory, provided these nerves have escaped injury, seems to be the most promising method of treatment.

#### DISCUSSION.

DR. ALBERT E. STERNE, Indianapolis: I have an interesting case of what I deem a fracture of that portion of the base represented by the orbital plate. The patient was a heroine of the disaster in which the town of Fontanet was wiped off the face of Indiana by the explosion of the DuPont powder-mill last September. This young woman was a school teacher and the building in which she was teaching was completely wrecked. She had the presence of mind to tell her little charges (before seeking safety herself or thinking of seeking safety, although she was near the door) to get under their benches. They did so, but by that time the roof was practically down on them. The teacher was caught between the top of a bench and the roof. She was found in that position, unconscious, the right side of her face being down on the top of the bench. She was unconscious for several days at the hospital at Terre Haute. At the time the surgeon and the oculist first saw her there was great protrusion of the right eye, a cent over the forehead; the forehead was incised in the line of the brow, as it was supposed that a fracture extended into the frontal sinus. The outer plate of the frontal sinus was removed. The protrusion of the eye lasted several days, but I do not know whether or not the swelling was largely extra-orbital. When I saw the patient, two months after the injury, the vision on the right eye was reduced, there was total paralysis of the third and fourth nerves, but no paralysis of the sixth nerve on the right side. During her five months' treatment vision increased almost to normal, being about 15/20 at the present, and she has only a palsy, of course with double vision after she reaches a certain axis in the upper quadrant. She has very little motion of the superior rectus; she has absolutely good motion of the internal rectus, of the inferior, of the superior oblique and the inferior oblique, the only affected muscle now being the superior rectus. At the time I first saw her I was not sure that there was not a lesion of the nerves themselves in the orbit, but as time went on and distinct recovery of the function of the eye muscles occurred I felt that that was probably not the case. Instead of being protrusive, the eye was sunken in the socket, possibly between an eighth and a quarter of an inch; I concluded that there had been a hemorrhage which had left an adhesion which was holding the bulb back in the orbit. At this time the right eye is almost at a level with the left, and I feel sure that the lesion was one of pressure through hemorrhage with subsequent adhesion rather than a direct lesion and tearing of the third and fourth nerves themselves. In general health the patient has improved so that at the present time she is practically well, although she still has a little diplopia on the upper quadrant.

DR. J. J. THOMAS, Boston: I omitted to speak of the mechanism, which I think varies in different cases. In a good

many of the cases in the hospital the patient recovers completely from the paralysis, but usually it is obstinate, and those are the cases in which there is apt to be a bony deformity. Frequently there is hemorrhage into the nerve, and therefore degeneration of axis cylinders, while in other cases the increase of intracranial pressure following a blow may account for the degeneration of certain nerve fibers. In the more severe cases we have to do with bony deformity, and that has been shown in a number of cases in which this deformity was seen, particularly in the auditory canal. Prognosis with regard to lesions of the optic nerve is very poor, as the nerve does not regenerate easily and is usually followed by complete atrophy. The eyeground even immediately after the injury shows a swelling of the optic nerve. In a great many injuries to the optic nerve, whether due to pressure or crushing of the nerve fiber there is incipient neuritis and later we can always see optic atrophy on ophthalmoscopic examination. In the cases in which I have encountered lesion of the second nerve, the diagnosis has been confirmed by ophthalmoscopic examination, which gives important aid in both the later and earlier stages of the trouble.

#### DENTAL EDUCATION.\*

M. L. RHEIN, M.D., D.D.S.  
NEW YORK.

Does dentistry in this country retain the international pre-eminence for which it has been so long noted? Many Europeans of to-day are already making claims of superiority over Americans. Admitting that American dentists are still in the vanguard as regards the quality of their professional services, it must be admitted that the contrast which existed twenty-five years ago between the dentistry of Americans and that of their foreign colleagues is fast disappearing. This can be due to two reasons only: the advance of dental education abroad and the lack of the same at home. The controlling factor in this world is evolution. Consequently, a stagnation means nothing short of retrogression.

History shows that in no country has there ever been witnessed such a demonstration of inventive genius, especially in the line of everything pertaining to mechanics, as in the United States. This has made this country the world's leader in most of the arts, and by virtue of the same attribute has brought about the international superiority of American surgery and American dentistry.

The surgeon, whether of a general or a special field, comes to a great extent under the same influences which are such potent factors in the success of the dentist. His inventive faculties are brought into constant use in every operative procedure which he undertakes. To insure success, his technique must be constantly varied, not only in his operations, but in the designs for artificial replacement of lost or malposed portions of man.

On this account, it is not so many years ago that the surgeon was considered the inferior of his medical colleague. He was called a "bone-setter," just as dentists of to-day are spoken of as "tooth-carpenters."

If we go back to about 1840, we will find that the general physician with the narrow prejudice of that day looked on the general and dental surgeon with equal superciliousness. The practice of general medicine was so empirical and so replete with error that it was bound to stir a feeling of just resentment against the wise owls in medicine at that time.

\* Read in the Section on Stomatology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



Here it was that general and dental surgery took divergent paths. The general surgeon never forgot that surgery was an inseparable part of medicine and acted on this theory so consistently that to-day it is universally admitted that, to become a good surgeon, it is necessary first to be a superior physician.

The dental surgeon, incensed at the unjust treatment he was receiving from his medical colleagues, rebelled and founded the science and art of American dentistry. This meant nothing more than the treatment of the teeth without regard to the rest of the body. On account of the benighted state of biology, pathology and chemical physiology at that time, the dentist was well able to hold his own.

The result of this separation between general medicine and dentistry is the American dental college of to-day.

It is idle to make surmises as to what the present condition of dentistry would have been had this secession from the parent body not taken place. Nevertheless, it is difficult at times to refrain from imagining what the results would be were this specialty practiced by men fully equipped in all the rudiments of general medicine and trained at the same time in the practice of a specialty that ranks pre-eminent in importance as a branch of preventive medicine. Under such conditions we should see the leaders in this specialty on equal terms with the most eminent men in medicine.

While many of the old guard may continue to make annual boast of the dentists' superior position, and of their equality with medical men, the younger men of merit refuse more and more to be cajoled by this form of sophistry. They have been too often worsted in the attempt to have their services recognized, not only in hospitals, but also in educational institutions. They have had to listen to the slighting admission of the members of the medical staff that, while the latter recognize the need of a dental staff, they can not trust any but medically educated men. No one can deny that, although to dentists is entrusted the sacred duty of preserving the health of the mouth and more especially of the teeth, whose functions properly performed, contribute more to a healthy old age than do any other known means, dentists as a body, nevertheless, occupy an inferior position before the public.

This statement perhaps elicits a protest. The dentist makes the most of his strongest argument when he draws attention to the gross ignorance of the average medical man on dental matters. It can not be denied that this lack of fundamental dental education has caused many serious errors in diagnosis and treatment. Does this ignorance of the physician, in the light of present-day knowledge about a portion of the body, excuse the lack of education of the dentist of to-day, not merely in the anatomy and physiology, but also in the pathology, of man as a whole?

The breach between general medicine and dentistry has been widened and deepened in the past by ignorance, pique, and most of all by ill-liberality of mind. To such an extent has this prejudice affected some of the distinguished members of our profession that the sight of the degree of M.D. is their signal for "on to the fray!"

Is this for the benefit of mankind, ye high priests who have been ordained for the alleviation of human suffering and the betterment of man? Well may the human body exclaim: How long will my ministers of the portal of life be at war with all the remainder of my servants?

This is no fanciful presentment, but a true indictment of many great minds who have used their best endeavors to keep alive discord and enmity. It requires less courage to make this statement to-day than formerly, because the hands of the mighty have weakened and their numbers are daily diminishing. The light of day is breaking in dental education. How many are there to-day willing to deny that there would be infinite advantage in a thorough medical education which did not sacrifice any dental educational factors now at command?

From all sides of the country comes the one answer: The plan is idealistic, but impracticable. Is the solution of the problem, then, impossible, as so many seem to believe?

It is not my intent in this present paper to enter into detail in regard to the great defects in the dental curriculum of to-day. Every careful investigator can but too readily satisfy himself on this point. Without a clear comprehension of the pathology of the entire body, any study of the pathology of the mouth alone is bound to be faulty. The evil results of this system of education are most apparent in two directions. One is the acceptance, by the mass of dentists, of all kinds of erratic ideas of pathology if the presentation is made in a plausible manner. The proneness of the mass of dentists to accept pathologic absurdities is not amusing, but profoundly distressing. The second bad result of such superficial education is the yearly graduation of a body of dentists more or less properly skilled in dental manipulation and technic, but absolutely devoid of ability to diagnose any complicated difficulty. Even years of experience will bring only to a few of this class a modicum of the knowledge necessary for diagnosis. The highest manipulative skill can never compensate for the continual possibility of doing the wrong thing.

There is but one remedy for this condition of affairs. The dentist of the future must be, first of all, fully grounded in the knowledge of medicine. This has been successfully accomplished in Europe, and it can be done much better here.

The argument that the study of medicine destroys the student's manipulative ability is ridiculous when the magnificent skill of the general surgeon, the ophthalmologist, the gynecologist and the rhinologist is observed.

The main argument brought forward is the impossibility of the student body finding sufficient time to study medicine and dentistry simultaneously. "It would take too many years" is the universal cry. At first glance, this seems plausible and unanswerable; but dentists who maintain that they should be on an equality with the healers of any portion of the body ought to be willing to take at least as much time to become properly qualified as dentists as physicians need in order to master the elements of their profession.

Few medical graduates to-day are audacious enough to enter into practice immediately after graduation. Nearly every one expects to spend at least two years as interne in a hospital, the equivalent of our dental infirmary. It is a recognized fact that without postgraduate work, the medical education of to-day has but little value. If it requires six years to finish a physician's preparatory training, why should it take less time to complete a dentist's? The fact that this length of time is required to finish a physician's education causes no diminution in the number of medical students. On the



contrary, the superior preliminary attainment of the medical matriculant over the dental can be easily demonstrated by personal investigation. In other words, the greater the attainment of the student, the more he is inclined to seek the profession in which he will find men of his own educational rank. Consequently, no better way can be found to attract students of superior merit than to raise the requirements to the highest standard.

The most powerful refutation of the argument based on time is the fact that one-third of the year is literally wasted in every dental school in this country. In the best of our institutions, instruction ceases about June 1 and commences about October 1. Would a young man beginning his life's career in any other calling take a few months' rest every year?

It is misleading to say that the dental student takes four months' respite from his studies. He has no other recourse; it is forced on him. The blame for this great waste of the student's time rests on the American method of dental education. The teacher of dentistry, at the end of eight months of conscientious labor, requires a respite from his arduous duties. He is entitled to his much-needed rest if his work is to be properly resumed the following session.

The root of the evil lies deeper than this. It consists in the fact that there ought to be two men for each position on a faculty where there now is only one. Scarcely a student graduates from a dental college who has not had at least one term during which illness has deprived the class of the instruction of some professor. Frequently, this entire course is lost; at best, some futile attempt is made to gloss over the student's loss.

Every actor of note has his understudy. In every preparatory educational institution skilled substitutes are at their command to fill, at a moment's notice, an hour vacated by a teacher's illness. Hospital services are rendered in the same manner the staff alternating in service so as to give each in turn a needed rest and also to have in this way some one always ready to fill a place vacated by illness. In every field it is becoming more recognized that a position of great responsibility should not be entrusted to one man alone. It is only a question of time when a dual faculty will be introduced into dental colleges. This will end the four-month vacation period and herald the advent of a rational dental education.

It is easy to criticise, to destroy the structure once erected, but there is little excuse for doing so unless something better can be built on the site of the ruins.

The faculty of a dental college should not be at the mercy of one man, for, while he may use his power only for good, there is no assurance that his successor will be equally conscientious. For the same reason, it should be made legally impossible to incorporate any proprietary school. To obtain the best results, the college should be part of a university and under the control of the university's officers.

With the exception of short vacations, not exceeding two weeks at a time, the twelve months could be divided into different semesters, so that the dental student would receive his medical instruction simultaneously with his special teaching in dentistry. Many different plans can be devised for accomplishing this end. The following is presented as a crude outline of what could be attained:

The dental student would take his place with the regular medical student, and would, in addition, devote

a certain portion of his time to dental technique. The didactic dental course would be given in the intervals between the medical terms. The dental degree should be granted not less than one year after the M.D. degree has been obtained. The student would be supposed to have passed in all his theoretic branches by the end of his last year in medicine.

The fifth year would now be devoted entirely to the dental infirmary and would enable the theoretically perfect student to test his knowledge and skill by practice. This infirmary course, after all the examinations in theory were passed, would then become the equivalent of the young physician's hospital service.

The degree in dentistry would be granted only after the candidate had demonstrated in the infirmary his ability to put into practice the principles which he had been taught. The scope of dental teaching in this country must in time embrace some plan outlined on the above basis. Only when this advance in the curriculum has been made, will the degree in dentistry attain its real value.

38 East Sixty-first Street.

#### DISCUSSION.

DR. N. S. HOFF, Ann Arbor: There is no university in this country where continuous instruction is given the year through. The University of Chicago maintains nearly continuous instruction, but the university does not have a dental department, and I doubt very much if it would give a summer term in dentistry if it maintained such a department. Again, I think that there would be considerable difficulty in persuading any university to duplicate its chairs of instruction in the manner advocated by Dr. Rhein. This kind of instruction is so expensive that most university authorities would feel it a useless expenditure of money to duplicate the teaching force. Many believe that there is a tendency to burden dental students with too much general scientific study. The better schools have three very strong courses in chemistry, general inorganic chemistry, organic chemistry and qualitative or analytic chemistry; in histology, two courses, one didactic and the other a laboratory course; the same in bacteriology, physiology and anatomy. These courses are too often given no practical application and students consequently lose interest. I have sometimes thought that students should be first taught technical and clinical dentistry until out of their own experiences they could be made to value the medical sciences for their practical as well as their cultural values. Continuous instruction would, I believe, be valuable, because it would keep the students' minds and hands in training without interruption. I always dread even the Christmas holiday vacations, for after the students return it takes a week or more to get them started again. The summer vacation is long, and sometimes students return at the beginning of the next year with what they had learned the former year more or less out of mind. We can meet this condition partially by making up our curriculum in such a way that the students in successive years, by other courses on similar subjects, get a review of the courses which preceded.

In Dr. Rhein's scheme I can see trouble from conflict in instruction. For instance, there are a few basic principles and fundamental truths in pathology that all pathologists recognize and must teach; but there are also many individual and more or less hypothetical views taught simply out of the instructor's personal experience, which may not always be in harmony with the teachings of another instructor. In our school we have three instructors teaching the subject of pathology directly and incidentally. The oral surgeon can not teach oral surgery without pathology, neither can the professor of therapeutics nor the clinical instructors; and there is still another instructor who gives a laboratory course in histologic pathology. I suggest that pathology be taught essentially as a laboratory and clinical course. Of course, it would be absurd to try to teach any course entirely as a clinical or a labora-



tory subject. Even a technical subject, without some didactic instruction, is defective. A student who is not taught to think out what he is doing, be the work ever so mechanical, is not getting the best out of his mechanical and technical training. You can not always get a student to think by giving him something to whittle or make into a certain form. He simply learns to do things as he is told to do them. Why he does those things is a different proposition, and to teach him why must be the work of a didactic teacher. I do not believe it practicable to divide instruction between several teachers of equal authority. The instruction of one good didactic teacher in connection with a laboratory course, supplemented, of course, by clinical experience, will accomplish more in teaching consecutive and scientific pathology than instruction given by any other method. I advocate such a plan for all subjects.

DR. E. A. BOGUE, New York: Harvard University opposed the four-year course when the plan was brought forward several years ago. The dean of Harvard Dental School took the ground that the courses were longer, and that the preliminary examinations were a great deal more severe than formerly. It seems now that he was right. Many of the medical schools now insist that the education which the student must get preliminary to entering such schools must be of a higher, broader character than ever before.

DR. F. B. MOOREHEAD, Chicago: I think Dr. Rhein is absolutely right. It is impossible that a man can be a good dentist unless he is educated to see the whole field of dentistry and to view it from every angle, in detail and at the same time as the perfect whole. This requires great mental culture, which Dr. Rhein's scheme comprehends. I approve of the system of a dual faculty in dental schools. I do not think it impracticable, although there are reasons why the problem will not be easily solved. All medical schools have such faculties. It would be a poor medical school that had only one man in the whole institution who could teach surgery, only one man to teach internal medicine. In case of sickness, in the interim the subject would go by default. A man at the head of a department ought to have competent instructors under him to step in and carry on his work successfully. I know of an institution one department of which suffered lamentably through one-half of the year's instruction because the head of the department was sick and there was no one to take his place.

It seems to me that the question of a medical education for dentists ought not to permit of discussion, the answer to it is so obvious. Who shall say that the rhinologist should be a medically trained man, the gynecologist a medically trained man, the orthopedic surgeon a medically trained man, but that the stomatologist need know almost nothing about the body and may confine his work to one little part? It is utterly absurd. Whether the medical training should come first and the dental second, or the dental first and the medical second, it will take some years to decide.

DR. EUGENE S. TALBOT, Chicago: Dr. Rhein has shown that we in America are fast losing our prestige as the best practitioners in the world. Mechanics are all right in their place, but the biologic side of our specialty is not advancing as it should. The ignorance displayed in any issue of a dental journal in the articles on pathology by members of our profession and teachers in dental schools is appalling. The announcements of dental meetings, national, state and local, offer clinics as drawing cards similar to side-shows of a circus. Dr. Rhein states the question fairly when he says that without a clear comprehension of pathology of the entire body, any study of the pathology of the mouth alone is bound to be faulty. We know that every pathologic manifestation in the mouth is due to some systemic derangement; hence the necessity of a broad knowledge of general pathology. The length of time for the study of our specialty should be four or five years, and six would be none too long. The college year should be continuous, divided into four semesters of three months each, as it is in some of the best medical schools. In this way, a student can vary his work and at the same time have a short vacation. Dr. Rhein's suggestion could be carried out with little difficulty.

DR. M. H. FLETCHER, Cincinnati: I have no firm belief that Dr. Rhein's ideas will be realized soon. Some of us may not, but many of the men who are advocating this solution of the problem will live to see it. I shall make what effort I can to assist in having such a plan carried out.

DR. THOMAS L. GILMER, Chicago: I have never had the slightest doubt that a medical education for the dentist was desirable. In time the educational change advocated by Dr. Fletcher may come. Meanwhile let us not indulge in harsh criticisms of the present schools and teachers who are trying the best they can under present conditions to elevate dentistry. In the school with which I am connected we have junior teachers in practically every branch. The junior is not equal to the senior teacher, but we recognize the fact that he must be capable of taking the place of the senior teacher during a temporary absence. No one believes more strongly than I that only such dental schools and medical schools should be tolerated as are connected with universities. I believe a four-year course none too long, but prefer to have a student for three years with a preliminary education sufficient to enable him to comprehend what is to be taught, rather than one for a much longer period without the better preparatory education.

DR. G. V. I. BROWN, Milwaukee: There should be an effort made to bring about greater uniformity between the curricula (I wish we might include them all under the word "curriculum") of the different colleges, and I feel sure that the better class of universities would be only too glad to cooperate to the end that there may be better courses. I believe that the members of this Section should set in motion an effort that may result in an organization with the object of improving the curricula of the different dental schools.

DR. N. S. HOFF, Ann Arbor, Mich.: A few years ago the representatives of four or six schools agreed to adopt the four-year course the following year; but when the time came all failed but one to do so. Then the Association of College Faculties adopted the four-year course, tried it one year, and then went back to the three-year course. The sentiment for some extension has not died out, for we need a four-year course. Could the university with which I am connected have had the support of the profession, we should never have gone back to the three-year course. It is good to keep up this agitation, for we can not afford to stand still; but we must not censure the colleges too much when we fail to support their efforts to do our will. There is a business aspect with which all colleges have to contend. They must have support in the way of attendance. The best of our schools would not have twenty-five students if it took the advanced stand advocated by Dr. Rhein. Our school has always maintained a high standard of preliminary education, but it has always been to our harm so far as progress in a business way is concerned; and that is the difficulty with which nearly every school has to contend. It will be difficult to convince most schools that it is possible and practical to adopt this plan and expect even moderate business success. It might be possible to induce state universities, which are entirely supported by state funds, to undertake it, because when any one of their boards of regents believes in a four-year course of instruction it will be adopted whether there are ten students or one; but one can not appeal to other schools on this basis, because it means bankruptcy.

DR. G. V. I. BROWN, Milwaukee: A few of the men connected with the universities should get together occasionally, go over this question point by point and adopt such changes as can be adopted. The regent of most any university would, within limits, do whatever the faculty advised him to do, but he would expect the faculty to make good, and if our students fall off and lose interest the plan is a failure and it comes back on us. We must avoid that, for we are not yet prepared to make good. We ought to have a thoroughly outlined, well-arranged curriculum on which we are in accord with the idea that it is the best kind of dental education. If we can convince the dentists and people of this country that whatever course we may finally adopt offers the best education, it does not make any difference whether it requires four or six years to complete it, we can get the students; but until such time we can not.



DR. M. L. RUEHL, New York: We must regulate educational matters on a business basis in order to make education a practical success. If our educational institutions are shown how they can make the degree in dentistry a supplement to a medical degree without losing pupils, I believe that the plan would successfully meet every objection. Every attempt heretofore in that direction, like the adoption of the four-year course, has resulted in such a loss of students as to make it a financial impossibility. There was no stronger advocate of the four-year course than the dental department of the University of Pennsylvania; the members of the faculty adopted it, and were forced to give it up because they did not feel that they could stand the decrease in the number of students. My plan, I believe, overcomes that difficulty. It entails more work for the faculty—that is, more students under the medical staff without a proportionate raise in salaries.

If a university having both a medical and a dental department would advertise to give students a year's course in both departments for the same tuition fee now required for a separate course in medicine or dentistry, it would be a success. The men who are desirable students would jump at the opportunity to secure such a combined education for one fee; and what difference would it make to the medical faculty if the number of students in their class-rooms was twice as great?

In all this it has been farthest from my thought to criticise the efficiency of the men who are teaching dentistry to-day to the best of their ability.

Dr. Hoff speaks of the injury done students by divergence of teaching among the men in the same department. The man who is studying dentistry or medicine, or both, has reached that period of life and is possessed of such educational attainments as to have a logical mind. It is far better that those divergent views, whether in regard to surgery, pathology, the theory and practice of operative dentistry, or prosthesis, should be brought to the attention of that student in his own institution, rather than that he should meet them in after life and feel that his mother institution was defective in her teaching. In my opinion, then, a teacher of pathology ought to tell his class the views which diverge from his, presenting his own views and making due allowance for the reasoning powers of the students. Any student not capable of logical deduction at that age makes a mistake in taking up any branch of the profession of medicine.

There is no place to-day for empirical medicine. Fifty or sixty years ago there was nothing else; scientific medicine did not exist. Many dentists who do not hold the medical degree admit their shortcomings in diagnosis, which is the secret of professional success. When large numbers of men candidly admit that they wish they had been grounded in the practice of medicine, then the sentiment is present and the results are bound to follow sooner or later.

I agree that a large part of the instruction in pathology must be in the laboratory. I claim that the clinical demonstration of pathologic study on the living subject is as important as the laboratory work.

## NUTRITIVE AND NEUROTIC DISTURBANCES OF THE HAIR.\*

L. DUNCAN BULKLEY, A.M., M.D.

AND

HENRY H. JANEWAY, M.D.  
NEW YORK CITY.

The hair, when attached to the body, is a live and more or less active portion of the economy, subject to constant growth from its root. The proof of its live character is found in its turning suddenly gray in its entire length, under certain conditions, and also in the

changes found at the extremities in *fragilitas crinium* and *trichorrhexis nodosa*, as will be mentioned later.

When shortened by cutting, hairs have an indefinite life, but when uncut they tend to fall normally after a certain period, and are replaced by new structures formed from the papillae and lining cells at the bottom of the follicle. The periodic shedding and reproduction of the hairy coats of certain animals, as well as the slight constant falling of the hairs of the head, eyebrows, etc., illustrate this, while the constant regrowth when hairs are extracted from the face of a female also demonstrates the vital power of the hair follicles under normal conditions.

In health the hair has a very firm hold on the skin, as is shown by the repeated instances on record where the scalp has been torn off when the hair has become entangled in machinery, and yet in certain conditions of disease it may be so affected as to break off or fall out with a touch. It may also lose color or change in color, character, or even shape, often from causes thus far unknown.

Certain diseased changes in the hair have for some time been recognized as due to the action of grosser parasitic micro-organisms, as in ringworm and favus; in other conditions, as in dermatitis seborrheica, the disturbance in the nutrition of the hair is believed to be caused by the presence of smaller organisms, as cocci, and some have claimed a parasitic form of alopecia areata; in others, as in folliculitis decalvans and dermatitis papillaris capillitii, the loss of hair is due to pus organisms. All of these are excluded from the present consideration.

But there is a much larger and very important group of disturbances of the hair which are caused by derangement of nutrition and innervation going on within the follicle, which it is well to consider from a broad point of view. We all know that certain physiologic states of the system are attended with conditions relating to the growth, atrophy, and changes in color of the hair, and we can thus readily understand how pathologic conditions of the economy can induce similar or dissimilar alterations in the hair structure. That we do not yet fully comprehend all the reasons for this, nor the exact methods in which they occur, is no reason for our not seeking to understand the relationship of these affections, or some of the causes which are apparently connected with them.

All of these troubles of the hair are so frequently regarded as purely local affairs and treated, often inefficiently, by external measures alone, that it is worth while to examine whether there may not be constitutional conditions back of them, the rectification of which will aid in accomplishing the results desired.

With this end in view, we will briefly consider the various alterations of the hair belonging to this group, which may be conveniently presented in the following tabular form:

In examining this table, the elements of which are arranged in a somewhat logical order, we find that in many of the affections there is discovered either a natural tendency to the hair disorder in question, or a well-recognized cause, or at least a physical condition which occurs antecedently. But in each form of hair disturbance we have also to recognize that in a certain proportion of cases we can find no adequate cause, and to these we give the designation *idiopathic*. This, of course, is an error, for they are not really idiopathic (*ἰδίως*, occurring independently), for every event in Nature

\* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association, at the Fifty-ninth Annual Session, held in Chicago, June, 1908.







The local causes to which the excessive growth was attributed were also interesting. In quite a number of instances the condition present was ascribed to previous efforts at relief, and the use of the much advertised "Modena" was repeatedly mentioned as increasing the growth greatly. Many had used various depilatories, pumice stone, shaving, etc., all of which had stimulated a previously fine growth into one luxurious and strong. Very many had pulled out the hairs, in some instances for many years.

## II. ALOPECIA.

Coming now to the opposite condition, namely, a failure in the proper activity of the hair follicles, leading to the various degrees of baldness, let us see if there are any facts which might lead us to suppose that there may be etiologic factors liable to be overlooked in ordinary cases.

Referring to our classification, we find that alopecia may be congenital or acquired. The former we will not dwell on, except to mention that in some of these cases there are undeveloped hair follicles, which later in life, even in childhood, may develop a more or less abundant crop of hair, when the life processes of the individual are equal to the task. We recognize, therefore, some failure in the nutritive or neurogenic activities of the system, for in these patients other kindred structures, the nails and teeth, often suffer as well; in some of the reported cases, however, a developmental error was at fault, as there was found microscopically an absence of hair follicles.

We next notice that acquired alopecia seems to be a more or less normal or natural accompaniment of advancing years, with its failure in nutrition and nerve energy. We are well aware that the researches of Pincus, Neumann, Michelson and others have shown atrophic changes in the scalp, with alterations of blood vessels, akin to those taking place in other portions of the senile tissues. But this only strengthens the argument that there are forces at work in the system leading to a diminution of nutritive and nerve supply to the hair, whereby its power of continued growth is hindered. The often striking exceptions to the rule of senile baldness only show that in certain instances the agencies which produce the hair have not been impaired.

Premature alopecia, which may occur at any time of life, is known to have a definite causation in certain cases. Thus, after erysipelas and fevers, notably after typhoid, there is often a great shedding of the hair, which regrows more or less quickly and with greater or less vigor, according to the recuperative powers of the system. In syphilis the hair is frequently lost, both in the well-known patchy manner in its early stages and also often later in the disease, both of which conditions yield more or less completely to proper constitutional treatment.

The hair follicle is but an involution of the epithelial covering of the skin, penetrating the corium, at the bottom of which the hair papilla rises from the corium, well supplied with nerves and blood vessels which furnish nutriment to the growing hair. The lowest part of the hair is large, soft and succulent, and it is only in the upper portion of the follicle and in the completed hair, as seen externally, that there is any tensile strength. The newly formed, soft and succulent cells in the deepest portion of the hair follicle are gradually changed in character, as the hair is pushed forward. The component cells, which were originally cylindrical and poly-

hedral in shape, become altered into spindle-shaped, nucleated cells, almost fibers, until, in the completed hair, they are firmly fused together into a firm, dense structure of considerable strength.

When there has been any agency or condition disturbing the nutrition of the hair, the lower cells fail to undergo the proper transformation just described, and, as they are pushed out by newly formed cells below, the portion of the hair within the follicle separates and the long hair is shed.

In the meantime, however, unless there has been too great a derangement of nutritive or nerve elements, the soft and succulent cells are still being produced around the papilla, and are pushed forward; but if they are yet unable to undergo a normal change into the fibrous structure of the complete hair there will be alopecia of greater or less degree. On close inspection we often find open follicles choked with imperfectly developed hair cells, and it only requires a resumption of the proper functions of the follicles to again produce hairs of proper size and length.

In course of time, however, as seen in the senile scalp, there may come a permanent alteration in the follicles, which then become sealed up, and no hair can possibly grow. In the ordinary falling of the hair, therefore, there is not, as the laity suppose, a complete loss of the hair, but only a shedding of the external portion, as in animals at certain seasons, while the real root from which new hair may grow remains still in the follicle, ready to reproduce healthy hair, if only the nutritive and neurogenic powers are in proper condition.

Applying what has preceded to the cases of ordinary baldness, let us see if any light can be thrown on them by a study of recorded data. In the accompanying table are given the age and sex each of 670 cases as observed in private practice.

TABLE 2.—ALOPECIA.

Age in years.	Males.	Females.	Total.
Under 5.....	5	3	8
10 to 15.....	11	1	12
15 to 20.....	52	29	81
20 to 25.....	65	63	128
25 to 30.....	91	68	159
30 to 35.....	76	38	114
35 to 40.....	50	19	69
40 to 45.....	30	16	46
45 to 50.....	20	4	24
50 to 55.....	12	1	13
55 to 60.....	5	5	10
60 and over.....	..	6	6
Total .....	417	253	670

It is well recognized that, in this country at least, males are more troubled with alopecia than females, 417 to 253, or 62 to 38 per cent. Later we may find some other causes, but I think that the general impression is correct, that this is in a considerable measure due to the head gear, the hard unyielding hat of the male causing pressure at the periphery of the head and interfering with the proper blood and nerve supply to the hair.

All ages are represented in this table, but most of the cases, over 60 per cent., were seen in patients between the ages of 20 and 35, the largest number being between 25 and 30 years. There are, of course, reasons why special attention should be paid to the matter just at this period of life, but a careful study of the recorded histories shows the existence of causes for the alopecia, which tend to be rather more pronounced at this time of life than in earlier or later years. It is to be regretted that the notes of cases were often rather scanty, but it must be realized that in the ordinary run of practice there is not always time to enter into such a careful study of the patients in all particulars as would be de-



sirable to furnish material for an analysis such as this; but enough has been recorded to show very interesting facts bearing on the causation of alopecia.

All recognize that dermatitis seborrheica is a most fertile cause for the falling of the hair, and in a study of this disease by one of us<sup>1</sup> it was shown to be an important factor in over 63 per cent. of cases of alopecia. But it was also shown that, although it was recognized as due to a micro-organism practically omnipresent, dermatitis seborrheica was constantly dependent on general causes, which lowered the vitality of the tissues and rendered them suitable for the growth of the organism and thus enabled it to interfere with the nutrition of the hair.

It would be quite impossible, as well as unnecessary, to enter into and detail the various debilitating elements which have been observed and recorded in these cases, as antecedents to the loss of hair; but it may be interesting to note a few of them as illustrative of the line of thought and investigation to be pursued.

In 59 cases the trouble had followed typhoid fever, in 35 it had occurred after the exanthemata, and in 28 cases it came on after pregnancy. In 119 patients there had been a history of nervous derangement of varying severity, and in 117 there was general debility from many different causes. Thus, in 22 it followed an attack of grip, in 8 cases after pneumonia, in a number there had been recent Roman fever, appendicitis, peritonitis, malaria, surgical operations, etc., and a considerable number were associated with skin affections manifesting much debility.

The results of a proper tonic treatment, both on the general health and in the growth of hair, showed a not insignificant relation between the two. In 13 cases it was recorded as being syphilitic (although undoubtedly alopecia occurred very many times more frequently in this disease in which it was not noted) and in several instances patients who came solely on account of the loss of hair learned for the first time that they had constitutional syphilis.

In 153 cases no good cause for the alopecia was recorded, and in 22 instances it was ascribed to hereditary influence. In a number it was attributed to local causes, heat, heavy hats, excessive perspiration, etc., and in many the daily use of the shower bath was believed to be an important causative element.

We see, therefore, that careful investigation will often reveal a variety of causes which can readily operate against the life of the hair in a very considerable proportion of cases of alopecia. In regard to other cases in which no adequate cause can be determined, may it not often be from lack of proper attention and study, with discrimination and judgment as to etiologic data, for in the light of science there must be a cause for every effect?

### III. CANITIES.

Following the same line of thought, we find that graying of the hair, or canities, is a process in Nature which must have a cause, although this is often most difficult to discover and overcome. In our classification we see that canities may be congenital or acquired, even as are the other conditions of the hair already discussed. We need not dwell on the congenital form, of which we know little; it is observed in albinos, and also occasionally in patches inherited through several generations.

Acquired grayness, as was remarked of alopecia, seems

to be a more or less normal or natural accompaniment of advancing years, with its failure in nutrition and nerve energy; and, as in the case of alopecia, the exceptions only prove the rule. Premature canities is seen to embrace several well-recognized conditions, relating largely to nervous causation, and may occur suddenly or gradually.

Sudden blanching of the hair, in a single night, as in the historic instance of Marie Antoinette, and in the case of the sepoy in India, condemned to be blown to pieces from the guns, has been doubted, but so many other instances have been reported by reliable observers that there can be no question but that it may happen after most severe mental strain or shock. No satisfactory explanation of the mode of its occurrence has been made, but it is commonly accepted, from microscopic findings, that the change is effected by the entrance of air between the cells, due to some remarkable action within the hair follicle in response to neurogenic influence.

Gradual graying of the hair can certainly come prematurely from grief or from mental and nervous strain, as every one has observed; and in certain instances the hair has been known to resume its natural color under more favorable conditions of life. Partial graying of the hair is also not infrequent along nerve tracts affected by neuralgia, and on patches of leucoderma on the scalp and elsewhere. The new hairs formed in alopecia areata are also apt to be white, but in time assume a natural color, showing a possibility of change after the hair is formed.

We see, therefore, that, as in other disturbances of the hair, there are nutritive and neurogenic influences which induce a loss of color in a large share of instances. May it not be that in, what is perhaps wrongly called, idiopathic canities, there are disturbances of nutrition and innervation, less active and severe, which induce the change, and which may be discovered and removed by most careful medical skill, thus enabling the hair follicles to resume a normal action, even in regard to the coloration of the hair?

The ages of patients with premature canities are shown in the accompanying table; there were, of course, very many more who were treated for other affections in whom this condition existed, but in regard to whom it was not particularly noted.

TABLE 3.—CANITIES.

Age in years.	Male.	Female.	Total.
15 to 20.....	..	5	5
20 to 25.....	2	4	6
25 to 30.....	1	8	9
30 to 35.....	..	6	6
35 to 40.....	..	..	..
40 to 45.....	..	4	4
Total .....	3	27	30

The few cases of canities in which the patients have presented themselves for treatment do not throw much light on the subject, although in some instances there were points of considerable interest. In four cases there was a very clear history of nervous causes, and, although there was no instance of a very sudden change in color, it was observed to occur in them very soon after profound nervous strain, and in a considerable number it was associated with much general debility, once after a severe peritonitis. In one patient who came for the treatment of patches of very white hair, altering the appearance sadly, the condition was found to be due to leucoderma. In six of the cases the trouble appeared to be hereditary.

1. Bulkley: Dermatitis Seborrheica and Its Relations to Alopecia, etc., Medical Record, May 13, 1905.



IV. FRAGILITAS CRINII.

The next condition of the hair exhibiting nutritive or neurogenic disturbance is one which may often be recognized as symptomatic, coming during and after fevers and debilitating illness. It may also at times appear to be idiopathic, although close investigation can often discover a reasonable cause. It is frequently met with in patients coming under treatment for alopecia, also in many cases of dermatitis seborrheica. It consists in a weakness or fragility of the shaft of the hair, whereby it is easily broken off at any length, or split, either in its course or more commonly at the free end.

While the condition was observed in dozens or scores of instances in connection with other affections, there were relatively few cases recorded as such, the ages of the patients being shown in the next table.

TABLE 4.—FRAGILITAS CRINII.

Age in years.	Male.	Female.	Total.
3 .....	..	1	1
8 .....	..	2	2
15 to 20.....	1	7	8
20 to 25.....	..	2	2
25 to 30.....	..	1	1
30 to 35.....	..	5	5
45 to 50.....	..	1	1
Total .....	1	19	20

Little can be learned from these few cases, but the frequent occurrence of fragilitas crinium in connection with alopecia shows that nutritive and neurogenic conditions which may lead to a premature shedding of the hair are such as may also induce a poorly developed structure, in which the component cells may have little tenacity. The same is true when the nutrition is interfered with by dermatitis seborrheica. But the fact of the splitting of the ends of the hair during and after fevers and great general debility shows that the hair is a live substance, modified by the conditions of nutrition and innervation, possibly in part through faulty action of the sebaceous glands surrounding the hair follicle.

One of our cases was that of a very nervous girl of 17, who since a child had consumed prodigious amounts of tea and coffee, many times daily, and even in the night. The hair over the entire scalp was broken off to an eighth of an inch in length; it had been thick and curly until about 5 years previous to her first visit. In an unmarried woman of 47 the hair on a strip about an inch wide in the front of the scalp broke off at about an inch in length, and, although of full size and apparently normal, remained thus short for some months. In a boy, aged 15, there suddenly appeared on the vertex a patch an inch in diameter, over which area the hairs were broken off to about a quarter of an inch in length. About the same time a little girl, aged 3, was seen who had a similar patch near the vertex. In both these cases the hairs were carefully examined microscopically, and there was certainly no trichophyton present in either.

V. TRICHORREXIS NODOSA.

This curious condition, now well known in dermatology, is closely allied to the former affection, but presents features which make it an independent disease. It is characterized by one or several small, grayish, node-like masses, generally toward the end of the shaft, at which the hair readily bends at a sharp angle, and at which it separates with slight traction, giving two brush-like extremities. Some writers speak of this as a very rare disease, seen usually in males, especially on the hairy face. In our experience it is not so very uncommon on the scalps of females in adult life, as shown in

the following table, which by no means represents all the cases which have been casually observed:

TABLE 5.—TRICHORREXIS NODOSA.

Ages in years.	Males.	Females.	Total.
15 to 20.....	..	5	5
20 to 25.....	..	4	4
25 to 30.....	3	4	7
30 to 35.....	..	5	5
35 to 40.....	1	5	6
40 to 45.....	..	2	2
45 to 50.....	2	1	3
Total .....	6	26	32

But little is known in regard to the causation of this curious affection, and, while some have claimed it to be parasitic, the findings of different observers do not agree, and careful studies by other competent observers fail to demonstrate the uniform presence of any micro-organism. The rather brief records of these cases do not throw much light on the etiology of the trouble. In 26 cases the scalp was affected in women, and in 6 the bearded face in men. In 2 the mustache alone was affected, and in one instance the disease appeared also on the eyebrows and forearms.

In 14 females there were other affections of the skin, acne 5, alopecia 4, dermatitis seborrheica 2, psoriasis 2, and alopecia areata and severe eczema 1 each. The last mentioned was a most interesting case on account of the combination of diseases. It occurred in a married woman, with no children, aged 30 when first seen, and who, living in a distant city, was under observation off and on for twelve years. The alopecia areata, which ultimately involved about the entire scalp, was very characteristic in its sharply defined spots; it often yielded to treatment, only to recur again and again after very severe repeated nervous strain, accompanying various sicknesses and finally the death of father and mother. In addition to this, she had trichorrhexis nodosa, with breaking of the long hairs, and later a most distressing eczema of the genital region. In a number of the other cases there was recorded a history of nervous strain, directly after which the trouble appeared.

From what has preceded in regard to the effect of disturbances of nutrition and innervation on the condition of the hair there is little doubt but that, for some as yet unexplained reason, the fibers of the hair become separated at particular localities, causing the swellings or nodes, and the ready fracture and brush-like ends of the hair follow as a natural sequence. Whether this is due to a sudden accumulation of air in the shaft, as has been suggested, can not now be determined; we recall that the alteration of the hair in canities, which may occur suddenly, is regarded as due to the presence of air. It is more likely that in both instances it is not actually air which is present, but some gaseous substance generated by the cells of the hair under abnormal nutritive or neurotic disturbance.

VI. ALOPECIA AREATA.

Having noted several entirely different alterations in the hair which may occur as a result of nutritive and neurotic disturbances, we are better prepared to understand alopecia areata, which often presents local and constitutional phenomena much resembling those observed in connection with the four last mentioned affections of the hair.

Alopecia areata is not a very common affection, but the bald, smooth, white patches are so striking that statistics probably present its relative frequency correctly, for all patients, rich or poor, seem equally sensitive



about it. Among 15,240 miscellaneous cases of diseases of the skin seen in private practice, it occurred 202 times, forming 1.3 per cent. of the whole; and in an analysis of 10,000 public cases it formed only 0.06 per cent., it being not quite one-half as frequent among this class of patients. This disproportion would seem to point strongly against a parasitic cause, as claimed by some, and in favor of its arising from some disturbance of nutrition or innervation. The constant observation of a spontaneous disappearance of the trouble, even repeatedly, would also militate against a parasite theory, while its occasional appearance or recurrence after each great nerve strain or shock would support the constitutional theory of the nature of the disease. The very great rebelliousness of alopecia areata to local treatment alone, and its yielding to complete and perfect internal measures, even without local aid, would also indicate a constitutional rather than a local etiology.

Space forbids our entering further into the discussion of these matters, or bringing more proof of the nutritive and nervous bases of this affection, which nearly forty years' observation of it, by one of us, has confirmed. We will refer to the records of the private cases previously referred to.

TABLE 6.—ALOPECIA AREATA.

Ages in years.	Male.	Female.	Total.
5 to 10.....	10	5	15
10 to 15.....	16	5	21
15 to 20.....	8	10	18
20 to 25.....	15	12	27
25 to 30.....	14	9	23
30 to 35.....	18	14	32
35 to 40.....	14	8	22
40 to 45.....	12	9	21
45 to 50.....	3	5	8
50 to 55.....	7	4	11
55 to 60.....	2	..	2
65 .....	..	1	1
66 .....	..	1	1
Total .....	119	83	202

Alopecia areata is seen to affect males more frequently than females in the proportion almost of 60 to 40 per cent.

It is observed in almost all ages, though rarely before 5 or after 45 years of age, and in this series of cases it was found most frequently between the ages of 30 and 35. In three cases it had begun before the age of 5 years. In one case, an apparently healthy female child, who was seen when 4 years and 9 months old, the disease had begun at 3 months of age and had continued in spite of the best local treatment until seen. A little fine hair sometimes appeared and fell again, and there had been no material improvement. Under active treatment, dietary and medicinal, with few local measures, there was a very satisfactory growth, the bald areas being covered within four months.

While alopecia areata will sometimes disappear spontaneously or yield quickly to treatment, in many cases it is very persistent, as may be judged from the following table of cases where the previous duration was noted:

TABLE 7.—ALOPECIA AREATA.

Duration before applying for treatment.	No of cases.
Few days .....	5
Few weeks .....	14
1 month to 2 months.....	15
2 months to 3 months.....	11
3 months to 6 months.....	15
6 months to 8 months.....	18
8 months to 1 year.....	13
1 year to 2 years.....	16
2 years to 3 years.....	11
3 years to 4 years.....	12
5 years to 6 years.....	16
7 years to 8 years.....	7
9 years to 10 years.....	4
Total .....	157

In the limits of this paper it is impossible to enter fully into a study of these cases, many of which present most interesting points; but a few data may be given which strikingly illustrate the position taken as to its constitutional nature.

One patient, a man from another city, was first seen when 27 years of age, and observed off and on for nearly fifteen years. At 2 years of age the hair fell in spots, and in one or two years he had lost all the hair and eyebrows. He wore a wig until 15 or 16 years of age, being entirely bald, until, after staying a short time at Richfield Springs, the hair began to grow, and at 19 he had a full crop of hair and whiskers. These remained until he was 26 years old, when bald areas appeared in the beard and shortly in the scalp. These increased in size until at his first visit, nine months later, about one-quarter of the scalp and hairy part of the face was denuded. The disease progressed in spite of rather irregular treatment, until almost all the hair had left the head and face, including eyebrows and lashes, and also the body and limbs, including the pubes and axillæ. He had, occasionally, a slight growth of hair here and there, but when last seen he still wore a wig and had no eyebrows. He was never very diligent in treatment, and had many business vexations and also depressing nervous influences at home. There were five cases in which the alopecia had thus become total.

Among the cases analyzed there were 50 in which distinct neurologic conditions were recorded, besides 3 which directly followed trauma of the scalp. Very many cases could be cited in which the disease appeared after profound nervous strain or shock, as in the case of the woman mentioned under trichorrhexis nodosa, and in some instances this recurred several times. In a number of cases alopecia areata was accompanied or preceded by considerable itching. In 151 cases the onset was very sudden, the area or areas being entirely bald when they were first noticed, and in 14 there was recorded a slow onset.

The location of the disease is interesting. In 116 cases the scalp alone was involved, in 8 instances only the bearded face, and once the eyebrows and lashes alone were removed by the disease. In 12 cases the face and scalp were affected and in 29 cases the face, scalp and body, while in 5 instances the alopecia was total over the face, body and limbs, and in 7 other cases it was almost so. In 33 instances the patients had other skin affections, 19 had eczema, and 2 had leucoderma. In but a single instance were there two in a family affected, sisters, and in two cases it was recorded that the trouble was hereditary; in two cases record was made of the possible contagiousness of the affection, which was not proven.

#### VII. MONILITHRIX.

This curious and rare affection of the hair, of which we have seen but a single case, and of which there are not much more than 60 cases on record, has certain relations to the conditions already considered which make it interesting in this connection. The disease is characterized by a series of even, nodular or fusiform swellings, giving the hair an uneven or beaded appearance; the hair breaks at the constricted or atrophic portions, and not through the nodes, as is the case in trichorrhexis nodosa.

Little or nothing is known in regard to the true pathology or causation of this curious affection of the hair, but all observers agree that the constrictions must be



due to some defective development in the internodular portions, for what appear to be nodes or swellings are in reality only about the size of the other normal hairs. One observer suggests that the narrowing is due to an intermittent muscular contraction around the follicle just below where the sebaceous glands empty into it, where the young hair cells are still soft and readily compressed. It is, however, a disturbance in the hair due to defective nutrition or innervation, or both, as the idea of a parasitic cause is out of the question.

#### SUMMARY.

We find, then, that the hair is an active, live portion of the economy, subject to various alterations, dependent on its nutrition and innervation. The well-known changes which occur in the hairy coats of animals in ill health, and which have long been recognized as a valuable indication in regard to constitutional treatment, would seem to show that the same might also occur in man.

We have found that a certain activity of the hair follicles belongs to a particular period of life, puberty, and a waning of their powers seems to be a natural sign of advancing age. We have seen that in certain conditions of nutrition and innervation, as after fevers, etc., the hair follicles in some way take on different action, and various disturbances of the hair are observed, and that the effect of profound nervous or mental strain and shock can be evidenced in the hair.

Turning to clinical experience, we find that among 15,240 miscellaneous dermatologic cases in private practice a total of 1,129, or over 7 per cent., belonged to the group of affections of the hair now under consideration. An analysis of such notes as were kept of them presented many striking features illustrating the points considered in regard to nutritive and neurotic disturbances of the hair.

It is not claimed that anything very new or startling has been developed by this study, and some might even insist that all that has been mentioned is abundantly recognized by the profession. But, while in a measure this may be true theoretically, yet practically there is yet great need that the underlying principles be put more in practice: for it is the rarest occurrence to find that patients with the diseases which we have considered have ever previously been interrogated in regard to the matters which have been mentioned, much less that any serious and prolonged attempt has ever been made to rectify the very gross errors of life which have often been discovered.

In almost every instance, indeed, if a physician has been consulted at all, there has been only some local application given, while in the large majority of cases the trouble has been left to the hairdresser. It is true that the books state in a general way that attention should be directed to the state of the general health, etc., but, as stated, practically everything but the local condition is commonly ignored when these patients apply to the physician for aid.

It was our desire, by a careful study and analysis of a number of cases, to seek to ascertain some of the underlying causes of the affections of the hair here considered, in order that we might endeavor to place on a more substantial basis the principles which would lead to a more intelligent and successful treatment of the nutritive and neurotic disturbances of the hair.

531 Madison Avenue.

## THE DIAGNOSIS OF PNEUMONIA IN INFANCY.\*

ROWLAND G. FREEMAN, M.D.  
NEW YORK CITY.

The diagnosis of pneumonia, the commonest of all winter diseases in infancy, is probably the cause of more error than that of any other disease and this error is largely due to the instruction ordinarily given by lectures and text-books concerning the characteristics of pneumonia in infancy. In an effort to make complete such description, portraying the different types, and differentiating between the lobar and lobular types, the whole matter, to my mind, is made obscure and more difficult for the student, although such complete descriptions are, of course, necessary in large works on pediatrics.

In the first place as to the difference between the lobar and lobular types in infancy. Occasionally a case will occur which does follow the adult lobar type, but such cases are rare, and the symptoms are not very different from those of the lobular type, the treatment is the same and there is no real necessity of any such differentiation in infancy. The most important fact and one which should be emphasized is that the pneumonia of infancy is a disease that should be recognized independently of signs ascertained by percussion or auscultation of the chest, such signs being valuable to corroborate the diagnosis and to locate the lesion. But the general picture of the disease is usually sufficient for an accurate diagnosis, and if one waits for the physical signs elicited by auscultation and percussion may have to wait until the patient is convalescent or never make a diagnosis in a really well-marked case.

This clinical picture of pneumonia in infancy has been set forth by Northrup, and it was my idea in this paper simply to emphasize the importance of recognizing it by the symptoms and to verify the diagnosis, if possible, by physical signs.

An infant with pneumonia, whether it be primary or secondary, suddenly becomes sick. The infant is dopy, indifferent or sleepy when a few hours previous it had been bright and active. It is noticed that the infant breathes much more rapidly, has a rise of temperature and usually that it develops a cough.

On taking the respiration and pulse accurately the relationship is apt to approximate 1 to 3, often going on to a ratio of 1 to 2, an ordinary observation being 50 to 150.

These five symptoms then: the sudden onset, depression, rapid respiration, fever and cough, are sufficient in many cases to create a suspicion of trouble with the lungs. In addition, another set of symptoms may be noted by observation. As soon as one looks at the infant, flaring nostrils are noted and usually the pneumonic type of breathing in which the ordinary type, consisting of an inspiration followed by an expiration and then a pause, is replaced by a type in which the inspiration is followed by a pause and the expiration accompanied by a pneumonic grunt indicating pain. Another sign occasionally elicited and very significant when present is rigidity of the neck and upper extremities, without rigidity of the lower extremities, this sign being due to a sore chest and an effort at protection.

These four signs—flaring nostrils, pneumonic breath-

\* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



ing and expiratory grunt, and rigidity of the neck and upper extremities—are almost pathognomonic of the disease.

The signs we find in the chest simply serve to corroborate our diagnosis. The shower of crepitant râles at the end of inspiration, the most characteristic sign; the occasional but rare area of dulness on percussio with diminished breathing, indicating an initial congestion; the presence of a localized bronchitis; all of these are of value in confirmation.

#### CONCLUSIONS.

1. Pneumonia in infancy is a disease furnishing characteristic signs on which a diagnosis may be based before the lungs are examined.

2. The symptoms are sudden onset, depression, rapid respiration with ratio to pulse of 1 to 3, fever and usually cough. If with these are noticed flaring nostrils, pneumonic breathing and expiratory grunt, a definite diagnosis may be made, while rigidity of the neck and upper extremities without rigidity of the lower extremities is an important confirmatory sign if present.

3. Auscultation and percussion of the chest should be used in confirmation of the diagnosis and for localizing the lesion and for information as to its character.

205 West Fifty-seventh Street.

### THE AMBULATORY TREATMENT OF PNEUMONIA IN INFANTS AND YOUNG CHILDREN.\*

THERON WENDELL KILMER, M.D.

Instructor in Pediatrics, New York Polyclinic Medical School and Hospital; Attending Pediatricist to St. Bartholomew's Clinic.  
NEW YORK.

It is not so long ago that a physician who advocated playing out of doors an infant with pneumonia was thought to be defending a crime which should never be forgiven. Rapid advances along medical lines are being made, and I consider the fresh-air treatment of pneumonia to be one of the greatest and most beneficial advances that therapeutics has made in the last decade.

In advocating the fresh-air treatment I do not mean to be an extremist, for the man who goes too far is making no more progress than the one who timidly does not go far enough. It is by one's personal experience, by one's own failures and successes, that one is taught, and it is by means of these personal observations that medical science is advanced. Little do I care for the heated and lengthy discussions elicited by the reading of extreme papers on a medical subject, for if these papers be the writers' own personal observations, the authors are certainly entitled to believe what they have seen. It is with personal observations that this paper deals.

The data of the cases of pneumonia on which this paper is based are taken from the records of 2,322 cases of illness occurring in the department for diseases of children of a very active dispensary in this city. Each case was personally examined and a careful record of it kept. The usual mortality from pneumonia, especially bronchopneumonia, is high, Holt giving it as 10 to 30 per cent. in private practice and 65 per cent. in institution work. This series of cases is rather small from which to draw conclusions, but nevertheless it demon-

strates that cases treated in an ambulatory manner do present an exceedingly small mortality. In fact, I really was apprehensive of presenting these observations to you until I learned that many other men were having just as good results as my own, and I tell you frankly that some months ago I mentally remarked: "If I present this paper to a body of medical men, they will pronounce me either a candidate for the psychopathic ward, or a direct descendant of Ananias."

The ages of these patients ran from 2 months—the youngest—to 12 years—the oldest. There were many robust, well-nourished children among the number, as well as some feeble, anemic and poorly nourished patients. There were specimens of all nationalities. There were in all 36 patients—16 boys and 20 girls. There were 16 cases of lobar pneumonia and 20 cases of bronchopneumonia. These cases presented themselves in the stage of congestion and consolidation. There were bottle-fed infants and there were breast-fed infants. There were children whose diet was perfect, and there were children whose diet consisted of almost anything at any time. A case was not tabulated as pneumonia until absolutely positive signs of the disease, such as bronchial voice and respiration, presented themselves to establish a true and certain diagnosis. Some of these patients had high temperature, 104 to 106, while others had low temperature, from 100 to 102, and there were one or two patients who had a normal temperature all through the disease. There were cases with intense cerebral involvement, such as hyperesthesia and convulsions, and there were cases in which the baby seemed in every way normal, excepting some slight ailment, such as a cough or diarrhea. The majority of the patients were brought to the dispensary because the parents thought some other disease existed, such as diphtheria, diarrhea and "colds." There were many of these infants and children that did not look as though they had had any personal hygienic care for weeks, while others were clean and neatly clothed. Many of the parents were illiterate and uneducated, while others had a fair share of cerebral development, and it is to the first class of parents that I want to draw your attention. Although these people were of the poorer class, and the majority of them possessing little learning, they were all eager and willing to carry out directions as regards treatment and did it surprisingly well.

These observations are recited only to demonstrate that, given a baby with pneumonia, no matter what his parents are, and no matter what his present bodily condition, a great deal can be accomplished and good results obtained by systematic treatment.

The first point in the successful treatment of pneumonia is to make a correct and early diagnosis. This can be done only by the use of a stethoscope (or small phonendoscope) and by having the baby undressed. That means naked. There is no clinician living that can pick out a small spot of solidified lung by the use of his ear alone applied to the surface of an infant's chest. This has been demonstrated to me many times. The ear is too large and does not fit the surface evenly to exclude extraneous sounds. What, then, has been the mode of treatment of these cases of bronchopneumonia and lobar pneumonia which have presented themselves at the dispensary?

#### INSTRUCTIONS REGARDING HYGIENE.

*Fresh Air.*—The mother is told in as simple a way and in as few words as possible what we expect her to

\* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



do to help her baby to get well. She is told that she must place the child in her largest room—in many cases the parlor; she is told that the windows must be kept open all the time; she is told why she must do this: because her baby is breathing so fast that it requires more air. In good weather many patients are placed, well covered and with hot-water bottles at their feet, out on the fire-escape for hours at a time during the day; and in the summer time these babies remain out of doors day and night. A flat nursing bottle makes an excellent hot-water bottle. No matter what the weather, the mother is told that she must bring her baby to the dispensary every other day, and in some instances every day. Many times I have seen these patients brought out in pouring rain and blowing snow storms, and I am certain that these children owe their lives to these doses of fresh air rather than to doses of thick, syrupy, nauseous medicines, had they received them.

**Clothing.**—The mother is told that she does her child harm by keeping it bundled with innumerable articles of clothing, especially while the baby is at home. The patient should wear a thin undershirt next its skin and a nightshirt over it. If the baby has no nightshirt, the mother is told to put a loose-fitting dress on her child. The parents are warned not to place too many or heavy covers over the baby and not to hold the patient in the arms so that the bodily heat of the mother will be added to the already high temperature of the baby. The patient is best in bed.

**Food.**—In all cases the food is weakened to at least one-half of the usual strength. In the case of a breast-fed baby the mother is instructed to give from half an ounce to two ounces of boiled water just before each nursing. In the case of older children the diet should consist of milk, gruels, cereals and broths. The mothers are told that their children must have their food at regular intervals, and that there is no cause for worry if the food is not always taken. All the fresh-boiled cool water is given the patients that they desire. A young child should have nourishment about every four hours. All directions are not only given the mother orally, but are written out on paper so that she will not forget them. I have found it convenient to have printed slips, one side of which is left blank for written directions for the individual case, while on the reverse side are printed general directions, etc., to aid the mother's memory. The following are the directions:

**CASTOR OIL.**—Wet the spoon before placing oil in it. Hold spoon filled with oil on a piece of ice until thoroughly cold; then give immediately. For older children give oil between two layers of orange juice in a wet glass. Nothing should be given to eat or drink an hour before or an hour after giving castor oil. Keep patient quiet.

**MUSTARD POULTICE.**—Use . . . part . . . ground mustard and . . . part . . . flour. Rub into a paste with a little warm water. Apply between layers of old linen, muslin, or cheesecloth. Prepare fresh each time.

**BARLEY WATER.**—Use . . . tablespoonful . . . barley flour. Rub into a smooth paste with a small amount of cold water. Then add one pint of boiling water. Cook half an hour, strain and add boiling water to make up to one pint. Add one rounded tablespoonful of granulated sugar. Add a little salt.

**OATMEAL WATER.**—Use three tablespoonfuls oatmeal to one quart cold water. Boil two hours, strain, and add boiling water to make up to one quart. Add one tablespoonful of granulated sugar to the quart. Add a little salt.

**DEXTRINIZED BARLEY (or Oatmeal) GRUEL.**—Prepare as for Barley water (or Oatmeal water). When cool enough to taste, add half a teaspoonful of Cerec to the pint of gruel, and stir until mixed.

**Reduction of Fever.**—Fever is best controlled by sponging the entire body with tepid water every four hours. The baby is placed on a towel on a table, the clothing is removed, the sponging is done quickly and the skin wiped dry. Many a baby will immediately fall asleep after sponging and get a much needed rest. Fresh air and sponging are the only means that are of any value for the mother to employ in the reduction of bodily temperature. The parents are carefully instructed as to the minute details of sponging and are told that, should the baby be hot or restless, it should be sponged with tepid water every four hours.

**Counter-Irritation.**—Mustard poultices to the chest act as counter-irritants and afford an immense amount of relief in the stage of congestion and incipient consolidation. They are made of from one to four parts of flour to one part of ground mustard, according to the age of the patient. For very young babies a greater proportion of flour to mustard should be used. The poultice covers the affected side from spine to sternum, well up under the arm, and should cover the whole lung. These poultices should be applied between layers of linen, muslin or cheesecloth once in four hours and left on for from ten to twenty minutes at a time, just enough to redden the skin. They should be made fresh each time.

**Drugs.**—The public is fast becoming educated to the fact that it is not the multiplicity of prescriptions that characterizes the best physician. The one drug, if you can call it such, that played an important part and almost the sole rôle in this series of cases, is castor oil. An initial dose of castor oil (one teaspoonful to an infant, two teaspoonfuls to an older child) was given each of these patients. If castor oil was vomited repeatedly, then one grain of ealomel, in doses one-tenth of a grain every half hour, was substituted. I believe that the following method of giving castor oil should be thoroughly explained to every parent: Wet the spoon before placing oil in it. Hold spoon filled with oil on a piece of ice until thoroughly cold; then give immediately. For older children give oil between two layers of orange juice in a wet glass. Nothing should be given to eat or drink an hour before or an hour after giving castor oil. Keep the patient quiet.

An occasional dose of castor oil was given every third day to keep the gastrointestinal tract clean. For the accompanying tight distressing cough the following was given to all infants:

R.	gm. or c.c.	
Tartar emetic . . . . .	00065	
Ipecac . . . . .	00065	or 55 gr 1/100
Aqua . . . . .	3 75	fl. 5i

Sig.: One teaspoonful every two hours until six to eight doses have been given in twenty-four hours.

To the older children the following was given with excellent results:

R.	gm. or c.c.	
Ammon. muriate . . . . .	13	gr. ii
Ipecac . . . . .	0013	gr. 1 50
		or
Elixir simplex . . . . .	60	m. x
Aqua . . . . .	3 75	fl. 5i

Sig.: One teaspoonful every two hours for six to eight doses in twenty-four hours.

The above two remedies seemed to make the patients more comfortable and were practically the only prescriptions given this series of cases. Heart stimulants were not used, because none of the patients needed them.

**Rest.**—To my mind, many a baby ill with pneumonia



would have recovered if the all too-zealous attendants had had sense enough to *let him alone*. The mother should be told very clearly that it is not necessary continually to "do something" for a patient with pneumonia. If a child falls asleep she should let it sleep. Sleep is the most beneficial thing it can have. She should try not to bother a child more often than every two hours at most; better still, she should let it have four hours' repose at a time. She should try to have the sponging, medication, feeding, etc., come all at once, say at four-hour intervals, so that between times the patient is not bothered.

## SUMMARY.

Treatment of both lobar pneumonia and bronchopneumonia in these dispensary cases consisted in giving an initial purge (castor oil or calomel); mustard poultice to the chest; sponging to reduce fever; cutting down diet to one-half strength; hygiene of body, clothing and sick-room, etc.; light expectorant every two hours for six to eight doses in twenty-four hours; keeping gastrointestinal tract clear; abundance of fresh air; rest.

It must be borne in mind that the above treatment was employed in this series of dispensary cases and that it is with this class of cases only that we are here dealing.

What, then, have been the results in pursuing the above method of treatment? One patient died, but not until the mother insisted on taking her baby to a hospital; nevertheless I shall include it in my observations. This makes our mortality at the dispensary 2.77 per cent., which is remarkably low compared to that of many a private practice or hospital. We do not claim that it is our special form of treatment which produced this low death rate from this dreaded disease, for other workers are obtaining the same good results. But what this study does show, and demonstrates positively and conclusively, is that by a combination of simple instructions to parents, and quiet, rest, proper food, and, above all, fresh air for the child, the mortality of one of the most dreadful diseases of childhood can be reduced.

165 West Eighty-fifth Street.

## DISCUSSION.

DR. S. M. HAMILL, Philadelphia: There are two sides to every question and I do not think that Dr. Kilmer gave the other side very much consideration. I think that in many instances the ambulatory treatment of pneumonia in children is most desirable, but, to say that the only thing to do is to treat pneumonia in the ambulatory service, is a mistake. A number of things must be taken into consideration. One must know something of the home surroundings. When the people live in a hovel and the parents are intemperate, to say that the ambulatory service is the best is ridiculous. Of course, the hospital offers conditions which are better in every way. Another thing to consider in the ambulatory treatment is the danger of exposure of the child to the contagious diseases so commonly met in dispensaries. For this reason, one of our first duties to the patient is to reduce the number of trips to the dispensary to the minimum. I am sure that I have had quite as good results in the hospital treatment of pneumonia by placing the patients in the open air, as Dr. Kilmer has had in his ambulatory service.

DR. T. W. KILMER, New York: I am afraid that Dr. Hamill misunderstood what I said. I did not make any statement that the ambulatory treatment is the only treatment. There are, however, patients brought to the dispensary that must be treated and if we treat them as we did in this instance we will get better results than we could from any other treatment. If Dr. Hamill can pick out thirty-six consecutive cases

treated in a hospital ward and give a mortality of 2 per cent. I think it remarkable. We have babies that do come to the dispensary for treatment; this is the way we treat them, and the results are as I have stated.

## THE SMEAR METHOD AS A MEANS OF THE RAPID DIAGNOSIS OF RABIES.

WITH A REPORT OF THIRTEEN CASES.

JAMES B. RUCKER, JR., A.B., M.D.

PHILADELPHIA.

While in charge of the Laboratory of Bacteriology of the Indiana State Board of Health, in 1907, I had the opportunity of examining the brains of thirteen animals sent to the laboratory by health officers of the state. The disease from which these animals were suffering when they died or were killed was diagnosed by competent veterinarians or by physicians as hydrophobia or rabies.

In making the examinations my aim was to prove the presence or absence of Negri bodies and to note in what proportion of cases in which the bodies were found was the subdural inoculation of a rabbit or guinea-pig productive of the symptoms of rabies. My method for determining the presence of the bodies was the smear method as used and described by Williams and Lowden.<sup>1</sup> In the preparation of these smears the technic is as follows:

A small piece of the gray matter of the brain is excised and placed on a clean slide near one end. The cut in the brain should be at right angles to the surface, only a thin piece being taken, in order to avoid the white matter as much as possible. A clean cover glass is placed over the tissue and pressed down with the thumb until it is thinly spread out, and with even pressure the cover glass is drawn almost to the other end of the slide. A little practice in thus making the smears will result in a thin, even film of tissue being left on the slide almost its entire length.

The parts of the brain used for obtaining these bits of tissue were the cortex about the Rolandic region, the cerebellum and Ammon's horn. Two smears were made from each of these regions of the brain, and the smears were air dried. Two methods of staining were made use of in the search for the Negri bodies. In the first (Giemsa's solution<sup>2</sup>) the smear is at first fixed for five minutes in methyl alcohol. In staining the smears for determining the presence of Negri bodies, a solution is made from the Giemsa stain by adding one drop of Giemsa for each cubic centimeter of distilled water made alkaline previously by adding one drop of a 1 per cent. solution of potassium carbonate for each ten cubic centimeters of water.

This modified Giemsa solution is poured over the smear and allowed to remain on it for about three hours. The stain is then washed off in running water, and the preparation after being dried between layers of blotting paper is ready for examination. By this method the protoplasm of the Negri bodies takes the blue stain, while the central bodies and chromatoid granules take

1. "The Etiology and Diagnosis of Hydrophobia." Jour. of Infect. Diseases, May, 1909.

2. The Giemsa stain is made thus: Azur II eosin, 3.0 gm.; Azur II, 0.8 gm.; Glycerin, c. p., 250 c.c.; Methyl alcohol, 250 c.c. Both glycerin and alcohol are heated to 60 C. The dyes are put into the alcohol, and the glycerin added slowly, the while stirring. The mixture stands over night at room temperature and is filtered before using.



on a bluish-red or azure. Usually the color assumed by the large central body is more intense than that of the smaller ones around the periphery. The cytoplasm of the nerve cells stains blue, but the definition of the bodies can usually be made out very distinctly within it. The nuclei of the "bodies" appear red, while the nucleoli are blue. The red blood corpuscles are seen as small yellowish-pink discs.

Williams and Lowden suggest a shorter method of staining with the Giemsa solution: The smear is immersed in methyl alcohol for five minutes and then transferred to equal parts of distilled water and Giemsa solution for ten minutes. This is used for rapid diagnosis by them, but after having used both the longer and the shorter methods of staining with the Giemsa solution I find the longer one much to be preferred on account of the more marked clearness with which the central bodies and chromatoid granules stand out, allowing thereby a diagnosis to be made with more certainty, though not quite so rapidly as by the shorter method.

The second method of staining used by me in these cases of suspected rabies for determining the presence of the Negri bodies was a modification of the one suggested by Dr. Van Gieson, of the Research Laboratory of the New York Board of Health, and used by Williams and Lowden in their study on the Etiology of Rabies. The smear is fixed while moist, in methyl alcohol for one minute, then the stain, consisting of 10 c.c. of distilled water, two drops of a saturated alcoholic solution of rosanilin violet and 20 c.c. of Loeffler's alkaline methylene blue, is applied and warmed until it steams. Pour off the stain, wash in water and allow to dry in the air.

By this method the protoplasm of the "bodies" takes a decided red stain, the central bodies and chromatoid granules are a dark blue, nerve cells light blue, and the blood cells a pale pink. This staining mixture deteriorates after standing for an hour or so, wherefore it is necessary to freshly prepare it only as it is needed.

In examining these cases, six slides were made from each: two from the cortex, two from Ammon's horn, and two from the cerebellum. Three—one from each region—were stained with the modified Giemsa solution, and to the remaining three Van Gieson's stain was applied.

CASE 1.—S. L. M. Brain of a dog, which had been found running wildly and snapping at anything which came in its way. Killed by a pistol shot and its brain received at the laboratory Dec. 5, 1906. Negri bodies were found in the smears by both the Giemsa and Van Gieson staining methods, but no animal inoculation was made. A laboratory diagnosis of rabies was reported.

CASE 2.—O. E. M. Brain of dog, sent in Dec. 29, 1906. No history. Negri bodies found in smears stained by both methods. Animal inoculated subdurally with a few drops of an emulsion from cortex and cerebellum in 0.6 per cent. salt solution, but died the next day. Positive diagnosis of rabies made.

CASE 3.—L. T. R. Brain, medulla, and cord of cow in 50 per cent. glycerin sent in Jan. 29, 1907. Cow had been supposedly suffering from rabies, being restless and irritable, taking no food for several days before she was killed. A dog which had bitten this cow had been acting strangely for several days. He was tied up and became very irritable, refusing all food, and finally died in convulsions. Smears from brain, medulla and cord showed Negri bodies by both Giemsa and Van Gieson staining methods. A guinea-pig was inoculated subdurally with an emulsion from brain, medulla and cord, on Jan. 29, 1907, and died on the evening of Feb. 5, 1907. Negri bodies

were found in smears from the brain of this guinea-pig. A positive diagnosis of hydrophobia was reported to the sender.

CASE 4.—C. G. B. Brain of dog sent Feb. 12, 1907. No Negri bodies found in smears. Guinea-pig inoculated subdurally without result.

CASE 5.—W. R. H. Brain of dog, sent in March 8, 1907. Negri bodies found in the smears stained by both methods. A guinea-pig inoculated subdurally with a few drops of an emulsion of the brain in salt solution did not develop rabies and was still alive and well Sept. 17, 1907. The sender stated that twenty-eight days after he had received a positive diagnosis of rabies from the laboratory, fourteen hogs bitten by the dog developed hydrophobia and died. Two cows and one other hog also bitten by the dog did not develop the disease. The dog was very docile and a companion of the children. After biting the hogs and cows the dog was confined, and when approached by any one, he would growl and snap. At no time was frothing at the mouth observed, but for several days before he died he refused all food.

CASE 6.—J. F. H. Brain and cord of cat, sent in March 27, 1907. Cat had bitten a child and was killed and brain and cord sent to the laboratory. No Negri bodies were found in the smears, and animal inoculation resulted negatively.

CASE 7.—W. J. U. Brain of dog, sent in April 1, 1907. Negri bodies found in stained smears from the cortex and Ammon's horn, but not in cerebellum. No animal inoculation made because no animal was available at the time. A positive diagnosis of rabies was reported.

CASE 8.—J. L. B. Brain of dog, sent in April 18, 1907. Negri bodies found in all the smears. A rabbit was inoculated subdurally but died the next day. A positive diagnosis of rabies was reported, however. In reply to my letter containing the report, the veterinarian stated that the dog had manifested all the symptoms of hydrophobia and had bitten two men and six dogs.

CASE 9.—F. A. S. Brain of dog, sent in April 18, 1907. Negri bodies found in all the smears. Rabbit inoculated April 18, 1907, subdurally. Took no food for three days previous to May 2, 1907, when it died.

CASE 10.—W. E. R. Brain of dog, sent in April 25, 1907. No Negri bodies found in any of the smear. Guinea-pig inoculated subdurally April 25, 1907, died of rabies May 18 in its paralytic form—symptoms typical. Negri bodies were found in abundance in the brain of the guinea-pig.

CASE 11.—A. M. K. Brain of puppy, sent in June 29, 1907. Negri bodies found in all smears. Guinea-pig inoculated subdurally, but died in two days without any symptoms which would indicate hydrophobia. A child bitten in the face by this puppy did not develop hydrophobia. A positive diagnosis of rabies was reported.

CASE 12.—F. A. T. Brain of dog, sent in Aug. 2, 1907. No Negri bodies found in smears. Guinea-pig inoculated subdurally still alive Sept. 17, 1907. A negative report was transmitted.

CASE 13.—C. D. B. Brain of dog, sent in Aug. 29, 1907. Negri bodies found in all smears. Guinea-pig inoculated subdurally died September 20. Diagnosis of rabies was reported.

In all cases proved by the biologic test to be rabies, Negri bodies were found in the smears. In several cases Negri bodies were found in the brains of the animals which had been inoculated with an emulsion of the brain of the animal the diagnosis of whose disease was in question, and in the smears from whose brain Negri bodies were found.

#### SUMMARY.

The smear method is preferable to all other methods because:

1. It is much simpler than any other, on account of the extreme facility with which the smears may be made and stained.

2. It is much shorter than any other, inasmuch as the least possible time in which even a poor section could be made and stained is three hours, whereas the time



required by the smear method is from fifteen minutes to three hours.

3. In the smear method the Negri bodies appear very distinctly, and their minute structure is brought out very clearly.

4. The smear method is absolutely reliable.

256 South Fifty-sixth Street.

### AN INFREQUENT TYPE OF OPTIC NERVE ATROPHY.\*

HOWARD F. HANSELL, M.D.  
PHILADELPHIA.

I am aware that my contribution to the subject of optic nerve atrophy can have but a limited application, and whatever practicability it possesses is clinical and therapeutic only. While the subject is fairly well understood, our knowledge pertains more to etiology and pathology than to therapeutics. Almost without exception inflammation and atrophy are secondary to some other affection, which, either directly by pressure or extension of disease from neighboring parts, or indirectly, following general disturbances of the nervous system, toxemia, alterations in the constituents of the blood or other remote causes impedes circulation and prevents nutrition to the nerve. Rarely does the inflammation arise in, and confine itself to, the optic nerve and its intraocular expansion. The treatment of the optic nerve affections, therefore, is the treatment of the underlying disease. Speaking generally, the ophthalmoscopic findings decide whether the atrophy is a sequel to inflammation, hence more or less acute, or whether it has followed connective tissue increase and destruction of the nerve fiber—the old-fashioned “ascending and descending” atrophy. My purpose in this paper is to confine myself exclusively to atrophy of the optic nerve as a disease in itself and not apparently associated with and dependent on other affections of the nervous system or of other organs of the body.

#### ANATOMIC RELATIONS.

The optic nerve may be divided arbitrarily for the purpose of clinical study into two sections: that between the chiasm and the optic foramen and that between the optic foramen and the eyeball. The former measures in the adult of average size from 7 to 11 mm. ( $\frac{1}{4}$  in. to  $\frac{7}{16}$  in.), and the latter from 23 to 30 mm. ( $\frac{7}{8}$  in. to  $1\frac{1}{4}$  in.), the entire nerve, from chiasm to globe averaging 35 mm. ( $1\frac{3}{8}$  in.) in length. The intracranial portion of the nerve lies in the optic canal in the body of the sphenoid bone, and is said to be enveloped only by the pial sheath, since the other two sheaths after passing through the optic foramen become united with the two outer membranes of the brain. The optic canal contains only one other structure, the ophthalmic artery, given off from the internal carotid in close juxtaposition. Between the chiasm and optic foramen the optic nerve runs under the medial root of the olfactory nerve and is separated from it by the anterior cerebral artery. On the medial side it borders on the division between the hemispheres and on the lateral side it lies near the anterior perforated space.

It is important to remember, as a factor of no inconsiderable interest in the clinical study of optic

atrophy, that no other cranial nerve lies in close enough proximity to become implicated by paralysis or inflammation by a morbid process that is confined to the optic nerve or its sheath, the third, fourth, the ophthalmic division of the fifth and the sixth nerves entering the orbit through the sphenoidal fissure. Its relation, however, to the sphenoidal sinuses and to the posterior ethmoidal sinuses is significant and throws light on the etiology of optic nerve affections. Professor Onodi, in his recent monograph (1907) on this subject, presents a series of photographs from original dissections which thoroughly explains this relation. He shows clearly how disease of the sinuses, directly by necrosis of the bony walls and extension of the disease through the openings thus made and involvement of the sheath of the nerve and indirectly by pressure from collections of pus or from a growth within the cavities, may affect the optic nerve. The walls of the sinuses are in some individuals exceedingly thin and yield readily to the tension of the contained material. The right sphenoidal sinus seems to be more often the cause of compression of the nerve and chiasm because of its slightly more intimate relation with them.

#### RELATION OF ACCESSORY SINUS DISEASE.

From this brief résumé of the anatomic relations of the intracranial portion of the optic nerve, it may be inferred that disease of the sphenoid and ethmoid sinuses may be ranked among the prominent causes of inflammation and atrophy. Sufficient stress, I believe, has not been laid either on the frequency or importance of this cause. Posey,<sup>1</sup> Arnold Knapp<sup>2</sup> and others have recently drawn attention to this causative connection and have insisted on the existence of accessory sinus disease despite the negative reports of laryngologists to whom their cases were referred for examination. It is doubtless impossible in the early stages of sinus disease for even the most expert examiners to detect its presence, but in the later stages the electric transilluminator is of great service. I wish here to repeat Posey's admonition that the ophthalmologist shall not be contented with the findings of one examination in cases which point to sinus disease as the cause of the optic nerve affection. In this connection Chance's case is of interest. He reports a case of presumed exostosis of the orbit which proved to be a bulging outward of the outer walls of the ethmoid cells due to an enormous collection of pus contained in the ethmoid and sphenoid sinuses and extending as far forward as the frontal sinus. There were no obstructions in the nasal or faucial passages, no discharge and no indication whatever that the sinuses were diseased. The optic discs were pale and the retinal veins were engorged.

As Bartels<sup>3</sup> has shown in his study of the pathology of blindness in orbital abscess, the optic nerve in purulent disease of the accessory sinuses may be affected by pressure, by extension of inflammation and by necrosis of the sheath and the fiber following impaired nutrition due to thrombosis of the small arteries and veins. First, then, in seeking for a cause the accessory sinuses should be examined thoroughly and repeatedly.

#### RELATION OF TERTIARY SYPHILIS.

Excluding local causes, no other etiologic factor can be compared in frequency with tertiary syphilis of the

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. THE JOURNAL A. M. A., Feb. 23, 1907, 676.

2. Arch. Ophth., January, 1908.

3. Arch. Ophth., January, 1908.



structures surrounding the intracranial portion of the optic nerve. The lesions may involve the dura mater, the pia mater, the bones at the base of the skull, the blood vessels and the nerves themselves, and consist of chronic inflammation with exudation, gummatous infiltration, gumma and disease of the vessels. Uhthoff<sup>4</sup> believes that in most instances of intracranial optic neuritis the nerve was affected secondary to surrounding syphilitic lesions. "In Uhthoff's own observations (17 cases), as well as in 150 autopsies of cerebral syphilis reported by others and reviewed by him, the lesions of the optic nerve were but part of the lesions found at the base of the brain."

Gradle,<sup>5</sup> from whose paper I extract the above quotation, has reported 4 cases, and all of them are believed by him to be syphilitic. In my own 2 cases, to which I shall refer briefly later, one was due to acute disease of the accessory sinuses and the other to syphilis. In view of the prevalence of syphilis in the etiology, I think it would be proper to presume syphilis to be responsible, although there may be no tangible evidence of that disease. To depend on the patient's testimony or on the presence of other lesions pointing to syphilis, would be misleading. It must be remembered that intracranial optic neuritis belongs to the very latest manifestations and the patients may have been in ignorance of their earlier infection or purposely withhold a knowledge of it from the examiner.

According to Gradle, the symptoms are sufficiently marked to make the diagnosis reasonably certain. "Sudden diminution of sight without central scotoma and with nearly normal field, tendency toward recovery, but possibly ending in incomplete atrophy with absence of all other symptoms except initial headache, is the clinical picture of intracranial optic neuritis." He says the transient failure of sight in 3 of his cases can best be explained by the assumption of diffuse optic neuritis involving only the intracranial portion of the optic nerve and the clinical characteristics of this assumed lesion are consistent with our knowledge of the topography of the fibers in the intracranial trunk.

When, however, the cause is not syphilis, but disease of the accessory sinuses, the symptoms may vary from those described by Gradle. In Arnold Knapp's case the sight of the right eye had become suddenly affected. V. = 20/70; field: periphery normal, central relative scotoma of 5 degrees; left eye was normal. After relieving the posterior ethmoid cells of a large amount of pus, vision gradually returned and in seven weeks was normal. "A central scotoma always seems to be present if the case is examined early enough and the optic nerve lesion falls into the group of retrobulbar neuritis."

**CASE 1.—History.**—X., a lad of 17, suddenly became partially blind after exposure. He had been driving all day in stormy weather and had become thoroughly chilled. After eating a hearty supper he lay down on the kitchen floor near a hot stove and slept all night. In the morning vision was reduced in each eye to the perception of large objects.

**Examination.**—The retinal arteries were greatly reduced in size and the papillæ pale. The veins were of normal caliber. He had a large central negative scotoma reducing the seeing field to a small area at the periphery. The cause was laid to intracranial optic neuritis from disease of the sphenoidal sinus, and this opinion was later verified.

**Subsequent History.**—Treatment was of no avail. The optic nerves became atrophic and a large patch of retinochorioidal

atrophy developed corresponding to the scotoma, due probably, as Birch-Hirschfeld<sup>6</sup> has pointed out, to toxic action on the optic nerve fibers.

The ophthalmoscopic appearances of the disc vary from the signs of acute neuritis and retinal edema in the acute cases, to a fine almost imperceptible deeply seated paleness, and this variation seems to be independent of the cause. In Gradle's first case the discs were normal; in the second, the same, in the third, the same at first, but two years later "an unquestionable though very slight atrophy of the left optic nerve while the right papilla was suspiciously pale;" the fourth was healthy. In Knapp's case there was "pronounced neuroretinitis, with a radiating figure of white lines and dots about the macula."

In my first case the atrophy was well marked, and in the second there was apparently good retinal and nerve circulation, but really a slight but positive loss of vascularity in the nerve head. It seems that the diagnosis of affections of the intracranial portion of the optic nerve can not positively be determined by the ophthalmoscope, because its signs do not materially differ from those of atrophy from affections of other parts of the nerve. Yet a "suspicious paleness," remaining unchanged through months and attended with comparatively great loss of vision, points to the situation of the lesion in the intracranial portion. The pupillary symptoms are not significant. The size of the pupils and any difference between them may be accounted for, in uncomplicated cases, by the loss of vision and the difference in vision between the two eyes. Moreover, dilated or unequal pupils may be misleading because they may indicate a lesion farther back in the brain than the chiasm or an extensive disturbance of the nervous system. Pupillary inequalities are present in many different affections, both functional and organic, and are more significant of the gravity of the disease than of the locality of the lesion.

The same statement may be made concerning ocular muscle paralysis. Its presence indicates simply that the lesion is not limited strictly to the intracranial portion of the nerve, but has originated either some distance away or has extended from the canalis opticus backward from the chiasm, involving the fifth, fourth, third and sixth nerves, respectively, or forward into the sphenoidal fissure. Its absence would point to the limitation of the lesion between the anterior border of the chiasm and the foramen opticum. Headache is a common symptom. It is violent and almost continuous in sinus disease and paroxysmal in syphilis. It is not characteristic and does not differ essentially from the headache of refractive errors and many other cerebral and general affections.

**CASE 2.—History.**—Mrs. J., aged 35, was infected by her husband with syphilis eight years ago. She received the usual treatment at the hands of an able and careful physician under whose care she remained for a number of years.

She considered herself well and for four years appeared to be so excepting for an occasional break-down due to a valvular heart lesion. In the spring of 1906 she consulted me on account of headache and failing vision of the right eye.

**Examination.**—R. V. = 20/50, L. V. = 20/30. Low hyperopia. Both optic discs were slightly pale with little noticeable difference between them, although the right was possibly a trifle paler, no limitation of either field for white, but concentric contraction for all colors. Urinary analysis showed a trace of albumin, no sugar, no casts.

4. von Graefe's Arch. f. Ophth., xxxix, 1.

5. Arch. Ophth., March, 1907.

6. von Graefe's Arch. f. Ophth., lxy, 3.



*Treatment.*—She was given injections of mercury, large doses of potassium iodid, hot baths and sweats, repeated every few weeks. In six months V. had fallen to R. 20/70, L. 20/50; the optic discs were unchanged in color, but the vessels of the retina showed signs of a mild degree of pressure, presumably exerted on the nerve. The veins were dilated and slightly tortuous, the arteries narrowed. The paleness of the discs was peculiar. At first glance the papillæ seemed to be entirely normal and of healthy color, but thorough inspection showed a deep-seated loss of color. At this time the right eye began to diverge, from paresis of the third nerve, fusion of the images requiring a prism of 40 degrees. Central vision was the same, but the fields were limited for white as well as for colors. Vision slowly declined in the right until the spring of 1907, when it equaled only 20/250. In June she stated she had attacks of severe pain, lasting from 12 to 18 hours starting in both eyes and passing back to the occiput and cervical regions. V. R. = 5/200, L. = 20/50. January, 1908, she reported three attacks of pain in right temple with swelling of the soft tissues, attended with transient diminution of vision. At this time there was in the right eye a small central scotoma for red and green. Under treatment vision and fields were improved (R. = 20/100), the scotoma disappeared, but the diplopia remained unchanged. The pupils were equal and responsive throughout, and the patient never seriously suffered in her general health. During the two years of observation of this patient the ophthalmoscopic findings remained without appreciable variation. Even when the vision had sunk to 5/200 and the field for white was limited to a circle of 15 degrees around the fixation point, the deep-lying paleness of the disc had not increased, and again when vision recovered to 20/200 the color was unchanged.

I believe the process in this patient to be a neuritis of varying intensity affecting the intracranial portion of the optic nerve, syphilitic in origin, basing the opinion on the absence of pupillary phenomena and of symptoms of general disturbance of the nervous system, the peculiar deep-seated paleness of the papillæ, the concentric limitation of the fields, the temporary scotoma and the unprogressiveness of the affection.

#### DISCUSSION.

DR. J. G. HUIZINGA, Grand Rapids, Mich.: I have now a case similar to the one described, the history of which is this. A year ago the patient first consulted me concerning a rapid diminution of vision. Examination of the fundus disclosed an inflammatory condition of the disc. I determined that this was due to ethmoiditis. Operation was declined by the patient until the vision depreciated to such extent that it was impossible for him to count fingers. Then he had an operation done and immediately his vision improved to the extent that he could tell a one-dollar from a two-dollar bill. He has had two operations on the ethmoid cells and one attempted on the frontal sinus which was absent. When the infection in the cells was worse the vision was worse; it was a very clear case. Whenever there was a clogging up of the ethmoid cells the patient's vision went down and when they were opened up and cleansed his vision improved. I have had him under observation trying to restore vision by vibratory massage and electricity, which I am trying out experimentally, but without results so far.

DR. H. F. HANSELL: The remark of Dr. Huizinga about the variation in vision calls attention to an important point in the diagnosis of these cases of intracranial disease with optic neuritis. In my own case, that due to syphilis, vision varied from 20/30 to 5/200 and back again to 20/30. For the relief of the accessory sinus disease I refer to those more competent than I am. The case due to syphilis I treated in the usual way, by mercurial injection and increasing doses of iodid of potassium and by sweat baths. I believe that the diaphoresis is valuable in enabling the patient to assimilate the mercury and iodid and that the combination of the three is the best treatment we have.

## DIFFUSE INTERSTITIAL KERATITIS IN ACQUIRED SYPHILIS.\*

A. E. DAVIS, A.M., M.D.

Professor of Diseases of the Eye, New York Postgraduate Medical School and Hospital.  
NEW YORK.

Interstitial keratitis, the result of acquired syphilis, is a rare disease, if we are to judge from the number of cases reported in literature, only about one hundred cases having been reported up to date; and judging from the number of cases reported in American literature it is an extremely rare disease, only about a dozen cases having been published. Furthermore, to emphasize the extreme rarity of the reports of such cases, I may state that, so far as I have been able to ascertain, the volumes of the transactions of the American Ophthalmological Society, published first in 1864 and continuously since then, do not contain the report of a single case presented to the society, and the same is true of *Knapp's Archives of Ophthalmology*, begun in 1869; the *American Journal of Ophthalmology*, begun in 1884; *Annals of Ophthalmology and Otology* (now the *Annals of Ophthalmology*), begun in 1892, and *Ophthalmology*, begun in 1906. Under the title of "Corneal Lesions in Acquired Syphilis," Dr. W. H. Wilder<sup>1</sup> has reported three such cases. The *Ophthalmic Record*, begun in 1891, has the original reports of two well authenticated cases, and of one doubtful case. Ellett,<sup>2</sup> Marlow,<sup>3</sup> and Hildrup<sup>4</sup> report these cases.

I have not taken into consideration the annular or disciform varieties of keratitis or other unusual forms of interstitial keratitis, confining myself strictly to the diffuse interstitial keratitis, as is so commonly seen in cases of inherited syphilis. The small number of published cases is remarkable when we remember that these are the leading ophthalmic journals in America, and also the great length of time covered by them. Not only is there a lack of original cases reported in these journals, but, as would be expected under the circumstances, very rarely indeed is there an abstract of such cases from foreign literature. Why wonder, then, that some leading ocnlists doubt the existence of the disease at all from acquired syphilis.

When I presented my first case to the New York Ophthalmological Society, December, 1901, one of the oldest members of the Society, the late Dr. D. B. St. John Roosa, said he had never seen a single clear case of interstitial keratitis from acquired syphilis in his long practice of forty-eight years, either private or hospital; and in a personal letter to me subsequently, in support of his contention, he cited Hutchinson's classical memoir,<sup>5</sup> as follows: "Although I will not make so sweeping an assertion that interstitial keratitis never occurs excepting in the subjects of inherited taint, yet I can not conceal from myself, and have no wish to do so from my reader, that such is my present belief. It seems, moreover, improbable that a peculiar disease, remarkably well separated from all its congeners, both by its symptoms and its progress, should acknowledge a specific cause in nineteen instances, and in the twentieth present precisely the same phenomena in total in-

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. The Journal A. M. A., Dec. 21, 1901, xxxvii, 1669.

2. Ophth. Rec., ix, 283.

3. Ophth. Rec., xiii, 113.

4. Ophth. Rec., xiv, 214.

5. Ophth. Hosp. Rep., 1858, i, 231.



dependence of such origin. It is only fair, in passing, to ask of those who are inclined to test the accuracy of this opinion that care be taken in the diagnosis."

In looking over the literature on the subject, however, I find that Hutchinson had occasion to change his mind later. In his retiring address<sup>6</sup> from the presidency of the Ophthalmological Society of the United Kingdom, in commenting on a case of interstitial keratitis in acquired syphilis published by Mr. Morton,<sup>7</sup> he says: "So far as I know that case remains practically unique. I have seen a few doubtful and ill-marked parallels, but never one that could be properly placed by its side. Why keratitis should be so common in inherited syphilis, and so rare in the acquired disease is one of the pathological enigmas for which as yet we have no answer. Mr. Morton's case was not sent specially for his delectation; there are others like it if we could but find them, and to find them we want the help of the army of trained specialists now associated in this Society. Our volumes contain, so far as I know, no reference whatever to the occurrence of keratitis in acquired syphilis."

How near these words (spoken twenty-two years ago) come to describing accurately the condition now existing in American ophthalmic literature, is apparent from my opening remarks. Yet, we all know that interstitial keratitis from acquired syphilis is not extremely rare. If we would but look for such cases and report them, I am sure that many could be placed on record, and that is one of the objects of this paper, to direct attention to the importance of publishing such cases.

Callan, of New York, has reported several such cases verbally, although not publishing a single one. Several members of the New York Ophthalmological Society, in discussing the case shown by me, said they had seen anywhere from one to seven such cases in their own experience, yet not a single case have they thought worth while to report. Most of the present-day ophthalmic text-books (there are a few exceptions) speak of acquired syphilis as a cause of interstitial keratitis, but report no cases that I have been able to find. If I have overlooked cases, as undoubtedly I have, in my limited time to look up the literature on the subject, I trust that my confrères will be good enough to cite any they may know of. It is high time for some one to call attention to these hitherto neglected cases, and to urge the publication of the same, at least in sufficient numbers to remove doubt of the existence of such cases. I beg, therefore, to report two cases—the only two well-authenticated ones seen in my practice of sixteen years. Both of these cases were seen this winter, one, in fact, while engaged in writing this paper.

**CASE 1.—History.**—Mr. C. M. M., aged 27 years. This patient came to me Oct. 5, 1907, because of pain and failure of hearing in the right ear. He gave a history of having the drum punctured six months previously because of an acute abscess.

**Examination.**—I found the drum membrane somewhat congested, shrunken, and a scar in the lower and posterior quadrant. Hearing had been reduced to 7/40. Bone conduction was normal; hearing in the left ear normal, 40/40; bone conduction and air conduction normal. There was a chronic laryngitis. By inflating the ear and treating the throat, the pain in the ear was completely relieved in a few days. On November 30, about two months after consulting me concerning his ear, he consulted me because of an acute inflammation

in each eye, more pronounced in the left. At this time he admitted the history of syphilis of one year's duration, and a report from his family doctor who treated him from the beginning confirms this. The patient had a primary chancre followed by secondary eruptions and sore throat; in fact, was under treatment by his family physician when he first came to me, but of which he made no mention.

**Present Condition.**—There are absolutely no indications of inherited syphilis at all. The teeth are perfect and there are no scars about the mouth or other marks of congenital syphilis of any kind. The man is robust in appearance.

**Local Condition of Eyes.**—For the last two weeks the patient has complained that the eyeballs have gotten red at night, burned, and that the light hurt him very much; tears also ran from the eyes. At the present time both eyes are inflamed, there is a marked circumcorneal injection in the left eye, and almost the entire cornea is covered with a grayish haze of a typical ground-glass appearance, and deep in the corneal surface can be seen a number of punctate spots, together with a few fine blood vessels. The right eye is affected very much in the same way as the left, but to a lesser extent. Vision in the right eye has been reduced to 20/30 and in the left eye to 20/50, although his vision, he tells me, was absolutely perfect before the present attack.

**Treatment.**—The patient was placed on atropin and hot water, locally, and the mixed treatment was pushed to the full limit. With the pupils well dilated under atropin, there were distinct changes in the chorioid to be observed far forward in each eye, and especially well marked in the left eye. After a few weeks' treatment the inflammation subsided rather rapidly, until the ground-glass appearance has almost disappeared.

March 7, 1908: The right eye is completely well, except for a slight circumcorneal injection; no infiltration of the cornea and no punctate spots remain. In the left eye all the gray haze has disappeared, together with most of the blood vessels, and but one very small punctate spot can be seen under the magnifying glass, and here and there a very fine blood vessel. The vision in the right eye was brought up to 20/20, and in the left eye to 20/40. There remains some congestion in the fundus of the left eye, and a few fine granular shreds floating in the vitreous.

**CASE 2.—History.**—Mr. G. B., aged 35 years. The patient consulted me first March 11, 1908 (consequently I have had him under observation about one week), with a history of his left eye being sore for the last two months, sensitive to light, running tears, and with rapid failure of vision in that eye. His family history is absolutely negative, in so far as can be obtained by me and by his family physician, the family physician assuring me there is no trace of syphilitic taint to be found in his family on either side. He is a married man and has a family. The first child died at the age of 8 months, the second child at the age of 6 months, the next two were miscarriages, and since then his wife has given birth to four healthy children, all now living.

He gives a history of a hard sore occurring on the penis three years ago. It was about two months in healing, but he denies any chance of infection except from his wife. Although there is this distinct history of the hard sore, there have been but few secondary symptoms. At the present time there is a slight enlargement of the glands in the neck and in the inguinal region. The man is robust in build, being about 5 feet 10 inches in height, and weighs about 190 pounds. He has absolutely none of the marks of congenital syphilis anywhere, and apparently is in perfect health.

**Local Condition of the Eye.**—The upper one-sixth of the left cornea is covered with the most pronounced salmon-patch I have ever seen; so deep, in fact, that it is almost liver-colored in appearance, while the rest of the cornea is completely covered with an intense grayish infiltrate. There is a slight circumcorneal injection, a very deep anterior chamber, and vision is reduced to counting fingers at six inches. It is as typical a case of diffuse interstitial keratitis as I have ever seen. The right eye is not affected; the vision is 20/40 without correction; the fundus appears to be normal. The fundus of the left eye

6. Tr. Ophth. Soc. U. Kingdom, 1886, vi, 517.

7. Moorfield's Hosp. Jour., 1874.



could not be seen, because of the intense infiltration of the cornea. The patient gives a history of no other disease that would be likely to cause the present condition. There is no history of rheumatism, influenza, malaria, gout, etc. There is no previous history of an eye affection of any kind.

Wandel,<sup>8</sup> who gives Fournier the credit of reporting the first case of this nature, reports a case himself and reviews the literature of forty-five cases.

It is rare, indeed, in these cases to have the salmon-patch. In fact, Trousseau says<sup>9</sup> that the salmon-patch never appears in these cases, and Mr. G. Anderson Critchett<sup>10</sup> said he had never been able to persuade himself that there was a true salmon-patch in the cases observed by him. In the case reported by Marlow,<sup>3</sup> the appearance of the cornea was very much like that presented in my second case, and I venture to give, very briefly, the case as reported by him.

A woman, aged about 30, was brought to him with a chancre of the conjunctiva in the lower retrolarsal fold of the right eye, with the preauricular and submaxillary glands enlarged on that side. He prescribed antispecific treatment, and did not see the patient again for ten years, when she presented herself with a typical interstitial keratitis in the right eye, the whole cornea being occupied by a diffuse patch of haze, while the upper part, perhaps 1/5, was covered by the characteristic salmon-patch of Hutchinson. The left eye was unaffected. The scar of the chancre was plainly visible at this time. She was not seen again.

Lange<sup>11</sup> also has reported a case of interstitial keratitis following a primary sore of the ocular conjunctiva.

Another very well authenticated case of interstitial keratitis, with the distinct salmon-patch, due to acquired syphilis, is reported by J. B. Lawford,<sup>10</sup> with four others, two of which were of doubtful authenticity. The particular one to which I refer is as follows:

Woman, aged 39 years. Her right eye was affected by diffuse interstitial keratitis. In the upper part the cornea was vascular and gray, and at the extreme upper edge was a very distinct salmon-patch. The pupil was active and dilated circularly under atropin. In the left eye nothing abnormal was found. There was no history of a previous eye affection. History as to syphilis was uncommonly definite. Thirteen years before she had prolonged affection of the throat, a skin eruption and loss of hair, and one year previous to coming under observation she had perforation of the hard palate. She brought to the hospital her young daughter, Violet H., aged 8, suffering from typical interstitial keratitis in both eyes. Her first child was living, aged 18. Five subsequent pregnancies resulted in stillbirths; then the daughter, Violet, and there are three younger children.

The patient was under observation four months, treatment being iodids and atropin. She was greatly improved. Mr. J. H. Herbert Fischer furnished the notes of this case for Mr. Lawford.

Mr. George Anderson Critchett, in discussing the case presented by Mr. Lawford, said he was glad to hear that a distinct salmon-patch had been met with in one case; that he had never been able to persuade himself that there was a true salmon-patch in any of his cases, though there was generally vascularity, but the opacity in the cases he had seen had not, as a rule, been so deep, so interstitial as in inherited cases. Mr. Griffith, in discussing the paper, mentioned the fact that Mr. Hutchinson had reported a case as a secondary manifestation in syphilis. He himself had seen four cases; in one of these the sight was lost—only the perception of light remaining, although he had given a favorable prognosis.

This point in regard to the loss of sight should be borne in mind by oculists in giving a favorable prognosis in these cases, although in most cases due to acquired syphilis the disease runs a much lighter and quicker course than in those of inherited syphilis.

Another interesting question has been brought up in connection with these cases, and that is whether it is possible for a man inheriting syphilis to acquire syphilis primarily himself, and the disease (interstitial keratitis) in this way be due to the inherited rather than the acquired taint. In this connection Fritz Mendel<sup>12</sup> reports the case of a young man whose mother was syphilitic, and who had suffered from this hereditary taint in the first year of his life, but acquired syphilis at the age of twenty-one, and had both eyes affected at this later date with a typical diffuse keratitis, which cleared up under free inunctions of mercury.

Mr. J. Herbert Fischer,<sup>13</sup> in a recent paper on some cases of interstitial keratitis from acquired syphilis, reports a number of cases. He expresses the opinion that interstitial keratitis from acquired syphilis is generally a tertiary manifestation; that it seems usually to attack only one eye, and that the infiltration frequently limits itself to a portion of the cornea only; that the keratitis, as far as it goes, is identical in clinical appearances to that due to the inherited disease, and that the statement made by Nuel, that it was usually secondary to iridochorioiditis, was by no means accepted universally. He also expressed surprise that more cases had not been reported. Mr. Sidney Stephenson, in discussing the paper, stated that about one hundred cases had been reported in literature, and that the average time of the development of interstitial keratitis after the primary affection was 10.8 years. He also thought that the unilateral location of the affection was due to treatment and that the bilateral cases occurred in the untreated cases. In a very recent communication, Mr. Stephenson,<sup>14</sup> states that nearly every case of interstitial keratitis is secondary to disease in the anterior part of the uveal tract. This opinion coincides with Nuel's.

It is interesting to note that this disease has been produced experimentally in the lower animals—rabbits, monkeys, etc.—by scrapings from lesions, chancres of the human being, and that the spirochetes had been found in such lesions. Mr. Sidney Stephenson also mentioned the fact that he and other observers, Stock, Peters, Römer and Babb, had found the spirochetes in congenital syphilis of the eye.

#### PATHOLOGY.

As to the pathology of the disease I shall say but little, except to quote briefly Mr. J. Herbert Parsons.<sup>15</sup> He says: "The cases of true interstitial keratitis, in the restricted clinical sense, which have been examined microscopically, are very few and are mostly complicated by other conditions which make it difficult to determine the anatomy of the disease. Even amongst the cases examined, a large proportion of those described as parenchymatous keratitis were undoubtedly tubercular. This raises the question of the true etiology of the disease. In England we are accustomed to lay the typical condition to syphilitic origin, and no satisfactory proof has been brought forward that this view is

8. Wehnschr. f. Therap. u. Hyg. des Auges, December, 1903.

9. Ann. d'ocul., 1895.

10. Tr. Ophth. Soc. U. Kingdom, 1900, xx, 67.

11. Tr. Ophth. Soc. U. Kingdom, 1892, xii, 74.

12. Centrbl. f. Prakt. Augenh., January, 1901; Med. Press and Circ., December, 1907.

13. Ophth. Soc. U. Kingdom, November, 1907; also Ophth. Rec. (London), Jan., 1908.

14. Tr. Ophth. Soc. U. Kingdom, May 25, 1907.

15. The Pathology of the Eye, 1, 1, 191.



incorrect. . . . There is a difference of opinion as to the cases of true interstitial keratitis. V. Michel and others distinguishing between a primary and a secondary keratitis. In the former, a triangular opacity appears at the margin of the cornea and gradually spreads over the whole area; it is often followed by iritis, keratitis, punctata, etc., and is ascribed by V. Michel to syphilitic affection of the marginal loops of the blood vessels. The secondary form is distinguished by marked inflammation of the uveal tract, and often of the sclerotic, more particularly in the anterior part of the eye."

According to Stephenson, the cause of the keratitis is the deposit and multiplication in the cornea of the *Treponema pallidum*, which comes from the uveal tract.

#### DIFFERENTIAL DIAGNOSIS.

At times it is extremely difficult to say what is the true cause of diffuse interstitial keratitis. The tuberculous and the syphilitic forms are so nearly alike clinically that it is often impossible to distinguish between the two, and even difficult to arrive at a conclusive differentiation by microscopic examination. Bull<sup>16</sup> has classified the syphilitic affections of the cornea, due to acquired syphilis, into the following four classes:

(1) Diffuse parenchymatous, or interstitial keratitis.

(2) True keratitis punctata, of Mauthner; which is exactly the same as Hock's specific punctate keratitis.

(3) Keratitis punctata, with general clouding of the cornea.

(4) Gummatous keratitis.

It is well to bear in mind this classification, as it will be of service in arriving at a diagnosis and in classifying the cases.

Von Hippel, Jr.,<sup>17</sup> says: "The question as to whether there are certain subjective symptoms of the eye diseases that would prove the syphilitic or tuberculous character, has to be answered in the negative. The limited vessels in the deeper strata of the cornea and the chorioid, chorioiditic changes considered by Hirschberg as characteristic of lues, are also found in the tuberculous form."

It is evident, therefore, that we must depend chiefly on the clinical history of the case and the symptoms found when the patient presents himself and the effect of treatment on such symptoms, to arrive at a diagnosis, as it is seldom, indeed, that an opportunity is presented for a microscopic examination on such cases. I would suggest that Calmette's test might be of service in clearing up the diagnosis in these cases.

#### CONCLUSIONS.

1. Diffuse interstitial keratitis may occur as a result of acquired syphilis.

2. It usually occurs as a late secondary sign of the disease or during relapses in the tertiary stage of the general disease. Stephenson gives the average time of development of interstitial keratitis as 10.8 years after the primary sore. Loewinson has reported one case as early as three weeks after the appearance of a primary sore, while Ellett reports a case appearing as late as twenty-three years after the infection.

3. It almost invariably affects but one eye, although

there are a few exceptions reported where both eyes were affected.

4. It runs a quicker and lighter course, as a rule, than the cases due to inherited syphilis, and is rarely harmful to the sight. It should be remembered, however, that Griffith has reported one case in which the sight was entirely lost.

5. True salmon-patches occur but seldom in these cases.

6. It is difficult to make a clinical diagnosis between the syphilitic and the tuberculous forms of the disease, and even a differential pathologic diagnosis is not always conclusive.

7. The prognosis is favorable, though it should be somewhat guarded from the fact that sight has been lost entirely in one case.

#### DISCUSSION.

DR. J. L. THOMPSON, Indianapolis: I have had in thirty-eight years at least a dozen of these cases, but never reported them, for I supposed that others had met with them also. As a general thing there is a little plastic iritis with it and I have also found an inherited condition of this kind in inherited interstitial keratitis. The only difference I know is that in the inherited disease years and years elapse before the opacity disappears, but in these other cases they will last three or four months and still leave a little opacity, just as in the case of the congenital disease. I am astonished that there have not been more cases reported.

DR. W. H. WILDER, Chicago: I had much the same impression as Dr. Davis when I reported three cases of this disease some years ago before this section at the meeting in St. Paul. Yet when I consulted the literature I found it rather sparse, and discussion elicited the fact that it is a rather rare condition. I urged that we should look more carefully for the existence of acquired syphilis and not think that an interstitial keratitis is necessarily due to inherited disease, for it is no uncommon thing to find acquired syphilis in the very young. I noticed that there was not that great tendency to vascularization of the cornea observed in keratitis due to inherited syphilis, nor the typical salmon-patches, but sometimes there will be observed an appearance like sclerosing keratitis, so that we are not sure that it may not be a case of tuberculous origin. In case of doubt, therefore, not finding a well defined syphilitic history, one should make some kind of test to determine if tuberculosis might possibly be to blame for the condition.

DR. LEARTUS CONNOR, Detroit: In one case which I have observed quite recently I was able to differentiate tuberculosis from syphilis by an examination which resulted in finding the spirochetes, now regarded as the specific element in syphilis.

DR. A. R. BAKER, Cleveland: Before reading this paper I had imagined that this condition was more frequent. I recall only one case in which I doubted that the condition was due to congenital syphilis. In that case I got a history of what was supposed to be a soft chancre in a young man of 17 or 18 years, but he had had no treatment. He came under my observation at the age of 29 with typical salmon-patch, and I treated it as chancre, yet a consultant that I had at the time thought that it was a case of tuberculous trouble and the question was left open. Since then, however, the man married and had a child that developed interstitial keratitis, so I do not think that there was much doubt but that this case was one of acquired syphilis.

DR. A. E. DAVIS, New York: I think that there can be no question at all as to the origin of some of these cases because the disease has been produced in the lower animals by the scrapings from the human chancre, transferred to the animal and later the spirochetes have been found. In my own cases I did not use the Calmette reaction because both eyes were affected in the first, and in the second the patient did not remain under observation. I mentioned in my paper that such a test would be of advantage in the differential diagnosis in such cases. I think a man may have both inherited and acquired

16. A System of Genito-Urinary Diseases, Syphilology and Dermatology, Prince Morrow, vol. ii, p. 550.

17. Twenty-fourth Rep. Ophth. Cong., Heidelberg, Aug. 18, 1895.



syphilis. One case has been reported where a child had congenital syphilis and at one year of age had interstitial keratitis, then later in life acquired syphilis and had a second attack of interstitial keratitis.

## OPACIFICATION OF THE CORNEA FOLLOWING CATARACT EXTRACTION.\*

VARD H. HULEN, A.M., M.D.  
SAN FRANCISCO.

The following case is the only one I have seen among 209 cataract operations, and seems worth placing on record:

*History.*—D. D., male, aged 81 years, retired furrier, native of England, entered the University of California Hospital Aug. 23, 1907, to be operated on for hemorrhoids. He was recovering from a carbuncle and lumbago. The medical report of his physical examination gives the heart action as being intermittent and irregular, with systolic and diastolic murmurs; the result of the blood examination was not significant. Senile breathing; lungs negative; urine gave trace of albumin; yet all his life he had been considered a very well man. The recovery from the general anesthetic and operation was prompt and uneventful.

*Examination.*—The patient being practically blind, I examined his eyes September 6. An interesting ocular condition was found with an uncertain history. He stated that for three months after birth his eyes did not open, also that he had a congenital cataract in the left eye. (If the former were due to ophthalmia neonatorum the latter was probably an anterior polar cataract.) The vision of the right eye was good for all purposes until he was 45 years old, when, after a fall on his head, glasses for reading became necessary. Attention was not attracted to his eyes again until 1893, when he had an attack of pain in the right eye, accompanied by failing vision. But even before this he thinks his sight was not perfect. Two years later the vision had gradually failed until reading was no longer possible. About this time a competent oculist told him that there was a chalky degeneration of the left lens which irritated the right eye somewhat and advised extraction of the lens. Vision of the left eye had never changed.

Ten years ago an ophthalmic surgeon of national reputation operated on his left eye. A preliminary iridectomy was done, later the cataract was extracted without accident. Neither pain nor inflammation attended, but there was a turning in of the lashes. No vision was given by the operation.

Inspection revealed a spastic entropion of the right lower lid which was successfully controlled by repeated applications of collodion. For some conjunctival irritation due to the entropion a boric acid wash and the occasional use of argyrol were advised. Patient's general condition steadily improved. On September 20 he was transferred to my service in the hospital, and the following notes were made:

*Status Præsens.*—Left eye: Cornea rather thinly but entirely opaque, with patches of greater density, while the site of the corneal section, two millimeters from the limbus, is solidly white. The opacity appears to be in the stroma, but the epithelial covering is very irregular and steamy. The key-hole pupil is faintly visible. Tension normal; vision equals movement of hand in all directions. Right eye: Cornea clear and slightly anesthetic. Lens appears a dark amber color. The ophthalmoscope shows red reflex around the periphery of cataract when pupil is dilated. Tension normal. Vision equals perception of light; projection good.

*Treatment.*—I advised extraction of the cataract and performed the preliminary iridectomy on this date. Atropin instilled, bandage applied, rest in bed. No reaction whatever followed the operation, blood remaining in the anterior chamber after the cut of the iris promptly disappeared. Healing was normal and rapid. Pupil widely dilated; cornea perfectly clear; patient discharged.

October 17 he re-entered the hospital and was given the usual preparation. General condition and spirits decidedly improved. The right eye differed apparently in no wise from a normal cataractous one after an iridectomy, but owing to the history of the fellow eye unusual precautions were taken. October 18 operation was done with the patient in bed. A 4 per cent. solution of cocain was instilled three times, at intervals of five minutes. Section of two-fifths of limbus, raising small conjunctival flap above, from which was slight hemorrhage. Peripheric capsulotomy done with sharp cystotome; when the capsule was opened a small amount of clear fluid escaped. Speculum removed and the cataract, about two-thirds the size of an average lens, was expressed easily with the fingers. As a few flakes of soft lens matter remained in the pupil, the anterior chamber was gently irrigated with a special glass nozzle pipette, using a small quantity of a warm sterile physiologic salt solution. No further manipulation was required; there was no loss of vitreous or other mishap and even less than the usual traumatism. The patient behaved well and experienced no sensation during the operation. Atropin was instilled and a gauze bandage lightly applied over both eyes. Before closing the eye operated on, attention was called to the fact that the lips of the entire corneal wound were whitish.

After the lapse of twenty-four hours the eye was inspected though the patient had no discomfort. The wound was closed; anterior chamber fully restored; thickened capsule in pupil which was widely dilated; edges of coloboma free, but the entire upper half of the cornea was affected by the appearance of a well-marked typical "striped keratitis;" otherwise no evidences of reaction. At the end of the second day the striated appearance had extended the full width vertically across the cornea. Anterior chamber very deep; tension, —1. There were no subjective symptoms; no ciliary and but slight conjunctival injection; the wound was firmly closed. The bandage was left off and a light dressing was held in place by strips of silk plaster.

October 21, in addition to the striated opacities, the cornea was thinly and diffusely opaque, apparently due to changes deep in the substantia propria or endothelium. Pupil not distinctly seen, but was widely and evenly dilated.

October 27, the eye had remained entirely free from inflammatory reaction and the patient complained only of his lumbago. The general diffuse opacity had gradually increased, but was conspicuous only by focal illumination. The striated opacities seemed less marked and were broken so that a dark branching line about one millimeter wide appeared in the shape of a "Y," with the arms above extending to the extremities of the site of the corneal section and the thinner body reaching below within three millimeters of the limbus. Close inspection with oblique illumination revealed that the dark line did not mean entire transparency. The epithelium was undisturbed; the corneal surface was smooth and glistening. Tension normal; no subjective symptoms. Dionin and hot fomentations were commenced. General condition satisfactory.

November 2, as the eye seemed entirely well but for the corneal opacity, the patient was allowed to leave the hospital, with instructions to continue the dionin and hot applications, and to use atropin to keep the pupil dilated. He has been seen at intervals since, and at the last visit, March 8, the eye remained much the same. The striated opacities were still distinct and crossed irregularly by fine opaque lines, the "Y" appearance being but faintly defined. The deeper and diffuse opacification was less dense to the temporal side. The cornea was very slightly steamy. Vision 2/200. No change in tension, and had it not been for the corneal opacities the healing process could have been recorded as uneventful. Patient's health continued fair, appetite and nutrition good, but stayed in bed a great deal because of "misery in his back."

It is generally known that the use of a solution of bichlorid of mercury for irrigating the anterior chamber, as well as various accidents and complications, may be followed by corneal changes, nor would opacification be unexpected in a patient whose general condition and nutrition were undoubtedly bad. But in my case none of these elements entered into the causation, so far as

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



can be determined. As it was impossible to obtain details from the first operator, I had thought it not unlikely that the opacification had been due to bichlorid, as that antiseptic was being used extensively about this period. Also there might have been some connection between the presence of the opacification and the section having been made far into the corneal tissue. And at this time, ten years before my operation, the patient's health was most excellent.

Had the cornea shown the slightest haziness following the preliminary iridectomy I should not have proceeded to extraction.

In the literature at my command only one or two text-books of ophthalmology mention general opacification following uncomplicated cataract extraction, and attribute it to the use of corrosive sublimate solution. So it seemed worth while to call attention to the subject. Hoping to make my paper of some value, the following questions were addressed to every member of the Section on Ophthalmology of the American Medical Association:

1. Have you had cases of general opacification of the cornea following cataract extraction; if so, how many (or if none) in what number of cataract operations?

2. To what cause or causes do you attribute its occurrence?

3. What appearance or forms did the opacity assume?

4. What part of the cornea seemed to be the seat of the lesion, and what the pathologic change?

5. To what extent did the opacity disappear, and how long before corneal changes ceased?

6. Kindly give separately the ultimate corrected vision in each case.

7. What preventive measures and curative treatment have you found of value?

8. What percentage of your cataract extractions has been followed by "striped keratitis"?

9. Have you ever seen striped keratitis fail to clear up so that the ultimate vision was affected by it; if so, what percentage did not clear completely?

10. Does your experience touch on any notable point outside your answers to the above questions?

To search case records for absolutely accurate replies was a task too laborious to be expected from any one, but I had hoped for a large number of approximate estimates of cataract extractions. This, with the data on corneal opacifications, should throw some light on an apparently obscure subject. However, I can not sufficiently express my appreciation for the generous and courteous responses made and regret that the limited space prevents my using more extensively the very valuable material gathered.

Out of the 227 heard from at this writing, 87 gave either the precise or estimated number of extractions, amounting to 19,821. From the figures given a conservative estimate of extractions by my correspondents would not be less than 50,000, and among these are only 39 cases of general opacification.

Concerning striated keratitis, there were great variations in statements. Sixteen correspondents reporting the exact number of cataract operations (the largest 397) aggregating 1,248 cases, had never seen this condition, while others gave large estimates, ranging from 50 to 100 per cent., depending, one says, on how closely we observe the condition of the cornea. The average of all answers is about 11 per cent. In my limited experience it has been about 3 per cent. and has always disappeared. Eleven reported cases of striped keratitis that affected the ultimate vision. One colleague wrote, "Ribben keratitis (Elschnig) or zonular keratitis (Salz-

mann) always heralds general bulbar degenerations," but I had reference to that well-known clinical appearance, commonly noted in case histories in a routine way by "striped keratitis present."

About 45 cases were reported as general opacification, but closer review determined that the process did not involve the entire area of the cornea. Distinct causes enumerated in all of these histories were identical with many of the known causes for the cases of complete opacifications. The pathologic conditions were probably similar, differing only in degree. One operator leaves the bandage on his myopic subjects twice the usual time. Another had frequently seen striped keratitis until he adopted the "open method" of treatment, but none since. Another of large experience states that since he had abandoned attempts at artificial ripening he had not seen a case of striped keratitis. And another advised, in cases of marked arteriosclerosis, to make the section in the limbus with a large conjunctival flap. Two interesting cases of partial opacification have been reported by Dr. Harold Bruns and one by Dr. H. G. Gille.<sup>1</sup>

Following is a synopsis of the 39 cases reported of general (complete) opacification of the cornea.

CASE 1.—Doubtful cause, syphilis. Specific treatment did no good.

CASE 2.—Operations, 75. Causes given, senility and poor nutrition, blood count low. Ultimate vision, 5/200.

CASE 3.—Operations, 150. Bichlorid getting into anterior chamber. Cleared up under atropin and alteratives. Vision, 15/50.

CASE 4.—Alcoholism and debility. Cleared up about one-half.

CASE 5.—Accidentally irrigated anterior chamber with bichlorid for saline solution. Ultimate vision, moving objects.

CASE 6.—Operations, 100. "Infection," no treatment; cleared; vision, 20/50.

CASE 7.—Cause doubtful unless incision too far in cornea. Vision, fingers 4 feet.

CASE 8.—Operations, 21. Dislocated lens; general debility. Vision, fingers 2 feet.

CASE 9.—Operations, 50. Section with poor knife. Corneal changes very similar to my case. Vision, fingers at one meter.

CASE 10.—Caused by infection more than a week after operation. Leucocytic infiltration of substantia propria. Opacities permanent.

CASE 11.—No cause. Partly cleared, dionin. Vision, 20/120 after five months.

CASE 12.—In another's practice, due to bichlorid solution.

CASE 13.—Operations, 200. Much lens matter left in anterior chamber produced irritation. Slight opacity only after three months. No treatment.

CASE 14.—Operations, 100. Traumatism and possibly syphilis. Vision P. L.

CASE 15.—Continued hemorrhage from "abnormal retinal vessel."

CASES 16 and 17.—Operations, 80 to 100. Caused by irrigation of anterior chamber (with what not stated), both cleared completely in two weeks, hot applications, atropin and dionin.

CASE 18.—Operator of large experience. Patient in good health, aged 58 years. Perfectly smooth operation, simple extraction, no rational cause discovered. Rapid opacification of entire cornea, apparently in parenchyma. Under long continued subconjunctival injections it cleared up in a measure, but no useful vision was obtained.

CASES 19, 20, 21 and 22.—Operations, 1,000. La grippe, followed on second day after operation. Very feeble patient. No cause known. Debility.

CASE 23.—Operations, 20. Senile debility, age 83 years.

CASE 24.—Operations, 400. Caused by using strong solution (4 per cent.) holocain in place of a 1 per cent. solution. Disap-



peared in four months. Used hot applications, atropin and dionin ointment, 5 to 10 per cent.

CASE 25.—Striped keratitis, involving entire cornea, that never cleared. Patient in good health, age 79 years. No cause known.

CASES 26, 27 and 28.—Operations, 200. All said to be due to "lessened nutrition of cornea;" all cleared practically, he believes, after several months.

CASES 29, 30, 31, 32, 33 and 34.—"Many hundred operations." All due, he thinks, to lack of "constitutional vigor."

CASE 35.—Operations, 50. Caused by extensive (three-fifths of circumference of cornea) section and to action of bichlorid on endothelium. Vision, 20/200.

CASE 36.—Hypermaturation cataract. Great loss of vitreous. Vision, fingers three feet.

CASE 37.—Operations, 100. Caused by accidental introduction of alcohol into anterior chamber. Vision perception of light ultimately.

CASE 38.—Operations, 100. Cause, severe iridocyclitis. Vision, perception of light. As this is the only case in which the pathology given is based on the microscopic findings, it is a great satisfaction to copy the report in full: "The whole cornea looked like ground glass. There was a deep white change with no disturbance of the superficial epithelium, not the so-called ground glass dots, but a general white opacity. Sections of the eye showed that the endothelial lining was replaced by a mass of dense new connective tissue, possibly one-third as thick as the original cornea. This new tissue, I believe, was the result of the iridocyclitis—masses of organized exudate. The proper substance of the cornea was unchanged, and the epithelium was normal. My colleagues and myself looked on this case as one of general opacification of the cornea. The whole appearance justified the expectation that the microscope would reveal interstitial changes."

CASE 39.—My own.

One operator only out of the twenty-nine reporting cases could include the history of the other eye, also operated on for cataract with useful vision obtained, but lost two years later through infection, and emphasizes the rarity of my case in which the second eye, ten years later, almost paralleled the course of its fellow through its peculiar and unexplainable history of opacification.

#### CONCLUSIONS.

The deductions that I would make from my study of this subject are that treatment is of but little or no avail, and that there is no indication at present known which enables us to determine beforehand when general opacification of the cornea may follow cataract extraction. But with the warning from such a result in one eye, the cause undetermined, I should favor some method other than extraction for the remaining cataract, and would suggest this as one of the very few conditions where couching may be a justifiable operation.

#### DISCUSSION.

DR. J. L. THOMPSON, Indianapolis: During the grip epidemic a man of 75 came to me with what looked like a favorable case for operation, and we did have one of the smoothest imaginable, but two days afterward the patient had the grip. There was no tendency to suppuration, but the cornea became entirely opaque, without any pain or anything of the kind, and the operation was a complete failure. I recall another case in a woman who suffered from stomach trouble and who had a very thin cornea. She was operated on and the case went exactly the same way. I also recall two doctors that were in the habit of drinking—taking something to keep the chills off in the morning, and then a little appetizer at noon, and in the evening a nightcap, and about sixteen during the day. One lost an eye. The other was able to write prescriptions afterward.

DR. D. W. GREENE, Dayton, Ohio: I have done over 1,000 operations on the lens in the past twenty-five years, largely

in a class of men, veterans of the Civil War, many of whom were broken in health and subject to dissipations and vices of all kinds, more than 90 per cent. being now above 60 years of age, with an average age of 67.72. The number of extractions I have made among these men is large, and I have not seen a total opacity of the cornea result. In private practice I saw one case, ten or twelve years ago. This occurred in a portly German, more than 60 years old, who led a sedentary life, being a tailor, and who was a large consumer of beer. The operation had been free from accidents, and no other complications followed. I am not sure of the strength of bichlorid used, nor whether the section was large enough, and the knife keen and sharp, nor whether much pressure was used in delivering the lens; these seem to be important factors in the evolution of striped keratitis, the type of total opacity which Dr. Hulen has brought to our attention being an exaggeration of this condition.

It seems strange at first glance that total opacity of the cornea is not a more frequent result of extraction of cataract. If striped keratitis consists essentially in wrinkling and other damage to Descemet's membrane, at right angles to the line of incision, from the strong antiseptic solutions that have been used, or from excessive pressure in delivering the lens through an insufficient corneal incision, there are sufficient exciting causes. Not all cataract cases, however, have striped keratitis, and we know that many operators still continue to use strong antiseptic solutions and that the great tendency among operators is toward making too small a corneal incision, for easy delivery of the lens. Experience has satisfied me that this has done more to keep up the number of cases than anything else, except the inordinate pressure in delivery, which is necessary because of it. There is abundant evidence that the condition is not inflammatory but rather a nutritive or circulatory change in the canals of the posterior layers of the cornea. It lasts but a few days and is not painful. These are sufficient exciting causes, in the absence of a known predisposing cause. Permit me to cite the influence which arterial diseases, with or without high blood pressure, is believed to have in the circulation and nutrition of other parts of the eye and to ask why the same conditions may not apply to the circulation and nutrition of this part of the cornea, as are believed to obtain in glaucoma and perhaps in cataract as well.

I now have a case of extraction made two weeks ago, after a preliminary iridectomy, in a woman 67 years old, with B. P. 220 mm. Hg. The other eye had been lost by glaucoma after an extraction and subsequent discission, made by a competent operator. No strong antiseptic solution was used, the section was ample, and expression of the lens was easy in my operation, yet I saw on the third day that striped keratitis was present. An ominous opacity of the cornea still persists. [Note: Since this statement was made the cornea has cleared entirely.]

DR. H. V. WÜRDEMANX, Milwaukee: In over a thousand extractions and expressions I have had total opacity of the cornea follow but once, but within the last two years I have seen eight cases of striped opacity of the cornea, all following expression of the cataract in the capsule; and I think that this is due to the mechanical pressure of the instrument used in expressing the lens. When you do this operation you are stroking the lens through the cornea for anywhere from fifteen to twenty seconds to four or five minutes before the lens comes away. The mechanical injury to the cornea produces this condition of opacity. None of these cases has lasted more than two or three weeks after the extraction and all the patients have recovered with good visual acuity. I have also believed the condition to be due heretofore to strong antiseptics and some years ago to the use of cocaine.

DR. G. C. SAVAGE, Nashville: In saying that "in selected conditions couching may be justifiable," of course Dr. Hulen must have meant that if one eye has been operated on and the cornea has become opaque, then couching is justifiable for the other eye. No man can know whether opacity is going to occur or not and couching is so unscientific and so danger-



ons that we all want to avoid it when we can. For a good many years I have made but little pressure on the cornea in expressing the lens and I never did make pressure anything like from two to five minutes, I am sure. But, it occurred to me some time ago to make just enough pressure on the cornea below to make the lens present itself in the incision and then with the cystotome transfix it from behind and lift it out without making any further pressure at all. My purpose was to avoid that occasional annoying occurrence, rupture of the hyaloid membrane and escape of vitreous. If you transfix the lens in this way there is no danger of rupture of the hyaloid membrane and if there is danger of producing corneal opacity by pressure in stroking the cornea this is avoided as well. Now I have had such cases, some getting well just as rapidly as Dr. Würdemann has suggested. I believe that in dionin we have a solvent for lymph. I have seen it disappear rapidly under the effect of dionin when it had failed to disappear before dionin was used and I believe that if we use it immediately after we see the opacity forming the plasma will not become organized and if it does not become organized then permanent opacification is impossible. If we can absorb it before it is converted into connective tissue we prevent opacity. Atropin should be instilled first and then after a proper interval, five or ten minutes, the dionin should be instilled. This can be done with the assurance that in recent cases corneal opacification will disappear under its influence.

MR. E. TREACHER COLLINS, London, Eng.: These cases of opacity of the cornea following operations on the eye, such as extraction of cataract or iridectomy for glaucoma, I have usually regarded as due to damage to the endothelium of Descemet's membrane. We know that this epithelium prevents the infiltration of aqueous humor into the stroma of the cornea and that if it is damaged this filtration occurs and produces opacification of the cornea. The cases in which I have seen most opacity follow after extraction of cataract have been, as Dr. Würdemann has mentioned, cases in which strong antiseptics have been used. In the early days of antiseptics, when I was house surgeon at Moorfield's Hospital, there was one surgeon who was so desirous of making everything antiseptic that he injected into the anterior chamber after extraction of the lens a solution of biniodid of mercury, 1 to 25,000, and in these cases there occurred marked opacity of the cornea. I urged on my senior that the opacity was due to this, but he would not have it. We decided to have a test case; he injected again and that case was the worst case of opacity I ever saw and it remained permanent. This same operator, a very skilful man, and a pioneer in antiseptic surgery, used to like to use a drop of 1 to 20 carbolic acid on his keratome when he made the incision. Some would trickle into the anterior chamber in the vicinity of the wound and in these cases I have frequently seen striped keratitis follow. One or two cases in which I have seen opacity occur have been where the keratome has been used for iridectomy in glaucoma. The operator was so anxious not to put the point into the lens that he pushed it into the back of the cornea instead and the point went through Descemet's membrane into the back of the cornea. I have had an opportunity of examining microscopically an eye in which this has occurred and have lantern slides showing the gap in Descemet's membrane.

DR. WILLIAM ZENTMAYER, Philadelphia: I have had the privilege of seeing a case of this opacification in the practice of Dr. W. F. Norris. The patient was a man of 30, on whom a combined operation had been done on one eye, followed by the cornea becoming opaque; in order to avoid this occurrence in the other eye a preliminary iridectomy was made, which was followed by the same lesion, notwithstanding that a keratome was used and the incision was made at the limbus. Thyroid extract was used without favorable result. This case was particularly interesting because the man subsequently developed phthisis. He died about three years subsequent to the loss of his sight. Whether the corneal condition was due to impaired nutrition at that time or whether he had nveitis as a result of his tuberculosis was not determined. I know

of one case of opacity following the use of Dr. White's bichlorid salve after cataract extraction. It was not permanent, but extensive and annoying for a time. It occurred in a case of ordinary senile cataract.

DR. VARD H. HULEX, San Francisco: There are certain definite causes that will produce opacification of the cornea, such, for instance, as the use of strong antiseptics, or overenthusiasm in irrigating the anterior chamber; but there are also cases, as I am satisfied from my experience and the reports I have received, that are predisposed to opacity of the cornea following a perfectly simple, correct cataract extraction. If you have that result in one eye, what are you going to do with the other eye? That is the point to which Dr. Savage referred in mentioning couching. If you have that experience in one eye, with no complication to cause it, then you should not do an extraction in the other eye. If not an extraction, what? Dionin was used early in my case, beginning with a 5 per cent. solution and gradually increasing until the powder was being used and continued a number of weeks along with hot applications. The patient's general condition improved, but the opacification was not affected at all. In regard to striped keratitis, I was struck with the reports I received as to the great variation in statements. Some members of the section who have had much experience reported that they had never seen a case of striped keratitis. That seemed most remarkable to me. Others made the statement that if one looked carefully enough he would find it in 100 per cent. of cases. There is no explanation, it seems to me, for this great variation in statements unless it is failure of careful inspection to bring the matter out.

## THE SURGICAL TREATMENT OF ORBITAL COMPLICATIONS IN DISEASE OF THE NASAL ACCESSORY SINUSES.\*

ARNOLD KNAPP, M.D.

NEW YORK.

The orbital complication referred to in this paper is the subperiosteal abscess. When disease of the nasal accessory sinuses extends to the orbit, the infection passes through the os planum of the ethmoid or through the floor of the frontal sinus. Two clinical pictures will be present, depending on whether the perforation occurs suddenly or gradually—acute or chronic. In the former, the local symptoms are those of an acute abscess with cellulitis. The orbital manifestations may disappear with intranasal treatment or else the pus works its way to the surface and discharges spontaneously. The acute symptoms may then abate, while the fistula either closes or remains open and a purulent sinus persists, leading into the frontal or ethmoidal cavities. In the second variety there is a greater or less defect in the orbital bony wall of the frontal and ethmoidal sinuses, and with the orbital periosteum a large abscess cavity is formed, causing marked exophthalmos which usually brings the patient to the eye clinic.

In children, the acute perforation takes place through the ethmoidal plate. A curved incision is made along the inner and upper orbital margin, the orbital periosteum and contents are retracted and the opening in the os planum can then be seen. This should be enlarged, and the adjoining cells curetted according to the amount of disease found present.

In the chronic cases with exophthalmos and in the other cases with acute perforation which do not improve on the restoration of intranasal drainage, the method of operating is as follows: It is a distinct advantage to

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



remove the anterior half of the middle turbinate a day or two before the external operation, though this procedure is condemned by some; thus Killian claims that the virulence of the infection is thereby increased. I have never seen any ill effects from this preliminary operation.

Under morphin-ether narcosis, the external excision is made (Fig. 1) along the upper orbital border midway between the eyebrow and the bony orbital margin, then down along the inner wall and the side of the nose to the floor of the orbit. This incision in my opinion is preferable to the incision through the eyebrow (Killian) as it permits external drainage of the frontal sinus if this be found necessary without making another incision. I have not found that packing the nose with gauze or insertion of a postnasal plug is necessary. The

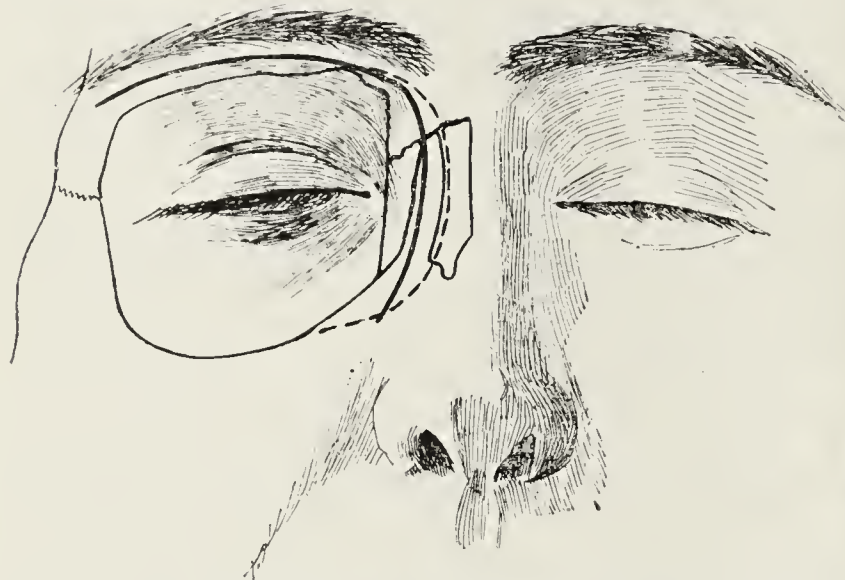


Fig. 1.—Showing line of cutaneous incision and (interrupted line) the resection of bone.

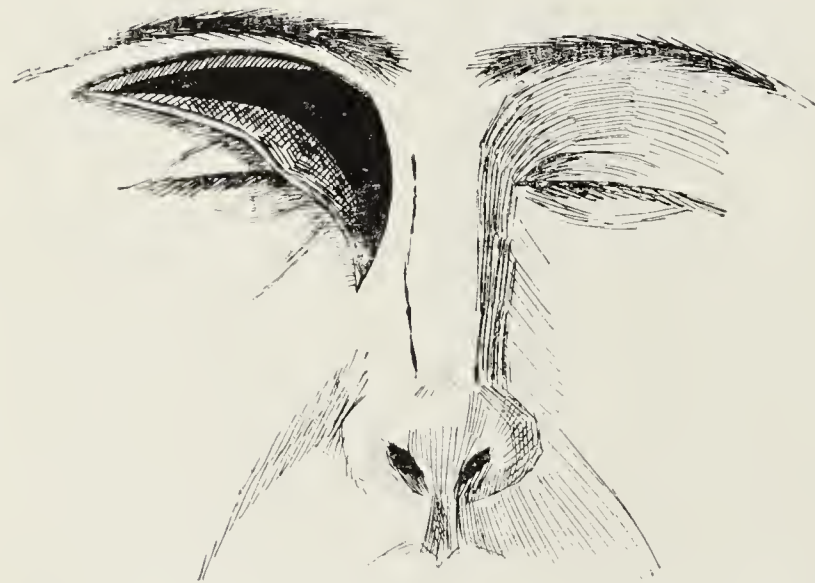


Fig. 2.—Complete detachment of the orbital contents and removal of floor of frontal sinus and of internal orbital wall.

periosteum is divided just at the orbital margin above and in line with the cutaneous incision along the nose. The periosteum is retracted with a rather sharp elevator. After the firm adhesion of the periosteum to the orbital margin is separated, the soft parts with the orbital contents and the lachrymal sac are gently detached and free access is given to the roof and to the inner wall of the orbit (Fig. 2).

The pulley of the superior oblique is carefully detached from the trochlear fossa. It is important not to disturb the relation between the tendinous ring through which the tendon passes and the periosteum to which it is adherent; the periosteum later becomes attached in its normal position by the healing process and interference

with the superior oblique muscle is avoided. This important relation can best be preserved by dislodging the pulley from the trochlear fossa by a blunt periosteotome working from behind forward. An examination of one hundred skulls has shown me that in four out of five the pulley is attached to merely a slight depression in the bone; in the remainder a well-developed spine directed straight down and occasionally slightly forward, was present just posterior to this fossa. It is evident that in the cases in which a spine is present the periosteum with the pulley can only be sparingly detached by following the above-described procedure.

The entire floor of the frontal sinus is then easily removed with the chisel and hammer, the diseased mucous membrane is everted and the bony septa in the frontal sinus are carefully eradicated. A portion of the orbital margin can be removed without causing any deformity if the normal curve be preserved. The nasal process of the superior maxillary, the lachrymal bone and the ethmoidal os planum are then resected, giving broad access to the middle meatus of the nose and to the ethmoidal labyrinth. Work in this region is facilitated by suitable retractors for the orbital soft parts. The



Fig. 3.—Partial resection of anterior wall in the cases in which the sinus extends high up.

two which I use are a curved, shovel-shaped retractor and one shaped like a tongue depressor. The ethmoidal labyrinth is completely removed with the curette, Jansen's forceps or Hartmann's conchotome, remembering that the anterior ethmoidal foramen, which is a constant landmark, indicates the base of the skull and that as one proceeds back the ethmoid becomes broader laterally. The remaining part of the middle turbinate may now be removed and the sphenoidal cavity entered if necessary. The work is facilitated by introducing a finger well into the nose which serves as a guide and prevents some of the blood from running into the nose. The final curetting of the ethmoid is best done with the head low down and when the patient is partly revived. As broad an opening into the nose as possible is made, in addition to removing all disease, to insure proper drainage.

If the frontal sinus extends unusually high up, as it is apt to near the median line, and the upper limit can not be everted from below, the cutaneous flap with the



eyebrow is forcibly retracted upward, a window is cut in the anterior bony wall similar to the Kuhnt and Killian methods (Fig. 3), leaving a broad bony supraorbital margin covered with periosteum; the purpose of this window is not to remove the greatest part of the anterior bony wall but should be only large enough to treat properly the upper parts of the cavity under direct inspection. Marked subsequent sinking in of the forehead can thus be prevented. The cutaneous wound is not sutured, the soft parts approximate of themselves, and a single wick of gauze is passed from without at the nasal angle into the frontal sinus. There is drainage not only into the nose but externally. Slight packing is introduced through the nose to the ethmoid region, if bleeding demands it; this is removed after twenty-four hours.

The patient occupies a partly upright position in bed. The external wound usually closes primarily. The small opening for the drain is left at the inner orbital angle for from seven to ten days. The nasal cavities are left undisturbed. In some cases diplopia is noted for a few days. This always disappears and all patients are carefully examined for diplopia with a colored glass and a candle, especially in the lower part of the field.

I have performed twenty-two operations according to this method which can be described as a modified combination of the Jansen and Kuhnt methods. In recent years, Killian's method has become deservedly popular. It has seemed to me, however, that the Killian operation has certain objections, at least for this class of cases. Thus it can be simplified if the trochlea be systematically dislodged. The entire floor of the frontal sinus can then be easily removed from below. In the healing process it is also of advantage if the entire bony floor is removed for then the cavity, especially at its outer part, has a better chance to obliterate. In many patients with broad access from below window resection of the anterior bony wall of the frontal sinus is not necessary unless the sinus is an unusually high one. This window does not need to include most of the anterior bony wall, but should be sufficiently large to permit thorough curetting of the uppermost limit of the frontal sinus. This is an improvement cosmetically. Complete removal of the ethmoidal structures is also facilitated when the orbital contents can be well retracted.

The elements of success in operations of this kind depend upon the use of a proper light (either with mirror or electric forehead reflector), the control of hemorrhage and a knowledge of anatomy. These should surely not deter the ophthalmic surgeon from continuing in the development of this important field where the first advances were made by members of our specialty.

26 West Fortieth Street.

#### DISCUSSION.

DR. E. J. BERNSTEIN, Kalamazoo: One of the important things about the operation is the cosmetic appearance, for, even though we cure our patients, save them much pain, or snatch them from death, if after recovery they are deformed they will be disappointed. Each will think of the deformity always and forget the benefit. Dr. Knapp's incision, it seems to me, produces a little more deformity than that of Killian. The incision that Killian makes directly through the eyebrow, leaves when cure takes place, absolutely no sign of deformity; you can not see the line of incision in two months. Through this incision you can displace the orbital contents just as well as when you make the incision, as I understand Dr. Knapp does. Killian's incision gives you the opportunity

of displacing the contents of the orbit with perfect facility and after the wound has been closed by subcuticular sutures, there is absolutely no sign of a scar. In draining the sinus I have observed trouble in the temporal end of the sinus—the trouble appears in the complications that occur in the median. It does not seem to me necessary to displace the trochlea at all. I have been able with perfect facility to remove the whole floor of the sinus and clean out the whole cavity through this opening after displacing the orbital contents. The incision through the eyebrow produces no deformity. The nasal end of the incision leaving the eyebrow abruptly and coming well in the side of the nose, hardly more than a faint line is seen and this can be hidden by glasses.

DR. WILLIAM C. POSEY, Philadelphia: While, of course, the extensive incision described by Dr. Knapp is necessary in some cases of involvement of the frontal and ethmoidal cells, especially when the mucous membrane lining the cavities has been converted into a thick pyrogenetic membrane, a smaller incision will suffice in many instances and excellent drainage may be secured without the loss of so much bone. I have always thus far coaptated the flaps of the orbital incision with sutures and have maintained a drainage tube in position, from the orbit into the nose, for at least a week. Dr. Knapp's procedure for the safety of the pulley of the superior oblique is ingenious and I shall be glad to follow his directions. I have found the speculum of Axenfeld, used in the removal of the lachrymal sac, of great service in sinus operations. The essentials of success in the external operations on the sinuses are, in my experience, a thorough knowledge of the anatomy of the orbit and the accessory cavities, ample drainage into the nose from all the affected cells, or if the mucous membrane be greatly thickened and diseased, its complete removal by Killian's or other similar procedure. In my opinion, those who confine their practice to rhinology alone should be discouraged from attempting to open the sinuses externally, owing to lack of knowledge of the orbit and its contents, and to the danger of injury to the eye or its adnexa, such incisions being within the province of the ophthalmic surgeon alone.

DR. A. E. DAVIS, New York: There is one of the accessory sinuses which Dr. Knapp did not mention at all; that is the antrum of Highmore. I have recently seen an eye lost by an operation in which a nasal surgeon tried to drain the antrum from the nose. He said that he had fractured the floor of the orbit by contre-coup, but he admitted that he had put the instrument in rather deeply. The orbit was infected and intense orbital cellulitis occurred with loss of the eye. There was marked choked disc, although perfect drainage from below. This sinus should be taken into consideration in considering these orbital infections. I think Dr. Knapp's incision most excellent and one of the most essential points of the operation. The deformity is practically nothing at all.

DR. ARNOLD KNAPP, New York: I thought it of advantage to have the incision somewhat below the eyebrow because in some cases we want to keep the wound open and we can drain better if the incision is not in the line of the eyebrow. I think that the detachment of the pulley is of great importance in order to get at the ethmoidal and deeper structures properly. This feature, and the complete removal of the inferior wall of the frontal sinus, make this method easier than Killian's operation. The complications, of course, are anomalies in the extent of the frontal sinus. When the frontal sinus extends high up and the apex is not accessible from below, Killian's window resection in the anterior wall must be performed. I limited my paper to this one condition purposely and avoided saying anything about the antrum of Highmore.

---

**Holding Patients.**—It is commonly observed that the so-called business getters are not business holders. Soon after beginning practice the writer was told by a practitioner of considerable experience that in ten years a physician in the city would have but few of the patients at the end of the decade who were with him at the beginning of the decade. This is a fact only with the business getters who are not business holders. Patients are held best by the man who is trustworthy. He who is honest with himself and his patients and is truly progressive is most successful.—*Leucocyte*.



SOME CLINICAL ASPECTS OF LENTICULAR  
ASTIGMATISM.\*EDGAR S. THOMSON, M.D.  
NEW YORK.

The subject of astigmatism has for its keynote the astigmatism of the lens. This is not only of interest from a scientific standpoint, but it is also of vital importance in the management of cases. It is not sufficient that we know the total astigmatism of an eye, unless we wish to prescribe glasses largely from the anatomic standpoint. In order to obtain a correct idea of the conditions present in each given case, we must separate the comparatively fixed quantity, the corneal astigmatism, from the fluctuating and uncertain one, the astigmatism of the lens. Leaving aside the differences in the corneal surfaces and the eccentricity of the visual axis, both of which quantities are so small as to be negligible from the clinical standpoint, the two broad facts to be determined are the amount of corneal astigmatism and the amount of lens astigmatism.

The corneal astigmatism, which is congenital in the vast majority of cases, may be determined accurately by the ophthalmometer of Javal and Schiotz. It may be stated in the beginning, however, that we have at present no accurate means of measuring the lens astigmatism, either as regards its quantity or its axis, but must depend on the subtraction of the corneal from the total astigmatism, as obtained by one of several methods.

## VARIETIES OF LENS ASTIGMATISM.

Lens astigmatism may be either static or dynamic, and is probably far oftener the latter than the former. It would otherwise be difficult to explain the occurrence of so many cases of corneal astigmatism of low degree (0.5 diopter) accurately compensated by the lens, especially in hyperopic cases with a well-developed ciliary muscle, and it hardly seems logical to attribute the cause of this to static astigmatism when we consider how small the measured change must be. In support of this, we have the clinical fact that low degrees of corneal astigmatism in myopic cases are much less frequently compensated by the lens; that is, they frequently accept cylindric glasses entirely at variance with the ophthalmometric reading, and this we should expect, because the ciliary muscle is relatively weaker, and because accommodation has no effect in increasing the visual acuity in use of the eyes for distance vision.

We are more apt to find this variation in the lens astigmatism the higher the total myopia and the weaker the ciliary muscle. That there exists a primary static astigmatism of the lens can scarcely be doubted, but that it exists unchanged in many instances may be very much doubted. Donders<sup>1</sup> found in his own eye astigmatism produced by the tilting of the lens, and that this can occur must be acknowledged by those who have seen astigmatism produced by a partial luxation of the crystalline lens. Children frequently learn to overcome low degrees of astigmatism by tilting the head, and presumably tilting the lens in relaxation of the zonula during accommodation. It is also a matter of common experience to see a patient with spherical glasses overcome an astigmatism by looking obliquely through the lens. Aside from these exceptional cases, however, which usually have rather pronounced clinical

features, dynamic lens astigmatism is, in all probability, most frequently caused by partial contraction of the ciliary muscle in the meridian of least refraction, allowing that meridian of the lens to become, within certain degrees, more convex.

If the tilting of the lens were a frequent cause of dynamic astigmatism, we should expect it to appear fully as frequently in presbyopes as in the young. Exactly the reverse is true. Astigmatism in presbyopia becomes manifest just as certain other errors do, unless, of course, we have a static astigmatism of the lens, and it is doubtful if dynamic astigmatism occurs at all after the age of 50.

Lens tilting argues an even higher individual development of control over the ciliary muscles, inasmuch as the mechanism by which it is produced must be the drawing forward of a certain set of ciliary fibers confined to a very small area. It is doubtful if this highly specialized action of the muscle exists frequently. Indeed, all the cases of lens tilting that have come under my observation have been, I believe, due primarily to the action of gravity in the twisted positions of the head which such patients assume.

Aside from the cases of lens tilting due to partial luxation of the lens, I have never seen a case where lens tilting seemed to occur during the distance test, these cases occurring only during accommodation at the near point.

Compensation by lens tilting must be extremely small, and is undoubtedly less in amount than compensation by partial contraction.

Partial contraction of the ciliary muscle was first pointed out by Dobrowolsky.<sup>2</sup> This view has been accepted by Landolt, Woinow, Pflüger, Mauthner, and others, while it has been opposed by no less distinguished observers than Hess, J. G. Bull, Sulzer, and Tscherning. The question is by no means settled, but it certainly seems as if the advocates of a dynamic lenticular astigmatism had a great deal in their favor, for the clinical facts and the voluntary control of the eye over astigmatism seems difficult to explain by any such fortuitous occurrence as dropping of the lens, tilting of the lens on the axis, or any of the other changes in the lens causing astigmatism, which, while they undoubtedly occur and have been demonstrated, certainly can not be the cause in the majority of cases.

The experiments of Hensen and Voelckers<sup>3</sup> are in the highest degree convincing, as showing that a meridional contraction of the ciliary muscle is possible, whatever may be its action on the shape of the crystalline lens. They found that irritation of the ciliary nerves by an electric current was followed by contraction in only that part of the iris and ciliary muscle supplied by that nerve. They also introduced needles through the sclerotic and cornea, and observed by the tilting forward of the needles which ones were acted on when a certain ciliary nerve was stimulated, proving that the choroid is drawn forward in accommodation. They observed in the same manner changes in the curvature of the lens, by placing the ends of the needles in contact with the anterior and posterior surfaces of the lens. This was demonstrated in living animals—dogs, cats and monkeys—and also on a freshly enucleated human eye. The point of application of the electric current in the animals was near the ophthalmic ganglion.

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Accommodation and Refraction, p. 532.

2. Arch. f. Ophth., 1868, xviv, 3, 51.

3. Exper. Untersuchung über den Mechanismus der Accommodation, Kiel, 1868; also Arch. f. Ophth., 1873, xix, 1.



## CLINICAL DIFFERENTIATION.

From a clinical standpoint, we must distinguish carefully the static and the dynamic astigmatism of the lens. I think all will agree that the latter exists, no matter how it may be produced. It seems impossible otherwise to explain the vast number of persons whose corneal astigmatism is reduced 0.50 or 0.75 diopter, so that, having that amount of corneal astigmatism, no amount of refractive error can be demonstrated either with or without a mydriatic.

As Landolt<sup>4</sup> points out, "It may easily be demonstrated that the eye succeeds with a certain effort in overcoming weak cylindrical glasses. By what mechanism would it be possible to neutralize the inequality of refraction produced by the cylinder if not by the unequal contraction of this ciliary muscle, followed by a corresponding change in the form of the crystalline? This unusual and, for the non-astigmatic eye, unnatural muscular action reveals itself, moreover, by a rather disagreeable sensation, which from its resemblance to the one experienced during fixation of the punctum proximum leaves no doubt as to its origin. . . . The contraction of this muscle, limited to a single meridian, must cause unequal relaxation of the crystalline and make it assume a more convex form in one meridian only." It may easily be demonstrated, by putting a -0.50 cylinder before the eye (which is the utmost that I personally can overcome), that variations in the position of the head have no effect on the ease with which this cylinder can be overcome in the majority of cases, but only in the exceptional cases of "lens tilting" mentioned.

The dynamic astigmatism of the lens could hardly be expected to exceed a fraction of a diopter, and in practice this is found to be the case. The earlier text-books on refraction frequently led one to believe that a very considerable amount of astigmatism might be uncovered by the use of atropin, but, as a matter of fact, we do not find this to be invariably the case, and even in those whose accommodation is young and vigorous any more than 0.50 diopter blurs distant vision. In practice, I find myself more and more inclined not to give cylindrical glasses, unless they improve the vision, and even if I have occasion to use a mydriatic and develop what may be called a latent astigmatism I do not by any manner of means feel sure that such a glass can be worn after the effect of the mydriatic has passed off. However, the occurrence of these cases of latent astigmatism is a very strong point in favor of partial contraction of the ciliary muscle.

A dynamic astigmatism of the lens, which persists for a certain length of time, may lead to one of two secondary changes in the eye. The first of these is a greater development of the fibers of the ciliary muscle in the meridian of contraction. There seems no reason to doubt this in the face of the accumulated proof of the muscular development of the whole ciliary body in hyperopic cases (Iwanoff). The second change is in the shape of the lens. A lens in which a dynamic astigmatism persists for a certain length of time gradually becomes fixed in that shape, as the nuclear sclerosis advances. This is shown by those cases of corneal astigmatism of two or more diopters in which there is normal vision with only a fractional cylinder. Even with the aid of a mydriatic it is impossible to develop a greater lens astigmatism. Naturally we only meet with

these cases in patients over 30 who have never worn glasses. These cases are, to my mind, a further proof of the existence of partial contraction of the ciliary muscle.

The cases above mentioned occur in astigmatism "with the rule." In astigmatism "against the rule" the dynamic astigmatism does not have the same tendency to become fixed. In presbyopic cases "against the rule" the lens astigmatism commonly disappears.

## LATENT ASTIGMATISM.

At times we find cases in the transition stages between these changes; that is, with increased tonicity in the fibers of the ciliary muscle, but no permanent change in the shape of the lens. These cases belong to the class of so-called "latent astigmatism," and if a mydriatic is used a certain amount of lens astigmatism is manifest, though after the mydriatic has ceased its effect the tonicity of the fibers in the meridian of contraction may again compensate for the corneal astigmatism.

## FACTORS IN TREATMENT.

In general, then, we have in the treatment of every case to consider the following factors, and, where absolute measurement fails us, to assign as nearly as possible a correct valuation in accordance with our judgment of the individual case: 1. Corneal astigmatism. 2. Lens astigmatism: a, static; b, dynamic. 3. The degree of compensation. 4. The factor in the error which is producing symptoms.

Obviously the last point is the end and aim of our efforts as practical ophthalmologists, and the relief of the irritative symptoms is the only question which greatly interests the patient.

## TESTS EMPLOYED.

For determining the above mentioned points there are only two positive tests: 1, the ophthalmometer for the corneal astigmatism; 2, the shadow test for the total astigmatism. It may be urged against the ophthalmometer that the posterior surface of the cornea will modify its reading, but that this modification must be very slight indeed is shown by the well-substantiated assertions of Baker.<sup>5</sup> From a practical standpoint I never consider this factor. The shadow test, taken by itself, gives no idea of the proper proportions of the various factors to be considered, and, while undoubtedly of great value in association with other tests, is of limited value when taken alone. It must always be done with the aid of a mydriatic. Its most enthusiastic advocates lay great stress on the accurate determination (if not correction) of the total refractive error, and this point of view might be the correct one if we were dealing only with the eyes of the young in which the original error is not modified. In practice we find all sorts of modifying circumstances, with the changes in the ciliary muscle and lens above mentioned. In brief, the question must be approached from the standpoint of the physiologist and the pathologist (if one may use the term in this connection) rather than that of the anatomist.

As Hess says in his masterly paper read before this Section last year:<sup>6</sup> "Here" (i. e., under mydriasis)<sup>4</sup> "the optic conditions are so different from the normal that it is impossible to come to a conclusion as to the normal refraction of the patient's eye."

4. Refraction and Accommodation of the Eye, p. 302.

5. Norris and Oliver's System, I, 138.

6. THE JOURNAL A. M. A., July 20, 1907, p. 230.



The subjective tests with the trial lenses I believe to be perhaps the most important in our list, when based on our other measurements, and the technic of applying them is very important. It hardly seems necessary at the present time to go into details on this point, but I may say that the "fogging" method has been generally unsatisfactory in my hands, and I much prefer to test with cylindrical lenses in the axis of the corneal astigmatism, gradually increasing the strength of the lenses and adding only the required spherical lens to bring the visual acuity to the point where finer changes are more noticeable to the patient. I then vary the axis to find any modifications that may exist; if I am unable to find the correction which gives relief, I use a mydriatic and obtain a reading of the total error.

The actual lens prescribed depends on the judgment of the various questions above mentioned, taken in connection with the general muscular constitution (as bearing directly on the constitution of the ciliary muscle), the needs of the individual, and the existence of any local complications—as strabismus, heterophoria, etc., which need not be considered here. I do not underestimate the value of the ophthalmoscope in the treatment of refractive errors, but its bearing in the present question is only to give a close approximation to the total spherical error, which, of course, we must know, and it is of little value in the actual determination of the amount of astigmatism.

To obtain the lens astigmatism, we subtract the corneal astigmatism from the total, as obtained by either of the above mentioned methods. The proper appreciation of the true cause of the lens astigmatism and of the factors producing the visual disturbance will depend not so much on mere figures as on the clinical conditions bearing on the case. To particularize, it is necessary to take up *seriatim* the different forms of astigmatism:

#### HYPEROPIC ASTIGMATISM.

The majority of cases of hyperopic astigmatism will fall under one of the following general classes:

##### 1. *Low Degrees of Corneal Astigmatism, Completely Compensated by the Lens, Axis 90° or Thereabouts.*

These cases occur at any age, give no symptoms, and accept no cylindrical glasses with or without a mydriatic, and have normal vision with a corneal astigmatism of not more than one diopter, usual axis 90°, symmetrical in the two eyes. They form the largest class of cases. We see them only incidentally, in the course of treatment of other eye conditions—inflammations or presbyopia—and, of course, they require no correction. The compensating astigmatism of the lens is static, whatever it may have been originally. My own feeling is that a large proportion of such cases, perhaps the great majority, begin as dynamic lens astigmatism, and that the efforts of the ciliary muscle are purposeful, and ultimately lead to full correction without the aid of cylindrical glasses.

##### 2. *Higher Degrees of Corneal Astigmatism, with Partial Regular Compensation by the Lens, Axis 90° or Thereabouts.*

Under this heading we have the largest class of cases coming to us for treatment. The lens astigmatism occurs in the same axis—or very nearly the same axis—as the corneal astigmatism, and amounts to between 0.50 and 1 diopter. It is for this reason that we have the arbitrary rule of subtracting 0.50 diopter from the

reading of the ophthalmometer in prescribing lenses, a rule which seems unfortunate as leading to a certain amount of misapprehension, though, in fact, our other tests usually give us approximately this result.

These cases, almost without exception, have a diminution of the visual acuity for distance (the amount depending on the degree of astigmatism) with asthenopia. Even small amounts of astigmatism are not properly to be called latent, though the meridional contraction occurs only at intervals when the patient is looking at the test card, and in most instances need not occur at all if the cylinders are carefully tried. By subtracting the total astigmatism (manifest with the trial lenses) from the corneal we have the lens astigmatism, and whether this be static or dynamic will depend on the severity of the asthenopia, the age of the patient, the length of time that the eyes have gone uncorrected, and the general muscular constitution of the individual.

After the age of 35 the compensating astigmatism is almost invariably static, and we may see even high degrees of compensation at this time; that is, 1.50 to 2 diopters, where glasses have never been worn and where the muscles have been allowed to develop gradually without undue forcing. In such cases, even under the influence of a mydriatic, the manifest astigmatism is not increased. Before 35, or thereabouts, the judgment of the character of the lens astigmatism is more difficult, and I have come to depend to a great extent on the finding of tender spots over the ciliary region, frequently in the meridian of contraction, when a dynamic astigmatism exists. If I find these tender spots, I suspect the astigmatism to be latent or dynamic, and I prescribe a mydriatic, both for accuracy in obtaining the test and for its physiologic action on the contracted fibers of the ciliary muscle. In most instances, the astigmatism will be found to be dynamic and needing partial or total correction, depending on the clinical features of the particular case, i. e., the amount of use of the eyes, the length of time since glasses have been worn, the age of the patient, and the general muscular constitution. One should be very careful in this connection not to overcorrect, for overcorrection is productive of much more irritation than undercorrection. Where no irritation of the ciliary muscle can be discovered, it seems unnecessary to use a mydriatic, and in practice I do not find that I am led into error through this line of procedure.

##### 3. *Low Degrees of Corneal Astigmatism with Irregular Compensation by the Lens.*

This class is composed almost entirely of cases in which the corneal astigmatism is less than 0.75 diopter. It occurs most frequently in cases where the corneal astigmatism is not symmetrical; that is, one cornea may have a 0.50 diopter of astigmatism, the other none. In such cases the axis of the total manifest astigmatism represents a mean between the cornea and the lens, whose astigmatism, either from its original static condition or through faulty accommodative efforts, lies in an entirely different axis from the corneal. Such cases are much prone to vary. The astigmatism will appear and disappear, the axes will change from time to time, even where we use a mydriatic and endeavor to put them on more permanent bases.

In these cases, as in the former, I do not use a mydriatic, unless I have evidence of muscular cramp, as shown by tender spots over the ciliary muscle. I prefer to correct the manifest astigmatism after not less



than two careful tests with the trial lenses. Unless there is a definite indication that the distance vision is accomplished through irritating accommodative effort, I prescribe the glasses only for the near work, and I often find that under this form of treatment the ciliary muscle adjusts itself, compensation is regained, and the glasses may be laid aside.

In this class of cases we frequently see the results of coordinated effort in the ciliary muscles of the two eyes; that is, where we have no corneal astigmatism in one eye and 0.50 diopter, axis  $90^\circ$  in the other eye, the same meridians will contract to such a degree that our final astigmatism will read axis  $180^\circ$  in each eye—say 0.50 diopter, axis  $180^\circ$ , in one eye, and 1 diopter, axis  $180^\circ$ , in the other eye, with 0.50 diopter or corneal astigmatism, axis  $90^\circ$ . In other words, the compensation in the eye with the 0.50 diopter of corneal astigmatism has overshot the mark and given us an excessive lens astigmatism.

#### 4. *Corneal Astigmatism with the Axis at $180^\circ$ or Thereabouts.*

In this class of cases, as is well known, the symptoms are very much more severe, compensation is much less apt to occur, and the lens astigmatism is frequently in excess of the corneal. Here we frequently find the lens astigmatism to be static, and the correction must be worn constantly. The reason for the increased difficulty of compensation in this class of cases over the preceding class is naturally to be looked for in a greater normal tonicity of certain fibers of the ciliary muscle over certain others, but so far we have no anatomic investigations to help us out on this point.

#### 5. *Cases of Simple Lens Astigmatism.*

In these cases the cornea shows no astigmatism, and the astigmatism is confined to the lens. It may be as high as a diopter, is accompanied by severe symptoms, and occurs most frequently below the presbyopic age. It is very desirable to use mydriasis in these cases, where even a small amount of muscular tenderness exists, as there is every evidence that the lens astigmatism is most frequently due to faulty ciliary contraction, and that if we keep our correcting lens a little under the full dynamic astigmatism with suitable management of the work done by the ciliary muscle, the astigmatism will ultimately disappear.

#### MYOPIC ASTIGMATISM.

In myopic astigmatism, we have, in general, a weaker ciliary muscle, and the compensating lens astigmatism is much less purposeful in its character than in hyperopic cases, as we should expect. While in the nature of the case there can be no constant correction of the astigmatism by the ciliary muscle, still in low degrees, unaccompanied by spherical error, we commonly find an attempt at correction or a contraction of the meridional fibers of the ciliary muscle, produced largely by certain habits in reading.

It must be remembered that within the far point of the meridian of greatest refraction (the most myopic), the only way the astigmatism can be reduced by the ciliary muscle is by correction in the opposite meridian, making both meridians myopic in the same degree, if the astigmatism is not too high; or reducing the astigmatism in the same way, if it is too great to be corrected entirely. We have, then, the same source of irritation as in hyperopic cases, but with a relatively weaker ciliary muscle, whose weakness depends on the amount of

spherical myopia, etc. It is for this reason that we so frequently find severe asthenopic symptoms in myopic astigmatism, and that such cases so frequently simulate simple myopia in the distance test. Low degrees will almost always accept spherical lenses for distance, if the same be added until both meridians are corrected, which, of course, leaves one meridian overcorrected. For this reason, I always correct the astigmatism before I add the full spherical lens, and I find very few cases of plain spherical myopia, even where the error is as high as 10 diopters.

Myopic astigmatism occurs in these general classes:

#### A. *Corneal Astigmatism, with Partial Regular Compensation by the Lens at the Near Point, Axis $180^\circ$ or Thereabouts.*

These cases have always marked diminution of distance vision with marked asthenopia for the near point on account of the meridional contraction of the ciliary muscle, as well as other factors, which we need not consider here. Low degrees may simulate a simple myopia—a patient may fail to notice an improvement in reading with cylindrical glasses—and, yet, they require full correction of the astigmatism, both far and near, if the ciliary muscle is to obtain its greatest power, and if the asthenopia is to be relieved entirely. On account of the difference in the constitution of the ciliary muscle and the fact that the dynamic astigmatism occurs only intermittently, compensation, as in hyperopic cases, does not occur, and full correction should be worn constantly.

If there is difficulty in inducing the patient to accept the cylindrical glasses called for by the corneal astigmatism, minus a certain amount for the lens (0.25 to 0.50 diopter), or if tenderness exists in the ciliary region, a mydriatic should be used, and the total static astigmatism be determined. It should never be forgotten that low degrees of this class may be due to overcontraction of the ciliary muscle in hyperopic astigmatism, simple or compound, but these cases have usually marked symptoms, and, moreover, are rather rare, errors of diagnosis in this connection being generally due to faulty technique with the trial case. The clock dial is of considerable value in the testing of these cases, for the lens astigmatism is apt to assume its static amount in the distance test, undisturbed by irregular ciliary contractions. It must be remembered, however, that where the eyes have been used without glasses for near work, especially in low degrees of spherical error, and where the muscular constitution is good, there may be some modification of the astigmatism at the distance, and we should not pay too much attention to any single test, but rather give weight to the preponderance of evidence in determining the full amount of astigmatism.

#### B. *Low Degrees of Corneal Astigmatism, with Irregular Modification by the Lens.*

These form a very large class, perhaps as large as the preceding. They show great variations in axes and amounts from the corneal astigmatism, which is usually "off axis," and not symmetrical in the two eyes. The principles that have already been discussed in the two previous classes of cases apply with equal force here, and it should especially be borne in mind that the lens astigmatism is so much less purposeful than in corresponding cases of hypermetropic astigmatism that the corneal reading, while important, is very little guide to the total astigmatism. I always try cylinders in the axis of the corneal astigmatism first, but if the indications are that the case belongs to the class under dis-



cussion, I do not hunt for the proper axis with the test lenses, but prefer to proceed at once to the clock dial test. This is apt to be of value, as dynamic astigmatism plays a relatively small part in such cases in far sight, and determination of the full static error is important.

### C. *Lens Astigmatism Pure and Simple.*

In this class there is no corneal astigmatism, and the astigmatism is located entirely in the lens. It rarely exceeds 1 diopter, is static in character, has the same characteristics, and requires the same treatment as in the preceding class. It is very doubtful if a dynamic myopic astigmatism ever develops from a hypermetropic case, such changes being usually due to lengthening of the eyeball.

### MIXED ASTIGMATISM.

These cases practically all belong to one class. The corneal astigmatism is high and "with the rule," in the vast majority of cases; in fact, mixed astigmatism "against the rule" has been with me one of the greatest of rarities. The distance vision is relatively good, when we consider the amount of the astigmatism, but asthenopia is severe. No complete lens compensation is possible, but almost invariably severe cramps of the fibers in the hypermetropic meridian exist, and are not at all readily overcome by any amount of care in testing with the trial lenses. Variations in the axis of the lens astigmatism from the corneal are uncommon, and when they do exist are of low degree, usually not more than  $10^\circ$  or  $15^\circ$ , and frequently less. Almost invariably we find a reduction of the hypermetropic meridian which is dynamic in character, and to my mind the only proper way to deal with such cases is to use a mydriatic, determine the full amount of astigmatism, and have the glasses put on before the effect of the mydriatic has passed off. We have here a condition of the ciliary muscle which may be considered a pathologic one, and the mydriatic is necessary, as much for a restoration of the fibers to the normal as it is for diagnostic purposes. Of course, this applies only to cases in which classes have not been worn. Where the ciliary muscle is in better condition, it is frequently possible, by care in the technique of the trial case, to ascertain the astigmatism without a mydriatic. Where the full correction has been prescribed with the assistance of a mydriatic, the case should always be studied subsequently and the action of the ciliary muscle noted, and any irregularity in the focus met by an appropriate change of lens.

19 East Forty-fourth Street.

### DISCUSSION.

DR. G. C. SAVAGE, Nashville: I do not deny that there is such a thing as lenticular astigmatism; I do deny that there is any such thing as partial contraction of the ciliary muscle. If there is a lenticular astigmatism, what brings it about, and if it is due to partial contraction of the ciliary muscle, why is it that atropin will not suspend it? Bowman's muscle has been forgotten. It is supplied by nerve fibers, as every muscle is, but not by the third-nerve fibers. Bowman's muscle fibers run meridionally and they must be there for a purpose. I believe that Bowman's muscle is supplied by the cervical sympathetic. Under the guiding influence of some faculty of the mind this muscle does the duty for which it was made, and if Bowman's muscle does anything at all it is the tilting of the lens. What will that do? Now if I have a +3.00 lens in my hand and tilt it on the horizontal axis 45 degrees the focus for rays in the horizontal plane will be, say, 13, and for those in the vertical plane  $6\frac{1}{2}$  inches. Now we have such power of tilting the lens of the eye but not through so great an arc. This tilting is done by the proper fibers of Bowman's muscle,

and for the purpose of correcting, in part or wholly, the corneal astigmatism. In my own case I suffered when coming up to middle life and nothing conquered my astigmatism except time. The first cylindrical lens given me was plus 0.60 D. and atropin developed no more. A few years later I had to have 0.75 D. and later a 1.00, 1.25, 1.50 D. and now 2.50 D. Eighteen years ago my corneas were measured for the first time with the ophthalmometer and I had 2.50 D. of astigmatism. Bowman's muscle also serves to adjust the lens in the new-born child. If its plane is not at right angles to the visual axis the muscle fibers contract in one part or another to straighten the lens. The purpose of that muscle is to prevent lenticular astigmatism, when there is no corneal astigmatism, as well as to neutralize an existing corneal astigmatism.

DR. LUCIEN HOWE, Buffalo: We may recognize lenticular astigmatism by means of the entoptic images, first described by Purkinje. These were first shown to me by Tscherning with his ophthalmophacometer. That is a laboratory instrument, but it can be made useful clinically by slight alterations. Thus we can take out the prism from the ordinary Javal-Schiötz ophthalmometer by unscrewing the projection in front of the disc and lifting out from the tube the part which holds the prisms. That converts the ophthalmometer into a telescope like the ophthalmophacometer. If we also attach a small electric light immediately below the axis of the tube, on looking through the telescope at the eye we see two reflections of this light. One of these reflections, large and distinct, is of course from the anterior surface of the cornea; the other reflection, small but bright, is from the posterior surface of the lens. If we revolve the tube of the telescope in the usual way, then, as the small electric light revolves, also, the reflection from that light which comes from the posterior surface of the lens describes a distinct circle around the reflection of the light from the cornea, in all cases in which the axis of the lens is practically the same as the axis of the telescope, that is to say, in all cases in which there is no tipping of the lens with the consequent astigmatism. If the lens is tipped forward or sidewise, however, then, when the tube of the telescope with the electric light is revolved in the usual way, the reflection of the light which comes from the posterior surface of the lens does not describe a circle around the reflection from the cornea, but it does describe an ellipse. When the lens is tipped forward, the long diameter of that ellipse is horizontal; and when the lens is tipped sidewise the long diameter of the ellipse is vertical. In dynamic astigmatism due to partial contraction of the ciliary muscle, the iris may dilate irregularly by ordinary doses of atropin, but this can be seen more frequently if we use about 0.00001 gram. This should be applied in the little discs. The pupil then may dilate as an ellipse, indicating unequal contraction.

DR. WALTER L. PYLE, Philadelphia: No better evidence of the necessity of using cycloplegics in the examination of the refraction of the eye can be offered than the facts set forth by Dr. Thomson and the subsequent speakers. There is no doubt in my mind of the frequency of partial contraction of the ciliary muscle, and in cases of long standing it is perhaps not possible to produce full cycloplegia at the first examination for refraction. By constant use of the initial optical correction, a gradual unfolding and relaxation of the spasm ensues, and only after several repeated corrections of refraction, under cycloplegia, possibly extending over several years, may the full static astigmatism be determined and corrected. These facts explain in part the great divergence of opinion relative to the efficiency of the different cycloplegics. I have frequently detected a greater amount of ametropia at a second refraction under homatropin and eocain than at the initial examination under the stronger cycloplegics, such as atropin and duboisin. The great practical lesson from these observations is the necessity of periodical examinations of refraction and changes of lenses whenever indicated by recurrence of local or reflex asthenopic symptoms or evidence of refractive changes. It should be remembered that when such changes occur they may give rise to symptoms quite as annoying as the initial discomfort that led the patient to seek ophthalmic treatment. It is a well established fact that the compensatory ciliary efforts in the involuntary attempts to correct astigmatism are far more



provocative of the manifold symptoms included under the general term "eyestrain" than are the similar spastic conditions in simple hyperopia.

DR. A. L. DERRIGER, Chicago: Noting particularly the difference in correcting errors of refraction without and with a mydriatic, and the changes that frequently take place in the amount of correction and also the changes in the axis of the cylinder where there is astigmatism, I decided some years ago to study some of these cases that vary considerably. A change of the axis, even of 5 degrees from the vertical or horizontal to the oblique, has made a remarkable difference in the relief given to the patient. A man, aged 43, vision before atropin was used, 20/15 (above normal), accepted minus 0.25 in each eye with no difference in vision. He had 6 degrees of right hyperphoria which I corrected by an operation on the superior muscles of the right eye. Using atropin for three days there was vision in both eyes of 20/30; with the right eye  $+0.25 \text{ C} + 0.50 \text{ vision} = 20/30$ . I prescribed full correction and he wore glasses with comfort until Aug. 27, 1907, when he had recurrent headaches. Under atropin vision was found to be 20/30 and the right accepted  $+0.75 \text{ C} + 0.50 \text{ C}$ , axis 45, vision = 20/20; left eye,  $+0.50 \text{ C} + 0.50 \text{ C}$ , axis 120, vision = 20/20. These were worn until April, 1908, when the patient returned again, complaining of similar attacks. Atropin was used again and this time vision reduced to 20/40. Right eye accepted  $+0.25 \text{ C} + 0.75 \text{ C}$ , axis 45, vision = 20/20; left eye  $+1 \text{ C} + 1 \text{ C}$ , axis 120, vision = 20/20. There was more astigmatism and more hyperopia in both eyes. One of the most important things is to give full correction after the age of 30, especially for close work.

DR. A. R. BAKER, Cleveland: I do not think that these repeated statements, "I do not use mydriatics," should be endorsed. You might as well try to fit a man with a suit of clothes while he is running down the street as to try to fit glasses without a mydriatic.

DR. E. C. ELLETT, Memphis, Tenn.: I recently saw a case in which rapid changes took place in the astigmatism. Mr. P., a preacher, aged 39, a hard worker and a man who took little exercise, was seen in March, 1908, complaining of recent poor vision. He saw 20/60 in each eye, unimproved by glasses, and read J. xii with O. D., and J. vi with O. S. The nerves showed distinctly veiled edges, but no measurable swelling, no hemorrhages, no exudation. The ophthalmometer showed plus 0.50 D., regular astigmatism with the rule. The fields were normal. He complained of indigestion and constipation. His tongue was brown and furred, his liver large and tender, the spleen slightly enlarged and the other organs normal. The urine showed marked indicanuria. He slept poorly, was inclined to be moody and depressed, and his general condition was poor. I am indebted to Dr. Buford for the notes as to his general condition. In less than one month his vision was normal, with glasses, after treatment by massage, diet, washing the stomach, high enemata and plenty of water internally. Successive tests of the refraction showed:

March 30: O. D.  $+1 \text{ cyl. ax. } 120^\circ$ . O. S.  $+1.50 \text{ cyl. ax. } 180^\circ$ .  
April 1: O. D.  $+1.50 \text{ cyl. ax. } 130^\circ$ . O. S.  $+1.50 \text{ cyl. ax. } 180^\circ$ .  
April 3: O. D.  $+2.50 \text{ cyl. ax. } 125^\circ$ . O. S.  $+1.50 \text{ cyl. ax. } 180^\circ$ .  
April 17: O. D.  $+0.75 \text{ cyl. ax. } 90^\circ$ . O. S.  $+0.50 \text{ sph.}$

All these tests were without a mydriatic. When last examined, on April 17, the correction indicated gave 20/20 full in the right and partly in the left, and J. i in each eye. The nerves were not yet perfectly clear.

DR. A. E. DAVIS, New York: I do not believe that lenticular astigmatism is due to partial contraction of the ciliary muscle. I do not see why the ciliary muscle should have a selective action in one set of cases, in corneal astigmatism with the rule, for instance, to neutralize part of the corneal astigmatism; and yet in another set of cases, in corneal astigmatism against the rule, to increase the corneal astigmatism, as we know to be the case from actual experience. I consider that Dr. Thomson makes one error in regard to the arbitrary subtraction of 0.50 D. from the reading of the ophthalmometer in astigmatism with the rule, and in the addition of 0.50 D. in astigmatism against the rule. The arbitrary addition or subtraction of a certain amount, say 0.50 D., should not be practiced; but after the ophthalmometric reading is made, sub-

jective and objective tests should be made, guided by the ophthalmometric reading; and the difference between the glass accepted by the patient and the glass indicated by the ophthalmometric reading is the amount that should be subtracted or added, as the case may be. This difference may be 0.25 D., 0.50 D. (as is usually the case), 0.75 D., or even 1 D.; and in astigmatism with the rule it is subtracted from the amount indicated by the ophthalmometer, while in astigmatism against the rule it is added. Now this very difference in the corneal astigmatism as measured by the ophthalmometer and the total astigmatism as represented by the cylindrical glass accepted is supposed to be due to the lenticular astigmatism, which lenticular astigmatism Dr. Thomson thinks to be due to unequal and selective action of the ciliary muscle. But this I do not believe to be the case, because, if we assume the lens to be tilted slightly on its vertical axis either to the right or the left, we can easily understand how it neutralizes part of the corneal astigmatism when it is with the rule, and how it adds to it when it is against the rule. According to the extent of the tilting it may neutralize 0.25 D., 0.50 D., 0.75 D., or even 1 D. of the corneal astigmatism, as above mentioned, but this must be found out by actual tests and can not be arbitrarily added or subtracted. In my experience this is the true explanation of lenticular astigmatism as opposed to Dr. Thomson's explanation, as he considers it due to unequal contraction of the ciliary muscle. I am of the same opinion in this regard as Hess and Bull, both of whom believe that lenticular astigmatism is accounted for by the tilting or slight displacement of the lens.

I advocate testing for glasses, in the majority of cases, without the use of cycloplegics. I was taught to use atropin or some other cycloplegic in every patient under forty years of age, but I have come to abandon their use almost altogether since the introduction of the ophthalmometer. In some cases it may be necessary to use them (as in spasm of accommodation or in children under ten years of age), and then I use the powerful cycloplegics, and do not trifle with doubtful ones, such as homatropin.

DR. ALBERT E. BULSON, JR., Fort Wayne, Ind.: As ophthalmologists we deserve severe criticism for using the terms "mydriatics" and "cycloplegics" synonymously. A cycloplegic is always a mydriatic but a mydriatic is not always a cycloplegic. To be certain that we have determined the static refraction of an eye requires cycloplegia, and without cycloplegia results are apt to be contradictory. The correction of the full static refraction is seldom borne comfortably by the patient, but a knowledge of the full static refraction is necessary in order to estimate properly the correction to be given. Occupation, temperament, and the physical condition of the patient will play an important part in arriving at conclusions as to the amount of the static refraction to be corrected.

DR. EDGAR S. THOMSON, New York City: I do not ignore the static astigmatism of the lens which to my mind accounts for some of the differences between astigmatism with the rule and against the rule. Further than that I think we have not data enough to decide that question. To my mind it is not a sweeping question as to whether we shall use cycloplegics or not. I do not hesitate to use them when necessary; in fact I always use them when I consider it necessary; but the point I make is that we must study the condition of the ciliary muscle. Is it compensating? Is it of normal tone or is it in a condition of cramp? If in a condition of cramp, we shall find local tenderness. I do not think that the matter can be put on the ground that no good work can be done without a cycloplegic or no good work with it. I am still unconvinced by Dr. Savage's arguments, but I admit that we have no scientific data and it seems hardly worth while to discuss theories. To my mind the important point is this, that we do not find high degrees of compensating astigmatism in presbyopes and if compensation were due to tilting of the lens we should expect it to appear as frequently in presbyopes as in the young. I believe that the gradual failure of compensation, in such cases as Dr. Savage has cited, is due to advancing nuclear sclerosis and is an indication in favor of the theory of partial contraction.



A STUDY OF ONE HUNDRED REFRACTION  
CASES IN INDIANS FRESH FROM  
THE PLAINS.\*

CLARENCE PORTER JONES, M.D.  
NEWPORT NEWS, VA.

Having had the good fortune to be able to study the refractive condition of the eyes in aborigines, and finding no literature whatever on the subject, I deem it not inappropriate to present a brief treatise on this subject.

The cases studied are confined wholly to pupils at the Hampton (Va.) Normal and Agricultural Institute, a school for negroes and Indians. This institution not being under government control, but, on the contrary, being a purely philanthropic enterprise, kindness, sympathy and individual application makes the stubbornness and distrust so inherent in the Indian melt away. The result is that he soon becomes an ideal student and is trained successfully to enter the realm of good citizenship.

Admissions to the school are made each month in the twelve, and several departments of instruction continue throughout the summer. This series of 100 cases covers exactly 289 admissions, the last being Nov. 24, 1907, four months before the compilation of the statistics. Therefore, I speak accurately when I state that the percentage having refractive errors necessitating the wearing of glasses to improve vision and to relieve symptoms of eyestrain is 34.6 per cent. The ages are from 14 to 22; Males, 127, in this series 44 cases, or about 35 per cent. Females, 162, in this series 56 cases, or about 34 per cent.

On admission a careful test of vision is made, and should it be below 20/20 in each eye, or should the usual symptoms of eyestrain develop subsequently, a thorough refractive test is made. In making this test I made careful and systematic use of the ophthalmometer, ophthalmoscope, retinoscope, phorometer and test

lenses, employing a cycloplegic in every case. In these 100 cases—200 eyes—the refractive varieties found were as follows: Hyperopia, 38 eyes; simple hyperopic astigmatism, 26; compound hyperopic astigmatism, 60; myopia, 13 eyes; simple myopic astigmatism, 15; compound myopic astigmatism, 32; mixed astigmatism, 16.

The axis of hyperopic astigmatism was 90 degrees in 69 eyes, 180 degrees in 5, 45 or 135 degrees in 5, nearer vertical than horizontal in 13, and nearer horizontal than vertical in 6.

The myopic axis was 180 degrees in 38 eyes, 90 degrees in 4, 45 or 135 degrees in 4, nearer vertical than horizontal in 4, and nearer horizontal than vertical in 15.

Twenty states and territories are represented in the 289 admissions, 39 tribes, 26 in the series.

There are 3 cases of heterophoria amounting to as much as 2 degrees, no case being treated other than correcting the refractive error. No strabismus.

A marked tolerance for cycloplegics exists in the Indian. Scopolamin is not effective, being practically worthless. Homatropin 1/25 grain in each eye, applied by means of gelatin discs, is usually reliable; this dose was repeated in thirty minutes in about 10 per cent. of the cases. Atropin was necessary in 3 cases. A less than 2 per cent. solution of the latter was ineffective; also the strong solution of atropin was found necessary when its effect was desired in treating eye injuries of Indians occurring in the school work shops. In the series herewith charted, when no cycloplegic is mentioned, let it be understood that homatropin hydrobromate was used.

Fifty-one, or 17.65 per cent. of the whole number, had trachoma on entrance—16 cases in this series; the remaining 35 had normal vision. All trachoma patients are treated surgically, being promptly rolled by Knapp's forceps; and active after-treatment. In the 16 cases mentioned in the refractive series, the test was not made till the acute symptoms had subsided and the corneæ became clear. The care exercised by officers, physicians and nurses with these patients has prevented the spread of the disease at the institution.

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

TABLE OF ONE HUNDRED REFRACTIONS IN INDIANS.

Case number.	Vision Before Cycloplegia.	Vision During Cycloplegia.	Results of Examination, etc.	Lenses Accepted for Use. Spherical. Cylindrical.	Tribe.	Remarks.
1.	20/70 20/50	20/40 20/40	20/20 w. +.75s. $\subset$ +.50c. ax.90..... 20/20 w. +.75s. $\subset$ +.50c. ax.90.....	+.50 +.50	Same. Same.	Shawnee. ....
2.	20/150 20/150	20/100 20/100	20/50 w. +.50c. ax.90 $\subset$ —.75 ax.180... 20/50 w. +.75c. ax.90 $\subset$ —2.00c. ax.180...	Same. Same.	.....	Cherokee. ....Scopolamin failed to produce cycloplegia; homatropin was successful.
3.	20/100 20/100	20/40 20/30	20/20 w. +.50s. $\subset$ +.50c. ax.90..... 20/20 w. +.50s. $\subset$ +.25c. ax.90.....	Same. Same.	.....	Oneida. ....
4.	20/30 20/30	20/40 20/30	20/20 w. +.50c. at 90..... 20/20 w. +.25s. $\subset$ +.50c. ax.90.....	Same. Same.	.....	Chippewa ..
5.	20/70 20/70	20/150 20/150	20/50 w. +.75s..... 20/50 w. +.75s.....	Same. Same.	.....	Sioux ....
6.	20/50 20/200	20/70 20/100	20/20 w. +.25s. $\subset$ +.65c. ax.90..... 20/70 w. +.62c. ax.180.....	Same. Same.	.....	Onondaga .....
7.	20/20 20/100	20/20 20/200	20/20 w. +.25c. ax.90..... 20/20 w. +1.75c. ax.90 $\subset$ —.50c. ax.180...	Same. Same.	.....	Omaha ....Atropin 4 % sol., 5 instillations necessary to produce cycloplegia, scopolamin and homatropin having previously failed.
8.	20/30 20/30	20/30 20/50	20/20 w. +.50c. ax.90..... 20/30 w. +.50c. ax.90 $\subset$ —1.00c. ax.180...	Same. Same.	.....	Seneca ....Scopolamin failed to produce cycloplegia; atropin 2 % sol., 3 instillations necessary for success.
9.	20/200 20/70	20/200 20/100	20/20 w. +.75s. $\subset$ +.25c. ax.180..... 20/20 w. +.75s. $\subset$ +.25c. ax. 90.....	Same. Same.	.....	Chippewa ..
10.	20/30 20/30	20/25 20/25	20/20 w. +.25s. $\subset$ +.25c. ax.90..... 20/20 w. +.25s. $\subset$ +.50c. ax.90.....	Same. Same.	.....	Oneida. ....
11.	20/50 20/50	20/50 20/50	20/20 w. —.50s. $\subset$ —.50c. ax.180..... 20/20 w. —.50s.....	Same. Same.	.....	Ponca ....



Case num-ber.	Vision Before Cyclo-plegia.	Vision During Cyclo-plegia.	Results of Examination, etc.			Lenses Accepted for Use.	Tribe.	Remarks.
						Spher-ical.	Cylin-drical.	
12.	20/100 20/100	8/200 8/200	20/40 w. +1.50s. $\ominus$ +1.25c. ax.100..... 20/40 w. +1.50s. $\ominus$ +1.25c. ax. 80.....			+ .75 + .75	Same. Same.	Chippewa .. .. .
13.	20/40 20/40	20/150 20/150	20/20 w. +1.25s. .... 20/20 w. +1.50s. ....			Same. Same.		Chippewa .. .. .
14.	20/30 20/30	20/40 20/40	20/20 w. +.50s. .... 20/20 w. +.50s. ....			Same. Same.		Seneca .. .. .
15.	15/200 20/30	15/200 20/35	20/100 w. -1.75s. $\ominus$ -.25c ax. 180..... 20/20 w. +.50s. ....			Same. Same.		Navajo .. .. .
16.	20/40 20/40	20/40 20/45	20/30 w. -1.12s. .... 20/30 w. -.50s. $\ominus$ -.50c. ax.135.....			Same. Same.		Shawnee. ....
17.	20/30 20/30	20/50 20/50	20/20 w. +1.00s. $\ominus$ +.50c. ax.90..... 20/20 w. +1.60s. $\ominus$ +.50c. ax.90.....			+ .75 + .75	Same. Same.	Seneca .. .. .
18.	20/30 20/30	20/40 20/40	20/20 w. +.75s. .... 20/20 w. +.75s. ....			Same. Same.		Oneida. ....
19.	20/30 20/30	20/30 20/30	20/20 w. +1.00s. .... 20/20 w. +1.00s. ....			Same. Same.		Chippewa .. .. .
20.	20/40 20/40	20/45 20/45	20/20 w. +.50s. $\ominus$ +.50c. ax.90..... 20/20 w. +.50s. $\ominus$ +.50c. ax.90.....			Same. Same.		Oneida.* .. .. .
21.	20/200 20/200	20/200 20/200	20/20 w. -2.50s. $\ominus$ -.25c. ax.180..... 20/20 w. -3.00s. ....			Same. Same.		Assinaboine. ....
22.	20/100 20/100	20/200 20/200	20/30 w. +1.12s. $\ominus$ +.25c. ax.180..... 20/20 w. +1.12s. $\ominus$ +.25c. ax. 90.....			Same. Same.		Chippewa .. .. .
23.	20/70 20/70	20/70 20/70	20/20 w. -.25s. $\ominus$ -.75c. ax.180..... 20/20 w. -.25s. $\ominus$ -.75c. ax.180.....			Same. Same.		Seneca .. .. .
24.	20/30 20/30	20/40 20/40	20/20 w. -.62s. $\ominus$ -.50c. ax.180..... 20/20 w. -.25s. $\ominus$ -.50c. ax.180.....			Same. Same.		Oneida. ....
25.	20/30 20/30	20/70 20/50	20/20 w. +1.00s. $\ominus$ +.75c. ax.90..... 20/20 w. +.75s. $\ominus$ +.50c. ax.90.....			Same. Same.		Winnebago. ....Trachoma: Lids rolled twice in one year, blue stick and bichlorid 1 to 500 ointment used alternately for period of 18 months. Refractive test made 20 months after entrance.
26.	20/150 20/50	6/200 20/70	20/40 w. +1.25c. ax.90 $\ominus$ -1.00c. ax.180.. 20/20 w. +.50s. $\ominus$ +.75c. ax. 90.....			Same. Same.		Pottawattomie. Trachoma: Lids rolled and blue stick used once or twice a day for 3 months before refractive test.
27.	20/70 20/50	20/100 20/70	20/30 w. +1.00c. ax.105 $\ominus$ -1.50c. ax.15.. 20/30 w. +1.50c. ax. 45 $\ominus$ -.50c. ax.135.			Same. Same.		Ponca ....Trachoma: Lids rolled and bichlorid 1 to 500 ointment used daily for 5 months before refractive test.
28.	20/30 20/30	20/40 20/40	20/20 w. +.65c. ax.90..... 20/20 w. +.75c. ax.90.....			Same. Same.		Chippewa .. .Trachoma: Lids rolled back and blue stick used twice a week for one month before refractive test.
29.	20/25 20/30	20/25 20/30	20/20 w. +.87s. .... 20/20 w. +1.00s. ....			Same. Same.		Sioux .. .. .
30.	20/100 20/70	20/150 20/100	20/30 w. -1.50c. ax.150..... 20/20 w. +.75c. ax.135.....			Same. Same.		Pawnee. ....Trachoma: Lids rolled and blue stick used 3 times a week for 3 weeks prior to refractive test.
31.	20/100 20/70	20/100 20/70	20/20 w. +.87c. ax.90..... 20/20 w. +.50c. ax.90.....			Same. Same.		Shawnee. ....
32.	20/30 20/200	20/30 20/200	20/20 w. +.12c. ax.90..... 20/20 w. -1.25s. $\ominus$ -.87c. ax.180.....			Same. Same.		Oneida. ....Trachoma: Lids rolled and blue stick applied daily for 6 weeks prior to refractive test.
33.	20/100 20/70	20/70 20/50	20/30 w. -.37s. $\ominus$ -.87c. ax.180..... 20/20 w. -.37c. $\ominus$ -.75c. ax.180.....			Same. Same.		Seneca .. .. .
34.	20/30 20/30	20/30 20/30	20/20 w. +.50s. .... 20/20 w. +.50c. ax. 90.....			Same. Same.		Pawnee. ....
35.	20/50 20/50	20/70 20/70	20/20 w. +1.25s. $\ominus$ +.50c. ax.90..... 20/20 w. +.75s. $\ominus$ +.75c. ax.90.....			+1.00 +.50	Same. Same.	Chippewa. ....Trachoma: Lids rolled, blue stick used 2 months prior to refractive test.
36.	20/30 20/30	20/35 20/35	20/20 w. +.75s. $\ominus$ +.25c. 90..... 20/20 w. +.75s. ....			+ .50 + .50	Same. Same.	Sioux. ....
37.	20/40 20/40	20/45 20/45	20/20 w. +1.00s. .... 20/20 w. +1.00s. ....			+ .87 + .87		Pima Sacaton...Trachoma: Lids rolled twice in 4 months. Argryol, 25 % sol., instilled daily for 6 months prior to test.
38.	20/30 20/30	20/35 20/35	20/20 w. +.62s. $\ominus$ +.12c. ax.90..... 20/20 w. +.62s. $\ominus$ +.12c. ax.90.....			+ .50 + .50	Same. Same.	Chippewa. ....Trachoma: Lids rolled, blue stick used 3 times a week for 2 months prior to test.
39.	20/20 20/20	20/25 20/25	20/20 w. +.25s. $\ominus$ +.12c. ax.90..... 20/20 w. +.37s. $\ominus$ +.12c. ax.90.....			Same. Same.		Sioux. ....Headache. Test made 4 months after entrance.
40.	20/30 20/30	20/35 20/35	20/20 w. -.62s. $\ominus$ -.37c. ax.180..... 20/20 w. -.62s. $\ominus$ -.37c. ax.180.....			Same. Same.		Assnaboine. ...Trachoma: Lids rolled, and blue stick applied twice a week for 2 months prior to test.
41.	20/50 20/50	20/100 20/100	20/20 w. +1.00s. $\ominus$ +.25c. ax.90..... 20/20 w. +1.00s. ....			Same. Same.		Pottawattomie. ....
42.	20/200 20/100	20/200 20/100	20/100 w. -6.00c. ax. 40..... 20/70 w. -2.00c. ax.180.....			Same. Same.		Oneida. ....Trachoma: Lids rolled 3 times, also blue stick and bichlorid ointment, 1 to 500. Test made 4 months after admission.
43.	20/30 20/30	20/70 20/75	20/20 w. -.75s. .... 20/20 w. -1.00s. ....			Same. Same.		Seneca .. .. .



Case number.	Vision Before Cycloplegia.	Vision During Cycloplegia.	Results of Examination, etc.		Lenses Accepted for Use.	Tribe.	Remarks.
					Spherical. Cylindrical.		
44.	20/70 20/50	20/70 20/50	20/20 w. —2.25s. .... 20/20 w. —1.50s. ....		Same. .... Same. ....	Sioux. ....	Trachoma: Lids rolled, bichlorid ointment 1 to 500 used 2 months prior to refractive test.
45.	20/50 20/150	20/150 20/150	20/40 w. —1.75s. ( —.25c. ax.180. .... 20/40 w. —1.75s. ( —.25c. ax.180. ....		Same. .... Same. ....	Sioux. ....	
46.	20/150 20/150	20/150 20/150	20/30 w. —.50s. ( —1.50c. ax.180. .... 20/30 w. —.62s. ( —.50c. ax.180. ....		Same. .... Same. ....	Seneca ....	
47.	20/150 20/150	20/150 20/150	20/20 w. +1.00s. ( +.37c. ax.150. .... 20/20 w. +.87s. ( +.25c. ax. 20. ....		+ .87 Same. ....	Omaha ....	
48.	20/70 20/50	20/100 20/70	20/20 w. +.87s. ( +.25c. ax.90. .... 20/20 w. +.25s. ( +.37c. ax.90. ....		+ .75 Same. ....	Oneida ....	
49.	20/30 20/30	20/45 20/45	20/20 w. +1.00s. .... 20/20 w. +1.00s. ....		Same. .... Same. ....	Shawnee. ....	
50.	20/100 20/100	20/100 20/100	20/45 w. —1.25c. ax.55. .... 20/45 w. —1.50c. ax.45. ....		Same. .... Same. ....	Arapahoe ..	
51.	20/70 20/70	20/100 20/100	20/20 w. —1.50s. ( —1.00c. ax.180. .... 20/20 w. —1.25s. ( —.75c. ax.180. ....		Same. .... Same. ....	Winnebago. ....	Exophoria 4°.
52.	20/30 20/30	20/30 20/30	20/20 w. +.75s. .... 20/20 w. +.75s. ( +.12c. ax.90. ....		Same. .... Same. ....	Sioux. ....	Esophoria 2°.
53.	20/30 20/30	20/50 20/50	20/20 w. —1.25c. ax.90. .... 20/20 w. —1.25c. ax.90. ....		Same. .... Same. ....	Sioux. ....	
54.	20/100 20/100	20/75 20/75	20/30 w. +.62c. ax.180 ( —.50c. ax.90. .... 20/25 w. +.50c. ax.180 ( —.62c. ax.90. ....		Same. .... Same. ....	Mashpee. ..	
55.	20/30 20/30	20/40 20/30	20/20 w. +.87s. .... 20/20 w. +.87s. ....		Same. .... Same. ....	Shawnee. ....	
56.	20/45 20/100	20/50 20/100	20/25 w. +.50s. ( +.37c. ax.90. .... 20/25 w. +.75s. ( +1.25c. ax.20. ....		Same. .... Same. ....	Chippewa ..	Trachoma: Lids rolled and 25 % sol. argyrol instilled t. i. d. for 2 months prior to refractive test.
57.	20/20 20/100	20/30 20/100	20/20 w. +.37c. ax.90. .... 20/45 w. +.50s. ( +.37c. ax.90. ....		Same. .... Same. ....	Navajo ....	
58.	20/100 20/100	20/100 20/100	20/30 w. +2.75 ax.105 ( —1.50c. ax. 15. .... 20/30 w. +2.00c. ax. 60 ( —.75c. ax.150. ....		Same. ....	Oneida. ....	
59.	20/30 20/30	20/30 20/30	20/20 w. +.62s. .... 20/20 w. +.62s. ....		Same. .... Same. ....	Oneida. ....	
60.	20/20 20/20	20/50 20/50	20/20 w. +.25s. ( +.50c. ax.90. .... 20/20 w. +.25s. ( +.50c. ax.90. ....		Same. .... Same. ....	Cheyenne. ....	Eyestrain. Test made 3 months after entrance.
61.	20/35 20/35	20/50 20/50	20/20 w. +.75s. ( +.25c. ax. 110. .... 20/20 w. +.75s. ( +.25c. ax. 90. ....		Same. .... Same. ....	Pueblo ....	
62.	20/70 20/70	20/70 20/100	20/25 w. —2.50s. ( —.50c. ax.180. .... 20/30 w. —.50s. ( —2.75c. ax.180. ....		Same. .... Same. ....	Omaha ....	
63.	20/20 20/20	20/20 20/20	20/15 w. —1.00c. ax.180. .... 20/15 w. —1.00c. ax.180. ....		Same. .... Same. ....	Apache ....	Trachoma: Lids rolled, and blue stick used 3 times a week for 8 months before refractive test.
64.	20/150 20/25	20/200 20/35	20/100 w. —.50s. ( —.75c. ax.135. .... 20/20 w. —.37c. ax. 135. ....		Same. .... Same. ....	Menominee. ....	
65.	20/25 20/25	20/30 20/30	20/20 w. +.25s. ( +.25c. ax.30. .... 20/20 w. +.75s. ( +.25c. ax.30. ....		Same. .... Same. ....	Arapahoe. ....	
66.	20/150 20/150	20/150 20/150	20/30 w. —.50s. ( —4.00c. ax. 15. .... 20/30 w. —1.50s. ( —3.50c. ax.155. ....		Same. .... Same. ....	Pottawattomie. ....	
67.	20/30 20/30	20/30 20/30	20/20 w. +.62s. .... 20/20 w. +.62s. ....		Same. .... Same. ....	Arapahoe. ....	
68.	20/75 20/75	20/100 20/100	20/30 w. +1.25s. ( +.75c. ax.90. .... 20/30 w. +.87s. ( +1.00c. ax.90. ....		Same. .... Same. ....	Chippewa ..	
69.	20/150 20/150	18/200 18/200	20/30 w. —5.00s. ( —1.00c. ax.175. .... 20/30 w. —5.00s. ( —.62c. ax.5. ....		Same. .... Same. ....	Yuki ....	
70.	20/200 20/200	20/200 20/200	20/20 w. +5.00s. .... 20/20 w. +5.00s. ....		+2.50 +2.50	Pawnee. ....	
71.	20/100 20/100	20/100 20/100	20/45 w. +.50c. ax.105 ( —.50c. ax.15. .... 20/45 w. +.62c. ax.100 ( —1.00c. ax.10. ....		Same. .... Same. ....	Stockbridge ....	
72.	20/30 20/30	20/35 20/35	20/20 w. +.37c. ax.90. .... 20/20 w. +.37c. ax.90. ....		Same. .... Same. ....	Tuscarora ....	
73.	20/100 20/70	20/100 20/100	20/45 w. +1.25c. ax.90 ( —1.25c. ax.180. .... 20/40 w. +.37c. ax.90 ( —1.00c. ax.180. ....		Same. .... Same. ....	Tuscarora ....	Atropin 3 % sol. to produce cycloplegia, scopolamin and homatropin having failed.
74.	20/50 20/50	20/50 20/50	20/20 w. —.50c. ax.15. .... 20/20 w. +.50c. ax.75. ....		Same. .... Same. ....	Sioux. ....	
75.	20/30 20/30	20/40 20/40	20/20 w. —.75c. ax.180. .... 20/20 w. +.50c. ax.180. ....		Same. .... Same. ....	Oneida. ....	
76.	20/50 20/45	20/75 20/60	20/20 w. +1.25c. ax.85. .... 20/20 w. +1.25c. ax.85. ....		Same. .... Same. ....	Oneida. ....	
77.	20/70 20/50	20/70 20/50	20/20 w. +.25s. ( +.87c. ax.90. .... 20/20 w. +.25s. ( +.50c. ax.90. ....		Same. .... Same. ....	Winnebago. ....	Trachoma: Lids rolled, blue stick and argyrol 25 % used for 9 months prior to refractive test.
78.	20/50 20/45	20/70 20/45	20/20 w. +.50c. ax.90. .... 20/20 w. +.37c. ax.90. ....		Same. .... Same. ....	Seneca ....	



Case number.	Vision Before Cycloplegia.	Vision During Cycloplegia.	Results of Examination, etc.	Lenses Accepted for Use. Spherical. Cylindrical.	Tribe.	Remarks.
79.	20/30 20/30	20/35 20/35	20/20 w. +.50s. $\odot$ +.62c. ax.90..... 20/20 w. +1.00s. $\odot$ +.75c. ax.90.....	Same. +.87	Same.	Pawnee. ....
80.	20/40 20/40	20/45 20/45	20/20 w. +.37s. $\odot$ +.37c. ax.135..... 20/20 w. +.25s. $\odot$ +.25c. ax. 70.....	Same. Same.		Shawnee. ....
81.	20/100 20/70	20/150 20/100	20/20 w. -1.75s. $\odot$ -1.00c. ax. 10..... 20/20 w. -1.50s. $\odot$ - .75c. ax.170.....	Same. Same.		Shawnee. ....
82.	20/25 20/25	20/30 20/30	20/20 w. +.50s..... 20/20 w. +.50s.....	Same. Same.		Tuscarora ....Headache. Test made one month after entrance.
83.	20/50 20/50	50/50 20/50	20/20 w. -1.50s..... 20/20 w. -1.50s.....	Same. Same.		Seneca ....
84.	20/150 20/150	20/150 20/150	20/20 w. -3.00s..... 20/20 w. -3.00s. $\odot$ -.50c. ax.65.....	Same. Same.		Seneca ....
85.	20/150 20/100	20/200 20/100	20/20 w. -3.75s. $\odot$ -1.00c. ax.180..... 20/20 -3.00s.....	Same. Same.		SiouX ....
86.	20/35 20/35	20/100 20/100	20/20 w. +.50s. $\odot$ +.75c. ax.90..... 20/20 w. +.25s. $\odot$ +.75c. ax.90.....	Same. Same.		Oneida. ....
87.	20/150 20/150	20/150 20/150	20/20 w. +1.00s..... 20/20 w. +1.25s.....	Same. Same.		Seneca ....
88.	20/20 20/20	20/20 20/20	20/15 w. +.37c. ax.90..... 20/15 w. +.25c. ax.90.....	+1.25 +1.25	Same. Same.	Oneida ....Headache. Test made 3 months after entrance.
89.	20/25 20/20	20/30 20/25	20/20 w. +.50c. ax.90..... 20/20 w. +.25s. $\odot$ +.12c. ax.90.....	Same. Same.		Klamath ..Symptoms of eyestrain.
90.	20/30 20/30	20/50 20/50	20/20 w. +.50c. ax.90..... 20/20 w. +.50c. ax.90.....	Same. Same.		Seneca ....
91.	20/150 20/150	17/200 17/200	20/30 w. -2.50s $\odot$ -.50c. ax.180..... 20/40 w. -.50s. $\odot$ -2.75c. ax.180.....	Same. Same.		Seneca ....
92.	20/70 20/75	20/75 20/100	20/20 w. +1.25s..... 20/30 w. +1.12c. ax.90 $\odot$ -.62c. ax.180...	+1.00 Same.		Oneida ....
93.	20/20 20/20	20/25 20/25	20/15 w. +.50s..... 20/15 w. +.50s.....	Same. Same.		Pima. ....Headache. Test made 3 weeks after entrance.
94.	20/40 20/40	20/40 20/40	20/20 w. +1.00c. ax.105..... 20/20 w. +.75c. ax. 75.....	Same. Same.		Oneida. ....Trachoma: Lids rolled and argyrol 25 % sol. used daily for 2 months prior to test. Left hypophoria. 4°.
95.	20/40 20/30	20/45 20/45	20/20 w. +.87s. $\odot$ +.50c. ax.180..... 20/20 w. +.87s. $\odot$ +.50c. ax.180.....	+.50 +.50	Same. Same.	Pawnee. ....
96.	20/40 20/40	20/45 20/45	20/20 w. +1.12s..... 20/20 w. +.75s. $\odot$ +.62c. ax. 180.....	+.87 +.50	Same. Same.	Pottawattomie. ....
97.	20/100 20/100	20/40 20/40	20/20 w. -1.25c. ax.180..... 20/20 w. -1.00c. ax.180.....	Same. Same.		Apache ....
98.	20/100 20/50	20/150 20/70	20/20 w. +1.00s. $\odot$ +.25c. ax.90..... 20/20 w. +.75s.....	Same. Same.		Shawnee. ....
99.	20/30 20/30	20/100 20/100	20/20 w. +2.75s. $\odot$ +.62c. ax.90..... 20/20 w. +2.25s.....	+1.75 +1.50	Same.	Omaha ....
100.	20/30 20/25	20/40 20/25	20/20 w. +.75s..... 20/20 w. +.50s.....	Same. Same.		Shawnee....

When cycloplegic is not stated, homatropin hydrobromate was the one used.

#### DISCUSSION.

DR. JOSEPH A. WHITE, Richmond, Va.: Twenty-five or thirty years ago, it was rare for me to find among the negroes a refractive case that needed correction, but as their environment has changed, and education increased among them, these troubles have become more common, and we find now a great many negroes wearing glasses. We now often find myopia among them, which was rare twenty-five years ago. It is one of the blessings of education.

I congratulate Dr. Jones on such superior results in clearing up opacities of the cornea in trachoma, because I have never had the good fortune to get that kind of result. I have always been able to find with the use of a good light or the loupe some opacification, and I never get 20/20 or 20/15 vision in cases of this kind.

DR. WALTER L. PYLE, Philadelphia: The reported remarkable eyesight of the savage has no relation to the refractive condition of his eyes, and it is quite possible for him to be hyperopic and astigmatic and yet preserve extraordinary acuity of vision. Very recently a well-known English oculist, Mr. Carter, made an investigation of the reported visual feats of the Boer marksmen. A few weeks' study convinced him that the whole subject was one of visual association and intimate acquaintance with environment. Nearly all the Boer feats in marksmanship could easily be duplicated by the British soldiers as soon as they had become accustomed to the country,

the atmospheric conditions, the shadows, etc. Examination of the eyes of many of the Boer prisoners showed refractive conditions very much the same as those exhibited in the British recruits. In early experience with golf I often marveled at the unerring accuracy of the caddies in locating and finding golf-balls which seemed to me irretrievably lost. I examined the refraction of one of the most expert caddies that I have ever known and found not only that he had a substantial degree of ametropia, but that even with the optical correction I could obtain visual acuity no better than 6/9. He had simply learned by long years of experience to mark the course of the golf-ball and follow it in its flight. In this case the apparent extraordinary vision was nothing but a matter of long education and careful association of surrounding objects on the golf course. I am told that at the Carlisle Indian School there is an increase of refractive errors as the students advance in their studies. This was most likely due to the extra labor at close range producing asthenopia symptoms which lead to a careful examination of the refraction.

DR. A. L. DERDINGER, Chicago: Some years ago I gave a lecture before the Milwaukee Child Study Association of school teachers, on eyesight. In the discussion the principal of one of the schools said that if people could just live an outdoor life like the Indian, there would be no such thing as wearing spectacles. A year later I had an opportunity of visiting a town in Wisconsin where there was a reservation of



Indians and I thought I would put the matter to a practical test. I examined fifty Indians, ages from 15 to 45, both male and female. In some cases they accepted plus lenses. Homatropin was used on sixteen cases, ages 16 to 30, and in more than two-thirds of that number it had no impression whatever. Three of the number became very excited and examination was impossible. I was almost afraid for my life with one of them. In one-third of the cases I found that they would accept plus 0.50 D. and vision would be 20/20 with and 20/30 without. In about 20 per cent. there was from 0.50 to 3 D. hyperopia. Myopia was found in about one-tenth of the number; from minus 0.25 to 1 D. In this number I used atropin and found that most of the myopia disappeared under its use. After it had worn off the myopia was manifest again. In two cases mixed astigmatism under atropin was shown. All these cases were verified six months after this first examination, and again in twelve months, with some little changes. Those that were attending school had more hyperopia.

DR. F. B. TIFFANY, Kansas City: Twenty years ago I read a paper before the International Medical Congress at Washington on the subject of the errors of refraction as gathered from statistics of about two thousand schoolchildren examined at that time. Among those were several hundred Indians at Haskell Institute at Lawrence, Kansas. The examination of these Indians showed a very large percentage of hypermetropes. It was rather the exception to find an emmetrope. Very few were myopic. Many of them had disease of the conjunctiva and cornea, and many were suffering from trachoma. These Indians seemed to be of a scrofulous diathesis, probably the result of syphilization in the attempt at civilization. It was my custom, and is now, to use bichlorid, 1 to 500, after expression in trachoma.

DR. C. P. JONES, Newport News: I can not get anything like the same results in treating other races. The Russian Jew, for instance, does not respond to treatment nearly as well as the Indian. I have seen some whose eyes have been rolled a number of times, and the eyes are worse off than before. I have a number of colored patients, too, that do not respond to treatment. If you roll the lids of the Indian you can use bichlorid, 1 to 500. If he suffers any considerable pain use argyrol or blue stick and the opacities clear up wonderfully.

## A BETTER PROGNOSIS IN PENETRATING WOUNDS OF THE EYEBALL.\*

JOHN A. DONOVAN, M.D.  
BUTTE, MONT.

The title of this paper might well be "A Plea for the Injured Eye." Before this section a year ago a member said, in the course of some remarks, that he excluded all lacerated wounds and wounds of the ciliary body which everybody enucleated. With his extensive experience, this had a definite meaning in his own mind; to those less experienced it simply confirmed their already well-established ideas that all those eyes should be removed at once. At the same time Dr. A. E. Bulson<sup>1</sup> quoted a case in which, in his opinion, a probably useful eye was needlessly sacrificed by an ophthalmic surgeon without having given it the slightest possible chance to recover.

Important as it is that many eyes should be enucleated, and that done quickly, it does not obviate the fact that no eye should be enucleated till each side of its case has had a fair and impartial hearing.

In no other branch of ophthalmology is a practical knowledge so essential. In any other condition, there is time and opportunity for study, but in the case of

severe injuries the patient's future depends on immediate resolution. Shall we enucleate or not; operate or wait; remove foreign bodies now or later? Immediate decision on some point is imperative. There are two or three weeks in which you may safely wait; then, why this rush to enucleate?

For some years I have been carefully investigating every case seen in which an eye has been enucleated, and I am convinced, after making every allowance, that in at least one-half of these cases the eye was removed needlessly. In fact, I know of many very useful eyes that escaped because the patient refused enucleation. The most lamentable cases, as have on several occasions been emphasized before this Section,<sup>2</sup> are those eyes that have become lost or useless through meddling surgery. I have sometimes wondered whether if such interference had been avoided there would be so much sympathetic ophthalmia. Consider in animals the number of eyes lost by injury, and recall, if you can, the blind ones through sympathetic ophthalmia. Most severely injured eyes are enucleated within the first few days; in fact, the sight of a lacerated or punctured wound of the eyeball, and especially wounds of the ciliary body, immediately brings to the mind of the average operator the thought of the necessity of enucleation as the only method of treatment, as surely as a case of malaria would to his mind suggest quinin.

This paper will not deal with treatment, except in a very general way to elucidate its idea, and for the same reason classifications will be avoided. In fact, the more injuries I see the more convinced I become that there is, and can be, no definite rule of treatment that can be applied to every case. For a thorough consideration of this entire subject in a brief practical manner I would suggest a careful study of that most excellent work of Ramsay's on Eye Injuries as one of the works in the line of conservatism, which I believe will be advanced still further.

I recall two locomotive engineers, now working, with normal vision (with glasses), who had extensive wounds, extending through cornea, ciliary body and sclera, with prolapsed iris and some escape of vitreous. Another patient, with similar injury, including the anterior capsule of the lens, more than a year ago, has now an opacity of about two-thirds of the capsule only, but this is slowly extending; still he has useful vision and otherwise a perfect eyeball. A later operation will probably restore sight.

In cases of prolapsed iris, unless it is very easily replaced, I prefer to cut it off, and, if possibility of infection exists, I invariably cauterize the edge of the wound with the electric cautery or a probe heated by a spirit lamp. This, to many of you, will seem an unnecessary measure, but the results have been so uniformly good in so many cases that I believe it to be of a decided value.<sup>3</sup> Eserin, though universally advised, in my hands has proved useless.

In corneal and scleral wounds, a stitch is rarely necessary, though in scleral wounds the stitching of the conjunctiva to one side over the wound is often of value. Here, too, the cautery has a similar action, not only in producing a reaction which neutralizes or eliminates infection, but it forms an adhesive material, which seals the wound and hastens closure.

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Trans. Section on Ophthal., A. M. A., 1907, 362.

2. Trans. Section on Ophthal., A. M. A., 1907, 362; also *id.*, 1905, 83.

3. Am. Jour. Ophth., October, 1903.



A much clearer conception of my position may be obtained by reading the history of one case.

*History.*—Mr. I., as the result of carelessness in blasting, had his face, upper portion of body, hands and arms filled with fine rock. The eyelids were much swollen but I could see much fine rock imbedded in both eyes.

*Treatment.*—They were washed repeatedly, and atropin and dionin was used. In five days the swelling had somewhat subsided. Cocain was used, and I removed from each eye as much rock as could easily be done; this was repeated every few days till the eyes were clean. Of course, the patient remained in bed. Some days later the ophthalmoscope showed but a faint reflex in the right eye; none in the left. Right eye continued to clear; left cleared some. It showed a detached retina. After four months, O. D. vision, with a cylinder, was 20/30, but there was a piece of rock imbedded in the iris. No irritation. Three weeks later lens began to become opaque. Used atropin and dionin constantly. Notwithstanding persistent and constant coaxing on his part, operation was postponed six months more. When active changes subsided the piece of rock was removed with a piece of the iris and the lens was extracted. Operation done two years ago; vision, with glass, is now normal. If our teachings were followed—all foreign bodies removed immediately—this man would long since have been blind.

Copper, brass and iron should be removed as early as favorable opportunity will permit. Rock, glass and chemically inert matter at times seems to remain indefinitely, without reaction, but in every case must be carefully watched. Washing out the lens by opening its anterior capsule and introducing a syringe is the proper procedure when active symptoms do not soon subside, or at any time if a quiet eye becomes active and can not at once be controlled. In the majority of cases the foreign body will remain in the lens till all inflammation has subsided, when the lens can be removed with much less danger. Do not enucleate an eye, as I recently saw done by a well-known operator, because of a swollen lens.

In regard to magnet cases, which, unfortunately, in my experience, are the exception, extraction is so comparatively easy it should in every case be done at once. In these cases the eye should rarely be sacrificed. In one case, where I was obliged to make a cross-incision across the entire cornea and iris to extract a piece of steel imbedded in the posterior part of the eye, enucleation was refused. The patient was kept in bed, and now, after two years, he has a good, though blind, eyeball. In another case, a piece of steel entered the center of the cornea and partly passed through the eyeball. On removal it measured one-sixteenth less than one inch. Eye has light perception.

The use of saline solution, when required, should not be forgotten and usually the closed lids will hold it in.

Mr. J., aged 43. Extracted a dislocated cataract from bottom of a blind eye with Knapp's scoop. Lost three-fourths or more of vitreous. Filled eye with salt solution, injecting through the pupil. Result, normal eyeball.

In extracting foreign bodies from the eyeball, a T- or X-shaped incision is always preferable, and apparently closes just as readily as any other.

#### CONCLUSIONS.

1. Mild antiseptic cleansing — 1 to 5,000 mercuric iodid (preferable), 1 to 2,000 mercuric cyanid or 1 to 5,000 mercuric bichlorid or saturated boric acid. Argyrol in special cases.

2. Remove all magnetic foreign bodies at once; also any or all that can be removed easier and safer now than later. Those remaining to be removed from time

to time when the eye can most safely stand interference.

3. Enucleate at once only such eyes as have been totally destroyed. Even then it might often be better to wait till about the fourth day to avoid the possibility of any question arising later. Others should be cleaned, filled with salt solution if necessary, prolapsed iris replaced or cut off and got in the best possible condition.

4. Cauterize infected wounds; stitch when lids will not hold edges in apposition; use atropin and dionin, as indicated. Hot applications are always safe and usually preferable to cold.

5. Keep patient in bed at least a few days, longer if possible, remembering that detachment of retina may have occurred.

6. Never interfere with an eye until you feel reasonably certain you are now doing the best thing, and that this is the best time to do it; otherwise always wait.

After ten years of active practice, constantly dealing with these injuries in the mines, smelters, railroads and shops, by carrying out the above suggestions, I have yet to enucleate my first eye that was not destroyed at once, or did not contain a foreign body, and so far, fortunately, I have never seen a case suggesting sympathetic ophthalmia where this line of treatment has been followed from the time of injury.

#### DISCUSSION.

DR. S. L. LEDBETTER, Birmingham, Ala.: I have never seen a case of sympathetic ophthalmitis follow injuries of this kind; of course, however, in unmanageable cases the eyes are generally removed early. In a large percentage of cases of wounds made by pocket-knives, scissors, fragments of steel from a hammer or chisel, or by shot-grains, which do not involve the ciliary zone, the eyes may be saved, with vision ranging from perception of light all the way to normal. I recall one case in which a fragment of steel from a hammer entered the cornea near the scleral margin, passed entirely through the eye, and into the orbital tissue behind, with practically normal vision resulting. I have seen normal vision in an eye that had been punctured by scissors, outside the ciliary zone, sufficient to require a stitch.

On the other hand I have seen eyes destroyed by wounds apparently trifling. I have treated but three cases of sympathetic ophthalmitis; two of those occurred fifteen or eighteen years ago. One, which I did not see until the eyes were destroyed, was the result of an arrow-wound. The other came from an iridocyclitis following an iridectomy after needling operation for soft cataract. In the third case the patient, a young girl, was brought to me with a punctured wound at the sclero-corneal margin; the wound was about a week old when I saw it. There was a hernia of the iris which could not be reduced, and was interfering with healing. It was snipped off, the eye dressed, and the patient sent home with a letter of instruction to the family physician. About eighteen days later the patient was brought to me again with an iridocyclitis in the wounded eye, and a well-marked sympathetic ophthalmitis in the other; iris heavy and cloudy; cornea full of fine inflammatory points. The sympathizing eye grew worse rapidly, and looked as though it would be destroyed entirely; vision went down to 15/200, but at the last visit it had gone up to 15/30, with general condition very satisfactory. All of these cases have been in wounds involving the iris at the scleral margin. I treated a case recently which illustrates the soundness of Dr. Donovan's ideas about waiting, only the wait was longer, I am sure, than he would advise. The patient had been struck in the eye by a foreign body twenty-three years ago. The eye was quite sore for a while; then the wound healed, and there had been no further trouble until recently, when the eye became irritable and scratchy. Examination showed a tumor in the corneoscleral margin, and a foreign body im-



bedded in it. It was so firmly imbedded in the swollen tissues that an incision had to be made on either side before it could be released. The fragment was irregularly shaped, about one-eighth of an inch in diameter, and held firmly in a fibrous bed. It had evidently gone entirely through the cornea, as the tissues, until recently, had covered it over, and as soon as it became loosened there was free escape of aqueous. The eye was irritable for a few days, but healed satisfactorily and has given no trouble since.

I believe in conservative surgery in penetrating wounds of the eye, but I always feel a little shaky when treating one which involves the ciliary zone.

DR. J. L. THOMPSON, Indianapolis: I agree with Dr. Donovan in regard to waiting a reasonable time before the enucleation of an eye, but I advise against waiting too long, especially when the eye is blind, or when, though a little sight remains, the eye is practically lost, and to retain the wounded organ would subject the patient to a fearful risk as to the other eye. I have seen many sad cases in which I have strongly urged the removal of an eye, and have even told the patient that I would not again see him if he did not have it enucleated. Sometimes the patient has gone to others and eventually has lost his sight; he has begged me to wait until he could hear from a distant relative, but before he could receive the letter, or the relatives could arrive, the trouble has been started and the sight eventually lost in both eyes. Many times have I removed foreign bodies from the vitreous chamber and have been rejoiced because of the excellent vision which followed. Not only have some of these patients lost sight over ten years after the extraction of the metal, but a violent inflammation has been set up which necessitated subsequent enucleation. I have no doubt that if Dr. Donovan could again see, twenty years subsequently, all the patients whose eyes were saved, or seemed to be, he would find that some have become blind in the injured eye while a few have lost the sight of both. We are told that the prevention of sympathetic ophthalmia will eventually be accomplished by suitable treatment, but until we find the means of doing this let us not be led away by transient hypotheses.

DR. ROBERT L. RANDOLPH, Baltimore: I was surprised to hear Dr. Donovan's statement that at least half of the enucleations which he had seen were unnecessary, and that he once saw a well-known oculist remove an eye for a swollen lens. I recall five cases of penetrating wound of the ciliary region complicated with traumatic cataract in which the removal of the swollen lens restored vision in two cases, while in two cases light perception and an apparently safe eye free of irritation was obtained. In the fifth case enucleation was found necessary. This problem has always seemed to me a rather simple one, and I consider Dr. Donovan's experience almost unique. I can not agree with him that any parallel can be drawn from a consideration of the lower animals when speaking of the rarity of sympathetic ophthalmia. It is quite true that it is a rare disease, but it is rare because of the attitude of ophthalmologists the world over towards this disease, and because preventive enucleation is promptly resorted to. It may be that occasionally a harmless eye is removed, but for obvious reasons it is better to take no risks when confronted with the possibility of a disease whose exact nature is so obscure, and the end of which is usually blindness. I have never been able to find, after a careful search in veterinary journals and considerable experimental experience, any evidence to show that the lower animals have sympathetic ophthalmia. I made a statement to this effect some years ago. The recent investigations of Fuchs, E. V. L. Brown and Lentz strengthen me in this view and I am more than ever of the opinion that it is a disease which is peculiar to human beings and that the lower animals do not have sympathetic ophthalmia, just as they do not have either syphilis or smallpox.

DR. MELVILLE BLACK, Denver: I do not believe it is true of surgeons of experience that many eyes are being sacrificed without being given the benefit of the doubt. I take it as an ophthalmologic precept that an eye is not to be sacrificed unless it is hopelessly injured, or there is evidence that it is

unsafe to delay enucleation. I can not agree with Dr. Donovan as to the use of hot applications. Both theory and experience teach that ice applications by reducing the temperature control the infection until Nature's forces can take care of it.

DR. J. W. PARK, Harrisburg: I live near the Pennsylvania steel works and a number of other large iron works. We have at least three or four serious accidents every week. Two or three years ago I had a case of an incised knife wound of the ciliary region. Most of the vitreous escaped and enucleation was necessary. This occurred in the afternoon and I thought I could apply cold applications and defer enucleation at least for a few hours. To my surprise, inside of three hours the man complained that he could hardly see with the other eye. I carefully tested his vision and he only had 10/200. I had the case prepared for enucleation at once. He regained part of his vision. It shows the necessity, in wounds involving the ciliary region, of removing the eye promptly. I have also lately had a case in which there was a wound 10 m.m. long through the sclerotic with a large bead of vitreous protruding, which I excised. I put in two sterilized catgut sutures, the wound healed up promptly, and the man had 20/40 vision. It shows the difference in cases and the care that must be exercised, especially in injuries involving the ciliary region.

DR. R. H. T. MANX, Texarkana: In the two cases of large corneoscleral wounds with escaping vitreous I succeeded in suturing the sclera and saved each of the eyes. That has been several years ago and there has been no trouble in either eye since. A young man was brought to me with slight protrusion of the iris, with small corneoscleral wound; I clipped off the protruding iris and kept the patient under observation a week. The wound healed without any inflammation. At the end of a week this patient left me with perfect acuity of vision, 20/20. A few weeks later he was brought back to me with a sympathetic ophthalmia in his other eye, and in spite of all I could do the sympathizing eye was lost. It is difficult to know what to do with these cases.

DR. ALBERT E. BULSON, JR., Fort Wayne, Ind.: The questions to be decided are always, what is to be gained by treatment instead of enucleation, and what is the risk? I believe that we all recognize that an injury in the ciliary region is prone to produce sympathetic irritation and perhaps inflammation. I think that the experience of the majority of ophthalmologists will not bear out the statement of Dr. Donovan that sympathetic inflammation is rare. If there is an injury in the ciliary region, with prolapse of iris, injury of the lens, and perhaps loss of the vitreous, removal of the globe would seem to be indicated as the best and safest procedure, for other treatment would require protracted time, expense and suffering, with the ultimate result of saving little or no vision, and perhaps an irritable globe which later would require removal. But if any question arises as to whether the eyeball can be saved, either with or without sight, it is safe to delay enucleation for a week or ten days following the injury, as sympathetic inflammation has not been known to occur inside of two or three weeks following the injury, and before that time has elapsed the fate of the eye can usually be foretold. I am strongly of the opinion, however, that we are not warranted in taking too many chances, and enucleation of a badly injured eyeball, even with prospects of ultimately saving a little vision in it, is far preferable to blindness of the fellow eye through too much conservatism in an effort to avoid removal of the injured globe. I know of several cases of blindness by sympathetic inflammation following efforts to save badly injured eyeballs, and no doubt there are other members of this section who know of similar cases. In any event the patient should know the risk to be run as well as the possibilities in the way of saving eyeball and sight if an attempt is to be made to save a badly injured eyeball.

DR. J. A. DONOVAN, Butte, Mont.: Some one suggested the possibility of vision in the other eye becoming poor at once. I remember bandaging one eye; the next day the patient returned with the bandage off as he could not see with the other



eye. He said that the other eye had been good before, but on examination I found that he had an old optic atrophy which had not been suspected. Each one has discussed this subject from the standpoint of his own experience. All these cases must be treated individually. I said in opening my discussion that I was not discussing the indications for enucleation, but the indications for not enucleating. Within the past month's time I have had four patients, hurt in the same blast, from whom I removed three eyes; so you see I do not try to save all, but do not remove an eye that may be useful unless the indications for doing so are positive.

## Clinical Notes

### INFLUENCE OF NUTRITIVE ENEMATA ON GASTRIC SECRETION.

LOUIS A. LEVISON, M.D.

Attending Physician Lucas County Hospital.

TOLEDO, OHIO.

The experiments described below were carried out at the Lucas County Hospital on a young woman possessing an external gastric fistula. The gastrostomy was performed by Dr. J. H. Jacobson owing to an impassable esophageal stenosis following the ingestion of lye.

It was my endeavor to determine what effect the administration of nutritive enemata had on the secretion of gastric juice. Owing to the widespread use of nutri-

each tube is added a definite amount (2.0 c.c.) of the edestin solution and the whole allowed to digest at room temperature for one-half hour. At the end of this time strong ammonia is run down the side of each tube through a pipette so as to form a layer above. In cases in which digestion has been absent or incomplete a distinct white ring will be seen at the point of contact. Absence of this ring denotes complete digestion. The point of demarcation between the tube with a ring and the tube without is taken as the pepsin strength. Thus if in the series of the 1 to 100 dilution the tube with 0.5 c.c. has no ring, while the tube with 0.4 c.c. shows a ring, the result may be recorded thus:

$$\frac{2.0 \text{ (edestin used)} \times 100 \text{ (dilution)}}{0.5 \text{ (stomach contents)}} = 400$$

In the subject of these experiments the normal acid values and pepsin contents were determined after an Ewald breakfast. The free hydrochloric acid varied from 18 to 25 and the total acid from 30 to 50. The pepsin values were from 30 to 100, rather low amounts. The stomach contents were always removed by direct aspiration through the fistula and the amount removed was practically the entire amount secreted.

Ten determinations were made with enemata. The bowels were kept cleaned and a high enema was given through a soft rubber rectal tube. The enemata consisted of about a half-pint of milk, raw eggs and salt,

Experiment.	Enema.	Fasting stomach contents before enema.			Stomach contents one-half hour after enema.			Stomach contents one hour after enema.			Stomach contents two hours after enema.		
		Amount.	HCl.	Pepsin.	Amount.	HCl.	Pepsin.	Amount.	HCl.	Pepsin.	Amount.	HCl.	Pepsin.
1.	Eggs, milk, salt.....	18.0	12-18	80	24.0	24-40	200	5.0	20-50	500	15.0	10-40	200
2.	Eggs, milk, salt.....	22.5	25-40	80	32.0	32-48	31	7.5	36-52	50	10.0	0-10	125
3.	Eggs, milk, salt.....	10.0	6-20	50	18.0	*	31	13.0	15-30	50	5.0	4-18	25
4.	Eggs, milk, salt.....	17.0	12-22	80	40.0	48-60	310	35.0	18-24	31	12.0	16-22	31
5.	Peptonized milk, eggs, salt.....	15.5	15-24	31	32.0	55-70	125	20.0	22-28	800	3.0	18-32	50
6.	Peptonized milk, eggs, salt.....	8.0	8-16	50	26.0	30-58	50	18.0	16-36	40	6.0	12-26	44
7.	Milk, eggs, sugar, salt.....	12.0	4-12	50	38.0	46-66	80	16.0	12-30	80	8.0	12-45	50
8.	Milk, eggs, sugar, salt.....	19.0	22-30	80	44.0	36-52	200	23.5	20-28	200	11.0	11-26	200
9.	Eggs, milk, salt.....	6.0	12-20	50	35.0	25-32	50	10.0	36-46	25	7.0	8-14	64
10.	Eggs, milk, salt.....	11.0	10-18	31	17.0	36-40	400	12.0	16-28	31	12.5	14-22	50

\* Not taken.

tive enemata in many conditions, and especially in gastric ulcer, definite knowledge on this question is desirable. The practical application of the results lie in the administration of remedies to counteract any excessive or acid secretion which might possibly be produced subsequent to the enema.

The points determined in the experiments herein described were the total amount of secretion, the free and total acidity and the pepsin value. All acid determinations were by the method of Töpfer. For the pepsin determinations the edestin method was used as described by Fuld and Levison.<sup>1</sup>

#### METHOD EMPLOYED.

Briefly, this method is as follows: Edestin, a white albuminous powder derived from hempseed, is used in a solution of 1 to 1,000, using as a solvent a hydrochloric acid solution having a titration strength of 30. The filtered stomach contents are used in two dilutions 1 to 100 and 1 to 10. The test is carried out with a row of six or eight test tubes for each dilution. In the first tube is placed 1.0 c.c. of the diluted stomach contents, in the second 0.8 c.c., in the third 0.6 c.c., in the fourth 0.5 c.c., in the fifth 0.4 c.c., in the sixth 0.3 c.c., in the seventh 0.2 c.c., in the eighth 0.1 c.c. To

with at times sugar added. Occasionally the milk was peptonized. The time of administration was always in the morning, before the patient had taken food or drink.

#### TECHNIC.

Each experiment was performed as follows: The contents of the fasting stomach were removed, the enema administered and the gastric juice removed by direct aspiration at the end of one-half hour, one hour and two hours after the enema. The results are tabulated, each space showing the amount of secretion in cubic centimeters, the hydrochloric acid and the pepsin work.

It will be noted that quite constantly the secretion was fairly large after thirty minutes. The hydrochloric acid rose at this period to figures considerably higher than the strength of the fasting stomach contents removed prior to each enema. At the end of the one hour period the amount of secretion showed a diminution as compared to the one-half hour amounts, likewise the acidity. At the end of two hours the amount of secretion was small and the acidity low. The pepsin values on the whole were low and did not seem to be especially influenced by the enemata. As a rule, it required a low dilution, e. g., 1 to 10, to secure digestion, but occasionally there were sharp variations from this, difficult to explain.

The half-hour secretion corresponds closely to the psychic juice secreted in *scheinfütterung* experiments



and probably depends on the appetite of the patient. Whether there would be an increased secretion in a patient surfeited with food is questionable. Technical difficulties would well prevent the administration of enema to sleeping subjects as worked out by Pawloff in sleeping animals.

It would seem from these experiments that the administration of nutritive enemata does affect the gastric juice, in that the amount and acidity are increased.

237 Michigan Street.

## BIRTH OF UNDEVELOPED TWINS COMPLICATED BY HEART DISEASE.

J. C. JOSEPHSON, M.D.

BALTIMORE.

The following case is unique in my experience:

*History.*—Mrs. E. S., multipara, eight months pregnant, had for some time had troublesome cough, which I found to be due to a chronic endocarditis, not attended, however, with marked failure of compensation.

*Labor.*—The labor was slow and the pains ineffective. After the lapse of about two hours I ruptured the membrane, and two minutes later the child was born—a very small child, about the size of a six months fetus. Six minutes later the woman had a strong pain, and the placenta was born, together with a second infant in a closed amniotic sac, just as one occasionally sees in abortions of the second or third month. I hurriedly opened the sac and removed a live child a little smaller than the first one. Although the uterus contracted firmly and there was only the usual discharge of blood, the woman was attacked immediately on the birth of the second child and placenta with a distressing cough, dyspnea and a profuse discharge of frothy and bloody mucus—edema of the lungs, in short. In spite of all efforts, she died about three hours later. The babies survived a few days.

The sight of an infant almost at term moving in the amniotic sac was novel to me. The fate of the mother, too, impressed very vividly on me the danger of pregnancy in a woman with valvular lesions.

4 North Broadway.

## PILO-NIDAL SINUS.

CHARLES C. ALLISON, M.D.

OMAHA.

The pathology of pilo-nidal sinus has been fully described by Hodges.<sup>1</sup> When one of these hair-containing perineal sinuses is first seen an erroneous diagnosis of anorectal fistula is frequently made. The symptoms are the presence of one or more small indurated areas in the perineum, with a history of pain and intermittent discharge. Associated with the conditions there will be uniformly noted a small depression in the integument, designated by the French the posterior navel, located between the tip of the coccyx and the anus. This dimple in the integument permits of pilus engagement and burrowing, until an actual nest of hairs becomes lodged under the skin with subsequent infection and the development of a small abscess.

The conclusions might be reached that a cyst of embryonic origin had led to this condition—that certain buried epithelial cells, prenatal in origin, had remained latent, after the style of a dermoid, and finally developed its pilus appendage. This has been found to be

incorrect, as no true epithelial cells nor hair bulbs have been discovered in the contents.

Given, therefore, a small tegumentary depression, the history of pain and of the development of a small abscess, with an earlier history of nodules, or of discharge from the depression in the skin, in a person whose integument is well supplied with hair, the pilonidal cyst may be recognized. I have never found a case in which the burrowing has invaded the bowel, so that in my experience the condition is not fistulous in character.

To treat the condition successfully it is essential to search carefully, after wide exposure, for ramifications of the sinus and particularly for small hair nests, which may be lodged and temporarily latent at some distance from the main sinus. Following the excision of the sinus wall in all of its ramifications the wound may be closed for primary union and the period of convalescence much abbreviated.

## PRIMARY ERYSIPELAS OF THE PHARYNX.

WM. H. RENDLEMAN, M.D.

DAVENPORT, IOWA.

In view of the facts that probably not more than a dozen cases of primary erysipelas of the pharynx have been reported in this country, that it is probably much more frequent than is recognized, and that the cases reported have been almost universally fatal, the following report should be of interest:

*Patient.*—Miss M. N., aged 22, waitress, had previously had good health except for two attacks of facial erysipelas when 5 or 6 years old. I first saw her June 9, 1907. She complained of having had a slight sore throat for four or five days. The morning I saw her she had had a hard chill with headache and fever. Her breathing was at times difficult. There was considerable pain in throat, made worse by deglutition, and some swelling on left side of neck. She was a healthy-looking girl, fleshy, and well-nourished. The breathing was slightly obstructed, much worse at times. There was some hoarseness and she was very restless. Temperature, 103; pulse, 120. On the left side of the neck there was moderate swelling of the glands along the anterior border of the sternomastoid. There was no induration surrounding the glands; no fluctuation, no change in the skin. There was some tenderness on pressure and pain when the head was moved, but no spontaneous pain. Dr. J. V. Littig made the throat examination. The pharynx was dry, red, and there was little if any swelling. The tonsils were slightly enlarged, follicular; no exudates. The epiglottis was very large, globular in shape, grayish red, causing some obstruction to the glottis. The vocal cords were somewhat congested. The urine was negative. Leucocytes ranged from 18,000 to 25,000. Examination of the rest of the body was negative. A probable diagnosis of deep cellulitis of the neck, following a mild pharyngitis and tonsillitis was made. The patient gradually became worse, the breathing more obstructed.

*Course of Disease.*—The hoarseness increased, and the temperature ranged from 104 to 105, with very little remission. Cold was applied, calomel given and a mouth wash used. On the fourth day the temperature fell after a profuse sweat to 99, remaining so for about twenty-four hours, the throat symptoms and general condition were much better, the swelling and tenderness of the glands on the left side gone. On the fifth day the fever rose to 104, and the condition became worse again. The dyspnea was continuous, the throat findings the same as in the first examination. Swelling and tenderness of the glands on the right side along the sternomastoid now made an appearance. On the sixth day there was a small spot of redness on the right side at the angle of the jaw,

1. Boston Med. and Surg. Jour., 1880, p. 485.



with some swelling and tenderness of the skin. The next day the area of redness had raised edges, was hard, and advancing over the ear, face and forehead. It spread rapidly over the eyes and forehead to the opposite side of the face with formation of bullæ, giving a typical picture of erysipelas. The throat symptoms gradually abated, and the temperature fell by lysis to normal on the eleventh day, after what I considered the beginning of the erysipelas. Recovery was complete. Examination five months later was negative.

*Treatment.*—No special treatment was employed. Eliminate and palliative measures with local applications of cold were used. Tracheotomy and intubation sets were kept in readiness.

This condition has seldom been diagnosed before its appearance was manifest on the skin. In this case the diagnosis was not made until the sixth day. The fact that erysipelas infection often makes its entrance through abrasions of the nasal mucosa and its accessory sinuses would make us expect it more frequently in the pharynx and larynx. No doubt this condition is often unrecognized when present.

### AN INEXPENSIVE HOME-MADE MILK REFRIGERATOR.\*

ALFRED F. HESS, M.D.  
NEW YORK CITY.

Individuals and communities are at present much interested in the question of pure milk for the infants of the poor. A more rigid supervision is gradually being enforced over all those who handle milk—the farmer, the dairyman, the wholesaler, and the retailer. Although these efforts can not be too highly commended, too little stress has been laid on the importance of the care of the milk in the home of the consumer. No matter how carefully the milk has been obtained and guarded up to the time it is retailed, even if it is pasteurized or certified, it will be rendered unfit for food after standing in a room at summer heat for a few hours. That this is a real danger is known to all who have tended babies in the tenement houses in summer. Most of the people in poor circumstances have no ice or an insufficient supply, so that the milk is kept at a temperature of from 50 to 70 F.

For some months I have been endeavoring to devise a simple and inexpensive means for keeping milk in summer—one that will be within the reach of the mother in the tenement house. After considerable experimenting, I can recommend the following box for this purpose:

An ordinary packing case was obtained; it had been made for bottled water, and measured on the inside 13 by 18 inches and was 11½ inches in depth. Sufficient sawdust was placed in this box to make a substantial layer on the bottom. On this was set a tin can, tall enough to hold a quart bottle of milk and 8 inches in diameter, and around this was placed a cylinder of tin a little larger in diameter than the can. The cylinder was then surrounded by sawdust. The lid of the can was, of course, left free. The ice box was completed by nailing about 50 layers of newspaper to the lid of the case (Figs. 1 and 2). The total cost of such an apparatus is the cost of the tin can, which may be 25 or 50 cents, according to the quality. The box and sawdust can be obtained free from a grocer.

To test the value of the box, a quart of milk was placed in the can and surrounded by 6 or 7 pounds of ice; that is to say, less than 5 cents worth. The room temperature was 81 F. The efficacy of the refrigerator was demonstrated by the fact that twenty-four hours later the temperature of the water in the can was 33 F., the milk in the bottle 37 F., and that even after forty-five hours the temperature of the water had risen only to 50 F. and the milk to 52 F.

Numerous variations from this type of box were found to keep out the heat. A somewhat larger box was found more desirable. Excelsior may be substituted for sawdust. All that is necessary is that the can containing the ice be surrounded on all sides by a material which conducts heat poorly. Care should be taken that the can rests on sawdust and not directly on the wooden floor of the case. Should the case be rather shallow for

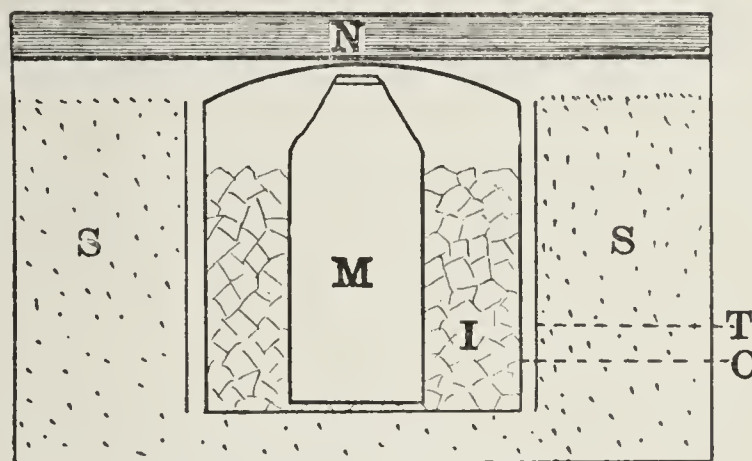


Fig. 1.—Vertical section of home-made milk refrigerator; S, sawdust, excelsior or other cheap non-conductor of heat; T, cylinder of tin or galvanized iron; C, can in which is placed the milk jar M, surrounded by broken ice, I; N, newspapers nailed to lid of case.

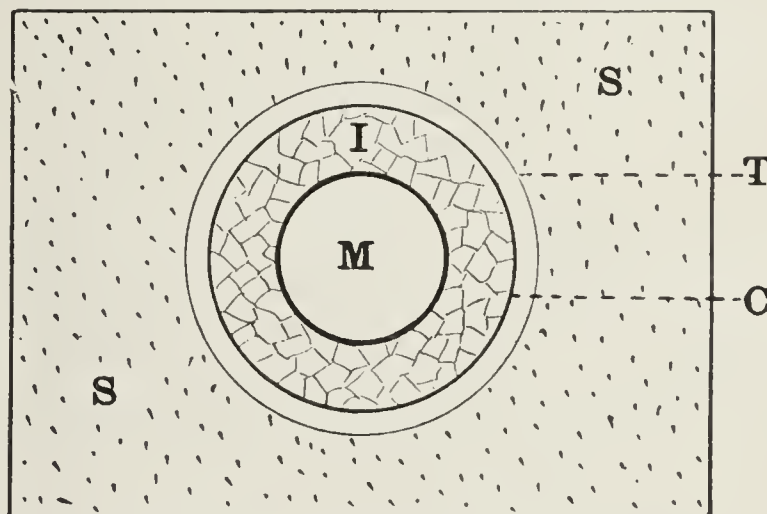


Fig. 2.—Horizontal section of home-made milk refrigerator; M, milk container; I, broken ice; C, can for holding ice; T, tin or galvanized iron cylinder to prevent sawdust, S, from falling into space when can is removed for purpose of emptying water.

the can, newspapers should be laid between the two. To prevent rusting a little soda may be placed in the can every day.

The apparatus described above will keep two quart bottles of milk, or four eight-ounce feeding bottles. The great majority of mothers in the tenements keep the day's supply of milk in a quart bottle and possess but two or three nursing bottles. As the ideal method is to have as many bottles as there are feedings in the course of the day, it was determined to make such minor modifications in the ice box as would allow of this procedure. To this end a tin can was obtained which was 8¾ inches in diameter and cost 30 cents. It was sufficiently large to admit a wire bottle holder

\* From the Research Laboratory, Board of Health, New York.



costing 45 cents and containing eight bottles. A case 18 inches square was employed to hold it. The ice was cracked into smaller pieces than before, 6 or 7 pounds being used, and the wire holder with its bottles (previously cooled in running water) was then set on the surface of the ice, or rather gently pressed down into the ice. Within one hour the temperature of the milk fell from 67 to 55 F. and continued to fall. After twenty-four hours it was at 39 F. and the water at 38 F.

The bacterial content of the milk was 7,000 bacteria to the c.c. when it was obtained. After twenty-four hours the milk in the refrigerator had risen to 42,000 to the c.c. A sample of the same milk left at a temperature of 73 F. showed 12,360,000 bacteria to the c.c.

Will mothers take the trouble to improvise ice boxes of this description? From an experience with mothers who consult the dispensaries I can say that they are anxious to do all in their power to protect their babies. Many would be quick to profit from the lesson if they saw a model of the ice box, were told how cheaply it can be constructed, how it will economize ice, and, finally, how its employment will aid in saving the baby from an attack of the much-dreaded summer complaint. The cost of such ice boxes can be considerably reduced if they are made in large quantities, so that with private and municipal cooperation they could be supplied for much less than the above figures.

Refrigerators of this design, one and one-half feet square by fourteen inches deep, have been distributed among the children's dispensaries, dairy kitchens, nurses' settlements and kindred organizations in New York City, where they are being demonstrated to mothers. It is hoped that this article may encourage other communities to similar action in aid of the poor babies.

## Therapeutics

### SALICYLIC ACID.

Salicylic acid may be classed as an antiseptic, as a bowel antiseptic and as a "specific" in acute inflammatory rheumatism or acute arthritis. As a local antiseptic it is valuable, but too expensive for extensive use. Its greatest value as a local antiseptic is in powders and ointments. Salicylic acid in some form represents, perhaps, the best bowel antiseptic that can be administered. For this purpose some combination of it or some salt of it which does not break up and become absorbed as quickly as does salicylic acid or sodium salicylate is better. The antiseptic action then extends farther down the small intestine.

While, on the one hand, it is absurd even to consider the possibility of rendering the intestinal canal aseptic, it is just as absurd to believe that some form of salicylic acid can not render the upper part of the intestine less likely to become the abode of bacteria, because such would not be the fact. In other words, it is certainly possible and is clinically easily demonstrated that fermentation and putrefaction in the intestine may be diminished by the administration of a salt of salicylic acid, as represented by salol or phenylis salicylas. It is well recognized that the normal hydrochloric acid of the stomach tends to inhibit fermentation, not only in the stomach, but in the upper part of the intestine. It is also recognized that, while normally bile is not a germicide, it does inhibit putrefaction in the intestine. Salicylic acid has the same power, and perhaps much more

in acting as a bowel antiseptic. It may be able not only to prevent typhoid and other germs, especially the colon bacillus, from migrating to the upper part of the intestine, but after absorption it may be able to prevent these germs from coming to the upper part of the intestine, gall bladder, etc., by the lymph and blood streams. At any rate, it is a common and every-day demonstration that diarrheal disturbances, not chronic, but due to an acute infection or to poisonous articles of food, are stopped and prevented by salicylic acid in the form of phenylis salicylas.

Another advantage of phenylis salicylas is that it does not disturb the stomach, not being broken up there into its component parts of phenol and salicylic acid, i. e., not under ordinary conditions, it being only so decomposed in alkaline media.

Salicylic acid seems to have some stimulant action on the liver, and it is thought that more and better bile is excreted under its action.

It is somewhat irritant to the mucous membranes, and for this reason may cause nausea or vomiting and a reflex urticaria.

The signs of its full action are known as "salicylism" and are not unlike "cinchonism," i. e., there is a fullness of the head, perhaps headache, ringing of the ears and sometimes dizziness. With ordinary doses of a pure, natural product, i. e., preparations made from plants and not synthetically, the heart and circulation are not disturbed, although the surface blood vessels are dilated, and thus there is caused an increased perspiration. If salicylic acid is too long administered, by its power to increase nitrogen waste, impaired nutrition occurs, and debility is caused. The patient also may become anemic, with a tendency to hemorrhages and bleeding from the mucous membranes. Therefore, salicylic acid in any form should not be administered in any dosage but minute for longer than two weeks at a time as the outside limit. Many a patient has had a protracted invalidism following a rheumatic fever because salicylates were administered too long.

The specific action of salicylates in acute inflammatory rheumatism may be due to its bowel antiseptic action, to its antiseptic action on the blood (and rheumatic fever is doubtless a germ disease, and perhaps caused by several germs), or to the increased elimination of waste products which it causes, or it may act for good in all these ways.

### INTERNAL ADMINISTRATION.

The ordinary dose of salicylic acid and of sodium salicylate are the same, as the former is less soluble than the latter, although the latter is naturally the weaker preparation. The adult dose in rheumatic fever is a gram (15 grains) of either of these preparations, administered four times in twenty-four hours, or for a few doses, perhaps, at four-hour intervals. Symptoms of "salicylism" occurring should cause the frequency or the size of the dose to be decreased. If an acute arthritis is not improved in four or five days, and certainly in a week, the salicylic acid should ordinarily be stopped. If there is improvement it may be continued in smaller doses, two or three times in twenty-four hours, for a longer period.

As the drug is very sweet, it is absurd in administering it to add any sweet preparation to disguise it, and generally the simplest method of administering a drug is the best. If the dose to be administered is very small, from 0.01 to 0.25 gram (from 2 to 4 grains)



it may occasionally be given in capsule form, but in that case it must be given after a meal, as when it begins to dissolve it may cause considerable gastric pain and even vomiting. This might be prevented by a combination with bismuth, as:

R.  
Sodii salicylatis, gm.  
Bismuthi subnitrat. aa. 5 | or aa. gr. lxxv  
M. et fac capsulas, 20.  
Sig.: One capsule, three times a day, after meals.

If given in liquid form, which is the best way, the following is not especially unpleasant:

R.  
Sodii salicylatis, gm. or c.c. 20 | or 3v  
Aquæ gaultheriæ 100 | fl3iv  
M. et sig.: A teaspoonful, with plenty of water, every six hours.

This could also be administered in some sparkling water.

A nascent sodium salicylate is sometimes deemed advisable as follows:

R.  
Acidi salicyli, gm.  
Sodii bicarbonatis, aa. 20 | or aa. 3v  
M. et fac chartulas, 20.  
Sig.: A powder, in a glass of water, every four hours. To drink as effervescence is about completed.

The oil of wintergreen may be used in place of the salicylic acid, if desired. The dose is 1 c.c., or 15 minims. It may be obtained in elastic capsules and thus administered, but should not be taken on an empty stomach. This preparation is sometimes rubbed into joints or applied on cotton to the affected parts.

Methylis salicylas, methyl salicylate, an artificial or synthetic oil of wintergreen, is also used externally as a liniment in rheumatic conditions.

Salol, or phenylis salicylas, ordinarily should not be used in rheumatic fever. It should also not be used when there is any kidney disturbance, as the phenol part of the preparation can cause kidney irritation. Salol should also rarely be used in very large doses, or too long, or in large doses too frequently, as it can cause the urine to become dark, indicating phenol poisoning, and may even cause hemoglobinuria and other symptoms of phenol poisoning. The best use of salol is as a bowel antiseptic, for which it may be given in doses of 0.50 gram ( $7\frac{1}{2}$  grains) repeated two or three times, or doses of 0.30 gram (5 grains) repeated a series of times, or a still smaller dose repeated a number of days.

Salol is also much used in specific urethritis, and is valuable in certain forms of cystitis and pyelitis. As a bowel antiseptic:

R.  
Phenylis salicylatis, gm. 2 | or 3ss  
Bismuthi subnitrat. 4 | 3i  
M. et fac chartulas, 4.  
Sig.: One powder every three hours.

Or,

R.  
Phenylis salicylatis, gm. 3 | or gr. xlv  
Bismuthi subnitrat. 10 | 3iiss  
M. et fac chartulas, 10.  
Sig.: One powder every two hours.

For gonorrhea:

R.  
Phenylis salicylatis, gm. 5 | or gr. lxxv  
Fac capsulas, 20.  
Sig.: One capsule every four hours.

In typhoid fever:

R.  
Phenylis salicylatis, gm. 4 | or 3i  
Fac capsulas, 20.  
Sig.: One capsule every six hours.

#### EXTERNAL USES.

The oil of wintergreen is often used externally in rheumatic conditions, but the methyl salicylate is probably as valuable and much cheaper. Either may be used undiluted, applied to the affected joint on absorbent cotton, or a little may be rubbed into the joint, or they may be diluted, as:

R.  
Methylis salicylatis, gm. or c.c. 10 | or fl5iiss  
Petrolati 25 | 3iv  
M. et sig.: Use externally as directed.

Or the methyl salicylate may be used as a liniment, as:

R.  
Methylis salicylatis, c.c. 50 | or  
Linimenti saponis, ad 100 | aa, fl3ii  
M. et sig.: Use externally as directed.

Or,  
Methylis salicylatis, 50 | or  
Linimenti chloroformi, ad 100 | aa, fl3ii  
M. et sig.: Use externally as directed.

Shoemaker suggests the following three prescriptions for profuse or fetid perspiration:

R.  
Acidi salicylici, gm. 10 | 3iiss  
Bismuthi subnitrat. 15 | or 3iv  
Zinci oleatis 10 | 3iiss  
M. et sig.: Use on the parts affected.

For eczema with fissures:

R.  
Acidi salicylici, gm. 3 | gr. xlv  
Petanaphtholis 50 | gr. vii  
Unguenti hydrargyri nitratis, 10 | or 3iiss  
Unguenti zinci oxidi 20 | 3v  
M. et sig.: Use externally as directed.

For dry eczematous patches on the skin:

R.  
Acidi salicylici, gm. 2 | 3ss  
Bismuthi subnitrat. 10 | or  
Amyli, aa. 10 | aa, 3iiss  
Adepis lanæ hydrosi 30 | 3i  
M. et sig.: Use externally as directed.

The following may be used for pruritus:

R.  
Zinci oxidi, gm. 5 | 3iiss  
Phenolis liquefacti 25 | or m. iv  
Acidi salicylici 50 | gr. vii  
Petrolati albi 30 | 3i  
M. et sig.: Use externally as directed.

The following may be used for profuse, oily secretion of the skin:

R.  
Acidi salicylici, gm. 1 | gr. xv  
Olei olivæ 15 | or fl3ss  
Adepis lanæ hydrosi 20 | 3v  
Aquæ rosæ 25 | fl3vi  
M. et sig.: Use externally as directed.

#### TOILET AMMONIA.

The *Druggists Circular* for March, 1908, suggests the following:

R.  
Aquæ ammoniæ, gm. or c.c. 250 | Oss  
Saponis mollis 120 | fl3iv  
Acidi oleici 10 | fl3iiss  
Olei myrciæ, or  
Olei rosmarini, aa. 1 | m. xv  
Olei lavandulæ 10 | fl3iiss  
Aquæ, q. s. ad 1000 | q. s. ad Oii  
M. et sig.: Ammonia water for toilet purposes.

"Dissolve the soap in 500 c.c. (a pint) of warm water, and when cool add the ammonia water and the oils; mix by agitation and add lastly the oleic acid and enough water to make 1,000 c.c. (a quart)."



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, JULY 25, 1908.

## MEDICAL WORK IN VIENNA.

For many years, perhaps forty, there have been in Vienna a considerable number of American physicians who are pursuing postgraduate work. This little colony is constantly changing in its make-up, a physician who stays for a longer term than two years being the exception; but even so, there is about it a uniformity of purpose and a permanency in certain customs and traditions that constitute an asset whose value has been clearly recognized and jealously guarded by the generations of physicians who have made Vienna their temporary home.

While social reasons and the desire to gain knowledge from informal or formal scientific converse had much to do with the formation of the Anglo-American Medical Association of Vienna, no doubt one object in view was the preservation of this knowledge of local conditions, and of the traditions and customs just referred to, and the desire to hand these down as an heritage to oncoming physicians to whom they would be of help. And we believe the association has done good service in these respects.

But from resolutions adopted for publication in THE JOURNAL, from protests we have received against the publication of these resolutions, and from correspondence that has come to hand, we judge there has been some little discussion, indeed some rather lively discussion, going on among the American physicians in Vienna as to the stand the local association should take in encouraging physicians of all kinds to make Vienna their medical Mecca. Some have felt that the association should advise all who have only a short time to spend in postgraduate work to keep away, not on the ground that they are directly harmful to those already in residence, but that they themselves will be saved keen disappointment, for, it is announced, Vienna is not a place for "short-timers," it is of benefit only to the "long-timer," i. e., the one who can stay for six months or more. Others, resenting the somewhat aristocratic tone of the long-time, oligarchical party, say Vienna is still a good place for the short-time man, that he may profit by even a brief stay, and they deprecate spreading the impression that the man of limited time or limited means is *persona non grata*; he is a welcome addition to the medical colony.

Physicians going abroad for study at a medical center such as Vienna may be divided into four groups. The first group includes those who merely pretend to study. The work that they talk about on their return home—and this talk is a part of their stock in trade—consists of attendance on a few clinics, the staining of a section or two in a pathologic laboratory, a trip through a ward with a docent and then a flitting in a few days to another city where they again take "special courses" under Professor A or Professor B, etc. These men are essentially shams. They never intend to do serious work, or at least their "work" can not be taken seriously.

The second group is made up of men, as a rule, somewhat mature in years and in experience, often men who are teaching in colleges or are connected with hospitals. They stay but a short time, they take a little course perhaps in some special field connected with medicine or surgery, but they spend their time chiefly in hearing different teachers and in studying methods. They talk much with students. They get hold of an assistant and over the coffee and cigars learn more as to the inside workings of the hospital, the merits of the different teachers and what new investigations are in progress by the advanced workers than the ordinary doctor can find out in a year. They leave quietly after a few weeks, refreshed from having breathed an invigorating atmosphere, filled with new ideas as to what is going on in the medical world, entertaining pretty definite notions as to certain things that they will imitate and certain other things they will avoid. They are not pretenders. They are honest men who profit by their brief stay. They know what they have come for and they get it.

In the third group are the young men only a few years from college or from hospital internships who have saved and planned for a good long stay and for solid work. They learn to know the ropes, they plan their work systematically, they keep the classes of the best teachers full of their own numbers, and the waiting list for these classes whose membership is limited is a long one. They "stand in" with everybody from the *Diener* to the *Geheimrath*. They have the inside track and, as a rule, they know it and sometimes show that they are aware that they have an advantage over the new comer who can stay but a short time. They get a very great deal from their work.

In the last group are the men who come with vague and often incorrect knowledge as to local conditions. They have heard of the remarkable opportunities offered the American student in Vienna, how courses are especially prepared for him, how the cost of living is a trifle and they have an ill-defined notion that by putting a few *hellers* into the slot there will be ground out in a few weeks a full-fledged training as a specialist in any one of several lines, or even in several lines at the same time. They are disappointed to find that a knowledge of German is an essential, hardly a course being given



in English; they are surprised to find that in Vienna good rooms and good board such as they would be content with in America cost much money; and that the instructor who designed the course for the American has one eye on the scientific feature of the course and the other on the American's pocketbook; they find the best courses full; they find the distinguished Professor X in his dotage, Professor Y unapproachable, Professor Z teaching crudely, and stubbornly refusing to come down to the level of our American practical physician. By the time they have become oriented and have learned all these things, the leave of absence and money are exhausted and they return sadder, wiser, disappointed, often disgruntled and unjustly critical.

We can not pretend to speak from this distance with an absolutely accurate knowledge of conditions as they are at this moment in Vienna. But it would seem to us that little good can come from making public announcement as to who ought and who ought not to go there for purposes of study. We are not discussing the question as to whether the cut and dried courses that are there given are the very best for the bright young American physician, and whether they will serve to arouse in him the eager desire to pursue his further study independently and in new fields. Medical study in Vienna is valuable and will be sought by many physicians. To advise the pretenders is useless and they may be ignored. The second group is made up of men who need no advice; they know their own wants and how to satisfy them. Those of the third group are deriving good from their work, are satisfied and understand conditions. Those of the last group might be spared some disappointment, perhaps, if warnings and advice were given. But it would not always be heeded. Many physicians get more out of the short courses than one would think. And we are not sure but what it is a valuable lesson for a physician to learn by experience, and not by reading about it, just how much there is to a European education, how it can not be obtained ready-made by the mere paying of money and the expenditure of a short time. The weaker man may become discouraged and give up, but the stronger man with the right stuff in him will realize as he would in no other way that a medical education in Europe, as in America, requires time, money and, above all, persistent, hard work, and will prepare to meet these requirements.

#### THE CANAL ZONE.

The Panama Canal Zone, up to recent years, has been one of the most unhealthy spots on the globe; some would hold that it has had no rival whatever in this gruesome distinction. It has been looked on as a vast graveyard for those not indigenous to the soil who have gone thither. Humboldt, a century ago, after a visit in which he studied the conditions carefully, expressed his belief that the Isthmus must always be cursed by yel-

low fever and malaria; the former he understood to be caused by the decaying mollusks and marine plants on the beach at low tide, the latter by foul emanations from overrank vegetation. Froude declared, in that superb English of which he was so great a master, that nowhere else on earth was there concentrated in a single space so much foul disease, such a noisome mass of moral and physical abomination. Peculation did much to bring about De Lessep's failure; and since his day charges of corruption against officials have by no means been lacking. But these deterrent factors have been negligible by comparison with the hopeless unhealthfulness of the Isthmus and the territories adjacent to it. It has been said that in the construction of the railroad from Colon to Panama every cross-tie represented the tomb of a workman who labored on it.

Since then has occurred the martyrdom of Lazear, and the self-abnegating work of Reed and Carroll, by which the health of these devoted men was fundamentally impaired and their lives greatly shortened. Their labors and those of Guiteras and Agramonte and the substantial work of Kean in Cuba have established the rôle of the *Stegomyia* as the intermediary in the transmission of yellow fever, and have made the epidemics of "Yellow Jack" which visited our seaboard cities mere hideous memories; no one now fears an invasion of this disease from the tropics.

Such conditions as those described prevailed in the Canal Zone prior to 1902; but Gorgas and his associates have made this region as infection-free as any in these United States, and much more salubrious than a great many. The last case of yellow fever occurred in Panama two years ago. During 1907 Gorgas did not have a case of bubonic plague to deal with; in that year he had but one death from smallpox; he had a 50 per cent. reduction from 1906 in malaria, dysentery, pneumonia and other grave diseases. His death rate in 1907 was more than 31 per cent. lower than that in 1906. In the territory over which he has jurisdiction (the Canal Zone and the cities of Panama and Colon), he has had in his keeping the health of many thousands of men from widely different parts of the earth, engaged in digging through the swamp lands of what has been probably the most deadly region in existence. He has had, during the month of March in 1907, 36,000 employés under observation, with 122 deaths. During the corresponding month of this year he has supervised 43,000 men, with only 45 deaths. The mortality rate of the Canal Zone for March, 1908, was less than that of the city of New York, which is among the lowest, urban or rural, in civilization. The completion of the Panama Canal within the next few years is a certainty. When finished let no one have to be reminded that this epochal work could never have been accomplished had not devoted and zealous men, from Finlay to Gorgas, so magnificently applied the discoveries and resources of medical science.



## THE BRAINS OF EMINENT MEN.

When looking up the literature on the higher functions of the brain one realizes how unfortunate it is that so much valuable material is not made use of. Men and women who have exhibited special aptitude and powers in various directions that must, according to all we can at present know or infer, have been correlated with special physical developments, probably macroscopic, of the cerebral cortex, are passing away daily. The knowledge which a study of their brains might impart is, however, through social prejudice, forever lost. One or two generalizations are fairly well established and these are almost *a priori* ones. One is that, generally speaking, the largest brains are those whose possessors are best endowed with intelligence. We may also assume it to be established that this is especially true of those who have been eminent for their achievements in the highest intellectual occupations which may be supposed to call into play and require the development of the most complex and highest mechanisms of the mind. We recognize, too, that a highly-convoluted human brain goes with a higher grade of intelligence as a rule. We know from pathologic observations the location of the special motor and speech centers, and the probable location, in a general way, of the higher intellectual faculties in the prefrontal region, and approximately the location of the sensory functions in other regions. But the physiology of the cerebral convolutions of man in any complete sense is as yet too little known, and especially do we lack the data needed to furnish any correct idea of the structural brain variations connected with the non-pathologic differences observed in different individuals of the same race.

How little has been done is illustrated by the complete series of references given by Dr. E. A. Spitzka in his recent work.<sup>1</sup> He was able to collect the data in regard to only 130 more or less prominent persons, and much of the material was exceedingly incomplete. His own contribution is, however, an important one; four at least of the men whose brains were studied by him had achieved a generally recognized eminence, a fifth would undoubtedly have done so if he had lived, and may, therefore, be put in the same class, while the sixth, if not exactly eminent, was a successful professional man of marked ability. While the material is not large, Spitzka has studied it thoroughly and brought out some striking and suggestive facts, which he briefly summarizes at the end of his pamphlet. One of these is the striking difference in the areas of the cuneus-precuneus regions of the brains of Dr. Leidy and Professor Cope. This difference, according to what we know of the higher functions of the human brain, corresponds to the

different characteristics of the two men, Leidy having been especially strong in his power of observation, while Cope, though not defective in observing faculty, was more prominently philosophic and constructive. Another striking result is that referring to the cerebro-cerebellar ratio which Spitzka finds a full unit higher in eminent men than in the average individual, and the preponderance in the former of the commissural fibers as shown by the relative size of the callosum. These facts are very strikingly illustrated by figures and diagrams made from comparison with other material as well as with the brains that form the chief subject of the monograph.

Dr. Spitzka's presentation is a notable one and should be carefully studied by those who have the opportunity of doing similar work. There is, for example, a vast field for such studies in our insane hospitals, which has been too much neglected. The material there is pathologic in a sense, but it will be not the less useful in supplementing observations of more physiologic subjects. Insanity is largely, and we might almost say chiefly, a degenerative and often even a teratologic condition. Usually even in cases in which a direct toxemia may be the exciting cause of the mental breakdown, it is only the more or less defective that succumb. Nowadays when it is the fashion to class the majority of cases under the heads of manic-depressive insanity and dementia præcox, the one an eminently degenerative type, the other a result of developmental stress, it would seem that this proposition could not be well disputed. Yet, up to the present the pathologists have too often given their main attention to histologic changes, neglecting the fact that it is the original functional disabilities as well as, or more than, the structural lesions that cause the symptoms of mental disease. A little more attention to convolutional topography and abnormalities will do no harm.

When there is a chance for the study of brains of individuals, exceptional for ability and achievements or otherwise remarkable, and there should be many such, it should be fully utilized for the general benefit of the race. The larger the selection the better, for otherwise our data may be confused by the frequent exceptions. There are probably many mute, inglorious Miltons and Cromwells as well as hypertrophied cortical organs and special abilities in otherwise only high-class imbecile brains. It is the amount of material that counts in correctly estimating the average. And who can tell how important a bearing a better knowledge in these points may have on practical eugenics?

## TUBERCLE BACILLI IN BUTTER.

Although we hear a good deal about the danger of tuberculosis from milk, there is, strangely enough, comparatively little said about the other uncooked dairy products, butter and cheese. Nevertheless, there is

1. "A Study of the Brains of Six Eminent Scientists and Scholars Belonging to the American Anthropometric Society, Together with a Description of the Skull of Professor E. D. Cope." By E. A. Spitzka, M.D., Professor of General Anatomy, Jefferson Medical College, Philadelphia. Pp. 308, with illustrations. Paper. Philadelphia: American Philosophical Society, 1907.



every reason to believe that butter, at least, is an important medium for the introduction of virulent bovine tubercle bacilli into the human alimentary tract. In one of the recently issued circulars of the Bureau of Animal Industry<sup>1</sup> there is a discussion of this topic, together with a report of experimental studies which indicate that butter is likely to be a dangerous article of food when made from the milk of tuberculous cows. Knowing that bacilli are heavier than water or milk, we naturally imagine that they settle to the bottom of the milk when the cream is separated by either centrifugation or natural gravity; but this, unfortunately, is not the case. In experiments made at the Bureau of Animal Industry Experiment Station it was found that tubercle bacilli present in milk soon collect in about equal proportions in the sediment and in the cream, no matter by which method the cream is separated, leaving the skim-milk relatively free from bacilli. Apparently many of the bacilli so adhere to the droplets of cream that they are carried upward in spite of their own higher specific gravity, with the result that the separated cream is much richer in tubercle bacilli than a corresponding quantity of the fresh milk from which it is obtained.

Cornet states that among 1,527 samples of milk examined in European countries 149, or 9.76 per cent., contained tubercle bacilli, while among 775 samples of butter 100, or 12.9 per cent., were positive. Although European cattle are probably more commonly tuberculous than those in America, still the disease is common enough here, and these figures indicate that the butter is if anything more likely to contain recognizable numbers of tubercle bacilli than is the milk.

Of particular importance is the long duration of vitality and virulence of tubercle bacilli in butter. While desiccation and exposure to sunlight destroy them rapidly, the fatty coating of the butter protects them from these deleterious agencies very effectively, while the amount of salt added to butter is not sufficient to kill them. The experiments of Schroeder and Cotton show that even after four and one-half months tubercle bacilli in butter kept at 60° F. were still virulent, apparently about as much so as at the beginning. It would seem probable, also, that butter would serve to protect the tubercle bacilli from the bactericidal action of the gastric juice during their passage through the stomach; and in the intestines, according to the results of certain experiments, tubercle bacilli are most readily absorbed when in an emulsion of fat. Consequently the taking of tubercle bacilli in butter would seem to possess peculiar dangers. As butter is commonly made at central stations from milk collected from numerous sources, the chances of its containing tubercle bacilli would seem to be particularly large, and its transportation to distant markets makes proper control difficult. It is especially

important, therefore, that this source of danger should be appreciated by those to whom the public health is entrusted, in order that proper steps for its control may be taken.

#### THE LOUISIANA SYSTEM OF HYGIENIC EDUCATION.

We commented last week<sup>1</sup> on Ditman's suggestion for the establishment of schools of sanitary science. The purpose of the proposed schools is not merely the education in state medicine of those seeking official sanitary appointments, but the adoption of measures looking toward education in sanitary principles, of the medical profession at large, educators, statesmen, etc., and through them of the general public; for on the intelligent cooperation of the public the ultimate success of sanitary legislation must largely depend. A useful auxiliary in this direction already exists in what has been called the "Louisiana System of Hygienic Education." The essential feature of this movement, according to Dr. J. F. Mayer,<sup>2</sup> consists in the holding of "Institutes of Hygiene," under the authority of the State Board of Health, before colleges, high schools, and special institutes. By this means not only is a considerable portion of the populace instructed in the nature and prophylaxis of transmissible diseases, but the movement is further extended by "the perfect correlation of the clergy of all denominations, educators, scientists, and the press, with the health service of the state in its educational efforts." The principle of this scheme has been adopted in France by ex-President Loubet, and in Greece by Dr. Cardamatis. Its benefits, moreover, have been extended, by arrangement between the respective health boards, into adjoining states. The further extension of this movement is much to be desired. It seems desirable, however, as Dr. Mayer suggests, that the educators should be independent officials not engaged also in field work; not only because there is work enough of that kind alone to engage their attention, but also because their teaching is apt to be looked on with suspicion by the ignorant if it emanates from one charged with executing the ordinances of the board.

#### THE MODERN SCHOOL FOR SCANDAL.

In another column<sup>3</sup> we publish a portion of a forcible editorial from the *Druggists Circular* entitled "Canned Mud," which shows up the discreditable methods used by the "interests" jeopardized by an efficient and effective administration of the Food and Drugs Act in circulating widely to the newspaper press "canned" editorial matter, artfully concocted to undermine, by its ceaseless "drip, drip," even the most firmly established reputation. For some time past and at present these underhand methods are being widely adopted for the purpose of undermining public confidence in Dr. Wiley, chief chemist of the United States Department of Agriculture. The unscrupulousness of these tactics is equalled only by their antiquity. They always have been

1. Tubercle Bacilli in Butter, E. C. Schroeder and W. E. Cotton, Circular 127, Bureau of Animal Industry, U. S. Department of Agriculture.

2. THE JOURNAL A. M. A., July 18, 1908, 227.  
3. Report of the Special Medical Inspector of the Louisiana State Board of Health, 1908, F. J. Mayer, M.D.  
4. Pharmacology, page 331.



used by unprincipled persons and presumably always will be. All that can be done is to caution those who may be misled to remember that one can not smoke out a wasps' nest without rousing much buzzing and some stinging.

#### THE BRITISH DAYLIGHT BILL.

A proposition is again before the British parliament to have the legal workday from April to October begin an hour and twenty minutes earlier than at present. This is to be accomplished by having all the clocks in the United Kingdom set forward eighty minutes. It is asserted that that amount of early daylight is now disused and the loss compensated for by extending the working hours into the evening, to the physical and financial detriment of the workers. There is much to be said in favor of the proposition; man is not naturally a nocturnal animal and sunlight is more healthful than artificial light, besides being less expensive. The old saw, "Early to bed and early to rise makes a man healthy," as well as some other things, was based on a good deal of human experience, and modern conditions have not yet altogether annulled its force. The advocates of the measure can find plenty of arguments and evidence in its favor, especially in Great Britain, where the tendency has been, at least among certain classes, to begin the day's activities later than is the custom in some other countries. In the adoption of standard time in this country some years ago no great difficulty was experienced in changing the clock time—to a less extent it is true—but British conservatism may make the proposed change a more difficult one to accomplish over there.

### Medical News

#### COLORADO.

**Personal.**—Drs. Robert Levy, Paul Gengenbach, and S. Simon are spending the summer in Germany.

**State Society Meeting.**—The thirty-eighth annual meeting of the Colorado State Medical Society will be held in Denver, September 8 to 10.

**Cerebrospinal Meningitis.**—About 200 cases of epidemic cerebrospinal meningitis have occurred at Louisville, Colo., with a mortality of 80 per cent.

**Postgraduate Instruction.**—The Denver and Gross College of Medicine announces that postgraduate courses of instruction will be given during July and August.

**New Jewish Hospital at Denver.**—The National Jewish Hospital for Consumptives at Denver has just opened a new building which doubles its former capacity. It now houses 130 patients. The opsonic treatment for tuberculosis will be extensively used under the direction of Dr. Saling Simon. Dr. R. Mogulesky, formerly of New York, is the new bacteriologist. He was appointed on the recommendation of Dr. Knopff. This hospital is non-sectarian and all patients are treated free.

#### DISTRICT OF COLUMBIA.

**Food Inspectors.**—Inspectors have been appointed by the health department for the purpose of examining into the cleanliness of all restaurants, lunch-rooms and soda fountains in accordance with a provision by the last congress relative to the sale of food in the District.

**Habit-Forming Drugs.**—The health officer has recommended that the commissioners urge on Congress the enactment of an amendment to the existing pharmacy law, making it unlawful for any person, other than a registered druggist, physician or veterinarian, to have in his possession certain habit-forming

drugs such as cocain, morphin, codein, heroin and chloral, so as to avoid the necessity of proving in each prosecution that such drugs are narcotics.

**Health Report.**—The mortality record for the week ended July 4, showed 136 deaths. This number is 21 less than occurred the previous week. Of these deaths 70 were white and 66 colored. The number of births reported during the week was 145, of which 95 were white and 50 colored. The contagious disease report showed no new diphtheria cases and a reduction of scarlet fever patients under treatment. Whooping cough cases were increased by one over the number recorded last week.

#### ILLINOIS.

**Care of the Baby.**—The State Board of Health has issued a thirty-two page circular on "The Care of the Baby," which is being distributed in all parts of the state. The circular, which deals with the feeding and care of infants, and selection and modification of cows' milk, gives clear, succinct directions to mothers as to the diet and care of the baby, the selection, modification and preparation of his food, and numerous health and comfort hints of especial value in the heated season. A chapter is also devoted to suggestions to dairymen and milk dealers, including the state laws regulating dairying.

#### Chicago.

**Contagious Diseases.**—A total of 240 cases of communicable diseases was reported to the department of health during the week ended July 18. To this list measles contributed 58 cases; scarlet fever, 55; diphtheria, 41; whooping cough and tuberculosis, each 31; typhoid fever, 17; chickenpox, 4; smallpox, 1, and minor diseases, 2.

**Mortality Report.**—During the week ended July 18 there were 536 deaths reported, equivalent to an annual death rate of 12.66 per 1,000. The deaths were 26 more than for the preceding week, and 36 more than for the corresponding week of 1907. Of the decedents 151 were infants under one year of age. Acute intestinal diseases headed the list of death causes with 96, followed by consumption with 66; heart disease with 53; violence (including suicide) with 43; nephritis with 33; cancer with 28, and pneumonia with 21. Sunstroke was responsible for 4 deaths, and tetanus caused one death.

**The Babies' Milk.**—The department of health has prepared for distribution and posting throughout the districts in which the highest infant death rate is reported the following card of warning, regarding the milk for babies:

LOOK TO YOUR BABY'S MILK!

*Feed No Dirty Milk to Your Babies.*

See to it that bottles or cans from which your supply is served are clean.

Milk as food for infants should be CLEAN as well as PURE. This means that you should note the condition of milk wagons and depots.

If for any reason you suspect your milk supply, bring sample in original package to the City Laboratory, Fourth Floor, 215 East Madison Street. If the store, dairy, wagon or can is dirty, write us.

DEPARTMENT OF HEALTH,  
City of Chicago.

**Saving Infant Lives.**—According to the figures compiled by the vital statistician of the Department of Health, more than 63,000 infant lives have been saved during the 12 years from 1895 to 1907 as compared with the previous 12 years, the death rate having been reduced from 6.13 to 3.18 per 1,000 of the total population. This decrease has been due principally to the education of mothers in the care of children, especially during hot weather. Notwithstanding this excellent showing, a campaign of education is still more urgently needed at present. Since 1900 there has been an enormous influx of immigration of the Slavic races, and among these people the infant and general mortality is very high. The city council has transferred \$10,000 from the contagious disease fund to a special fund for the care of children. On July 20 seventy-five physicians were assigned to duty in those parts of the city, in which, during 1907, the infant death rate exceeded 7 per 1,000. Thus the fifth district, along the west bank of the river, will have 34 medical inspectors, and the fifteenth district, which includes the mouth of the Calumet River, six inspectors. These medical officers will call at every home in the district and tell the parents what to feed their babies and how to care for them. Most of the inspectors selected speak languages other than English, and many are conversant with the Slavic tongues. With the support and help of the clergy, this work should accomplish notable results.

#### INDIANA.

**Protective Association Organized.**—The Physicians' and Surgeons' Protective Association of Indiana has been incorporated with a capital stock of \$10,000, although the association is



said not to be organized for profit. Its object is said to be to collect information regarding persons with whom practitioners have had dealings, this information to be furnished to physicians entering practice in any town or city in the state. The following officers were elected: President, Dr. John A. Garrettson, Indianapolis; vice-presidents, Drs. James Andrews, Frankfort, and Ellis A. Squier, Frankfort; secretary, Dr. M. Albertson Howard, Indianapolis, and registrar, Dr. Arthur J. Smith, Indianapolis.

**Personal.**—Dr. Harry D. Hayward, Crown Point, had his left eye removed in St. Luke's Hospital, Chicago, June 12, from injury resulting from being struck in the eye by a golf ball the day before.—Dr. John N. Hurty, secretary of the State Board of Health, has been appointed a director of the National Association for the Study and Prevention of Tuberculosis.—Dr. Mary Widdop, for several years superintendent of the nurses of Lafayette Soldiers' Home, has been made assistant physician in the State Hospital for the Insane, Longeliff, Logansport.—Dr. Francis A. Shoaf, Veedersburg, took poison by mistake, June 15, and was seriously ill for a time.—Dr. James G. Boswick, Mishawaka, has recovered from his recent attack of typhoid fever.—Dr. Harry H. Weist returned from Europe, June 19.—Dr. Golding Chittick, Frankfort, has been commissioned first lieutenant and assistant surgeon in the National Guard.—Dr. Wallace S. Grayston, Marion, was operated on for appendicitis in Chicago, June 2, and has made a good recovery.

### KENTUCKY.

#### Louisville.

**Milk Association Organized.**—The Babies' Milk Fund Association has just been organized. Dr. Henry E. Tuley is vice-president and Dr. Letchworth Smith, secretary-treasurer. Sufficient funds have been raised to open a milk dispensary by July 15, and additional subscriptions will be asked for from the general public shortly so the work of "Saving the Babies," which is the motto of the association, may be carried on for the remainder of the summer. The plan to be pursued is similar to that in vogue in Baltimore and other cities. Bottles of milk for the individual feedings of the baby will be distributed on the prescription of a physician and modified according to the individual needs of the baby, the parent paying ten cents a day for the twenty-four hour feeding.

**Medical Colleges Merge.**—The merger of the medical schools of the city now seems an assured fact. Representatives from the University of Louisville Medical Department, the Louisville and Hospital medical colleges and the Kentucky School of Medicine appeared before a meeting of the trustees of the State University of Kentucky, called by the governor in Lexington July 17, and formally made application for the merged colleges to be made the Medical Department of the State University. By a close vote it was decided to postpone action until the December meeting of the board, thus destroying any chance for the medical department of the State University to be started in time for the winter session. Appreciating the importance of the merger, a meeting was called of the members of the faculties of the three schools at the Seelbach Hotel July 18. A resolution was unanimously carried expressing the sentiment that all were in favor of a merger and that a committee composed of two members from each of the three faculties be elected by each faculty to carry out the details of the merger and to report back to the combined faculties as soon as possible. Meetings of the faculties were held at once, members of this committee were elected and the details of the merger will be carried out at once in time to get out a catalogue announcing a merger to the student body of the three schools. Drs. J. N. McCormack and William Bailey, members of the State Board of Health, were elected ex-officio members of the committee in whose hands the details of this merger will be placed. The committee is composed of the following: Drs. James M. Bodine and Joseph B. Marvin, University of Louisville; Drs. Clint W. Kelly and H. Horace Grant, Louisville and Hospital College of Medicine, and Drs. William H. Wathen and Martin F. Coomes, Kentucky School of Medicine.

### MARYLAND.

#### Baltimore.

**Deaths.**—During the week ended July 18, 60 children under 2 years old died in the city; 35 deaths occurred from consumption, and 2 from pneumonia.

**Contagious Diseases.**—A case of smallpox was discovered July 6. The patient was sent to the isolation hospital and the other inmates of the house were vaccinated and the premises

disinfected.—There were fifteen new cases of scarlet fever during the week ended July 11, with three deaths.

**Death from Hydrophobia.**—Henrietta Willis, who was bitten on the face by a rabid dog May 23, died from hydrophobia July 16. This is the second death from the disease out of 1,200 cases treated at the Pasteur Institute. The little patient had sixty injections of antirabic serum. There are now 50 cases under treatment in the institution.

**Personal.**—Dr. Daniel W. Cathell has recovered from his recent illness.—Dr. Fannie Hoopes has returned after taking a special course in Harvard University.—Dr. Harry Friedenwald has been elected president of the Federation of American Zionists.—Dr. John Randolph Winslow will attend the Pan-American Congress, to be held in Guatemala, August 5 to 10.

### MASSACHUSETTS.

**Diphtheria in Navy Yard.**—It is reported that there are several cases of diphtheria among the 200 prisoners at the navy yard in Boston.

**Board of School Physicians Re-elected.**—The Lawrence Board of Health has re-elected the present board of school physicians for the following year.

**Bequests.**—The will of the late Hannah M. Stowe of New Bedford provides that one-sixth of her estate, the value of which is not stated, be divided among the Women's Board of Missions of Boston, the Women's Home Missionary Society of Massachusetts, the Ladies' City Mission Society of New Bedford, and St. Luke's Hospital of the same city. According to the will of the late James D. Wright, Worcester, one-third of the residue of the estate, after payment of other bequests, is left to the Worcester Memorial Hospital.

#### Boston.

**Personal.**—Dr. H. A. Christian has been appointed Hersey Professor of the Theory and Practice of Physic at Harvard Medical School.—Dr. F. H. Thompson, Fitchburg, has been appointed medical examiner of the third district of Worcester County, vice Dr. Herbert H. Lyon, deceased.—Dr. Timothy Leary, Boston, has been appointed medical examiner of Suffolk County.—Dr. Edwin B. Harvey, Westboro, has been appointed a member of the Board of Registration in Medicine.—Dr. Charles W. Milliken, Barnstable, has been appointed medical examiner of the second Barnstable district, vice Dr. Faunce, deceased.—Dr. Joseph V. Meigs, Lowell, has been appointed medical examiner of the eighth Middlesex district, vice Dr. Irish, deceased.

**City Opens Camp for Consumptives.**—Fifty consumptives, too ill to be benefited by treatment at the Massachusetts General Hospital, will be transferred to the new home of the Boston Consumptives' Hospital on the Conness estate, Mattapan, and enter on treatment which it is hoped will culminate in their improvement to an extent that will warrant their entrance into the state institution. They will go to the camp in the morning and return to their homes at night. Those who are given preference in treatment are patients whose dependents, circumstances and health most demand it. The new hospital and its location are picturesque as well as healthful, and the patients will be able to remain throughout the winter. The building is 125 feet long and contains dining-room, kitchen, examination and rest rooms, and has a spacious veranda facing to the south. It is designed to accommodate 150 patients, and besides the medical staff there will be a sufficient number of servants in attendance.

### NEW YORK.

**School of Hygiene.**—Commissioner Eugene H. Porter of the state department of health has announced that negotiations have been completed with Cornell University for the establishment of a school of sanitary science and public hygiene. The course will be opened at Cornell October 8, with an address by President Schurman.

**Vital Statistics.**—The monthly bulletin of the New York state department of health gives the following interesting statement:

During the past month the total number of deaths reported in New York State was 12,681, being a decrease over the five years' average for the same month, which is 13,141. This gives a death rate of 17.8, the birth rate being 24.6 per 1,000. When we come to compare the city death and birth rates with those of the country we find in cities the death rate to be 18.7 and the birth rate 25.5; while in the rural districts the death rate is 16.6 and the birth rate 16.2. Both death rate and birth rate are higher in the city than in the country, but in the country the birth rate is lower than the death rate, the reverse being the case in the cities.

Cities which reported more deaths than births for this month are Albany, Troy, Auburn, Newburgh, Cohoes, Middletown and



Watervliet. The highest annual death rate is shown by Watervliet, which is 25.3 per 1,000. The lowest death rate is shown by Oneida, which is 6.8 per 1,000. Yonkers shows the highest birth rate (41.9), and the lowest birth rate is shown by Troy (10.2) and Albany (10.8).

#### New York City.

**Roof Playground.**—Plans have been filed with the building department providing a roof playground for the children in Roosevelt Hospital; it will be 29 by 39 feet, and fills a much-needed want.

**Guarding Against Lockjaw.**—Commissioner Darlington announced that a large supply of tetanus antitoxin had been distributed among the various boroughs and could be had by individuals and hospitals on request.

**Laying Off Health Inspectors.**—Dr. Bense, superintendent of the sanitary bureau of the health department, announced that 100 inspectors had been laid off July 1, in order that the appropriation for the bureau should not show a deficiency. Sixty were let go in Manhattan, 30 in Queens, 5 in the Bronx, and 5 in Richmond.

**To Keep Beaches Clean.**—The authorities of New York City have assured the Governor of New Jersey that they will cooperate with that state in endeavoring to prevent the pollution of the Jersey coast by the dumping of garbage and refuse at sea. The dumping of street sweeping and ashes at sea will be permanently discontinued. Garbage has been dumped at sea by private collectors and New York has promised to police the bay and stop this also.

**Infant Mortality Increasing.**—The conference on summer care of babies gives out the notice that for the six weeks, June 1 to July 11, there was an increase over 1907 of 50 per cent. for Manhattan and the Bronx, 80 per cent. for Brooklyn, 133 per cent. for Queens, 55 per cent. for Richmond, 66 per cent. for all boroughs, this referring to deaths from diarrheal diseases of infants under one year of age. For this six weeks' period diarrheal diseases caused 763 out of 1,924 deaths.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ending June 27, 406 cases of tuberculosis with 168 deaths, 286 cases of diphtheria with 28 deaths, 658 cases of measles with 19 deaths, 360 cases of scarlet fever with 30 deaths, 58 cases of typhoid with 7 deaths, 17 cases of whooping cough with 4 deaths, 3 cases of cerebrospinal meningitis with 2 deaths, and 116 cases of varicella, a total of 1,904 cases and 258 deaths.

**June Death Rate.**—The street cleaning commissioner has made a special effort to do thorough work and believes the reduced death rate for the month of June to be due to his efforts. The reports show that the death rate for June, 1907, was 17.89 per 1,000 in Manhattan, 18.01 for the Bronx, and 15.84 for Brooklyn; for 1908 the rate per 1,000 for Manhattan was 14.57, for Bronx 15.35, and for Brooklyn 14.18. The report for the first two weeks in July, however, showed an advance due to the hot weather.

**Summer Hospitals Overcrowded.**—The floating hospital of St. John's Guild has carried over 8,500 patients since it began its daily trips to Staten Island in June. This is nearly 3,000 more than for the same time last year. The Sea Side Hospital at New Dorp has also been overcrowded, having 1,000 patients, whereas it had only 500 at this time last season. The Health Home which the Children's Aid Society maintains at Coney Island has proved inadequate to the demands made on it. The normal capacity is 250 mothers and children. The hot spell has compelled the home to take in 350 more, thus overcrowding has made the need for financial aid very urgent.

**Personal.**—Dr. Albert Warren Ferris, president state commission in lunacy, and Dr. Adolph Meyer, director of the pathologic institute of New York state hospitals for the insane, sail this month for Europe.—Dr. Carl Beck has been decorated by the King of Sweden with the Order of the North Star.—On July 17 a reception was given Dr. and Mrs. Louis Livingston Seaman of New York City at the Peers' Club, Tokyo, under the auspices of Baron and Baroness Ozawa. During Dr. Seaman's stay in Japan he received three decorations: two given by the Japanese Red Cross Society and one, the "Rising Sun," conferred on him by the emperor.—Dr. William P. Spratling, superintendent of the Craig Colony for Epileptics, Sonyea, has been made professor of physiology and nervous diseases in the College of Physicians and Surgeons, Baltimore, vice Dr. George J. Preston, deceased.—Dr. and Mrs. M. Allen Starr and Dr. Charles L. Dana, New York City, sailed for Europe July 15.—Dr. Floyd M. Crandall, New York City, and his mother were injured on the White Mountain express, July 15.

**Rules for Fly Time.**—The Board of Health has been asked by the chairman of the water pollution committee, in furtherance of the campaign of the Merchants' Association against the house fly, to distribute among householders, hotel and restaurant proprietors, etc., cards on which appear the following rules and comments:

Keep the flies away from the sick, especially those ill with contagious diseases. Kill every fly that strays into the sick-room. His body is covered with disease germs.

Do not allow decaying material of any sort to accumulate on or near your premises.

All refuse which tends in any way to fermentation, such as bedding, straw, paper waste and vegetable matter should be disposed of or covered with lime or kerosene oil.

Keep all receptacles for garbage carefully covered and the cans cleaned or sprinkled with lime or oil.

Keep all stable manure in vault or pit screened or sprinkled with lime, kerosene or other cheap preparation.

See that your sewerage system is in good order; that it does not leak and is up to date and not exposed to flies.

Pour kerosene into the drains.

Cover food after a meal; burn or bury table refuse.

Screen all food exposed for sale.

Screen all windows and doors, especially the kitchen and dining room.

Burn pyrethrum powder in the house to kill the flies.

Don't forget that if you see flies their breeding place is in near-by filth. It may be behind the door, under the table or in the cuspidor. If there is no dirt and filth there will be no flies.

If there is a nuisance in the neighborhood write at once to the Health Department.

It is confidently believed that this method of following up the impression made last year, not only on the people of New York, but on those of all sections of the country, will result in a great diminution of the number of deaths from the hot-weather diseases now known to be transmitted by flies.

#### NORTH CAROLINA.

**Personal.**—Dr. Hubert A. Royster, Raleigh, has returned home after a trip in the west.—Dr. John C. Walton, formerly of Reidsville, has opened a sanatorium in Richmond, Va.

**Abattoir for Charlotte.**—Charlotte municipal health authorities are providing for the erection of a complete modern abattoir which will be operated under the supervision of the city's sanitary officers.

**New Hospital for Raleigh.**—The contract for the new Rex Hospital at Raleigh has been let. It will be of concrete, two stories high, with basement, and is to cost about \$47,960. It is hoped to have the building ready for occupancy in ten months.

**No Legal Prescriptions of Liquor.**—Durham, by a majority vote of its aldermen, has refused to renew the drug-store license to sell liquor on physicians' prescription, thus making it impossible, legally, to have a prescription containing liquor filled in the city.

**Personal.**—Dr. Laurie C. Keerans, Charlotte, announces that he will confine his practice to surgery and consultation work.—Dr. Hassell Brantley, Spring Hope, has moved to Norfolk, Va., and will confine his practice to diseases of the eye, ear, nose and throat.

**Licenses of Liquor-Selling Druggists Not to Be Renewed.**—The board of aldermen of Charlotte recently voted not to renew the license required of all druggists who sell whisky. According to the prescription files of the various drug stores of the city it appears that during the past year more than \$50,000 worth of alcoholics have been dispensed on physicians' prescriptions, and professional sentiment is opposing it. A recent meeting of the Mecklenburg County Medical Society adopted resolutions commending the action of the aldermen in refusing the Charlotte druggists whisky license.

#### PENNSYLVANIA.

**Typhoid at Hastings.**—Typhoid fever is reported to be epidemic at Hastings, Cambria County, where 21 new cases were reported last week.

**University Name Changed.**—By a decree handed down July 11, the name of the Western University of Pennsylvania was changed to the University of Pittsburg.

**Medical Day.**—Medical Day was celebrated at Willow Grove Park July 22, by the following county medical societies: Berks, Bucks, Chester, Delaware, Lehigh, Montgomery, Northampton and Philadelphia. Dinner was served at 4 p. m., and the following addresses were made: Address of welcome, Dr. J. C. Attix, Willow Grove park physician; "Philadelphia County Medical Society," Dr. Albert M. Eaton, president; "Fraternalism in Our Ranks," by Dr. William L. Estes, president of the Pennsylvania State Medical Society, and "The Importance of Medical Organization," by Dr. Joseph D. Bryant of New York City.



## Philadelphia.

**Public Baths.**—The report of the city public baths for the first five days of July shows that 525,000 persons visited the baths in different sections of the city. For the first week the total number of visits made aggregated 670,297.

**Improving Rush Hospital.**—Extensive changes are in progress at the Rush Hospital for Consumption and Allied Diseases. The new wing, which was started several months ago, will be completed by May next. This structure will be six stories high and will contain 40 individual rooms, which will increase the capacity of the hospital to 70 beds. The cost of this addition will be \$125,000.

**New Lutheran Hospital.**—Plans have been drawn and a charter has been secured for the erection of the Lutheran Hospital. The following officers have been elected: President, H. C. Miller; vice-president, C. F. Boyer; secretary, J. H. Brandt; treasurer, P. K. Erdman; attorney, James Strong; chairman on committee on site, ex-Judge Dimmer Beeber; chairman of committee on by-laws, Dr. Allen J. Smith.

**Cornerstone of New Hospital Laid.**—The cornerstone of the new building of the Frederick Douglass Memorial Hospital and Training School was laid with appropriate ceremonies June 28. Judge W. W. Wiltbank of the local court was the principal speaker. The new building is to be a four-story brick structure to cost \$75,000. The Frederick Douglass Hospital was founded in 1895 and it is the first hospital to be established in Pennsylvania by the colored race.

**Medical Inspectors' Work for Summer.**—It has been announced that the work of the medical inspectors during the summer months will be devoted to the fight the city and state are making against tuberculosis. The inspectors will visit the homes of persons affected with tuberculosis and impart such knowledge and information as will aid in lessening the danger of contagion and all sanitary laws will be rigidly enforced. The department will also institute means of relief for all sufferers.

**Protecting Meat Supply.**—The new regulation of the Board of Health prohibiting the slaughtering of cattle on Sundays and between the hours of 6 p. m. and 6 a. m. on other days, was placed in operation July 1. This action, it is thought, will safeguard the city's meat supply because of the inability of the health department to have Sunday and night inspection of the abattoirs made. The failure of any individual or firm to observe this regulation will be followed by revoking the license of the abattoir.

**Hospital Reports.**—The report of the Polyclinic Hospital for June shows that 138 patients were admitted to the wards and 1,823 new patients were treated in the dispensary. The total number of visits to the out-patient department was 7,954, and 92 patients were treated in the accident ward.—The report of the Howard Hospital for the month shows that 70 patients were admitted and that 820 new patients were in the dispensaries; 216 individuals were treated in the accident ward and 3,585 prescriptions were compounded.—The report of the Presbyterian Hospital for the same period shows that 203 patients were discharged and 168 new patients were admitted to the institution. The total number treated in the dispensary aggregated 1,882.

**Health Report.**—The total number of deaths reported for the week ending July 18 was 517, 264 males and 253 females, a decrease of 68 from the previous week and an increase of 86 over the corresponding week of last year. The principal causes of death were: Typhoid fever, 6; measles, 4; pertussis, 10; diphtheria, 3; consumption, 48; cancer, 19; diabetes, 5; apoplexy, 12; heart disease, 42; acute respiratory, 22; enteritis, 127; Bright's disease, 25; premature birth, 18; congenital debility, 14; old age, 7; suicides, 5; accidents, 18, and marasmus, 15.—There were 81 cases of contagious diseases reported, with 9 deaths, as compared with 119 cases and 14 deaths, reported in the preceding week.

**The Samuel Gross Prize.**—It is announced that essays will be received in competition for this prize until Jan. 1, 1910. The essays must be written by a single author, in the English language, and sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 219 South Thirteenth Street, Philadelphia." Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. The prize is awarded every five years to the writer of the best original essay, illustrative of some subject in surgical pathology or surgical practice, founded on original investigations, the candidates for the prize to be American citizens.

**Tuberculosis Crusade.**—According to a report of the bureau of health the decrease in mortality from tuberculosis for the six months of this present year was 0.078. The health department is pleased with the increase of 32 per cent. of cases reported, showing that the physicians are more interested in reporting tuberculosis cases. For the first six months of this year 3,038 cases were reported, with 2,090 deaths, as compared with 2,304 cases and 1,295 deaths reported in the previous year. A number of deaths from tuberculosis of the lungs per 1,000 population, for the decade ending 1890 was 2.95; for the decade ending 1900, 2.27, and for the period from 1900 to 1908, 2.14. The department shows that this state leads the United States in the percentage of tuberculosis. Since Jan. 1, 1903, this city has spent \$417,948.01.

**Charitable Bequests.**—By the will of the late William W. Farr, the following institutions have been benefited: The Women's Homeopathic Hospital, \$19,000; Presbyterian Home for Widows and Single Women, \$50,000; Presbyterian Orphanage, \$5,000; Pennsylvania Institution for the Blind, \$10,000; Pennsylvania Hospital, \$5,000; Jewish Hospital, \$5,000.—The will of the late William Pabst bequeathes \$5,000 to the German Hospital to endow the William Pabst free bed; \$300 to the Women's Homeopathic Hospital; \$500 to the Lutheran Orphanage; and \$300 to St. Luke's Orphan Asylum.—The will of the late Catharine O'Donnell bequeathes \$25 each to the following institutions: Little Sisters of the Poor, St. John's Orphan Asylum, St. Joseph's Home for Boys, and St. Vincent's Home.

**Personal.**—Dr. Charles W. Haughton was seriously injured while removing his automobile from a freight car in Atlantic City, July 16.—Dr. Charles B. Warder has been operated on in Stetson Hospital for appendicitis.—Drs. James Tyson, Joseph Farley, Ida E. Gaston, Irvin A. Friese, Milton B. Hartzell, Howard F. Hansell, J. William White, John G. Clark, F. F. Simpson, Paul J. Sartain, S. Lewis Ziegler, John B. Deaver, H. C. Welch and H. K. Hill have sailed for Europe.—Dr. Charles L. Leonard sailed July 16 for Europe, to attend the meeting of the British Medical Association at Sheffield and the International Congress of Electrology and Radiology in Amsterdam.—Dr. C. E. G. Shannon was operated on in Jefferson Hospital for appendicitis July 6.—Drs. John H. Jopson, George C. Stout, J. W. Robinson, W. C. Posey and C. A. Currie have sailed for Europe.—Dr. B. F. Stahl was operated on in St. Agnes Hospital for appendicitis July 4.—Dr. Walter Strong, Dr. Joseph S. Gibbs, Dr. G. Oram Ring and Dr. Jndson Daland have gone to Europe.—Dr. J. L. Borsch of Paris, France, is visiting this city.

## WISCONSIN.

**Left Large Estate.**—The late Dr. William H. Earles left an estate estimated to be worth half a million, and in his will requests his trustees so to arrange the estate as to continue the Milwaukee Medical College, if it be possible.

**Tuberculosis Dispensary Opened.**—The Free Medical Dispensary for tuberculous patients on the South Side was formally opened May 11. The officers of the Milwaukee Society for the Care of the Sick, under whose auspices it was arranged, acted as hostesses.

**Personal.**—Dr. Victor H. Bassett, Milwaukee, has been chosen city bacteriologist of Savannah, Ga.—Dr. Elmer L. S. Fletcher, Eau Claire, has moved to Eugene, Oregon.—Dr. Francis A. Stirn, Cudahy, was shot and seriously wounded by a patient, who was presumably insane, June 19.—Dr. U. O. B. Wingate has removed from Milwaukee to Fox Lake.

**Decision Against State Medical Board.**—After two days' argument by counsel, Judge Ludwig, Milwaukee, is reported to have directed a verdict in favor of the defendant in the case of the state against Dr. Henry A. Schmidt. The action was a test case brought by the State Board of Medical Examination to annul the certificates of about 120 practitioners who secured their certificates of registration without a medical college diploma, because they were practicing prior to the organization of the board in 1897. The attorney for the state contended that the defendant did not have legal qualifications at the time the certificate was granted, and that it was secured by misrepresentation and through error. The judge decided, however, that the action involved was simply on the construction of the law and that the defendant had legal qualifications to hold his certificate. The case will be appealed to the supreme court.

## WASHINGTON.

**Seattle Births and Deaths.**—During June there were 308 births against 255 in the same month of 1907. Deaths in June, 1908, numbered 153, compared to 143 in June, 1907.



**Sanitary Squad Busy.**—The health department has already destroyed by burning 300 buildings condemned as insanitary. About an equal number have been condemned and will be destroyed as fast as possible.

**Personal.**—Dr. L. H. Wood, Ellensburg, has fallen heir to a fortune of about \$300,000 by the death of an uncle in Germany.—Dr. Fonda Nadeau, Seattle, has gone to Europe for a six months' trip.—Dr. James Shannon has returned to Seattle from abroad.

**Northwest Organization.**—At the meeting of the Oregon State Medical Association recently held in Portland, Dr. R. C. Coffey suggested a Northwest organization of physicians, one strong medical college for the three states of Washington, Idaho and Oregon, and one medical journal. The association will meet next year at Seattle during the Alaska-Yukon-Pacific Exposition.

#### GENERAL.

**Confederate Medical Officers Meet.**—The eleventh annual convention of the Association of Medical Officers of the Army and Navy of the Confederacy was held in Birmingham, Ala., June 9-11. The following officers were elected: Dr. Jones C. Abernethy, Birmingham, Ala.; Drs. William F. Beard, Shelbyville, Ky.; Edwin D. N. Newton, Athens, Ga.; George M. Burgett, Lenoir City, Tenn., and William H. Barnes, Homewood, Miss., vice-presidents, and Dr. A. A. Lyon, Nashville, Tenn., secretary.

**Health of the Philippines for the First Quarter of 1908.**—The official report of the Bureau of Health for the first quarter of 1908 states that a considerable increase in the mortality is shown as compared with the same period in 1907. This is due to the presence of cholera and smallpox. Deaths from disease occurred as follows: Typhoid, 30; smallpox, 11; cholera, 156; dysentery, 85; beriberi, 155; pulmonary tuberculosis, 272; general tuberculosis, 15; meningitis, 160; convulsions, 531; tetanus, 43; acute bronchitis, 217; chronic bronchitis, 124; bronchopneumonia, 23; chronic diarrhea, 34; diarrhea and enteritis (in patients over 2 years), 57; infantile debility, 157.

**Far Eastern Association of Tropical Medicine Formed.**—The fifth annual meeting of the Philippine Islands Medical Association was held in Manila, February 26-29. Eleven delegates were present from far eastern countries and formed the Far Eastern Association of Tropical Medicine. This association is to meet biennially in one of the countries entering into the agreement, the first meeting to be held in Manila in 1910. The association has for its object the closer union of medical men and the advancement of the medical profession in far eastern countries, and the gradual dissemination of hygienic knowledge among the native peoples. The officers elected were: President, Dr. Paul C. Freer, Manila; Secretary-Treasurer, Dr. Francis Clark, Hong Kong.

**Effects of the Opium Law.**—Dr. Victor C. Heiser, Director of Health for the Philippines, states in his official report that on the prohibition of the use of opium becoming absolute in the island except for medical and scientific purposes, the number of habitués seeking treatment has enormously increased. The care of these unfortunates has thrown much additional work on the Board of Health. Several wards of the insane department at San Lazaro Hospital were set aside for them and Dr. Heiser states that though unlimited patience is required at first they soon become satisfied with their surroundings, and that the majority really desire to be cured. Arrangements are now being made with the provincial board of Cebu for the use of part of the provincial carcel as a hospital for the use of opium habitués and as soon as this is accomplished facilities will be available for such treatment at Manila, Cebu or Iloilo. Free transportation is provided to and from the patients' homes.

**Pan-American Congress.**—The Fifth Pan-American Medical Congress will be opened in a formal way by the president of the Republic of Guatemala on the evening of August 5, at which session the official representatives of the country and those of the other American republics will be present. The papers are principally on questions of general and tropical medicine, hygiene and sanitation, both of civil and military character, and general surgery, the consideration of the different remedial agents used in southern countries, and papers on the different specialties. There will probably be a section in medicine, including general, internal and tropical diseases, with perhaps children's diseases, nervous and mental diseases and therapeutics; a surgical section, including general and abdominal surgery, gynecology, anatomy and obstetrics; a section on eye, ear, nose and throat diseases; a section on hygiene,

demography, military sanitation and epidemiology; and other sections, as the general committee sees fit. It is said that the boats of the United Fruit Company, leaving New Orleans, are very commodious and comfortable; that the new railroad from Porto Barrios on the gulf to the capital of Guatemala is an excellent one; that the time chosen for the congress is the period known as the "cunienla," when it is warm but not raining. Guatemala City is situated on a plateau one mile above the sea level, and is said to be cooler than our middle western states in summer.

#### FOREIGN.

**Italian Medical Senators.**—Among the recently elected senators in Italy are five well-known physicians connected with various universities: G. B. Grassi, professor of comparative anatomy at Rome, the well-known authority on malaria; A. Carle, professor of surgery at Turin; P. Foa, professor of pathologic anatomy at Turin; G. D. Novara, professor of surgery at Genoa, and G. Paladino, professor of physiology at Naples.

**Medical Historical Exhibition at Stockholm.**—The Swedish Medical Association is to celebrate its centennial next October, at Stockholm. A special committee is making great efforts to have a notable collection of historical medical portraits, medals, printed and manuscript works and an antique apothecary shop as features of the celebration. The committee includes some of the editors of *Hygiea*, the official organ of the Swedish Medical Association, which issues an appeal for all to bring forth their historical relics, etc.

**Memorial to Botkin.**—A life-size statue of S. P. Botkin, 1832-1889, was unveiled in the grounds of the Military Medical Academy at St. Petersburg on the eighteenth anniversary of his death, May 25. In the memorial address Sirotinin stated that of the seventy pupils who worked under Botkin's direction more than half have become professors at various universities. Botkin founded in 1869 and maintained the Russian *Archives for Internal Medicine*, and in 1880 founded the *Weekly Clinical Gazette*, better known as *Botkin's Gazette*, which became very popular.

**The Koch Endowment.**—Sums have been received to date amounting to a total of \$225,000, and the personnel of the board of eleven managers has been officially announced at Berlin. The aim of the foundation is to supply funds to be applied in the crusade against tuberculosis as R. Koch may direct. A number of German cities have appropriated sums ranging from \$100 to \$2,000 to add to the fund, and local medical societies and private individuals of all classes are also contributing. A gift of \$5,000 or more entitles the donor to special privileges, and the sum is called by his name as a special fund.

**Awards for Science.**—The Prussian Academy of Sciences has recently appropriated nearly \$10,000 for scientific purposes. Among the beneficiaries is M. Rothmann, Berlin, who was given \$125 to further his research on the functions of the hemispheres of the brain. W. A. Nagel, Berlin, was given \$250 to further his research on acoustic and phonetic phenomena; A. Lohmann, Marburg, \$250 to aid his research on the ear. The central committee working on the international nomenclature for the central nervous system was also given \$250, and \$350 was applied for the purchase of the radium left by the late Prof. O. Lassar.

**Death of Medical Missionary.**—The death is reported from Umbundu, Angola, Africa, of the Rev. William Fay, B.A., B.D., who, while not holding a medical degree, had, nevertheless, like so many other missionaries, a large practice among both whites and blacks. The difference between Mr. Fay and many other non-medical missionaries, according to a correspondent of the *Journal of Tropical Medicine*, is that he practiced medicine scientifically. From the same source we learn that Mr. Fay spent three months of his last furlough but one at the London School of Tropical Medicine, and that it was he who confirmed the finding of human trypanosomiasis in the Benguela hinterland.

#### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, July 11, 1908.

#### The Daylight Saving Bill.

When Mr. Robert Pearce's "daylight saving bill" was brought into parliament it was generally regarded as a joke. But since then many people have been converted to the idea and the select committee of the house of commons has now issued a remarkable report in favor of it. Instead, however,



of advancing the clock 80 minutes by an alteration of 20 minutes on each Sunday in April with a corresponding retrogression in September, the committee proposes an advance of the clock by one hour at 2 a. m. on the third Sunday in April, with a corresponding retrogression in September. For all scientific purposes, such as astronomy and navigation, Greenwich mean time will be used as at present. By this plan a saving of 153 hours of daylight will be effected as against 210 hours by Mr. Pearce's bill, but the plan has the advantage of greater simplicity. The committee has found that the following benefits would be gained: 1. The usual hours of work and leisure would be shifted nearer to sunrise. 2. The greater use of daylight for recreative purposes would be promoted. 3. The use of saloons would be lessened. 4. The training of the territorial army would be facilitated. 5. The physique, general health and welfare of all classes of the community would be promoted. 6. The commercial, industrial and domestic expenditure on artificial light would be reduced.

#### Poisoning by Anilin Oil.

A remarkable case of poisoning by anilin oil is reported from Manchester. A workman splashed a quantity of the oil over his clothes while opening a cask, and went on working without changing. The oil was absorbed by his body, he developed severe symptoms of anilin poisoning and died in a short time.

#### Prosecution of a Quack.

The activity of the authorities in the prosecution of quacks continues. The latest example is furnished by a man named Napoleon Hirschfeld, who was making \$7,000 a year by sending bottles of medicine all over the country. He was charged at Brighton with obtaining \$13 by false pretenses from a man. According to the evidence of the chief constable, he took rooms at a house and advertised in the papers as follows: "Rheumatism of all kinds and rheumatoid arthritis cured. A lady knows of a wonderful treatment which has cured when all else failed. Sufferers may receive particulars by sending stamped addressed envelope to Mrs. Clarke, Teignmouth." Letters received by this person were forwarded to the prisoner, who wrote to the applicants stating that their cases had been recommended to him and asking particulars as to length of suffering, whether joints were swollen, etc. When answers were received he asked for payment and directed his clerk to make up a "treatment" and send it to the applicants. Almost invariably the sufferers wrote that they were not much, if any, better. Additional treatment was sent as long as the price charged was forwarded, but when money was not forthcoming the prisoner threatened legal proceedings. The prisoner's clerk said that he was ordered to make the preparations by filling up a little glass with turpentine and then coloring it red, after which cayenne pepper was added. When complaints were made that the preparations caused blisters the cayenne was omitted. On being arrested the prisoner said that he did not know that he was doing wrong. He had been curing people for twenty years of rheumatism and had cured himself. The chief constable said that his books showed a profit of \$7,000 a year. He was remanded on bail.

#### BERLIN LETTER.

(From Our Regular Correspondent.)

BERLIN, June 24, 1908.

#### The Success of Preventive Medicine.

However unsatisfactory the results of the specific treatment of infectious diseases may be, the morbidity and mortality of these diseases taken as a whole show almost uniformly a gratifying reduction. Especially for the acute infections this progress depends on the improvement in diagnosis and hygiene. This appears very plainly in the fight against typhoid fever in western Germany. In this region there existed for many years a high rate of sickness and deaths from this disease, and all attempts to lower it were without success, until it was determined to investigate, according to a carefully worked out and systematic plan, the individual disease foci of typhoid and the method of its spread. In carrying out this plan Robert Koch cooperated in a prominent way and, as in most cases, he succeeded in achieving results. By following every case of typhoid to its original source it was possible to eliminate the focus of the disease. Among these foci a great rôle is played by the so-called bacilli carriers, that is, individuals who, having experienced an attack of typhoid fever, still harbor in their intestinal canal typhoid bacilli and eliminate them in the stools. These persons are regarded as healthy, but are always in a position to convey the disease in a greater or less degree to other people by the germs which are excreted and which, by uncleanliness, contaminate drinking water, milk, etc.

#### The Campaign Against Tuberculosis.

A reduction of morbidity and mortality has been shown not only for acute infections, but also for the chronic. How greatly the mortality from tuberculosis has been reduced is strikingly shown in an address recently delivered before the Berlin Medical Society by B. Fränkel, a most careful investigator in this field. In 1886, 88,283 persons died of tuberculosis in Prussia; in 1906 only 64,459, that is, 17.26 per 10,000 inhabitants, instead of 31.14 in the year 1886. In 20 years the mortality from tuberculosis has undergone a reduction in Prussia of 13.88 per 10,000. As Fränkel points out, this remarkable reduction of the tuberculosis death rate coincides very closely in time with the discovery of the tubercle bacillus (1882), and with the introduction of the social legislation which was referred to in a former letter. Fränkel is of the opinion that industrial insurance has had a good influence in a social as well as in a therapeutic way, while the discovery of the exciting cause of the disease has made it possible to begin the fight against the disease at an earlier stage. Fränkel attributes special importance in the campaign against tuberculosis to the sanatoria which have become extraordinarily prevalent in Germany. According to the last business report of the German central committee for the campaign against tuberculosis, there are in Germany at present 99 popular sanatoria for adults affected with disease of the lungs. These have 10,539 beds, 6,500 for men and 4,039 for women; in addition there are 36 private sanatoria with 2,175 beds, so that in all, 12,714 beds for adult tuberculosis patients are available. For children with pronounced tuberculosis there are 18 sanatoria with 875 beds; besides there are 73 institutions, with 6,348 beds, in which are received only "serofulous" children and those who are threatened with tuberculosis.

According to the business report of the German central committee, 31,022 insured persons were treated in the sanatoria during a total of 2,312,850 days of care, at a cost of 11,483,033 marks (\$2,755,928). On an average, each person treated received 75 days of care at a cost of 370.16 marks (\$88.84) or 4.96 marks (\$1.19) per person for each day of care.

There is still some discussion among practicing physicians regarding the value of the popular sanatoria for the fight against tuberculosis, and there are not a few of the profession who are very skeptical, while others hold a more favorable opinion regarding the results of sanatorium treatment, but regard the cost as relatively too high. A conclusive judgment respecting this important question can be reached only after some time. Meanwhile it is worthy of note that, according to a statistical report from the imperial insurance office, of the persons treated for tuberculosis in 1902 and controlled by investigation five years later, the successful result established at the time of discharge was still present in 42 per cent. of the cases, and in 40 per cent. of the men alone; 20 per cent. of the total were invalid or dead.

Aside from the actual tuberculosis sanatoria, the so-called forest recreation stations (*Wald-Erholungsstätten*) are effective in the cure of tuberculosis and the fight against the disease. Of these there are about 80 in which those only slightly affected or convalescent pass the day and return to their homes at night. Besides these, there are in Germany at present 182 places for the information and care of tuberculous patients (*Auskunfts- und Fürsorge-Stellen für Tuberkulöse*) equivalent to tuberculosis dispensaries in which the patients and their families are advised and treated as ambulatory patients and by which the condition of their dwellings and their nutrition are kept under constant supervision, and similar philanthropic measures are carried out.

Of late forest schools for children have been established, in which the instruction is given in the woods, and the sick children have the opportunity during their schooling of being placed in the best of air. There are three such schools at present. Quite recently the attempt has been made to include lupus in the campaign against tuberculosis and under theegis of Althoff, the former "ministerial director," who in this, as in so many other directions, has been a pioneer, a commission for the campaign against lupus has been established by the German central committee, and several eminent experts have been appointed.

#### The Virchow Monument.

The tragico-comic incident of the Virchow monument seems to have entered on a new phase. According to a newspaper report, at the last meeting of the monument committee, the mayor proposed to separate the allegorical group from the monument and install the group in some park. The sculptor is to be required to make another monument which shall consist of a statue of Virchow himself. In this way, at any rate, Virchow will receive his monument at last.



## Pharmacology

### THE BROADER AIMS OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

TORALD SOLLMANN, M.D.

Member of the Council, Professor of Pharmacology and Materia Medica at the Medical Department of Western Reserve University,  
CLEVELAND, OHIO.

(Continued from page 237.)

#### XVIII. PROTECTION AGAINST SUBSTITUTION.

Frequently—all too frequently—we are treated to the announcement that some druggist has been detected in the act of substitution; sometimes the entire pharmaceutical profession of a large city is thus arraigned. Manufacturers who demand extravagant prices for their products are especially loud in their denunciations, and adopt all sorts of devices for their "protection."

Naturally, these reports and accusations and rumors are often exaggerated. In some cases, the "substitution" is merely technical, or is not substitution at all, as in the so-called "investigation" of antiseptic powder, by which Mr. Tyree of Washington has recently tried to make capital. On the other hand, there is no doubt that substitution does exist, and will continue to exist, in spite of laws and statutes, so long as it is profitable. Manufacturers of the type of Mr. Tyree, set the example when they "substitute" whatever they please for the formula which they advertise; they tempt it when they exact unreasonable profits. Physicians point the way when they are lured by detail-men into prescribing equivalent, but ever-changing "brands" of the same product. Some "physicians" who belong by rights to another "profession," almost force the druggist to substitute when they deprive him of his legitimate pay by exacting a "percentage" on their prescriptions—a malpractice that is not as dead as it should be.

All this is in the way of explanation, not of excuse. The way of the pharmacist is beset with temptations—but this is the more reason why he should not yield. The public is obliged to trust pharmacists and physicians more than other men. Professional pride and tradition, and even enlightened self-interest, demand that this confidence should not be abused. Unfortunately, the profession of pharmacy is perhaps the least concerned of some who deal in drugs; and with them the immediate profits of substitution outweigh all other considerations. The law should deal with these in such a way that they could no longer abuse the public, and if the law neglects its duty, the physicians should see to it.

The profession of pharmacy, in the highest sense, is not quite extinct; and the right sort of local medical society should have little trouble in ascertaining which of the local pharmacists are reliable, and it should make the information effective. The individual physician should have the courage of his convictions, and should unhesitatingly advise his patients against patronizing druggists whom he has good reason to distrust. If he considers himself so low in the estimation of his patients that he would not recommend a druggist for fear of the suspicion that he accepts the infamous percentage, then he owes it to his self-respect to teach the patient better things. But he should not invite that contemptible suspicion by accepting any gratuities from the pharmacists—not even that common but most petty "tip," free prescription blanks.

The protection afforded by such a direct attack on the substitution evil must be much better than the numerous proprietary devices. Their very number proclaims them ineffective, and they are all open to abuses. As I have pointed out in a previous chapter, the "original package," the "coined

name," the distinctive monogram, even the distinctively shaped bottle—these are all much more effective for advertising than for protection. If the physician really deems Chap's hypophosphites superior to the official article, it should suffice to prescribe "Hypophosphites (Chap's)." If it does not suffice, then his medical society has a disagreeable but very necessary duty to perform.

(To be continued.)

#### Nostrums and the German Medical Press.

The *Münchener medizinische Wochenschrift* recently stated that it and certain other medical journals had rejected the advertisements of "leucrol," as this remedy was a "secret proprietary," and they preferred to exclude it from their advertising columns. The manufacturers objected to this statement and pointed with pride to their published formula. To this the *Wochenschrift* replies, June 23: "It is true that the firm publishes a formula for leucrol, but nevertheless the remedy belongs in the class of so-called 'secret remedies.' The principal effective ingredient is said in the formula to be: 'Extract. Jubahar, the extract of an East Indian plant of the family of *Ranunculaceæ* much used medicinally by the natives.' Zernik's analysis of leucrol demonstrated the presence of cocoa, sugar and lemon juice, and the absence of any specially powerful ingredient. None of the authorities consulted had ever heard of the plant, and no reference could be found to it in the text-books or special botanic literature."

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION.]

#### EXAMINATION OF TABLETS OF BISMUTH, OPIUM AND PHENOL.

##### The Limitations of Tablet Compounding.

W. A. PUCKNER AND A. H. CLARK.

The demand for "palatable and convenient" medicaments has led manufacturing pharmacists to attempt to produce in tablet form mixtures which, from the nature of the case, are not suited to that method of compounding. In such cases it becomes a question as to what reliance the physician may place in such products and so an examination of a type of these preparations was made in the Association's laboratory.

Nearly every manufacturing pharmacist lists in his catalogue a tablet composed of bismuth, opium and phenol (carbolic acid). According to the price lists and labels, each tablet contains either five or three grains of bismuth subnitrate, one grain of aromatic powder, one-half grain of powdered opium and one-half grain (in one case one-eighth grain) of phenol.

Specimens of different makes of this tablet were purchased, in open market and from the manufacturer, and were examined to determine the amount of phenol each contained. A long series of experiments, the details of which will be published elsewhere, were carried out to determine the best method of estimating the amount of phenol in mixtures of this nature. The methods adopted are given below.<sup>1</sup>

1. Estimation of Phenol (Method A): A quantity of the powdered tablets containing not more than 0.175 gm. phenol was placed in a distilling flask and water sufficient to cover the powder added. The mixture was then acidulated with about 1 c.c. U. S. P. phosphoric acid and the distilling flask connected with a Liebig condenser and a current of steam driven through the flask. The distillation was continued until 250 c.c. of distillate was obtained. Of this distillate, 50 c.c. was measured into a 250 c.c. glass-stoppered flask and 25 c.c. standard bromin solution added, and the mixture acidulated with 5 c.c. hydrochloric acid. After standing one-half hour, the uncombined bromin was determined by adding potassium iodide T. S. and titrating the liberated iodine with standard thiosulphate V. S. As a typical example 8 tablets weighing 3.1045 gm. and calculated to contain 0.2592 gm. phenol were taken. Fifty c.c. of the distillate, representing 0.6209 gm. of the tablets and which should have contained 0.05184 gm. phenol, consumed 11.24 c.c. tenth-normal bromin V. S. Each c.c., being equivalent to 0.001556 gm. phenol, the 50 c.c. contained only 0.017489 gm. phenol, or 2.85 per cent. of the weight of the tablet. (Method B): The same procedure was followed as above outlined, except that the mixture of the powdered tablets and water was saturated with carbon dioxide and the distillation conducted with a brisk current of carbon dioxide passing through the distilling flask constantly.



The results here tabulated were obtained from the examination of specimens purchased direct from the manufacturer. At least one other specimen—bought in the open market—of each manufacturer was examined, the latter giving, in nearly every instance a lower figure, probably because it had been in stock longer. In the few cases in which the latter specimen gave a higher result, both findings are given.

The essential point brought out by the table is, of course, that shown by the figures in Column 8—"Amount Found Expressed as Per Cent. of Amount Claimed." It should be realized that if the tablets contained the amount of phenol claimed, the numbers in this column would all be 100. But instead of this even the best specimen contained only 72.65 per cent., while some ranged as low as 12.66 per cent.

Manufacturer.	Weight of Heaviest Tablet in Gms. <sup>2</sup>	Weight of Lightest Tablet in Gms. <sup>3</sup>	Average Weight of Tablet in Gms. <sup>4</sup>	Per Cent. Variation. <sup>5</sup>	Per Cent. Phenol According to Formula on Label. <sup>6</sup>	Per Cent. Phenol Found, Method A.	Per Cent. Phenol Found, Method B.	Amount Found expressed as Per Cent. of Amount Claimed. <sup>7</sup>
Hance Bros. and White.....	.4053	.3400	.3833	17.03	8.45	1.81	1.85	21.89
W. S. Merrell Chemical Co.....	.5225	.5152	.5142	1.42	6.30	3.02	3.08	48.89
H. K. Mulford & Co.....	.4837	.4569	.4752	5.64	1.72	.86	.90	52.34
Parke, Davis & Co. (No. 1).....	.5747	.4993	.5328	14.17	6.08	4.27	...	70.23
Parke, Davis & Co. (No. 2).....	.5800	.5245	.5518	10.06	5.87	2.76	2.74	47.02
Sharp & Dohme (No. 1).....	.3951	.3742	.3852	5.24	8.41	6.06	6.11	72.65
Sharp and Dohme (No. 2).....	.4213	.3544	.3937	17.00	8.23	2.83	2.85	34.63
Frederick Stearns & Co.....	.5221	.3690	.4457	34.35	7.27	1.92	1.93	26.55
Truax, Greene & Co.....	.3428	.2482	.3232	29.27	10.03	1.38	1.36	13.69
H. K. Wampole & Co. (No. 1).....	.3646	.3417	.3525	6.21	9.19	4.06	4.24	46.14
H. K. Wampole & Co. (No. 2).....	.3670	.3487	.3609	5.07	8.98	3.53	3.49	39.31
Wm. R. Warner & Co.....	.2850	.2397	.2684	17.55	12.08	1.53	1.53	12.66

The comparative weights of the tablets also is interesting. While the difference in weight between the heaviest (Column 1) and the lightest (Column 2) tablet in one-half the specimens, amounted to less than 10 per cent (Column 4) of the average weight (Column 3), in one instance the difference amounted to 34.35 per cent. (Column 4).

These tablets are a typical illustration of the attempts to produce, in "elegant and palatable form," the impossible—impossible at least without care and expense. From the nature of the processes involved in the manufacture of a tablet, it is very difficult to produce one containing a definite amount of a volatile substance like carbolic acid. Accuracy in dosage is indispensable to the scientific administration of drugs. In medicinal preparations of the type just described the essential—accuracy—is sacrificed for the merely desirable—convenience and palatability. To the extent to which physicians prescribe, as tablets, combinations of drugs that can not be successfully put up in that form, to that extent does scientific medicine suffer.

---

2. Ten tablets, or, if the variation proved to be great, 25 tablets, were separately weighed and the weight of the heaviest tablet recorded.

3. Ten tablets, or, if the variation proved to be great, 25 tablets, were separately weighed and the weight of the lightest tablet recorded.

4. One hundred tablets were weighed, and from this weight the average of a single tablet calculated.

5. These figures were obtained by dividing the difference in weight of the heaviest and lightest tablet by the average weight and multiplying this quotient by one hundred.

6. These figures were obtained by dividing the weight of phenol each tablet should contain by the average weight and multiplying this quotient by one hundred.

7. The figures given here are obtained by dividing the highest per cent. of phenol found by either method by the per cent. of phenol indicated by the formula on the package and multiplying this quotient by one hundred.

Miscellany

Canned Mud from the Exploiters of Nostrums and Impure Foods.

The following from an editorial entitled "Canned Mud," in the *Druggists Circular*, July, is worth reading:

Public opinion is a more or less plastic thing. Those who exert the most force on it usually succeed in shaping it to suit themselves—for the time being. Hence the "canneries." By "canneries" we mean those publicity bureaus which send out in convenient form ready-made editorials and other matter for the papers to print, and bring "influence" to bear on the papers to make them print this kind of literary product. . . .

1	2	3	4	5	6	7	8
Weight of Heaviest Tablet in Gms. <sup>2</sup>	Weight of Lightest Tablet in Gms. <sup>3</sup>	Average Weight of Tablet in Gms. <sup>4</sup>	Per Cent. Variation. <sup>5</sup>	Per Cent. Phenol According to Formula on Label. <sup>6</sup>	Per Cent. Phenol Found, Method A.	Per Cent. Phenol Found, Method B.	Amount Found expressed as Per Cent. of Amount Claimed. <sup>7</sup>
.4053	.3400	.3833	17.03	8.45	1.81	1.85	21.89
.5225	.5152	.5142	1.42	6.30	3.02	3.08	48.89
.4837	.4569	.4752	5.64	1.72	.86	.90	52.34
.5747	.4993	.5328	14.17	6.08	4.27	...	70.23
.5800	.5245	.5518	10.06	5.87	2.76	2.74	47.02
.3951	.3742	.3852	5.24	8.41	6.06	6.11	72.65
.4213	.3544	.3937	17.00	8.23	2.83	2.85	34.63
.5221	.3690	.4457	34.35	7.27	1.92	1.93	26.55
.3428	.2482	.3232	29.27	10.03	1.38	1.36	13.69
.3646	.3417	.3525	6.21	9.19	4.06	4.24	46.14
.3670	.3487	.3609	5.07	8.98	3.53	3.49	39.31
.2850	.2397	.2684	17.55	12.08	1.53	1.53	12.66

The federal Food and Drugs Act has been operative for about eighteen months. At first there was not much open opposition to its enforcement, for the law was aimed at fraud and deceit, and, in a way, for a manufacturer to oppose it was to seem to proclaim that he was opposed to a law which had for its principal object the suppression of lying labels on food and drug products. It may be those whose "vested rights" to defraud were to be most affected, believed at first that the law was, as one paper with a Shakespearian leaning had it, mere sound and fury, signifying nothing. But those "interests" reckoned without their host when they flattered themselves that Dr. Harvey W. Wiley—who had seen the necessity for the law as perhaps no other man had, and had striven long and hard for its enactment—would let his labors go for naught. In the eyes of these "interests" Dr. Wiley had been perniciously active. He took the lead in executing a "confiscatory" law which said that morphin-laden soothing syrups, cocain-laden catarrh snuffs, alcohol-laden bitters, acetanilid-laden headache powders, and codein-laden cough syrups which entered interstate commerce should be so labeled as to reveal their dangerous character. He was held responsible in the minds of certain manufacturers for the alternative which was presented to them of admitting damaging truths which they had been persistently denying, or going out of business. He must be suppressed. It was actually getting so that it was risky for a real canner to add poisonous copper salts to his peas to give them a pretty green color and fresh appearance, or to put up bob veal and label it boneless chicken. In one instance an old and highly respected extract manufacturer was rudely brought into a court house and vulgarly fined five dollars for shipping some kind of a chemical combination under an extract of vanilla label. Such outrages could not be borne by self-respecting business men. Something had to be done. . . .

Now, had Dr. Wiley been a different kind of man from what he is, he would have heeded the uproar which his actions were causing and would have pursued a course easier for him and easier for the "interests"—never minding the rights of the people or the mandates of the law. That is to



say, the course he would have pursued would have been easier for him if he had been the kind of a man that such a course would have been easier for.

Seeing that he was not amenable to the kind of reasoning that guided their own line of conduct, those manufacturers whose "vested rights" to attach false and misleading labels to their goods had been invaded, were driven to adopt other means to gain their ends. Many of them were canners by trade, so for them to resort to the uses of "canned" methods of attack was but natural. We who read see the result. Let us quote from an article in the *Food Law Bulletin* by Read Gordon. Mr. Gordon says that he is a manufacturer of canned goods, but has refused to join any association to fight the enforcement of the Food and Drugs Act. While he takes issue with Dr. Wiley on the question of the harmfulness or harmlessness of certain food preservatives, he deprecates the creation of a "yellow dog" fund to be used in an underhand fight against the doctor. In the article referred to Mr. Gordon says: "No mere moral consideration will avail to prevent these 'interests' from criticizing Dr. Wiley in the most unfair, unmanly and savage spirit. Evidence of this is beginning to be seen in trade journals and the public press, and this sort of thing, if kept up long enough, will blast any man's reputation, unless he be so firmly fixed in public estimation that such attacks are like water on a duck's back. Unhappily there are but few of this kind." Mr. Gordon goes on to show how the "interests" can "raise funds for their purpose, employ the ablest legal talent, create public adverse opinion through a subsidized press, and drive the individual to despair."

This language reminds us of what we said about another institution whose work is opposed by certain "interests." When the American Medical Association created its Council on Pharmacy and Chemistry, whose duty it should be to examine the claims made for proprietary medicines and to put them to the test, the *Circular* said (in its issue for May, 1905, page 137): "With the aims and objects of this Council no honest man or woman can find fault. We need just such work accomplished, and we need it badly." We went on to say how much pressure would be exerted to control the actions of the Council, and to win the approval of its members by means other than deserving it, and added: "If it is concluded that they can not be won, that their presence on the Council is dangerous to a certain interest, then it becomes necessary to get them removed from the Council and have a pliant tool placed there. The powerful corporations that have much at stake will work for votes to make the change, and the character of the man that holds out most firmly against them will be quietly, steadily and surely undermined. If he is a man of original thought he will be pronounced a dangerous crank. Somehow—anyhow—they will seek to have him deposed. . . . Of course there will be none of this until the Council's work begins to tell. It is only in case of success that these things can happen."

The *Circular* goes on to remark that what was predicted has come to pass in a measure, although so far, it says, the innuendo and open vilification have been mainly against the chairman of the Council. In a similar way, the *Circular* remarks, attacks are now made on Dr. Wiley, chief chemist of the United States Department of Agriculture. "The campaign to turn public sentiment against him may be said to be well under way. He is to be besmirched with 'canned' mud. To borrow some of Mr. Gordon's forms of expression, the press bureau of misinformation is at work, sending out false rumors of possibilities, scraps of information that may be more or less true, but which are perverted, all indicating the starting of a movement having for its object the undoing of Dr. Wiley. When a man stands in the way of the 'interests,' the more of character, usefulness, ability and integrity he has, the more dangerous he is to the 'interests.'"

**The Functions of the Hypophysis and the Pineal Gland.**—In a communication to the Académie des Sciences, Paris, April 22 (*Progrès méd.*, May 4), M. de Cyon summarized the functions of the pituitary body and the pineal gland as follows: The hypophysis, according to his researches, is an autoregulator of the intracranial blood pressure. It also maintains the tonic excitation of the moderator nerves of the heart. The glandular portion produces two active substances which have to do with the proper functioning of the cardiac and vasomotor nervous apparatus, but only the hypophysis intervenes, indirectly through its active secretions, and directly by its action on the sympathetic and pneumogastric systems, in the organic changes in the tissues; it regulates the diuresis and exerts a

certain action on the male sexual organs. The pineal gland acts chiefly in a mechanical way as a regulator of the afflux and reflux of the cerebrospinal fluid through the aqueduct of Sylvius; but its action is null on the blood pressure and very moderate on the cardiac nerves. Garnier and Thaon reported at the session of the Société de biologie, April 13 (*Progrès méd.*, May 4), the results of total extirpation of the hypophysis in twelve dogs. Progressive asthenia, torpor, extreme emaciation with paresis of the hinder limbs were produced, with death following on the sixteenth day.

**Chloroform in Obstetrics.**—Sir W. J. Sinclair, professor of Obstetrics and Gynecology, Victoria University, Manchester, in a paper read at a meeting of the North of England Obstetrical and Gynecological Society (*Lancet*, May 30, 1908, page 1541), says: "Chloroform as administered in obstetric practice, which was the prevailing use of it at first on account of Professor Simpson's influence, brought disappointments. Its shortcomings were soon fairly demonstrated, especially by Simpson's rivals, to be very much what the experience of half a century has taught us all to accept as the truth. The administration of chloroform had certain unfavorable effects on the pains of labor; when long continued it prevented firm contraction, and it produced postpartum hemorrhage, ending in hemostasis by thrombosis instead of by contraction, and consequent puerperal fever in the form of metrophlebitis. Although since then it has been abundantly proved that ether is in many ways a less harmful anesthetic than chloroform in obstetric practice, British conceit had no expression except the language of contempt for the opinion of American obstetricians who had almost universally adopted ether as the obstetric anesthetic."

**The Beneficent Work of Medical Missions.**—If, at Christmas time, we ask the man who has seen all that is worth seeing in the world what is the most beneficent work that he has witnessed in any quarter of the earth, he will probably name the work of the men and women who carry the gospel of Jenner and Pasteur and anesthesia. If he shall have faced the on-sweep of a pestilence or watched beside a child whose throat was fast closing with a diphtheritic membrane, the work of the educator, the engineer, the philanthropist, even of the minister himself, will have shrunk into the commonplace beside the work of the physician. We are entitled to our individual estimates of the usefulness of the man who goes abroad with the Bible and hymn-book, but there can be little difference of opinion regarding the man or woman who carries his gospel in a surgical case, whose chapel is a thatched dispensary in an out-of-the-way place in the world. The doctor who goes a hundred or a thousand miles beyond the most distant hospital and practices his profession among an alien race—at a salary equal to that of a bookkeeper—certainly need envy no other man in any part of the world his opportunities for doing good.—Edgar Allen Forbes in *World's Work*, December, 1907.

**Reduction of Fever by Prolonged Application of Ice to the Heart.**—Deléarde and Dubois claim that prolonged application of ice to the heart, or precordial frigotherapy, as they call it, is effectual in reducing the temperature in fever. They have reported a number of case histories and much experimental research. The *Gazette Médicale Belge*, June 18, summarizes their communications which are all in favor of this local application of ice. The measure has been found especially effectual in typhoid, and they think it has no contraindications except in tuberculosis. They keep up the applications day and night, commencing them systematically at the beginning of fever, until the temperature is normal. Air forming as the ice melts must be allowed to escape or otherwise it may form an isolating layer. No antipyretics should be given with this frigotherapy, as the combined effect would be too powerful. The temperature does not fall immediately, generally not for ten or fifteen hours. If the pulse rate keeps high, this shows that the infectious condition persists, even after the temperature has returned to normal.

**Contraindications for Massage of Abdomen.**—In a communication to the *Zeitschrift für physik. u. diät. Therapie*, April,



1908, Boas urges more careful study of the possible contraindications in each case to avoid disaster from inconsiderate massage of the abdomen. In several cases in his experience a latent intestinal cancer was whipped up to a rapid growth and metastasis by massage of the region, and dormant gastric ulcers aroused. Occult blood should always forbid it. McBurney's point and the gall-bladder region should be carefully examined before massage of the abdomen is attempted, as appendicitis and cholelithiasis strictly contraindicate it. A history of cardialgia at any time, especially before or after pregnancy, increases the probability of latent gallstone trouble. Gynecologic affections must also be excluded, as also any affections of the liver, spleen and pancreas. Massage proves exceptionally beneficial, however, he says, after operations on the stomach, and he urges its more general use to improve motor conditions in the stomach after gastroenterostomy, etc. It should never be ordered, he reiterates, until the physician is certain of his diagnosis. Pain of any kind contraindicates it.

**Improved Test for Quantitative Estimation of Albumin in Urine.**—I. Tsuchiya writes from A. Schmidt's clinic at Halle to recommend the use of phospho-tungstic acid in place of the Esbach reagent. He has devised an albuminimeter for the purpose, which he describes and illustrates in the *Zentralblatt für innere Medizin*, June 13, 1908, p. 605. He advocates this technic as a great improvement over the Esbach method in simplicity and delicacy of the test. His article is entitled: *Die volumetrische Eiweissbestimmung mittels der Phosphorwolframsäure*.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### NERVE RESECTION FOR PAINFUL STUMP.

—, JULY 7, 1908.

*To the Editor:*—I have a case of sensitive and painful stump of the left leg below the knee. The sensation of pain seems to be in the area supplied by the external popliteal nerve. Would there be any injurious results following division of the peroneal nerve in the middle part? P. R. A.

ANSWER.—If the pain in the stump is limited entirely to the distribution of the external popliteal nerve no injurious results whatever can result from a division or, better still, a resection of this nerve. It is to be understood, of course, that the stump itself is in good condition—that is, is not a conical one, in which there is excessive growth of the bone or bad fixation of the flaps to the end of the bone, etc., in which case a reamputation might be better than a simple resection of the nerve.

### TREATMENT OF BURNS BY RUBBER TISSUE.

DRBQUE, IOWA, July 11, 1908.

*To the Editor:*—Where can I find articles describing the treatment of burns by enclosing them with rubber-tissue dressing? N. Y. Z.

ANSWER.—Consult the following articles:

Van Zandt, T. K.: Study of Burns, *Am. Pract. and News*, June, 1905; abstr. under Therapeutics, *THE JOURNAL A. M. A.*, Sept. 23, 1905, p. 939.

Johnson, J. W.: Treatment of Extensive Burn with Rubber-Tissue Dressing, *Northwest Med.*, June, 1907; abstr. in *THE JOURNAL A. M. A.*, July 27, 1907, p. 354.

### POSSIBLE TUBERCULIN REACTION FROM TUBERCULOUS CHICKEN.

GRINNELL, IOWA, July 18, 1908.

*To the Editor:*—Light on the following case will be greatly appreciated: A child, 4 years of age, was well till three months ago when tubercular peritonitis developed. Family history is negative. The child did well under treatment until, having eaten tuberculous chicken, marked rise in temperature resulted in 12 hours. The question is whether or not the tuberculous chicken caused the fever by reason of the tuberculin reaction. O. F. PARISH.

### PERFORATION IN TYPHOID FEVER.

Dr. Francis D. Patterson, 2103 Locust St., Philadelphia, desires the details of any hitherto unreported cases of perforation in typhoid fever.

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending July 18, 1908:

Carter, E. C., lieut. col., M. C., relieved from duty at Ft. Leavenworth, Kansas, and ordered to duty at the expiration of his present leave of absence, at Ft. Sheridan, Ill.

Munson, E. L., major, M. C., when relieved at Ft. Sheridan, Ill., ordered to duty as instructor in the care of troops at the Army Staff College, Ft. Leavenworth, Kans.

Harris, H. S. T., major, M. C., ordered to duty at the expiration of his present leave of absence at Ft. Leavenworth, Kans.

Page, Henry, Clayton, J. B., Shimer, I. A., Manly, C. J., Ashford, B. K., Chamberlain, W. P., Hartsock, F. M., Webber, H. A., Schreiner, E. R., Duval, D. F., and Baker, David, captains, M. C., promoted to be majors in the Medical Corps, with rank from April 23, 1908.

Huntington, P. W., capt., M. C., left Ft. Rosecrans, Cal., on leave of absence for three months.

LaGarde, L. A., lieut.-col., M. C., returned to Chief Surgeon's office, Denver, Colo., from leave of absence.

Bosley, J. R., capt., M. C., ordered to duty with First Infantry, en route to and at camp at American Lake, Wash.

Raymond, T. U., major, M. C., left Ft. Logan, Colo., with 21st Infantry, for camp near Ft. D. A. Russell, Wyo.

Baily, H. H., capt., M. C., ordered to Ft. Wayne, Mich., for temporary duty, and return.

Woodbury, F. T., capt., M. C., arrived at San Francisco, from Philippine service, and granted leave of absence for two months.

Lowe, T. S., contract surgeon, arrived on the *Sheridan* from Philippine service, and ordered from San Francisco to Vancouver Barracks, Wash., for duty in Dept. of the Columbia.

Dougherty, J. C., Newlove, Geo., Eber, A. H., and White, J. S., arrived at San Francisco on the transport *Sheridan* for leave of absence from the Philippines Division.

Porter, E. H., contract surgeon, ordered from Ft. Worden, Wash., to Ft. Casey, Wash., for temporary duty.

Card, D. P., contract surgeon, granted leave of absence for one month.

Yemans, H. W., contract surgeon, ordered, at the expiration of his present leave of absence, to Ft. Wayne, Mich., for duty.

Weston, H. R., contract surgeon, relieved from duty at Ft. Ethan Allen, Vt., and ordered to Manila, P. I., for Philippine service.

Graves, L. K., contract surgeon, relieved from further duty in the Philippines Division, and ordered to Whipple Barracks, Ariz., for duty.

### Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending July 18, 1908:

Lee, A. E., asst.-surgeon, detached from the Naval Hospital, Canacao, P. I., and ordered to the *Concord*.

Eyttinge, E. O. J., asst.-surgeon, detached from the *Concord* and ordered to the *Ranger*.

Alexander, C. E., pharmacist, appointed pharmacist from July 10, 1908; ordered to the *Relief*.

Harmon, G. E. H., medical director, detached from the Naval Academy and ordered to temporary duty in command of the Naval Medical School Hospital, Washington, D. C.

Kerr, W. M., acting asst.-surgeon, detached from the Naval Hospital, New York, and ordered to the Naval Hospital, Norfolk, Va.

Snyder, J. J., surgeon, detached from the *New Hampshire* and ordered to the *Franklin*.

Randall, R. C., asst.-surgeon, detached from the second torpedo flotilla and ordered to the *Solace*.

Biello, J. A., asst.-surgeon, detached from the *Solace* and ordered to the Pacific torpedo fleet.

### Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and other officers of the Public-Health and Marine-Hospital Service for the fourteen days ended July 15, 1908:

Guiteras, C. M., surgeon, detailed to represent the service at the 5th Pan-American Medical Congress at Guatemala, Aug. 6-10, 1908.

Wertebaker, C. P., surgeon, leave of absence granted for three days from July 1, 1908, amended to read 1 day.

Goldberger, Joseph, P. A. surgeon, granted leave of absence for one month, from July 20, 1908.

Ward, W. K., P. A. surgeon, granted leave of absence for one day, June 16, 1908, under Paragraph 191, Service Regulations.

Ward, W. K., P. A. surgeon, relieved from duty at Ellis Island and directed to proceed to Manila, P. I., reporting to the chief quarantine officer for duty.

Creel, R. H., P. A. surgeon, granted leave of absence for two months from Aug. 3, 1908.

Krulich, E., asst.-surgeon, granted leave of absence for 20 days from July 6, 1908.

Hart, L., asst.-surgeon, temporarily relieved from duty at Stapleton, N. Y., and directed to proceed to Washington, D. C., reporting to the director of the Hygienic Laboratory for temporary duty.

Wilson, J. G., acting asst.-surgeon, granted leave of absence for three days from June 16, 1908, under Paragraph 210, Service Regulations.

Glennan, A. H., asst.-surgeon-general, granted leave of absence for twenty-eight days from July 22, 1908.

Wickes, H. W., P. A. surgeon, directed to proceed to Brunswick Quarantine Station, Georgia, for special temporary duty, on completion of which to rejoin station.

Parker, H. B., P. A. surgeon, granted leave of absence for one month from Aug. 1, 1908.

Ward, W. K., P. A. surgeon, granted leave of absence for seven days from July 14, 1908, under Paragraph 191, Service Regulations.

Trask, J. W., P. A. surgeon, granted leave of absence for 27 days from Aug. 3, 1908.



Manning, H. M., asst.-surgeon, directed to report to the director, Hygienic Laboratory, for temporary duty.

Manning, H. M., asst.-surgeon, granted leave of absence for three days from July 12, 1908.

Salmon, T. W., asst.-surgeon, directed to report to chairman of Board of Examiners in Washington, D. C., July 20, 1908, to determine his fitness for promotion to grade of P. A. surgeon.

Ashford, F. A., asst.-surgeon, directed to report to P. A. Surgeon Foster, San Juan, Porto Rico, for examination for promotion to grade of P. A. surgeon.

Pettyjohn, Jos., asst.-surgeon, directed to report to the chairman of Board of Examiners, Manila, P. I., to determine his fitness for promotion to grade of P. A. surgeon.

McKeon, F. H., asst.-surgeon, directed to report to chairman of Board of Examiners, Manila, P. I., to determine his fitness for promotion to grade of P. A. surgeon.

Sweet, E. A., asst.-surgeon, directed to report to the chairman of a Board of Examiners at San Francisco, Cal., July 20, 1908, to determine his fitness for promotion to the grade of P. A. surgeon.

Spratt, R. D., asst.-surgeon, directed to report to the Chairman of Board of Examiners at Washington, D. C., July 20, 1908, to determine his fitness for promotion to the grade of P. A. surgeon.

Altree, G. H., acting asst.-surgeon, excused from duty without pay for two months from June 4, 1908.

Carter, P. L., acting asst.-surgeon, granted leave of absence for four days from July 6, 1908, under Paragraph 210, Service Regulations.

Nute, A. J., acting asst.-surgeon, granted leave of absence for sixteen days from Aug. 4, 1908.

Rodman, J. C., acting asst.-surgeon, granted leave of absence for seven days from July 14, 1908.

Seavey, L. T., acting asst.-surgeon, granted leave of absence for twenty-one days from July 25, 1908.

Spohn, A. E., acting asst.-surgeon, granted leave of absence for thirty days from Aug. 1, 1908, and excused without pay Aug. 31 to Oct. 31, 1908.

Tappan, J. W., acting asst.-surgeon, granted leave of absence for twenty days from July 8, 1908.

Walker, T. D., acting asst.-surgeon, granted leave of absence for eight days from June 25, 1908.

#### APPOINTMENT.

Dr. Henry C. Richter, of Pennsylvania, was on July 7, 1908, appointed an acting asst.-surgeon for duty at Calexico, Cal.

#### BOARDS CONVENED.

A board of medical officers was convened to meet at Seattle, Wash., for the purpose of examining certain alien immigrants. Detail for the board: P. A. Surgeon M. W. Glover, chairman; Asst.-surgeon C. W. Chapin, recorder.

The board of medical officers convened to meet in San Francisco, on July 6, 1908, to examine asst.-surgeons for promotion to the grade of P. A. surgeon. was re-convened to meet July 20, 1908. Detail for the Board: Surgeon H. W. Austin, chairman; P. A. Surgeon Rupert Blue; P. A. Surgeon W. W. King, recorder.

A board of medical officers was convened to meet in Manila, P. I., to examine assistant surgeons for promotion to the grade of P. A. surgeon. Detail for the Board: P. A. Surgeon V. G. Heiser, chairman; P. A. surgeon T. B. McClintic; P. A. Surgeon A. J. McLaughlin, recorder.

A board of medical officers was convened to meet in Washington, D. C., July 20, 1908, to examine asst.-surgeons for promotion to the grade of P. A. surgeon. Detail for the board: Asst. Surgeon-Gen. W. J. Pettus, chairman; P. A. Surgeon A. M. Stimson; P. A. Surgeon J. W. Trask, recorder.

Boards of medical officers were convened to meet on July 13, 1908, for the purpose of examining officers of the Revenue Cutter Service for promotion, as follows:

Baltimore: Surgeon L. L. Williams, chairman; P. A. Surgeon J. T. Burkhalter, recorder.

New York: P. A. Surgeon J. A. Nydegger, chairman; P. A. Surgeon C. H. Lavinder, recorder.

Boston: Surgeon R. M. Woodward, chairman; Acting Asst.-Surgeon F. H. Cleaves, recorder.

San Juan, P. R.: P. A. Surgeon M. H. Foster, chairman; Acting Asst.-Surgeon P. del Valle Atilles, recorder.

Chicago: Surgeon G. B. Young, chairman; Asst.-Surgeon C. E. Wood, recorder.

Mobile: Surgeon G. M. Guiteras, chairman; Acting Asst.-Surgeon C. S. Carter, recorder.

Detroit: Surgeon Fairfax Irwin, chairman; Acting Asst.-Surgeon E. W. Mooney, Recorder.

#### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended July 10, 1908:

##### SMALLPOX—UNITED STATES.

California: Los Angeles, June 20-27, 2 cases; San Francisco, 6 cases.

Washington: District of Columbia, June 20-27, 1 case.

Illinois: Chicago, June 20-27, 2 cases; Jacksonville, June 1-30, 10 cases; Springfield, June 18-July 2, 3 cases.

Indiana: Fort Wayne, June 14-29, 3 cases; Indianapolis, June 21-28, 3 cases, 1 death; La Fayette, June 30-July 6, 1 case; South Bend, June 30-July 4, 1 case; Terre Haute, June 20-27, 1 case.

Iowa: Cedar Rapids, June 1-30, 4 cases.

Louisiana: New Orleans, June 29-July 4, 5 cases.

Michigan: Saginaw, June 20-27, 1 case.

Minnesota: Winona, June 20-27, 1 case.

Missouri: Kansas City, June 27-July 4, 1 case; St. Joseph, June 20-27, 2 cases.

North Carolina: Charlotte, June 20-27, 1 case.

Ohio: Cincinnati, June 26-July 3, 1 case; Dayton, June 27-July 4, 3 cases; Toledo, June 13-20, 4 cases; Topeka, 3 cases.

Tennessee: Knoxville, June 20-27, 1 case.

Texas: San Antonio, June 27-July, 2 cases.

Washington: Spokane, June 20-27, 6 cases.

Wisconsin: La Crosse, June 13-July 4, 7 cases; Milwaukee, 8 cases.

##### SMALLPOX—INSULAR.

Philippine Islands: Manila, May 9-23, 29 cases, 21 deaths.

##### SMALLPOX—FOREIGN.

Brazil: Bahia, May 1-31, 114 cases, 5 deaths; Rio de Janeiro, May 24-June 14, 717 cases, 266 deaths.

China: Hongkong, May 16-23, 8 cases, 5 deaths; Shanghai, May 24-June 14, 3 cases (foreign).

Ecuador: Guayaquil, June 6-13, 1 death.

Egypt: Cairo, June 3-17, 16 cases, 2 deaths.

France: Paris: June 13-20, 2 cases; Toulon, May 1-31, 1 case.

Germany: General, June 6-20, 10 cases; Bremen, May 23-June 6, 3 cases.

India: Bombay, May 25-June 9, 45 deaths; Calcutta, May 16-23, 12 deaths; Madras, May 23-29, 1 death.

Italy, general; June 14-21, 20 cases; Naples, June 6-20, 12 cases.

Japan: Kobe, May 31-June 6, 4 cases; Osaka, May 16-30, 46 cases, 28 deaths.

Mexico: Aguas Calientes, June 14-27, 4 deaths.

Portugal: Lisbon, June 20-27, 4 cases, 2 deaths (imported).

Russia: Batoum, May 1-31, 1 case; Moscow, June 6-13, 17 cases, 11 deaths; Riga, June 20-27, 1 case; St. Petersburg, June 6-13, 54 cases, 11 deaths; Warsaw, May 9-16, 4 deaths.

Siberia: Vladivostok, May 21-June 4, 4 cases.

Spain: Valencia, June 6-20, 25 cases, 1 death.

Straits Settlements: Singapore, May 16-23, 1 death.

Turkey: Constantinople, June 7-21, 7 deaths.

##### YELLOW FEVER.

Brazil: Manaus, May 31-June 13, 3 cases, 3 deaths; Para, June 6-20, 5 cases, 5 deaths; Rio de Janeiro, May 31-June 7, 2 cases, 2 deaths.

Cuba: Daiquiri, July 11-13, 4 cases.

Ecuador: Guayaquil, June 6-13, 2 deaths.

Mexico: Frontera, July 12, 1 case; Veracruz, 2 cases, 1 death.

Philippine Islands: Provinces, Capiz, May 9-23, 100 cases; Pangasinan, 100 cases.

##### CHOLERA.

India: Bombay, May 25-June 2, 1 death; Calcutta, May 16-23, 71 deaths; Madras, May 23-29, 5 deaths; Rangoon, May 16-30, 21 deaths.

##### PLAGUE.

Brazil: Rio de Janeiro, May 24-June 14, 1 case.

China: Hongkong, May 16-23, 114 cases, 95 deaths.

Ecuador: Guayaquil, June 6-13, 5 deaths.

Egypt: General, June 11-25, 102 cases, 45 deaths; Alexandria, 7 cases, 3 deaths.

Formosa: May 23-June 6, 212 cases, 180 deaths.

India: General, May 16-30, 5,300 cases, 4,360 deaths; Bombay, May 25-June 9, 218 deaths; Calcutta, May 16-23, 79 deaths; Madras, May 23-29, 1 death; Rangoon, May 16-30, 82 deaths.

Japan: Kobe, May 23-30, 1 case, 1 death.

Peru: Callao, June 6-13, 1 case.

Trinidad: June 22, 1 death.

Venezuela: Caracas, June 20-21, 4 cases, 2 deaths; June 21-27, 6 cases, 1 death; La Guaira, June 16-19, 5 cases, 1 death.

Straits Settlements: Singapore, May 16-23, 1 death.

## Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

#### Meritorious Bills Introduced by Congressman Mann.

Hon. James R. Mann, of Illinois, has introduced into the House of Representatives two bills of interest to physicians and druggists and of the greatest importance to the public, which we quote in full:

A BILL relating to the transportation of habit-forming and poisonous drugs in interstate and foreign commerce, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled,* That hereafter it shall be unlawful for any person, firm, company, corporation, or association to deposit in the mails, or to send by mail any alpha or beta eucain, chloral hydrate, cocaine, hyosein, morphin, opium, scopolamin, or any derivative or preparation of any of the foregoing substances, except on the original prescription or written order of a legally authorized practitioner of medicine, dentistry, or veterinary medicine.

Provided, however, that the foregoing provisions shall not apply to articles sent in the ordinary course of business from manufacturers, jobbers, or wholesale dealers to registered retail druggists, legally authorized practitioners of medicine, dentistry, or veterinary medicine, to manufacturers of medicinal remedies or pharmaceutical preparations, to hospitals, colleges, scientific and public institutions, or to each other.

SEC. 2. That any person, firm, company, corporation, or association violating any of the provisions of this paragraph shall be deemed guilty of a misdemeanor and on conviction may be fined not exceeding \$100 for each offense, and on conviction for each offense subsequently committed may be fined not exceeding \$500 or be imprisoned not exceeding one year, or both such fine and imprisonment in the discretion of the court.



A BILL relating to the transportation of habit-forming and poisonous drugs in interstate and foreign commerce, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled,* That it shall be unlawful for any person, firm, or corporation to send, carry, ship, or bring into any state, territory, or the District of Columbia, by freight, express, mail, or otherwise, from any other state, territory, or the District of Columbia, or from any foreign country, directly to a consumer, or to sell, or furnish, or give away, or have in his or her possession, except as provided for in this section, in the territories or the District of Columbia, any alpha or beta eucain, chloral hydrate, cocain, hyosein, morphin, opium, scopolamin, or any derivative or preparation of any of the foregoing substances, except on the original prescription or written order of a legally authorized practitioner of medicine, dentistry, or veterinary medicine, which prescription or order shall be dated and shall contain the name of the person for whom prescribed, or if ordered by a practitioner of veterinary medicine shall state the kind of animal for which ordered and shall be signed by the person giving the prescription or order. Such written prescription or order shall be kept on file for a period of not less than three years by the person, firm or corporation who shall compound the article or articles prescribed or ordered, and it shall not again be compounded or dispensed except on the written order of the original prescriber for each and every subsequent compounding and dispensing. In no case, however, shall the original prescription or written order, for a human being, call for more than one-fourth of one ounce of chloral hydrate or more than one-eighth of one ounce of alpha or beta eucain, cocain, hyosein, morphin, opium, scopolamin, or corresponding amounts of any derivative of the above-named substances, whether simple, mixed, or compounded into any preparation; and when two or more of any of the above ingredients are prescribed together the combined total quantity of such substances prescribed must not exceed one-eighth of one ounce. The above original prescriptions and written orders shall be subject to inspection at all times by any federal or state official delegated by the Secretary of Agriculture.

Provided, however, that the above provisions shall not apply to sales at wholesale by jobbers, wholesalers, and manufacturers to registered retail druggists or to each other, or to sales made to manufacturers of medicinal remedies or pharmaceutical preparations for use in the manufacture of such preparations, nor to sales to hospitals, colleges, scientific and public institutions.

SEC. 2. That no person, firm or corporation shall send, carry, ship, import, or bring into any state, territory, or the District of Columbia, by freight, express, mail, or otherwise, from any other state, territory, or the District of Columbia, or receive for shipment into any state, territory, or the District of Columbia or sell or furnish or give away in the territories or the District of Columbia any of the following-described substances, to wit: The caustic hydroxids of ammonium, potassium and sodium; the concentrated mineral acids; the essential oils of bitter almonds, pennyroyal, rue, and savin; wood alcohol and yellow phosphorus or any preparation or compound containing the same; the salts and derivatives of antimony, arsenic, barium, chromium, copper, gold, lead, mercury (excepting calomel), silver, and zinc, or any preparation or compound containing the same; the following-named substances and their derivatives or any compound or preparation containing the same, namely, acetanilid, acetphenetidin, aconite, antipyrin, belladonna, cannabis indica, cantharides, carbolic acid, chloral hydrate, chloroform, coeulcus indicus, eocain, colchicum, conium, cotton root, creosote, eroton oil, damiana, diacetyl morphin, digitalis, ergot, formaldehyd, hydrocyanic acid, hyosein, hyoseyamus, ignatia, laudanum, lobelia, morphin, nux vomica, opium, oxalic acid, paregoric, Paris green, phenacetin, physostigma, phytolacca, pyramadon, scopola, stramonium, strophanthus, strychnin, sulphonal, tansy, trional, veronal, veratrum viride, or any other virulent poison, unless the bottle, box, carton, or any other package, including any wrapper or covering, containing any of the above-named substances, compounds, preparations, or derivatives is labeled and such label is printed on red paper in distinct white letters or in distinct red letters on white paper, with the word "Poison" in letters not less in size than any other letters used on the label, and in no case smaller than required by regulation seventeen (e) of the rules and regulations for the enforcement of the Food and Drugs Act of June 30, 1906, and the skull and crossbones device, together with the names of one or more suitable antidotes and the name and address of the person, firm, or corporation manufacturing, shipping, importing, or selling the same

SEC. 3. That any person, firm, or corporation violating any of the provisions of this act shall be guilty of a misdemeanor, and for such offense shall be fined not exceeding \$200 for the first offense and, on conviction, for each subsequent offense not exceeding \$300, or be imprisoned not exceeding one year, or both such fine and imprisonment, in the discretion of the court.

The passage of these bills will not in any way interfere with the legitimate business of physician, manufacturer, wholesale druggist or pharmacist since all such business is expressly exempt. It will prevent and is evidently designed to prevent irresponsible persons—and it will check some of the advertising quacks especially—from carrying on a mail order business and sending out medicinal preparations containing habit-forming or dangerous drugs, abortifacients and other preparations used by quacks and swindlers. If these bills become laws the sale to the public of dangerous drugs will be limited to the pharmacists and the distribution of such preparations by irresponsible parties will be prohibited. Since these bills were introduced, editorials and comments have appeared in several of the drug journals calling on druggists to oppose their passage. Certainly the writers of such notices were either ignorant of the provisions of the bills or else were more interested in the business prospects of the proprietary manufacturer engaged in the mail order business than they were in the retail druggists. The bills proposed can not possibly affect the wholesale or retail pharmacist nor can they touch his business in any way. They are simply designed to stop mail order business in dangerous drugs and should have the support and endorsement of all physicians and druggists, as well as all others interested in the protection of public health.

#### County Milk Commissions.

An editorial in the July *Ohio State Medical Journal* on "The Medical Milk Commission" points out that the work of securing pure milk for the public is essentially a county society function and that it is the duty of every county society to see that steps are taken to control and supervise the milk supply. Dr. Henry L. Coit of Newark, N. J., in 1892, inaugurated through the Essex County Medical Society a local medical milk commission and adopted the term "certified milk" to designate milk which had been inspected by the milk commission and approved.

This work opens up a field of usefulness for county societies which will quickly and positively demonstrate to the public the value of proper medical organization. Few communities can be so dense or so ignorant as not to realize the value of a pure milk supply for the babies and young children. A commission of representative medical men of the county can formulate rules to be observed by dairymen and milk dealers and can by proper inspection secure the enforcement of these rules. Dealers complying with the requirements can be given a certificate and the physicians of the county, by advising their patients and families to purchase only certified milk, the purity of which is assured, can practically regulate the milk business of the county.

Such work is so manifestly unselfish and philanthropic on the part of physicians that it can not fail to secure public support.

#### The Duty of Physicians in Prohibition States.

At the recent session of the Medical Society of the State of North Carolina, Dr. J. Howell Way, the retiring president, presented a series of resolutions regarding the enforcement of the state law regulating the sale of liquors except on physicians' prescriptions and stating that, in view of the confidence shown by the public in the medical profession in placing in the hands of physicians the right to prescribe liquor at their discretion, the Medical Society of the State of North Carolina condemns as unprofessional and grossly immoral any lax or unfaithful conduct on the part of its members in this particular; that all physicians be urged to aid in the enforcement of the law and in building up a public sentiment that will insure protection against illegal traffic in intoxicating liquors and that the Board of Medical Examiners of the state be urged to revoke the license of any physician proved guilty



of prescribing intoxicants unnecessarily. The resolutions were unanimously adopted and were ordered printed in the newspapers of the state.

#### Two Years of Postgraduate Work.

Dr. Wilfred Haughey, the retiring president of the Battle Creek (Mich.) Medical Club, reports a most successful year's work. This club is an adjunct of the Calhoun County Medical Society and organized for the purpose of taking up the postgraduate course of study. During the past year, which has been the second year of postgraduate work for the club, forty-two meetings have been held with an average attendance of over fifteen, or twice the attendance of last year. In only a single instance has a member on the program been absent. The members of the club are greatly pleased with the plan of postgraduate work.

As pointed out in this department in a previous issue, the organization of local clubs for postgraduate scientific work can be made a valuable adjunct of county societies, so long as the club is an adjunct and not a rival of the county society. Valuable as its work is, it should not be allowed to take the place of the larger organization. While more frequent meetings of the local clubs are possible, they should be utilized as feeders for the regular meetings of the county society, the best papers on the programs being repeated before the larger audiences of the county society. Caution is necessary in this particular lest we unconsciously drift again into the condition of innumerable medical societies, indefinite in affiliation and responsibilities and overlapping in jurisdiction, from which the reorganization movement has well-nigh freed us. The same caution is necessary in large cities in which district or branch societies have been organized, lest, owing to the greater interest of the general practitioner in his district or local society, interest and enthusiasm for the main or county society be allowed to wane. The essence of our present plan of organization which has accomplished so much and which is capable of far greater things is the trinity of medical organizations—the county society, the state association and the national association.

#### Reorganization in Maine.

Dr. W. B. Moulton, the newly elected secretary of the Maine Medical Association, reports that at the annual meeting of that body held in June, a new constitution and by-laws were adopted, providing for the organization of component county societies and for the establishment of a delegated legislative body for the state association.

The adoption of these two features, the essentials of the reorganization plan, places Maine in the column of reorganized states and inaugurates a new order of things in medical organization in that state. From observation of results in other states it can be asserted positively that the next five years will witness greater achievements along every line on the part of the medical profession of Maine than have been seen in any twenty years heretofore. The establishment of county societies will afford an opportunity to every physician in the state to keep in touch with medical organization and progress and will weld the profession of the state into a single harmonious and useful body. A number of inquiries have already been received regarding the method of organizing county societies, the different lines of work to be taken up, etc. We congratulate the physicians of Maine on this achievement for we know that it will be the beginning of a new day for the people and the physicians of that state.

#### POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR,  
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

#### Eleventh Month.

#### SECOND WEEKLY MEETING.

#### Uremia.

#### Etiology.

Occurrence in nephritis, in obstruction of ureter, compression of renal vessels, cholera, etc.

Theories of Causation: (a) Retention or accumulation of excretory products, gradual or rapid, character of poisons. Bonchard's views. (b) Traube's views, localized or general edema of brain.

#### Symptoms:

Distinguish between acute and chronic uremia. Cerebral symptoms, slight to extreme: headache, somnolence, stupor and coma, or acute delirium. Convulsions, character, onset, severity, course, duration. Amaurosis and deafness. Respiratory symptoms, dyspnea. Gastrointestinal symptoms. Pulse, rate and tension; temperature, urine.

#### Hematuria and Hemoglobinuria.

#### Hematuria.

Etiology: Renal causes: inflammations, infarction, calculi and pyelitis, tuberculosis, malignant disease, parasites. Traumatism.

Affections of urinary tract: (a) Ureter, calculi, traumatism; (b) bladder, calculi, malignant tumors, acute cystitis, varicose veins; (c) urethra, gonorrhea, calculi, parasites, traumatism.

General diseases: Acute specific fevers, blood dyscrasie, chronic heart, lung or liver disease.

Diagnosis: 1. Presence of blood; color, sediment, chemical tests (Heller's guaiacum). Microscopic examination. Spectroscope. 2. Source of hemorrhage; mixture with urine, clot, molds, casts. Cystoscope, ureteral catheterization.

#### Hemoglobinuria.

Toxic: (a) Poisons; carbolic and pyrogallie acids, potassium chlorate, naphthol, phosphorus, carbon dioxid. (b) Poisonous fungi, muscarin. (c) Infectious diseases, scarlet fever, typhoid, malaria, syphilis, yellow fever, purpura. (d) Cold and exertion. (e) Burns, absorption of hemorrhagic effusion, transfused blood. (f) Epidemic hemoglobinuria in infants.

Paroxysmal: Sex, age, cold, exhaustion. Association with Raynaud's disease. Pain, gastric disorders, jaundice. Urine; color, reaction, blood tests. Microscopic examination. Methemoglobin.

## Marriages

JOHN HUNT, M.D., Seattle, Wash., to Miss Grace Portrais, recently.

JAMES W. HADLEY, M.D., to Miss Ethel Stoms, both of Frankfort, Ind., July 2.

X. P. DeDONATO, M.D., Georgetown, Wash., to Miss Flora Agnes Corgeat, June 11.

HIRAM B. TEBBETTS, M.D., to Mrs. Harriet Baurman, both of Los Angeles, June 20.

JACOB SILBERMANN, M.D., to Miss Jessie Stern, both of Cleveland, Ohio, June 28.

SCHUYLER A. WHITSITT, M.D., to Miss Margaret Crosby, both of Kent, Ind., June 24.

AMOS G. REESE, M.D., Williamsport, Pa., to Miss Helen Rounds of Sayre, Pa., July 2.

JOHN HUNT SHEPARD, M.D., to Miss Vera Nevers, both of Coeur d'Alene, Idaho, June 25.

THOMAS RALPH CASTLE, M.D., LeMars, Iowa, to Miss Edna Pabst of Albia, Iowa, June 24.

WILLIAM A. SHEPHERD, M.D., to Miss Minnie M. Mattis, both of Seymour, Wis., July 1.

ERNEST CHARLES STRAUS, M.D., to Miss Elsie Leszinsky, both of Louisville, Ky., July 9.

ANTHONY P. DONOHUE, M.D., to Miss Kathryn McCormack, both of Davenport, Iowa, June 25.

VANCE W. WATERMAN, M.D., Vergennes, Vt., to Miss Mary A. Rikor of Newark, N. J., June 24.

CLARENCE NICHOLAS McCUMBER, M.D., to Miss Iva Mand Rice, both of Lewiston, Ill., June 30.

LORIN C. KNEE, M.D., to Miss Anna M. Koenig, both of Lawton, Okla., at Oklahoma City, July 2.

GIFFORD LYNE SOBEY, M.D., to Miss Katharine Bayard Douglas, both of San Francisco, April 19.



GEORGE LEWIS WICKES, M.D., U. S. Navy, to Miss Marjorie Lindsay Appel of Cheyenne, Wyo., July 8.

HARRY HILL VAN KIRK, M.D., U. S. Army, to Miss Henrietta Clark Jordan, at New York, June 24.

A. PAUL TRAYWICK, M.D., Cameron, S. C., to Miss Janie May Crute of Buckingham County, Va., June 24.

ROY G. SWINNEY, M.D., Troy, Iowa, to Miss Minnie Shaw of Bloomfield, Iowa, at Ottumwa, Iowa, July 1.

GEORGE H. KENNETT, M.D., Kellogg, Idaho, to Miss Perle Schmalhausen of Missoula, Mont., in Idaho, June 24.

JAMES W. STRIBLING, M.D., Dickinson, N. D., to Miss Frances Archibald of Jamestown, N. D., at Spiritwood Lake, June 24.

PRESTON POPE SATTERWHITE, M.D., New York, to Mrs. James E. Martin, Sr., of Martin Hall, near Great Neck, Long Island, July 7.

## Deaths

Walter P. Hanning, M.D., Ohio Medical University, Columbus, 1903; of Nelsonville, Ohio; a member of the Ohio State Medical Association; died at St. Anthony's Hospital, Columbus, July 8, after an operation for gallstones, aged 29.

Lewis Barnes, M.D., University of Buffalo Medical Department, 1851; a member of the Connecticut State Medical Society; for many years health officer of Oxford, Conn.; died at his home in that place, July 5, of apoplexy, aged 84.

Winfield Scott Phillips, M.D., University of Vermont, College of Medicine, 1867; a member of the American Medical Association; for forty years a general practitioner in Arlington, Vt.; died at his home May 14, from myocarditis, aged 66.

Maximilian Frederick Charles Drescher, M.D., Long Island College Hospital, Brooklyn, 1891; a member of the Medical Society of the State of New York; died at his residence in South Brooklyn, July 7, from heart disease, aged 51.

Andrew McP. Cheeseman, M.D., Jefferson Medical College, Philadelphia, 1848; formerly of Philadelphia; died at Bethesda Hospital, Cincinnati, June 30, after an illness of five months of heart disease, aged 83.

Samuel N. Walker, M.D., University of Louisville Medical Department, 1877; a retired physician of Baldwyn, Miss.; died at his home in that town, July 7, after an illness of several weeks, aged 66.

J. J. Washington, M.D., Medical College of Alabama, 1880; a member of the American Medical Association; of Pass Christian, Miss.; died at his home, July 8, of heart disease, aged 56.

Alfred McLaughlin, M.D., Medical Department of the University of California, 1896; of San Francisco, who had been in failing health for some time; died at Pleasanton, aged about 37.

John Franklin Reiley, M.D., Missouri Medical College, 1896; a member of the Missouri State Medical Association; died at his home in West Plains, Mo., of cerebral hemorrhage, aged 36.

Beatrice Magdalene Curran, M.D., Woman's Medical of Pennsylvania, 1904; died at her home at South Hadley Falls, Mass., July 10, from valvular disease of the heart, aged 27.

Augustus R. Edmonds, M.D., St. Louis College of Physicians and Surgeons, 1884; a veteran of the Civil War; died at his home in Miami, Mo., July 7, after a lingering illness, aged 64.

James Hoffman, M.D., Hahnemann Medical College and Hospital, Philadelphia, 1885; of Jersey City, N. J.; died at his summer home in Newfoundland, N. J., July 8, of apoplexy.

George W. Hall, M.D., Jefferson Medical College, Philadelphia, 1855; one of the oldest physicians in St. Louis; died at his home in that city, July 7, after a long illness, aged 78.

Benjamin W. Bizzell, M.D., Southern Medical College, Ga., 1886; formerly a member of the Atlanta Board of Health; died in Phoenix, Arizona, June 26, of tuberculosis, aged 40.

Bert L. Goldthwait, M.D., Albany Medical College, Albany, N. Y., 1892; of Schenectady, N. Y.; formerly a practitioner of Troy, N. Y.; died suddenly at his home, June 17, aged 41.

James G. Ireland, M.D., University of Maryland School of Medicine, 1852; formerly of Baltimore; died at Washington, D. C., July 9, after a long illness, of paralysis, aged 77.

Francis J. Smith, M.D., Detroit College of Medicine, 1901; a member of the Michigan State Medical Society; of Sickles, Mich.; died at Ithaca, July 2, of tuberculosis, aged 31.

Daniel M. Stout, M.D., Jefferson Medical College, Philadelphia, 1847; a member of the Medical Society of New Jersey; died at his home in Berlin, N. J., July 10, aged 82.

Henry V. Dunstan, M.D., Medical College of Virginia, Richmond, 1862; one of the leading physicians of Windsor, N. C.; died at his home in that city, June 30, aged 66.

Edwin S. Robins, M.D., Jefferson Medical College, Philadelphia, 1854; of Shamokin, Pa.; one of the oldest practitioners in that part of the state; died July 9.

Jacob Charles, M.D., Long Island College Hospital, 1869; of Ephrata, Pa.; formerly a practitioner of Lincoln, Pa.; died at his home June 22, from nephritis, aged 60.

Zarilda P. Bradley, M.D., Eclectic Medical University, Kansas City, Kan., 1906; died in a private sanitarium in Kansas City, Mo., July 3, after an operation, aged 45.

John E. Sombart, M.D., Jefferson Medical College, Philadelphia, 1881; of Wilmore, Kan.; died in Wichita, July 8, after an operation for appendicitis, aged 49.

George B. Hamlin, M.D., Chicago Homeopathic Medical College, 1893; died at his home at Frankfort Station, Ill., after a lingering illness, July 2, aged 42.

Henry Flannery, M.D., University of Pennsylvania Department of Medicine, 1901; died in St. Agnes Hospital, Philadelphia, July 2, of uremia, aged 31.

John Buchanan, M.D., Medical Department University of Nashville, 1861; a veteran of the Civil War; died at his home in Eads, Tenn., July 8.

Richard B. Cash, M.D., Ensworth Medical College, St. Joseph, Mo., 1891; died at his home in Spickard, Mo., after a long illness.

John A. Carlstein, M.D., Chicago Homeopathic Medical College, 1882; of Ravenswood, Chicago; died at Charlevoix, Mich., July 10.

Willis S. Green (Years of Practice, Ind.), died at his home in Evansville, July 10, from apoplexy.

### Death Abroad.

O. Liebreich, M.D., professor of pharmacology and director of the Pharmacologie Institute at the University of Berlin since 1871, until forced to retire on account of illness over a year ago, died July 2, aged 69. He began life as a sailor, then took degrees in chemistry and in medicine and became assistant to Virchow in 1867. Among the discoveries for which he is noted are the special properties of chloral and ethyl chlorid, strychnin as an antidote to chloral, the synthesis of oxynervin, action of formalin, etc., and lanolin. He founded the *Therapeutische Monatshefte* in 1887.

## Society Proceedings

### COMING MEETINGS.

American Public Health Association, Winnipeg, Can., Aug. 25-28.  
American Acad. of Ophthal. and Oto-Laryng., Cleveland, Aug. 27-29.  
Wyoming State Medical Society, Sheridan, Aug. 28.

### CONNECTICUT STATE MEDICAL SOCIETY.

*One Hundred and Sixteenth Annual Meeting, held in New Haven, May 27-28, 1908.*

The President, DR. EVERETT J. MCKNIGHT, Hartford, in the Chair.

### Officers Elected.

The following officers were elected: President, Dr. Seldon B. Overlock, Pomfret; Vice-presidents, Drs. Irving L. Hamant, Norfolk, and Walter L. Barber, Waterbury; Secretary, Dr. Walter R. Steiner, Hartford; Treasurer, Dr. Joseph H. Townsend, New Haven; delegates to the American Medical Association, Drs. D. Chester Brown, Danbury, and Everett J. McKnight, Hartford.

Hartford was chosen as the next meeting place.

### Deformities of the Neck.

DR. E. H. ARNOLD, New Haven, reviewed the general etiology of deformities of the neck giving the nomenclature of two typical deformities. He discussed cervical rib as an important etiologic factor of congenital rib deformity and said it might be productive of no apparent outward deformity.



of caput obstipum anteriore, or torticollis. Pressure neuritis in the arm was occasionally produced by it. He reported six cases. The progressive development of this condition might produce subjective symptoms as well as a late deformity.

#### Case of Congenital Hypertrophic Stenosis of the Pylorus in Infants.

DR. ISAAC W. KINGSBURY, Hartford, referred to the first case of this disease as being described by a Connecticut man, Dr. Hezekiah Beardsley, of Southington. He then reviewed the pathology and symptoms of this condition, laying stress on the necessity of frequent examinations with the patient fully undressed. Under etiology he noted the rarity of the affection among the Latin and Slavonic races. In considering the diagnosis the pathologic conditions should be kept in mind. If spastic, the symptoms would subside, the loss of weight would not be progressive, the vomited stomach content might be abnormal and diarrhea might alternate with constipation. Concerning the treatment he stated it was to be considered a surgical affection and the operation must be undertaken by a competent surgeon. Prognosis was bad without an operation, but fair with one according to the condition of the patient and skill of the surgeon, ultimate prognosis after medical treatment dubious, after operative treatment excellent. He then described the case of a child, operated on by Dr. John C. Munro of Boston, eleven months ago. The patient made an uninterrupted recovery and its present weight is twenty-one pounds.

#### Recent Progress in Exact Diagnosis of Aural Brain Complications.

DR. E. DORLAND SMITH, Bridgeport, in discussing this subject said that otologists were now trying to forestall brain complications of aural infection by early operation on selected cases. Exact methods were needed to pick out these cases as they were usually without redness, swelling and tenderness of the mastoid process. Most of them were persistent chronic running ears in which there was either pus aspirable after cleaning, dead or rough bone in the tympanic cavity or attic, cholesteatoma, mastoid disease, or labyrinth involvement. The last was especially important as the suppurating labyrinth was not only more common than had been supposed, but was one of the regular and not infrequent paths by which infection goes from the ear to the brain. Several forms of labyrinth affection might be differentiated according to the character of the cochlear deafness, to the disturbance of equilibrium by dizziness and the nystagmus of vestibular affection, and to the presence or absence of vestibular irritability. Some of these ideas about the labyrinth had not yet stood the test of time, but so much was true and useful that labyrinth investigation could not be neglected. Nystagmus was easily observed, and by its presence or absence, its amount, direction, variability, etc., often gave definite help in diagnosis. When brain complications were present, an early exact diagnosis led to a simpler and surer operation. Such a diagnosis required close study of the case and often a minute record of symptoms, but might often be made by searching out every bit of evidence and by thinking out all the possible theoretical causes for each symptom. Whether made or not, the attempt to make an exact diagnosis helped to avoid some of the unnecessary operations, and to do a better operation when operation was necessary.

#### Removal of Foreign Bodies by Bronchoscope and Esophagoscope.

DR. HENRY L. SWAIN, New Haven, stated that inventions or improvements on old methods were usually the results of necessity or defects and deficiencies in the older means adopted to each certain end. The old methods of examining the throat were subject to limitations. One could not examine the larynx much less do delicate operations on it, or introduce an anesthetic, except under almost insurmountable difficulties. Young children and older unwilling children could not be coerced into permitting examination by the indirect method, and not being able to accomplish it under an anesthetic, diagnosis and treatment of diseases of the larynx

and trachea were unsatisfactory. Diagnosis of diseases of the esophagus was relegated entirely to the sense of touch which of course never permitted sight of a lower level than just back of the arytenoid cartilage. If a foreign body was in a small bronchus it was almost impossible to remove it even by tracheotomy and even then no one ever thought of using a reflected light to locate and aid in removal. When a foreign body was in the esophagus, it was inexactly located and then literally fished out by aid of various ingenious devices. Dr. Swain also called attention to the value of the *x*-ray in locating these foreign bodies, especially in conjunction with the bronchoscope.

#### General Pathologic Conditions Occurring With Uterine Fibroid.

DR. HENRY G. ANDERSON, Waterbury, said that it was probable that uterine fibroid was not only a local disease but that the process was practically a general one influenced by the presence of, or by products from, the uterine growth. These changes included degenerative processes in the circulatory system as anemia, thrombosis and embolism. Degenerative changes of the heart and kidney are often observed. These changes influenced the question of operation and might of themselves make the demand for operation imperative.

#### Bier's Hyperemia.

DR. ALFRED M. ROWLEY, Hartford, explained the method of application of this form of treatment in acute rheumatism and gonorrheal joint affections, and reported three cases showing good results. A third case demonstrated the prophylactic value of early hyperemia in streptococcus infections, illustrated by the treatment of two vaccinations received at the same time on either hand; one wound treated with early constriction healed in four days, the other was treated with late hyperemia and required incision and three weeks for healing.

#### Prognosis in the Suture of Nerves.

DR. ERNEST A. WELLS, Hartford, merely mentioned the primary suture of nerves and dealt chiefly with secondary suture and with the readjustment and anastomosis of nerves for the cure of certain forms of well-localized paralysis. The number of cases reported is comparatively small, but the number of cases amenable to this form of treatment seems to be increasing as attention is called to the possibilities offered by it. He reviewed the literature and discussed thirty-five operations for the cure of facial paralysis, including one reported for the first time. He also discussed fourteen cases of anastomosis of nerves other than facial for the cure of paralysis.

#### Etiology and Treatment of Puerperal Infection.

DR. W. L. BARBER, Waterbury, gave a brief history of the disease before and after the discovery of the organism. He ascribed the cause, as usual, to the neglect of the obstetrician and midwife in securing and maintaining asepsis for the patient during and after labor. He thought that midwives were not sufficiently educated in aseptic methods. He believed that the position of the child should be determined, if possible, by external abdominal examination. Normal labor was expedited too frequently, he asserted, by use of instruments; chloroform should be used in any stage of labor, if necessary; the uterus should be well contracted, and all tears should be repaired. The causes of elevation of temperature should be sought for at once; if it occurred within 24 hours, it depended usually on some infection within the system—autogenetic—primarily of gonorrheal origin, or from pyosalpinx, or vulvovaginal abscess. He thought that a correct diagnosis of puerperal infection should be made from a culture taken from the lochia. In the curative treatment, he removed from the uterine cavity all the toxic-producing debris by his fingers, if possible; then flushed with salt solution. The fever subsided in a few days if sapremic. When the infection was of streptococcal origin, the uterus should not be washed out. The exudate following puerperal infection was absorbed as a rule; but, when not and supuration was assured, he advised incising and draining. Hys-



terectomy might be useful if the uterus alone were involved, but never in any case with involvement of the peritoneum. He believed that early abdominal incision, with flushing of the peritoneum and drainage through Douglas' space should be employed. The only medication useful was alcohol and strychnin in large doses. It was more rational to follow the bacteria in the blood with the mercury than with the silver salts. Injections of salt solution were always of advantage. Serum was of little use. In concluding he asserted that puerperal infection could not be eliminated from the list of diseases while present careless habits controlled the attendants.

#### Treatment of Typhoid and Its Complications.

DR. CHARLES J. FOOTE, New Haven, discussed the milk diet in typhoid from the following standpoints: The objections to the use of milk; the need of more carbohydrates in the diet; the indications for the use of alcohol in typhoid, the physiologic effects as shown in recent studies, and their bearing on the use of alcohol in typhoid; the relation of alcohol to susceptibility to infection, intestinal antiseptics in typhoid; typhoid primarily a septicemia and not an intestinal infection; the real value of intestinal antiseptics.

#### Pleurisy With Effusion.

DR. NELSON POMEROY, Waterbury, said that in the treatment of a serofibrinous pleurisy the physician should aspirate as soon as possible and repeat the operation at the first sign of a reaccumulation of the fluid. This treatment had the following advantages: It was easily and safely done; it relieved and shortened the local inflammation; it removed in a few moments a quantity of fluid which could not be removed through the kidneys and bowels in many days; it prevented carnification of the lung and the formation of adhesions; it prevented congestion of the lung on the unaffected side; and probably in many cases secured exemption from empyema.

#### Other Papers Read.

The following papers were also read: "Early Diagnosis of Cerebral and Spinal Tabes," Dr. John C. Lynch, Bridgeport; "Grocco's Sign," Dr. George Blumer, New Haven; "Gastrojejunostomy," Dr. Edward W. Smith, Meriden; "A Case of Family Periodic Paralysis," Dr. Max Maihouse, New Haven.

### AMERICAN ACADEMY OF MEDICINE.

*Thirty-third Annual Meeting, held at Chicago, May 30 and June 1, 1908.*

The President, DR. THOMAS D. DAVIS, Pittsburg, in the Chair.

The officers elected were named in THE JOURNAL, June 6, page 1913.

An amendment to the constitution was adopted providing for the election as associate members of those who are not physicians, but who have the required preliminary degree, and who are working along sociologic, educational and other scientific lines.

#### Education of the Public in Medical Matters.

DR. EDWARD JACKSON, Denver, chairman of the committee, appointed to recommend the best means for the medical profession to assist in education of the public, recommended that the academy provide for the placing before the public of such papers and reports read before its meetings as would be of value in the work of popular education in medical subjects, such work to be furthered through the exchange list of the *Bulletin*. On that list educational journals and popular science publications should be represented, as well as foreign or domestic medical journals and scientific transactions. It was recommended that the individual members continue their active interest in the various educative movements, and that the academy itself continue its studies, discussions and recommendations, regarding the teaching of physiology and hygiene in the schools; that it encourage original papers on the education of the public in medical matters and provide for exchanges with publications devoted to education and popular science; and, further, that at an early meeting it arrange for a dis-

cussion of the education of the public by the physician in active practice through his patients.

#### DISCUSSION.

DR. CASEY A. WOOD, Chicago, cited Helmholtz as the first noted man to proclaim it an essential function of the medical profession to teach the public on matters medical. Dr. Wood believes it the duty of the profession to teach the laity, all opinions to the contrary notwithstanding. He considers the public press a much more effective medium than the distribution of pamphlets.

DR. HENRY B. HEMENWAY, Evanston, Ill., urged the importance of impressing on the public the need of public sanitation. The prevalent ignorance of the laity was shown in the fact that the United States Government had to exclude from its publications the vital statistics of most of the states because of inaccurate records. Lectures for the education of the public, to be efficient, must be divorced from personal ends. To accomplish this the lecturer should be paid.

DR. LEARTUS CONNOR, Detroit, urged that the physician who would educate his community must live as he would teach. In Michigan there was a movement under the Board of Health whereby those with a knowledge of sanitation were led to instruct the uninformed.

DR. PHILIP ZENNER, Cincinnati, thought that unsigned but authoritative medical articles in the daily press would eventually be read as eagerly as the baseball news now is.

DR. HENRY F. GOODWIN, Chicago, protested against such instruction as that in the *Chicago Tribune* for the arrest of hemorrhage by filling the wound with cobwebs collected from walls, etc.

DR. JOSEPH K. WEAVER, Norristown, regarded the county medical society as the proper medium of instruction between the medical profession and the laity.

DR. THOMAS H. SHASTID favored the work of the *Youth's Companion* in publishing half column articles on medical matters. He strongly advocated the publication of medical articles in farm journals.

DR. JOHN H. TRESSEL, Alliance, Ohio, spoke of the strong desire on the part of the farmer for instruction in matters of hygiene.

#### Report of Committee on Medical Education.

DR. CHARLES MCINTIRE, chairman at the conference in Pittsburg in January, reported the opinion of the committee that there was a definite field for the academy in the discussion of the educational requirements of the intending physicians, viz.: the harmonizing of the courses in the literary and medical colleges, emphasis being given to the desirability (not necessity) of a broad liberal culture precedent to the study of medicine, and the shaping of the liberal culture course to include those sciences which lie at the foundation of medicine, that they need not be taken again in a medical course.

#### DISCUSSION.

DR. LEARTUS CONNOR, Detroit, thought no medical school should grant a diploma until the graduate had filled a hospital internship for at least a year.

DR. L. HARRISON METTLER, Chicago, wished there might be some authority to determine the man best fitted for certain chairs in colleges. He believed that the standard of medical education ultimately resolved itself to the character and knowledge of the faculty. The German plan of having the whole university scheme under one head he thought approximately solved the problem, for the student thus continued his studies with the teacher from whom he acquired the most knowledge; and this reacted on the teacher.

DR. WINFIELD S. HALL, Chicago, agreed with Dr. Mettler that the power of choice on the part of German students was a valuable educative factor. A plan in vogue in Chicago which resulted somewhat as the German system was the holding of clinics in medical schools at which attendance was more or less optional with the student. He believed that should the licensing board require a year's experience in hospital work before granting license to practice, the suggestion of Dr. Connor could be made practicable.



DR. HARVEY observed that in Massachusetts while about 150 medical students were graduated every year, there were hospital internships for less than fifty.

DR. L. CONNOR believed that the state boards of examiners would require such provision only if backed by public sentiment.

#### The Doctor and the School.

DR. THOMAS D. DAVIS, in his presidential address said that on no important medical subject was the physician so seldom consulted as on school hygiene. It was possible also that there was no object which he was so ill prepared to advise. In sharp contrast to the fact that school boards do not seek the advice of physicians concerning location of school buildings, he said, was the fact that the generals of the Japanese army were not allowed to pitch their tents until the medical officers had approved the locations. Medical men should insist on the acquisition of large tracts of ground for school yards and play grounds, as a matter of economy as well as of hygiene. The arrangement of rooms for the convenience of teachers and scholars had its hygienic as well as its pedagogic side. Dr. Davis believed that in the matter of heating school rooms the best results were obtained by heat supplied by direct radiation from hot water or steam coils, fresh air being introduced through the window sash and by opening all the windows every three-quarters of an hour. The advantages of the inclusion of physical culture in the curriculum were considered. Such exercises must be carefully selected and adapted to the age and condition of the child. Medical advice should have a place in college athletics. The football controversy should be settled by physicians rather than by college presidents. Attention was called to the medical inspection of school children and the necessity for and advantage of such examination, which should be aided by the cooperation of teacher and parent. The importance of the teaching of physiology and hygiene was emphasized and the belief expressed that such teaching of hygiene would do much in its relation to morality and purity to elevate the next generation.

#### Second International Congress on School Hygiene.

DR. HELEN C. PUTNAM, Providence, R. I., delegate, briefly outlined the main features of the congress. There seemed need she said, of an international commission to unify inspection methods for purposes of compilation and comparison. Oral sepsis and the influence of inspection on the incidence of diseases were of special interest. In the section on hygiene of the teaching profession, statistics were quoted showing that in Canada and the United States tuberculosis was more prevalent among teachers than among any other class; but this was not the case in European countries. Two sections indicated tendencies to classify children according to physical and mental capacities, and recommended less "machine work," more individual attention. Emphasis was laid on supplementing physical and psychical elements of formal drill with others of initiative and exhilaration through games and dancing. Suggestive items as to fatigue were reported from child-study laboratories in the section on psychology of education. At present, it was pointed out, children at school underwent depression throughout the year without sufficient holidays for effective recovery; over 75 per cent. failed to follow the curriculum prescribed as suitable for their ages and abilities—the greater number of failures being among those who had been in kindergarten—due to insufficient knowledge and application of physiologic and psychologic laws of childhood. Temperance instruction seemed the feature of the schools most interesting to foreigners; then, co-education. Instruction in the physiology and hygiene of sex was an international problem. Parental incapacity and environmental difficulties out of school were frequently discussed. Out-of-school hygiene was the title of one section. The point most insisted on in the final resolutions was much better work by institutions for training teachers. It was stated that the proceedings could be obtained through Dr. James Kerr, honorary general secretary, Royal Sanitary Institute, Margaret St., London, W. C.

#### DISCUSSION.

DR. PHILIP ZENNER, Cincinnati, remarked that the teaching of sexual hygiene carried out in the public school of one of the poor districts of Cincinnati had resulted in an altogether different moral tone among the pupils.

DR. HELEN PUTNAM referred to the instruction in sex hygiene carried on through the efforts of the American Society of Sanitary and Moral Prophylaxis. In Philadelphia in the school gardens the subject was approached from a biologic viewpoint, embracing a study of flowers with their reproduction, and of insects. It was there taught that the two objects of every living being were to perfect and to reproduce itself. Attention was not especially drawn to human reproduction, but the plan was a means of approaching indirectly the fundamental elements of life and demonstrated what might be done in this respect in the public schools.

(To be continued.)

#### NORTH DAKOTA MEDICAL ASSOCIATION.

*Annual Meeting, held at Grand Forks, May 12-13, 1908.*

The President, DR. CHARLES V. MACLACHLAN, New Rockford, in the Chair.

#### Address of Welcome.

The association was welcomed by Senator J. D. Taylor, M.D., mayor of Grand Forks.

The response in behalf of the association was made by Dr. F. R. SMYTH, mayor of Bismarek.

#### Progress in Medicine.

DR. CHARLES V. MACLACHLAN, New Rockford, in his presidential address, felicitated the association in greeting so many representative men of the profession from the various sections of the state, and welcomed a number of distinguished visitors from sister state associations. He discussed the recent progress made in many branches of medicine, especially in the study of infectious diseases. In pneumonia, now becoming so common in the northwest, attention was called to the occurrence of icterus, a well-marked case of jaundice indicating a grave prognosis, as this in itself seriously altered the heart's action, causing dilatation and incoordination in an already overburdened organ.

Dr. MacLachlan said that the discussion of the spread of tuberculosis and its prevention and management by the individual by the state and by the nation opened up a subject in which there was great diversity of opinion, yet a unanimity in conviction that organized effort, colossal in character, must be instituted without delay that the fearful progress might be stayed. This young and vigorous commonwealth was abundantly capable of taking care of its own afflicted. Of fresh air, sunlight and food, the sheet-anchors in the care of consumptives, there was an abundance. A campaign of education was required to spread information as to how to combat the spread of disease by educating the patient himself, the family, the neighborhood, the county and the state. The judicious expenditure of the money would enable the patient to be treated at home—where care and friendship were united. Dr. MacLachlan urged that at this meeting an appropriation be made sufficiently large to enable each local society to send a delegate to visit the regular committee on tuberculosis and legislation during the session of the legislature, in order that urgent necessity of remedial legislation might be impressed on the governor, the senate and the assembly, a permanent fund obtained and a commission appointed to carry home to the people the necessary education and to provide up-to-date shelter and care for resident consumptives. The State Board of Health should be empowered by legislative act to inspect the buildings, sanitary conditions and administrative conduct of all hospitals throughout the state and license them if they fulfilled requirements. The sanitary conditions of hotels and schools and other public institutions should be similarly inspected.

Physicians of the state should follow more closely the methods of the profession in the East in matters of professional ethics. They should guard against consulting with



the representatives of various "pathies" and "isms," who, according to the standard of the American Medical Association, are "irregular and unreliable."

#### Proceedings of House of Delegates.

The House of Delegates convened daily. The following report was endorsed unanimously, in conformity with the president's recommendation:

Your committee, to which was referred that portion of the president's address pertaining to the practice of some members of the profession assisting or consulting with persons practicing under various "pathies" and "isms" who are not considered up to the standard required by the American Medical Association for membership, begs leave to report that the ethics of the profession discredit the practice suggested in the president's address, and this committee recommends that this society go on record as requiring that its members do not encourage osteopaths and other irregular practitioners by assisting them with council or otherwise in their work.

The report of the secretary showed a substantial gain in membership in the component societies, some of which were doing excellent work and having interesting meetings. The report of the treasurer showed a good balance—sufficient to assist materially in carrying out at least some of the suggestions made by the president in his address.

The Committee on Public Policy and Legislation reported that the only legislation recommended by the committee during the past two years was a vital statistics bill on the lines advised by the U. S. Bureau of the Census. The bill was passed by the legislature and became a law, but without the necessary appropriation to make it effective. The committee recommended that an effort be made to secure a sufficient appropriation at the coming session of the legislature, and the recommendation was approved.

The Committee on Tuberculosis made the following recommendations in its report, which was adopted:

The Committee on Tuberculosis would respectively recommend that the Committee on Legislation be instructed to have drafted suitable bills and to have them introduced at the next meeting of our legislature at Bismarck and to use and exercise all legitimate means at their disposal to have the same become a law, these bills to embody the principles herein set forth, to wit:

1. That the appropriation for the use of the Department of Public Health be increased to at least \$7,000 per annum, making it possible for the department to carry on an aggressive policy along sanitary and educational lines. Your committee is of the opinion that the health and welfare of our citizens should at least receive as much consideration as that of our dumb animals. The Live Stock Sanitary Board has an annual appropriation of \$7,500, while our Department of Public Health has an appropriation of \$2,700 annually.

2. That it be made mandatory for attending physicians to report to the Department of Public Health all cases of tuberculosis coming within their knowledge to the end that the parties so infected may be supplied with suitable and reliable information relative to the best methods for the cure of the disease and of the precautions necessary in order to avoid transmitting the disease to others.

3. That spitting on a sidewalk or floor of any public building, cars, or any sort of public conveyance be declared a public nuisance, dangerous to public health, and on conviction shall be punishable by a fine of not less than five dollars or by imprisonment in the county jail not to exceed thirty days, or both.

4. That suitable and sufficient sanatoria be established and maintained at some proper and desirable location within the state and at its expense where approved and up-to-date methods may be employed for the relief of those who may be admitted therein for care and treatment.

#### Endorse Council on Pharmacy and Anti-Nostrum Work.

The Grand Forks Medical Society, through its delegates, introduced the following resolutions passed by that society Feb. 12, 1908. They were adopted:

WHEREAS, The American Medical Association has established a Council on Pharmacy and Chemistry, composed of scientists of world-wide reputation and standing, whose function is to examine pharmaceutical products in order to be able to inform the profession as to the actual composition of said products; and,

WHEREAS, After careful examination of many of said products, it has officially announced its approval of a large number of them, and, in order to make clear to the profession the methods and purposes of the work, has published exposures of a large number of the fraudulent preparations that have been foisted on the members of the profession and through them on the public by interested owners and manufacturers, frequently laymen, ignorant of the use of drugs, except their meretricious use, as examples of the much larger number which they have found of little or no value or positively harmful; and,

WHEREAS, We believe that every physician in North Dakota is vitally interested in the work of this Council and desires in every possible way to promote its usefulness and interest; and,

WHEREAS, The greatest aid to the nostrum manufacturers in their nefarious and avaricious work has been the medical press, whether controlled by medical organizations or interested lay firms; and,

WHEREAS, We believe the time has arrived when the great profession of medicine and all agencies controlled by it should divorce itself permanently, finally and forever from those interested who like ghouls prey on the sick and afflicted through the commercial sale of nostrums and dishonest so-called proprietary medicines; now, therefore, be it

*Resolved*, By the Grand Forks District Medical Society, in regular session assembled, That we heartily endorse the formation of the Council on Pharmacy and Chemistry, and that we extend it our confidence and congratulations on the splendid work already accomplished and that we pledge it our unanimous support in its purpose of freeing our profession and its publications from nostrum control; and be it further,

*Resolved*, That in pursuance of this object we hope each county society in North Dakota will devote a special session to consideration of this important question with a view of securing the active aid of every licensed practitioner in the state, and that the council of this association be requested to omit from the advertising columns of the journal all pharmaceutical preparations which are not manufactured in conformity with the United States Pharmacopoeia or the National Formulary until they have been approved by the Council on Pharmacy and Chemistry of the American Medical Association; and be it further

*Resolved*, That we request every physician in the Grand Forks District to secure a copy of the abridged U. S. Pharmacopoeia and National Formulary and be guided by this and the approval of the Council on Pharmacy and Chemistry in the use of medicines; and be it further

*Resolved*, That our council be requested to communicate with the editors, owners, collaborators and publishers of the medical journals of the country on this subject, and to announce to the profession of North Dakota, through the columns of *The Journal* of the American Medical Association and such publications as are willing to assist the profession by freeing their columns of nostrum advertising, and we hereby pledge our support to such journals even if they find it necessary to increase their subscription rate; and further be it

*Resolved*, That we expressly condemn the publication of so-called medical journals by interested owners and manufacturers of nostrums, and request the profession of the state to decline to receive them.

#### Approval of State Public Health Laboratory.

A Public Health Laboratory was established by an act of the last legislature at the State University and School of Mines, and in appreciation of this needful legislation, the association approved the following:

*Resolved*, That the North Dakota State Medical Association fully appreciates this act of the legislature and desires to emphasize the inestimable value to the people of the work of this laboratory in assisting to conserve public health. It believes that the perpetuation and concentration of the work at this institution will bring additional benefits to the people of this state and that it should receive the earnest support of all our citizens as well as that of the medical profession. It also endorses the initiative work of the present director, Dr. Gustav F. Ruediger, in bringing the laboratory up to its present efficient standard and commends him for his earnest, conscientious and capable work.

#### Officers Elected.

The following officers were elected: President, Dr. Henry A. Beaudoux, Fargo; first vice-president, Dr. J. E. Countryman, Grafton; second vice-president, Dr. John D. Taylor, Grand Forks; third vice-president, Dr. R. H. Beck, Lakota; secretary, Dr. H. J. Rowe, Casselton; treasurer, Dr. John Dempsey Taylor, Minot.

The association meets at Fargo in 1909.

#### RHODE ISLAND MEDICAL SOCIETY.

*Ninety-seventh Annual Meeting, held at Providence, May 26-28, 1908.*

The President, DR. CHARLES V. CHAPIN, Providence, in the Chair.

The secretary's annual report showed 386 members; of these, 345 were resident, 29 non-resident, and 12 honorary. The library committee reported 22,000 books in the library. During the year, 371 bound volumes, 278 reprints, and 226 pamphlets were added.

The trustees of the Fiske prize fund reported that a prize of \$200 had been awarded to Dr. Frank R. Vale, Washington, D. C., for his essay on the subject, "Has Surgical Treatment Lessened the Mortality from Appendicitis?"

For 1909 a prize of \$200 is offered for the best essay on "The Mode of Infection and the Duration of the Infectious Period in Scarlet Fever."

For 1910 a prize of \$200 is offered for the best essay on "The Classification and Treatment of the Diseases Commonly Known as Rheumatism."

The trustees of the Chase-Wiggin fund announced that a prize of \$75 was awarded to Dr. J. M. French of Milford, Mass., for his essay on "Tea and Coffee as Drinks."

For the year 1909 a prize of \$75 is offered for the best popular essay on "The Nature of Alcoholic or Intoxicating Drinks and Their Evil Effects on the Human System."



**Sanitary Problems.**

The President, DR. CHARLES V. CHAPIN, in his annual address on "Some Sanitary Problems," said that although much yet remains undone, much has already been accomplished. Among the sanitary successes of the last century have been the cleaning of cities, the providing of pure water, the removal of waste, the scientific purification of water and sewage, the building of special hospitals for the isolation and treatment of those suffering from contagious diseases and the substitution of effective inspection for burdensome and ineffective quarantine.

**Case of Brain Tumor.**

DR. WILLIAM McDONALD, JR., Providence, reported a case of brain tumor and exhibited the specimen. The tumor was a glioma and occupied nearly the whole of one hemisphere. In spite of the extensive destruction of the brain, the patient remained quite rational for a long time.

**Laryngeal Diphtheria.**

DR. IRVING S. COOK, Georgiaville, reported a case of diphtheria which involved the larynx and trachea. Antitoxin failed to relieve and preparations were made to operate when the child had a severe coughing spell and coughed up a long membrane which was a perfect cast of the trachea and primary bronchi and which on one side showed two extensions into secondary bronchi.

**Actinomycosis.**

DR. NATHANIEL H. GIFFORD, Providence, read a paper on "Actinomycosis." He briefly reviewed the subject and reported the first case to be presented to the society. The patient was a male, aged 56, who had been accustomed to suck pieces of straw. When first seen, the disease had made such progress in six weeks that the patient was unable to separate his jaws more than a quarter of an inch. The right jaw and the tissues below presented an irregular tumor, the size of a small orange, and on its surface were several soft and inflamed spots. This and some small abscesses which formed, were opened and drained. Internally, iodid of potassium was given and in about six months the man made an excellent recovery. The fungus was shown under the microscope.

DR. WILLIAM C. MONROE, Woonsocket, read a paper on "The Health Problems of the Smaller Cities."

**Officers Elected.**

The following officers were elected for the ensuing year: President, Dr. Frank B. Fuller, Pawtucket; vice-presidents, Drs. Eugene Kingman, Providence, and Augustin A. Mann, Central Falls; secretary, Dr. Stephen A. Welch, Providence; treasurer, Dr. George S. Mathews, Providence. Dr. G. T. Swarts, Providence, was appointed to serve for three years on the Committee on Medical Education of the American Medical Association, and also to serve on the Committee on Medical Legislation of the American Medical Association.

**AMERICAN ORTHOPEDIC ASSOCIATION.**

*Twenty-Second Annual Meeting, Held in Chicago  
June 4-6, 1908.*

The President, DR. HENRY LING TAYLOR, New York, in the Chair.

The President, in his address, discussed the "Present Day Needs of an Orthopedic Service."

DR. ROBERT B. OSGOOD, Boston, secretary of the Association, presented the memorial to Albert Hoffa.

**Treatment of Joint Tuberculosis by Marmorek's Serum.**

DR. ALBERT H. FREIBERG, Cincinnati, reported the progress of cases described at last year's meeting, and giving some new cases treated since. He said that the serum had no influence on the temperature in any severe case, but that in cases of ordinary unmixed infection the temperature seemed to become more nearly normal than before the administration of the serum.

**Treatment of Rheumatoid Arthritis.**

DR. FRANK E. PECKHAM, Providence, R. I., gave the results of the treatment of villous, atrophic and infectious arthritis, by electric and other baths, vibration and gymnastics.

**A New Treatment for Old Tuberculous Sinuses.**

DR. JOHN RIDLON and DR. WALLACE BLANCHARD, Chicago, described this treatment which consists in injections of bismuth and petrolatum emulsion.

**DISCUSSION.**

DR. EMIL BECK, Chicago, spoke of some of the limitations of the method, so as to put orthopedists on their guard against them. He thinks, however, that its use is not attended with much danger, there having been no bad accidents from it. It should not displace other methods.

DR. H. AUGUSTUS WILSON, New York, said that the first fluid, melting at a lower point, is better for small sinuses, and said that the second, hardening with great rapidity, would enter with more difficulty.

DR. GWILYM G. DAVIS, Philadelphia, asked whether or not any bad effects are likely to arise from the use of paraffin and petrolatum, these being minerals and apparently almost unabsorbable. He has not used bismuth, but has used a mass of iodoform, wax and oil of sesame or olive oil.

DR. A. H. FREIBERG, Cincinnati, had used for several years a thin suspension of bismuth for the purpose of diagnosing the extent of these fistulous tracts. He thinks, however, that so long as destruction at the seat of disease is going on, it would be useless to close the fistula.

DR. PHILIP HOFFMAN, St. Louis, said that he wondered whether or not some of the many sinuses shown in radiograms of such cases might not be dissection-sinuses produced by the force used in injecting the bismuth.

DR. RUGH stated that in the postmortem examination of a part of the face that had been injected subcutaneously with paraffin for the correction of a deformity, it had been found that Nature was appropriating the material by throwing out new tissue through the injected mass, thus making it actually a part of the body.

DR. BLANCHARD said that the bismuth was not intended as a treatment for the tuberculosis, for which the patients were being treated at the same time by other means. He has found no bad mechanical effect from the injections. The method was not used in cases of acute inflammatory conditions, but only for old chronic sinuses and to open two abscesses. He saw no reason for changing the formulas employed.

**The Influence of Weight Bearing on the Treatment of Tubercular Joint Disease.**

DR. VIRGIL P. GIBNEY, New York, presented this paper.

**DISCUSSION.**

DR. H. A. WILSON, New York, said that by this method he has obtained both the best and the most disastrous results that he has ever encountered. He was surprised at the manner in which one patient's legs developed and apparently became swollen from some kind of pressure. In order to prevent the weight-bearing from producing luxation and consequent shortening, the limb, when the plaster is applied, should be held in a position of slight flexion, abduction and external rotation.

DR. EDWARD H. BRADFORD, Boston, said that he had seen a certain number of patients treated for hip disease with weight-bearing and a short spica without immediate benefit, and in whom recovery was a slow and extremely painful process. He thinks that the splint treatment has been carried to the point of absurdity. He thinks that patients should not be allowed to run around on diseased hips, even if they are abducted. He does not consider the appearance according to the x-ray photograph conclusive evidence as to the real condition present. The question should be considered from the standpoints of pathology and clinical results, and he believes that although weight bearing is justifiable and salutary in some cases, in others fixation and compression or traction should be employed.

DR. DAVID SILVER, Pittsburg, mentioned a case in which the result from the use of this method had been that the head



of the femur was entirely destroyed, leaving just the remains of the neck.

DR. COMPTON RIELY, Baltimore, said that patients should not be kept in traction too long. Attempts should be made at short intervals to see whether the patient could not get along with the spica.

DR. ARTHUR J. GILLETTE, St. Paul, said that some patients do better with immobilization, some with extension, and some with both. No hard and fast rule can be laid down.

DR. JAMES K. YOUNG, Philadelphia, said that his experience with the Lorenz method has been gained in treating patients who came to him with abscesses and other troubles after having been treated according to that method by other men.

DR. TAYLOR said that he does not feel ready to accept the dictum that all cases can be successfully treated with the spica. A great many patients do fairly well under this treatment while in the hospital, but within a short time after leaving that institution they come to the out-patient department with legs swollen.

DR. V. P. GIBNEY, New York, said that the method was known before Lorenz was thought of. He does not treat all his patients in that way. He has not found radiograms always satisfactory, and hopes by the end of another year to have some statistics to present on the subject of the results of this method of treatment.

#### CANDIDATES' THESES.

##### 1. Deformities in Feeble-Minded Children.

DR. E. H. ARNOLD in his thesis said that the conspicuous findings are the following: The preponderance of females, the high percentage of Hebrews, the comparative sterility of the parents, the large number of families having more than one defective child, the fact that instrumental delivery is a possible cause in some cases, the large proportion of smooth-breathers, the tardy beginning of walking and talking, the prevalence of left-handedness, the fact that very few feeble-minded children escape deformity, and the conclusion that most of these deformities are acquired and due to habit. He then considered the prophylaxis in some of these conditions, and the value of educational measures in forming good habits and overcoming bad ones.

#### DISCUSSION.

DR. B. E. MCKENZIE, Toronto, believes that instead of one of these conditions being dependent on the other, both are due to a common cause—a brain-lesion at some time, and frequently before birth. In correcting these deformities he depends greatly on education. If he can not have the cooperation of the patient, as is impossible in the feeble-minded, he hesitates to enter on the more distinctly surgical aspect of the correction of deformities.

DR. YOUNG said that forceps are often used unnecessarily, and their use often results in the deformity of the child.

MR. ERNEST MUIRHEAD LITTLE, England, said that in a certain proportion of spastic cases the pressure of the forceps probably causes the lesions with which the surgeon has to deal.

##### 2. Tuberculin in Orthopedic Surgery. Clinical and Laboratory Reports.

DRS. JOHN JOSEPH NUTT and T. W. HASTINGS based their paper on twenty-two cases of joint tuberculosis, and described fully the details of the administration of the tuberculin.

DR. CHARLES F. PAINTER, Boston, said that he has had many cases in which this treatment was used, but that the results had not been so satisfactory or so encouraging as those in Dr. Nutt's series.

DR. CHARLES OGILVY said that the opsonic index is of little practical value, and that some patients improve under injections of tuberculin much more quickly and satisfactorily than others.

##### 3. Mechanical Lesions of the Sacroiliac Joints.

DR. RALPH R. FITCH reported twenty-two cases, divided in groups according to etiology. Treatment began with support, and he described a method of applying plaster-of-Paris jackets

with the back in a hyperextended position without special apparatus.

#### DISCUSSION.

DR. PAINTER said that manipulation under anesthesia often gives relief that mechanical measures do not afford, and gave the details of an illustrative case.

DR. ANSEL G. COOK, Hartford, Conn., called attention to a new symptom of the condition, first suggested to him by Dr. William Porter, of Brooklyn. This is the fact that pain can be elicited by pressing on the joint from the rectum, when no pain can be elicited by pressing on it from the other side.

DR. R. E. FITCH said that he does not know of the presence of any one definite symptom. He has seen one or two cases with pain referred to the coccyx and without pain elsewhere.

##### 4. The Non-operative Treatment of Fracture of the Femoral Neck.

DR. A. M. FORBES referred to the grave prognosis in medial and intra-capsular fractures, and the decreasing tendency to osseous union as the fracture approaches the smaller portion of the neck near the head. A consideration of the anatomy of the fracture and the anatomic principles of treatment and a critical review of the methods of treatment that have been advocated led him to conclude that under certain forms of treatment there is probably a more hopeful prognosis than most surgical writers indicate.

#### DISCUSSION.

DR. HOFFMAN gave the details of several cases in old women treated by the Whitman method, in each instance some time after the accident occurred, with good results. He thinks if good union could be secured under such adverse conditions, to get it must be merely a matter of technique. He remarked that a person inexperienced in the application of the plaster-of-Paris could make the patient very uncomfortable. Pads should be used, and then the patients are more comfortable than with the old traction method. They can be shifted around in bed and bedsores do not occur.

DR. AARON J. STEELE, St. Louis, considers fracture of the thigh bone to be due to old age, at which period changes take place that cause the thigh to be broken very easily. He referred to what might be called a figmental ligament, a thickening of the capsular ligament running along the under side of the neck, and said that when the thigh bone is fractured from a slight cause in elderly people the figmental ligament may act as a splint and hold the parts of the bone together. If in such cases the patients are confined to bed and slight traction made, the union would probably take place without much trouble.

DR. FORBES said that Whitman's method is best in the cases of young patients, but that Maxwell's is better in elderly persons.

##### 5. The Cause of Atrophy in Joint Disease.

DR. ARTHUR T. LEGG gave the results of a comparative study of the atrophy of disuse alone and that caused by joint irritation. The results of animal experiments led him to conclude that, since the atrophy of disuse is brought about in a complex way by the vasomotor system controlling the nutritive equilibrium of the body, the atrophy seen in joint disease is brought about in the same way, namely, through functional inactivity.

DR. HOFFMAN said that bandaging with traction probably also tends to produce atrophy. He thinks, however, that the atrophy is more due to non-use than to mechanical interference.

DR. MCKENZIE said that in the affected limb the gluteal muscles are subjected to more strain than in the other limb in having to keep the joint at rest yet their atrophy is usually marked. It would be difficult to explain why bone-atrophy is also a distinct factor in hip disease.

##### 6. The Anatomy of Congenital Dislocation of the Hip; a Further Study.

DR. W. G. TURNER discussed some of the anatomic causes predisposing to the occurrence of dislocation and the importance of proper fixation adapted to anatomic conditions. He demonstrated the class of cases in which the axillary abduc-



tion position is indicated, and showed diagrams of seven cases illustrating the varieties of skeletal variations previously discussed.

#### DISCUSSION.

DR. RIELY said that in his experience the neck of the femur was twisted forward, instead of backward, in all but one case. He referred to some radiograms, exhibited soon after Lorenz's visit, in which the trochanter, instead of the head, was in the acetabulum. These cases had had a posterior twist; and the neck, instead of being twisted back on the shaft, was twisted forward. A great deal of difference in the result is produced by the position of the leg when the plaster is applied.

#### SYMPOSIUM ON BONE DISEASES.

##### Actinomycosis of the Ribs and Vertebrae.

DR. JAMES K. YOUNG said that in this case there was no history of exposure to the contagion. The disease began with difficulty of deglutition. A large scapular abscess was followed by infection of the ribs and dorsal vertebrae. An operation was performed, but the disease continued to extend and had a fatal termination.

##### Myositis Ossificans.

DR. CHARLES F. PAINTER described two principal types of this disease, the progressive and the traumatic, and reported two cases, considering the etiology, the gross and microscopic pathology, the clinical course, the operative and medicinal methods of treatment, and the prognosis.

##### Three Cases of Blastomycosis Resembling Bone Tuberculosis.

DR. EDWIN W. RYERSON, Chicago, said that the first patient, a young man, apparently suffering from an old knee-tuberculosis, had an acute localized suppuration in the outer malleolus, followed by similar affections in many other joints. The second case was that of a young man with apparent dorsal Pott's disease and pulmonary tuberculosis, who developed typical blastomycosis. Both cases were fatal, and an autopsy was obtained in each.

##### Bone Fragility and Eburnation of Rickets.

DR. WALLACE BLANCHARD, Chicago, said that rachitic bone may be so friable that the long bones of the legs may break under the body weight, and with a change of diet and environment may eburnate in two months to nearly the solidity of adult bone. He presented cases showing a quick change of bone structure from extreme friability to comparative solidity and strength.

#### Discussion on Bone Diseases.

DR. F. H. ALBEE added two more cases of myositis ossificans to those reported by Dr. Painter and exhibited x-ray pictures. In the second case there was no history of injury and no pain, just a flexion deformity at the knee-joint.

DR. RIELY described a case that he had seen and believed to be myositis ossificans. There were flat, hard plates at various portions of the body, some of which were permanent and some transient. The patient had had rheumatism and had rheumatic endocarditis.

MR. LITTLE referred to one of Dr. Blanchard's cases, in which after an operation for bow-legs, a knock-knee had appeared, resembling a case of retrogressive rickets. He believed such cases to be more common than is generally supposed. Some surgeons believe them to be osteomalacia and not rickets, but the postmortem microscopic appearance in one of his cases had been those of rickets. He asked for the experience of the members in regard to the prevalence of late rickets, and also desired to know whether or not they thought it of any use to do an osteotomy in such cases.

DR. PAINTER said that he had had an undoubted case of osteomalacia some years ago, and had lately had one of adolescent or recrudescent rickets. Both had developed at about the age of puberty, and in both the attempt to take out the bend proved fruitless. He thinks that recrudescent rickets is a form of osteomalacia.

DR. H. L. TAYLOR mentioned a peculiar case seen by him and Dr. Albee within a few weeks, in which the diagnosis of

myositis ossificans was made, but in which an x-ray disclosed a needle.

DR. DAVIS thinks that the condition known as Madelung's disease might be a condition of late rickets. In this disease subluxation occurs at some points, progressing to a moderate degree, and then remaining stationary. He had such a case in which good union was secured after osteotomy.

DR. BLANCHARD said that he believed it to be thoroughly understood that adolescent rickets is different in nature and pathology in every respect from infantile rickets.

(To be continued.)

#### NEW HAMPSHIRE MEDICAL SOCIETY.

*One Hundred and Seventeenth Annual Meeting, held at Concord, May 14-15, 1908.*

(Continued from page 246.)

##### The Treatment of Acute Intestinal Obstruction.

DR. CHARLES L. SCUDDER, Boston, said that there are two groups of intestinal obstruction, the non-mechanical and the mechanical. In the non-mechanical group are included those cases of obstruction: Following contusion of the abdomen and those associated with abdominal inflammatory processes; pneumonia; acute nephritis and after clean laparotomy wounds.

The mechanical group includes the obstructions occasioned by bands, adhesions, kinks, intussusception, volvulus, stones within the gut, and tumor within and without the gut.

The mechanical conditions are of less importance than the local and general vital conditions. Two factors are present in every intestinal obstruction; an obstruction to the lumen of the gut and obstruction to the circulation in the wall of the gut. He emphasized a consideration of the changes in the wall of the gut. Early diagnosis in acute intestinal obstruction admits early operative relief; early operative relief ensures a low mortality. He discussed the surgical procedures in the treatment of an acute intestinal obstruction, and submitted a report with an analysis of 121 cases of acute intestinal obstruction from the Massachusetts General Hospital clinic.

#### DISCUSSION.

DR. H. L. SMITH, Nashua, said that rarely is an operation performed where there is not reason to be thankful it has been done.

Referring to the question of pain brought out by Dr. Scudder, Dr. Smith described a recent case, where, after an operation, the patient had post-operative hemorrhage, and more or less manipulation had to be done on the peritoneum and bowel without ether. Handling the intestine was not painful, but any tension on the peritoneum or on the mesentery caused severe pains. As the patient was conscious all the time, this was very noticeable.

DR. KEAN said that the cause of the pain is the stretching of the peritoneum, whether in rupture in pregnancy or in appendiceal colic, or anything else.

As to the insertion of the drain, having it come in contact not with the small bowel, but with the large bowel, as referred to by Dr. Scudder, Dr. Kean believed that would explain some of the points made with reference to the small bowel as to vomiting, etc.; that the peristalsis of the small bowel is much more rapid than that of the large bowel.

##### Vibrotherapy in Gynecology.

DR. AUGUST GUERTIN, Nashua, defined sismotherapy as really mechanical massage, having the action of an aspirating and compressing pump on lymphatics and veins, thereby increasing and diminishing the circulation or congestion of the parts treated, according to the firmness and rapidity of the vibrations employed. He recited the history of sismotherapy and its evolution up to the present time, explaining the treatment fully and clearly, and illustrating it by blackboard sketches. He asked that, though this was a comparatively new style of treatment, it should be given a fair hearing and conscientious study.



## DISCUSSION.

DR. I. G. ANTHOINE, Nashua, spoke warmly in favor of this method of treatment, and believed it to be a method of relief advantageous in the treatment of almost all forms of human disease.

**The Duty of the Physician as a Teacher.**

DR. PHILIP H. GREELEY, Farmington, urged on the profession the necessity of recognizing and fulfilling their duty as teachers of the people along the line of prevention of disease and preservation of vigorous health; for preventive medicine, which stands well in the foreground to-day, in order to be of practical good, must be absorbed by the layman as well as by the physician.

He called attention to the matters of food, clothing, ventilation and recreation, as of unlimited importance in preserving health. They are misused, sometimes carelessly, sometimes ignorantly, and the public should be instructed by the physician regarding them. He urged that special attention be given to the education of children along this line, to the end that future generations might be freer than the present one from preventable disease.

The advancement of preventive medicine is a task which belongs to the medical profession. No other profession or class of people can take this burden from it. A physician must never expect to make himself famous by such work, but with patient zeal, born of love for humanity, he can direct many lives to a much better knowledge of the fundamental laws of health.

## DISCUSSION.

DR. F. L. KEAY, Rochester, laid particular stress on the duty of teaching the children in the public schools the principles of physiology and hygiene, together with the causes and prevention of preventable diseases. He expressed the opinion that it is exceedingly difficult, if not impossible, to remove the long-fixed, erroneous impressions of the adult in regard to these matters. He urged that in the teaching of the child lay the opportunity for the ultimate accomplishment of the greatest good.

DR. G. A. TOLMAN said it would seem at first glance that we would better instruct the children less and look more closely after the schoolhouses in which they are instructed. He urged the necessity of looking after the sanitary condition of schoolhouses, especially those in the country, where often practically no attention is given to insure anything like healthful conditions. He had traced a case of typhoid fever in one school district to drinking water which had been dipped out of the river and allowed to stand all day in a pail; and at another time he had traced a case of diphtheria to a closed water closet which he discovered at a certain schoolhouse, and which was in very bad condition. He thought that the physician should take an active part in the work of school boards.

**Two Years of Progress Under the Food and Drugs Act.**

MR. C. D. HOWARD, Concord, state chemist, gave a complete summary of the work accomplished by this department of the state during the last two years. He said that since Jan. 1, 1907, when the act went into effect, a great many samples had been collected and analyzed, preliminary hearings had been held, and something over one hundred cases had been submitted to the department of justice for trial. While progress was necessarily slow, and there was a tendency in some quarters to find fault, some persons going so far as to declare the law a failure, nevertheless the fact was undeniable that an inconceivable amount of good had been accomplished, though the progress of enforcement was lacking in the spectacular quality which the public seems to have expected.

## DISCUSSION.

DR. I. A. WATSON, Concord, stated that the great amount of work accomplished under the act referred to in the last paper was due almost wholly to the efforts of the author of that paper.

**Some Conditions of Mind and Body which May Persist After Mutilating Operations on the Female Generative Organs, with Cases.**

DR. C. H. HOLCOMBE, Brookline, explained clearly a group of symptoms which sometimes follow operations on the female pelvic organs, and described several complicated cases which came under his observation.

## DISCUSSION.

DR. ELLA B. ATIERTON, Nashua, stated that the severity of the symptoms following such operations depends largely on the general condition of the patient before the operation, rather than on the particular lesion for which the operation is performed, which fact was not taken sufficiently into consideration. The speaker called special attention to the point that in all operations to remove the ovaries, if even the smallest part of the ovarian tissue is left, it will be helpful to the psychic condition, as it causes much less of a shock than the complete removal of both ovaries.

DR. A. W. SHEA, Nashua, considered that normal ovaries should never be removed, as not only is the function of reproduction lost, but also the important quality of stamina. Too many of the profession to-day, he said, are good operators rather than good surgeons, devoid of the "surgical conscience," and when an opportunity presents itself to remove, fix, or suspend an organ, they are ready to act without further thought of results. We should study our cases, pay more attention to diagnosis, and operate when our best judgment deems surgical interference the best therapeutic measure.

**Acute Infectious Jaundice.**

This paper was read by DR. MARION L. BUGBEE, Concord. After giving a complete history of this disease, previously known by several different names, such as abortive typhoid, endemic yellow fever, bilious fever, relapsing fever, and even polyarthritis with absorption icterus, the author described four very interesting cases.

**Acute Rheumatism.**

DR. J. G. QUINBY, Lakeport, said that rheumatism, though an unscientific and vague word, was one that designated several conditions which have three things in common: 1. Febrile or toxic symptoms, which may be of a general or constitutional character. 2. A localized inflammatory lesion, usually in the joints, though frequently found in the muscles and skin. 3. A great tendency to complicate other conditions by causing certain visceral inflammations, such as the heart, serous membranes, and sometimes the tonsils. The common use of the word rheumatism, or its synonyms, in conjunction with other maladies, such as gonorrheal rheumatism, rheumatic gout, and rheumatoid arthritis, is a misnomer, for it implies an etiological condition which does not exist. No matter whether there is a common antecedent diathesis or not, there is so little in common in the pathological anatomy or symptoms of gout, arthritis deformans and gonorrheal rheumatism, that we should hardly be justified in calling them rheumatism.

He described symptoms and complications, and recommended that care should be taken to separate rheumatism from pyemic states, gonorrheal arthritis, acute tuberculous joint disease, osteomyelitis, glanders, arthritis deformans, acute gout, scurvy, etc., most of which have some diagnostic symptoms not common in rheumatism. Acute articular rheumatism is a self-limited disease, and will generally result in recovery in from one to six weeks.

**Eczema and Allied Conditions.**

DR. D. R. CHASE, Orford, stated that this condition is one of the diseases of the skin of most frequent occurrence, statistics showing that it forms from 20 to 40 per cent. of dermatological cases reported, and though acne is a more common affection than eczema, yet as many subjects never deem it necessary to submit to treatment, the records of such cases do not figure in the above statistics.

Clinically several types of eczema can be recognized, which require separate description. Dr. Chase then described eczema erythematosum; eczema papulosum; eczema vesiculosum.



eczema pustulosum; eczema rubrum; eczema squamosum; eczema fissum; eczema intertrigo; eczema verrucosum; eczema sclerosum; eczema diabeticorum; eczema folliculorum, and discussed some of the various cases which might be difficult of differentiation, such as acne, dermatitis, erysipelas, erythema, herpes, impetigo, pediculosis, psoriasis, scabies, seborrhea, syphilis, ringworm, etc.

There are no specifics for eczema. Such remedies only should be given as are indicated by the general condition of the individual. Overmedication and dosing with blood medicines are common errors in the management of this disease. The chief object of the constitutional, and also the local treatment, is to remove all sources of irritation to the inflamed skin.

#### DISCUSSION.

DR. J. M. GILE, Hanover, touched on the point that the mental picture of eczema is never that of a single definite appearance on the surface of the body, but usually one type predominates, and the others, one or more, are present in greater or less measure. He also suggested the necessity of differentiating carefully between eczema proper and parasitic skin diseases, as the treatment in the two groups of cases should be radically different.

The discussion was continued by DR. A. K. DAY, Concord, who referred especially to the infantile eczema, and eczema of the hands, or what is commonly known as salt rheum, and DR. I. G. ANTHOINE, Nashua, who stated that he had used the x-ray in a number of cases of eczema, with good results, and the doctor described particularly two such cases.

### Medicolegal

#### Court Extends the Liability of Physicians to Negligence in Removal of Patient After Operation.

The Supreme Court of Iowa says in the case of Haase vs. Morton and another, that the senior member of the defendant firm of physicians, being called to the plaintiff's home to treat her professionally, determined that a surgical operation was necessary. This he suggested it would be safer and more convenient to perform at a hospital, and undertook to and did make the necessary arrangements for performing it there.

Thereafter the plaintiff was taken to the hospital by said physician, who performed the operation, his partner administering the anesthetic.

After the operation, the plaintiff was taken from the operating table and placed on a car or stretcher for the purpose of taking her to her room on the floor below. Both of the physicians assisted in placing her on the car, which was about six feet long and had six rubber-tired wheels, two large wheels in the center and two smaller ones at each end, so that, when either set of end wheels was resting on the floor, the car inclined in that direction.

After the plaintiff had been placed on the car the senior physician left the operating room for the surgeon's dressing room, and his partner and a nurse rolled the car into the elevator room for the purpose of taking it to the room below on the elevator, the physician being in front of the car and the nurse behind it. When they reached the elevator room, they found the elevator door wide open and the elevator below. After the car had been stopped the physician left it, and stepped to the side of the elevator shaft for the purpose of bringing the elevator to their floor. The machinery did not at once respond to his efforts, whereupon the nurse told him that she would go and call the janitor. She then left the car, and, after she had gotten some seven or eight feet therefrom, the physician said to her, "Never mind, I can get it from here." When the nurse turned to go back into the elevator room the car was just rolling into the elevator shaft. She reached it, but too late to save the plaintiff, who was still unconscious, and they were both precipitated to the floor below, some fifteen feet. For injuries received in the fall, the plaintiff brought this suit.

The Supreme Court affirms a judgment for the plaintiff. It says that the evidence tended to show that the physician who was with the car or cart had, before this particular time, assisted in operations at the same hospital, and had also assisted in removing the patients operated on from the operating-room by means of the same cart and elevator. It must therefore be presumed that he was familiar with the size and construction of the cart used in the present instance and with the conditions surrounding the elevator room.

It was shown that the peculiar construction of the cart, the end wheels being lower than the center ones, made it very easy to start. The floor in the elevator room was cement, and the wheels of the cart were equipped with rubber tires, making a combination well calculated to overcome friction. The elevator door was wide open when the cart was stopped by the physician with its front end within a foot of the elevator shaft. The plaintiff was at the time unconscious, and hence wholly unable to look out for herself or appreciate the danger of her position. Notwithstanding these dangerous conditions, the physician not only left the cart himself, but, after being advised by the nurse that she had also left it, he paid no attention to it, and a slight movement of the plaintiff started it toward the open shaft.

The defendants' position on this branch of the case was unsound for two reasons. In the first place, it might well be said that just such a result might reasonably be expected to follow the leaving of such a vehicle in so dangerous a place. Indeed, it seems to the court that an accident might almost be expected to follow as a matter of course. The cart was easily started, and even unconscious persons not infrequently use their physical power; therefore a reasonably careful person would guard against these conditions singly or combined. In the second place, negligence does not depend on the question whether the result of an act might reasonably have been foreseen. The consequences of negligence need not be foreseen. It is enough to constitute negligence if the result of the act is the natural, though not the necessary or inevitable thing to be expected. If ordinary prudence would suggest that the act or omission would probably result in injury, it is sufficient to support the charge of negligence.

It was conceded that the defendants were not responsible for the negligence of the nurse, and the defendants contended that the act of the physician in leaving the cart for the purpose of raising the elevator was not the proximate cause of the accident. But he was one of the persons in charge of the plaintiff at the time in question. He had undertaken to assist in removing her to her room, if he was not in fact in charge of her at that particular time, and he was therefore legally bound to exercise reasonable care in her removal. Whether he exercised such care after he knew that the nurse had left the cart was clearly a question of fact for the jury. If it be said that they were both negligent it did not relieve the defendant for it is the rule that the mere fact that some other cause operates with the negligence charged does not relieve from liability.

Furthermore, the court is unable to agree with the contention of the senior physician who denied liability on the ground that whatever liability existed must rest on the act of his partner, while he was assisting in the removal of the plaintiff from the operating-room to her own room, and insisted that the removal to her private room was not within the scope of the ordinary business of the firm. The defendants were partners in the general practice, and the partnership, acting through the senior member, undertook to perform the operation and did in fact perform it. It was he who advised the plaintiff to go to the hospital where she could be much better taken care of than at her home. He made all of the arrangements at the hospital for the plaintiff and took her there in his own carriage. When she arrived there she was shown to a private room, and, acting under the direction of the defendants, she there prepared herself for the operating table. She went from there to the operating-room where the anesthetic was administered by the junior physician and in the presence of the senior physician and several persons connected with the hospital. It was very clear that the plaintiff could not be left in the operating-room during the period necessary for her



recovery, and it was the duty of some one to see that she was safely removed therefrom and placed in a room suitable for such further treatment as her case might require.

While it was shown that neither of the defendants owned or controlled the hospital, it did appear that they made all arrangements for the plaintiff's stay there, and a jury would be justified in finding that the defendants as part of their employment undertook to care for the plaintiff from the time she entered the hospital until she was ready for discharge therefrom. And while this might not ordinarily include the work of the hospital employes, the physicians might assume the duty of returning the patient to her room, and in such event each member of the firm would be the agent of the other in carrying on the work. It is fundamental that each partner is the agent of the firm while engaged in the prosecution of the partnership business, and that the firm is liable for the torts (wrongful acts) of each, if committed within the scope of the agency.

The trial court gave an instruction which embodied correct law on this subject and it was for the jury to say whether the junior physician was acting for the firm when the accident occurred. It surely should not be said as matter of law in all cases that after a serious surgical operation and while the patient is still unconscious, the physician may leave the patient on the operating table to find his way to his own room the best he may. Furthermore, the evidence showed that in this hospital the physicians accompanied their patients up and down the elevator.

Justice Weaver says, in a dissenting opinion: I am not able to concur in the foregoing opinion. The net result of the holding there expressed is to greatly increase and enlarge the liability, already sufficiently burdensome, of the medical profession. It may be admitted that the defendants advised plaintiff to go to the hospital, and in her behalf arranged with the hospital managers for her reception, but I am unaware of any rule of law by which such acts on their part rendered them chargeable with the negligence of the hospital managers or their servants. There is no pretense that defendants had any connection with or control over the hospital or the attendants there employed except as practicing physicians who went there to treat their patients.

Again, he says, referring to the junior physician: To charge him with this unfortunate result—and to go still further and charge the partnership of which he was a member—strikes me as a grievous injustice not called for by any rule or principle of law. Suppose, in wheeling the car along the hall, the nurse had carelessly tipped it over, precipitating the plaintiff on the floor, or had carelessly fallen on or against the plaintiff, or had of her own motion administered a medicine or restorative in excessive or dangerous quantity, is there any principle on which defendants could be held liable for injuries thus occasioned? I think it safe to say that this question will be unhesitatingly answered in the negative, and yet it will be very difficult indeed to suggest any tenable ground for distinguishing between the relations and liabilities of the parties in these supposed cases and the case at bar.

I freely concede that one who adopts a profession which has to do with matters affecting the health and lives of those whom he serves is properly held to a high degree of responsibility, and is required to exercise care reasonably proportioned to the delicacy and importance of the duties he undertakes to perform. While there are doubtless occasional exceptions, it is a matter of common observation that the medical profession of to-day is keenly alive to its responsibility. No profession excels it in thoroughness of preparation.

The true physician never ceases to be a student, never flags in zeal for more thorough mastery of the mysterious laws of human life and human health. In entering the practice he assumes grave risks. Both law and public sentiment demand of him a skill which adequately reflects the accumulated experience of the profession since the day of Hippocrates, and the breadth of scientific knowledge which is characteristic of the present age.

Though he does all a man can do and gives to a case the best fruits of a life of earnest study and investigation, he can

not escape carping criticism, and the sick or injured person who is disappointed by his physician's inability to perform a miracle is easily persuaded to find solace in a malpractice suit, in which a sympathetic jury stimulated by the sight of a wasted or crippled human form, is led to put a brand of undeserved reproach on one who merits the entire confidence and respect of the community.

Every physician who answers an emergency call, even though it be one of the numerous "charity cases" which daily demand much of his time and attention, takes his professional life and reputation in his hand, and when having vainly exhausted all the resources at his command some person inspired by ignorance, or malice, or hope of blackmail, holds him up with a damage claim, he ordinarily finds it to his advantage to submit to unjust exaction rather than risk the uncertain outcome of such controversies in a court of justice.

This court, while not relaxing the rule which insists that men holding themselves out as physicians shall exercise the care and skill befitting the profession, ought not to unduly increase the burdens of that profession or make its practice so onerous and hazardous as to drive therefrom its reputable members; yet I feel warranted in saying that such result can not be avoided if the legal liability of the physician is to be extended materially beyond the limits which have been recognized and established in our earlier adjudications on this subject.

Justice Weaver dissents also from the conclusion that, if the junior physician was chargeable with negligence, his partner was equally liable with him. He says that even if we assume that the former was wheeling the car at the time of the accident, though it is conceded he was not, he was engaged not in the business of the partnership, but was voluntarily doing or assisting in the work of a hospital attendant. His partner was not present, took no part in the service being performed at that time, and should be exonerated from all the liability. The judgment appealed from should be reversed.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Boston Medical and Surgical Journal.

July 9.

- 1 \*The Sanctity of Medicine. T. F. Harrington, Boston.
- 2 Obliterating Endarteritis: Types and Their Surgical Importance. C. F. Painter, Boston.
- 3 \*Obscure Fever in Infancy and Early Childhood. J. L. Morse, Boston.
- 4 An Instrument for Separating the Jaws. W. Rollins, Boston.
- 5 Acetonuria. A. G. Rice, Springfield, Mass.

1. **Sanctity of Medicine.**—After a historical retrospect of the relations of medicine and religion from the earliest times, Harrington discusses the limitations of laboratory methods, the psychic element in healing, the rehabilitation of the family physician of the old school, "not as a general practitioner, but as the adviser and guide to the individual and to the family in all problems of health, and in the choice of a specialist, as well as to groups of individuals in their duty toward the state." He must take the leadership in questions of public health and morals. The popularization of medical knowledge is essential. "Medical things and the medical view and relation of affairs are as much the property of the public and subject to its review as [those] in any other department of life."

3. **Obscure Fever in Infancy.** Morse refers, not to elevations of temperature which are obscure merely because a careful physical examination has not been made, but to certain forms having inherent difficulties, by the occasional absence of distinguishing symptoms, etc. He enumerates and discusses pneumonia, endocarditis, typhoid and malaria, eczema, fever in the new-born, dentition, toxic absorption from tonsils and adenoids, otitis media, cervical adenitis, bronchial adenitis, pyelitis, anemia, rickets, syphilis, tuberculosis and intestinal toxemia.



## New York Medical Journal.

July 11.

- 6 Course in Obstetrics in the University of Pennsylvania. B. C. Hirst, Philadelphia.
- 7 A Plea for More Sanatoria for the Consumptive Poor in all Stages of the Disease. S. A. Knopf, New York.
- 8 \*Significance of Blood Analysis in Appendicitis. C. C. Sichel, New York.
- 9 \*Management of Chronic Endocarditis During the Stage of Compensation. S. A. Stein, New York.
- 10 Treatment of Delirium Tremens. W. T. Dannreuther, New York.
- 11 Biochemical and Anatomic Changes Induced in Dogs by Potassium Cyanid. W. H. Welker and N. E. Ditman, New York.
- 12 Paroxysmal Hemoglobinuria. E. G. Ballenger, Atlanta, Ga.
- 13 Treatment of Erysipelas. D. B. Allen, New York.

8. **Blood Analysis in Appendicitis.**—Sichel considers that the solution of the question of when to operate in appendicitis depends on the careful study of the blood. From a study of over 50 cases he decides that, imperfect as is the study of the blood, when an infection is present and absorption starts in appendicitis blood change will inevitably occur. The blood picture is similar to those seen in infections elsewhere, though the counts are not always so high. Leucocytosis varies from 12,000 to 25,000 or 30,000. Polynuclear counts show from 80 per cent. to above 90 per cent., usually in the neighborhood of 83 per cent. With the first leucocytosis and increase of the distinctive polynuclear percentage, he says, we should operate at once. When there is no increase in the counts he advises watching the blood picture in repeated examinations and being guided by the findings plus the patient's general symptoms.

9. **Chronic Endocarditis.**—Stein discusses the management of chronic endocarditis with compensation. Alcohol, tobacco, tea and coffee should be limited or interdicted. Obesity may require reduction, which can be safely accomplished only with the greatest care in diet, exercise, and drug treatment. Complicating diseases, e. g., derangements of the digestive organs, the lungs, the kidneys, and all emunctories, must be looked after; avoidance of shock to the nervous system is important. Rest in the recumbent position and sleep are essential. He discusses the variety of causes of sleeplessness and dilates on the value of hydrotherapy. Of drugs, codein alone or in combination with one of the urea group of hypnotics is most generally useful; the bromids, if used, must be used with caution; chloral is well borne when compensation is good. The two great factors requiring attention are the heart itself, its special lesion and muscular condition, and the condition of the arteries. He discusses them both in detail and concludes with a consideration of the advantages conferred by modern instruments of precision.

## Medical Record, New York.

July 11.

- 14 \*Conquest of the Venereal Diseases. H. Ellis, London, Eng.
- 15 Significance of Wash Water Examinations for Gastric Cells in Diagnosis of Atrophic Gastritis. A. Bassler, New York.
- 16 \*Nerve Anastomosis in Infantile Paralysis. K. Osterhaus, Norfolk, Va.
- 17 Insanity: Its Genesis and Transmissibility. S. W. Smith, New York.
- 18 Lactic Acid Bacilli Cultures in Nose, Throat and Ear Work. H. H. Curtis, New York.
- 19 \*Cases, Other than Obstetrical, in which Hypodermatic Injections of Ergot Have Been of Great Service. E. P. Robinson, New York.

14. **Venereal Diseases.**—Ellis considers the arguments of those who hold it unnecessary to show any sort of recognition of venereal diseases, and immoral to do anything that might seem to involve indulgence to those who suffer from such diseases. He says: The man who is run over in crossing the street, the family poisoned by unwholesome food, the mother who catches the disease of the child she is nursing, all these suffer as the involuntary results of the voluntary act of gratifying some fundamental human instinct—the instinct of activity, the instinct of nutrition, the instinct of affection. The instinct of sex is as fundamental as any of these, and the involuntary evils which may follow the voluntary act of gratifying it stand on exactly the same level. This is the essential and fundamental fact: a human being in following the human instincts implanted within him has stumbled and fallen. The majority of those who contract venereal diseases by illegitimate sexual intercourse are young. They are youths, ignorant of life, scarcely yet escaped from home, or they are young girls, who have indeed ceased to be absolutely chaste, but

have not yet lost all their innocence, and who do not consider themselves, and are not by others considered, prostitutes; that, indeed, is one of the rocks on which the system of police regulation of prostitution comes to grief, for the police can not catch the prostitute at a sufficiently early age. The general acceptance of the fact that syphilis and gonorrhea are diseases, and not necessarily crimes or sins, is the condition for any practical attempt to deal with this question from the sanitary point of view, which is now taking the place of the antiquated and ineffective police point of view. The Scandinavian countries of Europe have been the pioneers in practical modern hygienic methods of dealing with venereal diseases. The fearless and energetic temper of the people impels them to deal practically with sexual difficulties, while their strong instincts of independence render them averse to the bureaucratic police methods which have flourished in Germany and France. They have more or less completely organized the system of putting venereal diseases under the common law and dealing with them as with other contagious diseases. The first step in dealing with a contagious disease is to apply to it the recognized principles of notification. If we dispense with the paternal method of police regulation, if we rely on the general principles of medical hygiene, and for the rest allow the responsibility for his own good or bad actions to rest on the individual himself, there is a further step, already fully recognized in principle, which we can not neglect to take: We must look on every person as accountable for the venereal disease he transmits. So long as we refuse to recognize venereal diseases as on the same level as other infectious diseases, and so long as we offer no full and fair facilities for their treatment, it is unjust to bring the individual to account for spreading them. It may be necessary to point out that every movement in this direction must be the spontaneous action of individuals directing their own lives according to the rules of an enlightened conscience, and can not be initiated by the dictation of the community as a whole enforcing its command by law. In these matters law can come in only at the end, not at the beginning.

16. **Nerve Anastomosis and Infantile Paralysis.**—Osterhaus expresses his firm conviction that to nerve anastomosis we must look for the most beneficial results in many cases of infantile paralysis—results which can never be obtained from the other operative measures now in use, and which will be the means of converting into useful citizens many little sufferers who otherwise would be doomed to lifelong dependence on crutches or braces, burdens to themselves and to the community.

19. **Ergot.**—Robinson refers to the writings of A. T. Livingston in reference to the use of ergot in other than obstetrical conditions, and says that during the past 7 years he has used ergot hypodermically with gratifying results in over 300 cases of acne rosacea. He used the deep gluteal injections, and reports three cases selected from many of various kinds illustrative of its uses. They represent respectively acne rosacea, varicose veins in an obese aged woman, and extreme nervousness with defective venous circulation associated with excessive cigarette smoking.

## Lancet Clinic, Cincinnati.

July 4.

- 20 Interstitial Nephritis. D. O. Hancock, Henderson, Ky.
- 21 \*A Paranoiac. J. R. Smith, Cincinnati.
- 22 The Tuberculin Ocular and Cutaneous Reactions. H. Aufm-wasser, Covington, Ky.
- 23 Vaccine or Tuberculous Therapy in the Treatment of Tuberculosis. H. B. Weaver Asheville, N. C.
- 24 Direct Laryngoscopy, Tracheobronchoscopy; Esophagoscopy, Gastroscopy. R. H. Johnston, Baltimore, Md.
- 25 Requirements for Entry to the Medical Colleges of Minnesota. E. J. Wilson, Columbus, Ohio.

21. **A Paranoiac.**—Smith reports a case, an interesting feature of which is a facsimile reproduction of a diagrammatic sketch of himself by the patient, showing what he considered to be his condition.

## Archives of Internal Medicine, Chicago.

June.

- 26 \*Use and Value of Tuberculin in Diagnosis of Pulmonary Tuberculosis. L. Hamman, Baltimore.
- 27 \*Experimental and Critical Study of the Etiology of Chronic Nephritis. H. Emerson, New York.



- 28 \*Prevention of Tropical Abscess of the Liver by Early Diagnosis and Treatment of Presuppurative Stage of Amebic Hepatitis. L. Rogers, Calcutta, India.  
29 \*Snake Poisoning in the United States. P. Willson, Washington, D. C.

26. **Value of Tuberculin in Pulmonary Tuberculosis.**—Hamman discusses the tuberculin reaction theoretically, the significance of tuberculin hypersensitiveness, the clinical features of the tuberculin reaction, the criteria of a reaction to tuberculin, the dangers of a tuberculin reaction, the clinical interpretation of tuberculin hypersensitiveness and the clinical method of demonstrating it, and the cutaneous and the conjunctival tests. He summarizes his considerations practically as follows: While tuberculin is a valuable aid in the diagnosis of pulmonary tuberculosis it must be used with care and the results interpreted with caution. The reaction is probably a specific one, but it must be borne in mind that a very insignificant lesion may produce tuberculin hypersensitiveness and the prevalence of such lesions should be fully realized. A negative reaction is considered decisive information, as is also a focal reaction. In the absence of a focal reaction, tuberculin hypersensitiveness must be viewed as one phase of the clinical picture, and judgment must not be too much warped by its presence. As a clinical procedure, no routine scheme can be advised, as the method must be altered to meet conditions as they arise. For adults some such scale as 0.2, 0.5, 1 and 5 mg. may be suggested; for young children 0.1, 0.2, 0.5 and 1 mg. The cutaneous reaction is too delicate an indicator to be of any value in diagnosis unless the reaction be negative, which it seldom is in adults. The eye reaction gives results more nearly in accord with clinical experience, but by no means of absolute certainty. Hamman does not feel that it can supplant the subcutaneous method. For some time the two should be used together, but not simultaneously. Eye inoculations should precede the subcutaneous by a few days.

27. **Chronic Nephritis.**—Emerson records a series of careful experiments on fourteen dogs, extending over 26 months, undertaken to establish the effects on the kidney of repeated general vasomotor dilatation, of mechanical injury of its substance, and of various drugs injected directly thereto, and of the effect on the kidney of increased viscosity of the blood due to the addition of gelatin to the blood stream, and of solutions of adrenalin chlorid and of lead acetate. The following are the conclusions drawn: From experimental results it would appear that interference with the blood supply of the kidney can be accomplished by means of chemical injury to the renal parenchyma, and that the process of repair which ensues may involve such a destruction of secreting tissue as to cause the death of the animal. From the experimental use of general vasodilators, it appears that the kidney suffers at least mild grades of degeneration, which may be due, not to the specific renal irritation of the drugs employed, but to the defective blood supply which frequently repeated vascular relaxation causes. From an analysis of the accepted causes of chronic nephritis in man it is evident that many of them have as a common factor a more or less severe and prolonged stagnation in renal blood supply, and, although this factor is often accompanied by the presence of irritants which we recognize as injurious to the kidney tissue, insufficient blood supply alone will cause, first, an error in the function, and later, an alteration in the structure of the kidney. As convincing proof of the true cause or causes of chronic nephritis in man is not present, we must perforce accept as a theory one which will account for most of the known facts. Loeb's explanation of the probable sequence of the circulatory events coincident with the course of chronic nephritis in man might reasonably be supplemented by an explanation of the etiology of nephritis which recognizes as a frequent, if not an invariable factor, deficient renal circulation. Faulty function always results from deficiencies of blood supply, and if the defects persist or are frequently repeated faulty structure results. In the case of the kidney, the fault in its function resulting from the altered structure in chronic nephritis will cause much or little disturbance in the body at large, according to the degree of circulatory compensation which can be maintained. Cardiac disease, bacterial toxins, and metabolic waste products are probably the causes of the errors in circulation which cause, first, faulty function in the kidney,

and, finally, chronic nephritis. If this theory of etiology is supported by subsequent study, its application to the prevention of nephritis might strengthen existing efforts to check the spread of infectious disease, and to urge moderation in the habits of overstimulation and overwork, which are prominent in present-day life in large centers of population.

28. **Tropical Liver Abscess.**—Rogers' experience leads him to believe that 90 per cent of amebic abscesses of the liver can be prevented by the use of large doses of ipecac. The drug must be given in freshly made pills or bolus, no food or drink being given for several hours before and after the dose, which is best given once a day in the evening. Vomiting must not be produced, particularly if abscess has already formed. To prevent it, tincture of opium or chloral hydrate may be given about twenty minutes before the ipecac; or the ipecac may be put up in keratinized capsules, which do not dissolve before reaching the intestine (Rogers); or the pills may be coated with melted salol (Grubbs). The daily dose is from 30 to 60 grains of ipecac, continued for at least two weeks, but at increasing intervals.

29. This article was discussed editorially in *THE JOURNAL*, July 11, 1908, p. 132.

#### American Medicine, New York.

##### May.

- 30 Syphilis. W. P. McIntosh, U. S. Public Health and Marine-Hospital Service.  
31 \*Orthotic Albuminuria; Its Relation to Tuberculosis. F. T. B. Fest, Las Vegas, N. M.  
32 Tonsillitis. R. O. Semmes, Camden, Ala.  
33 Errors of Refraction and Balance of the Eyes and Their Bearing on General Health. J. R. Shannon, New York.  
34 Complications and Sequels of Measles. H. R. M. Landis, Philadelphia.  
35 Case of Traumatic Rupture of Descemet's Membrane, and Defects of That Membrane. E. B. Coburn, New York.  
36 Nasal Obstructions. J. G. Parsons, Sioux Falls, S. D.

##### June.

- 37 Clinical Types of Eclampsia (Toxemia) as Viewed by the Specialist for the Benefit of the General Practitioner. E. H. Grandin, New York.  
38 Treatment of the Puerperal Eclamptic Attack. R. Cronson, New York.  
39 The Action of Remedies Usually Employed in Puerperal Eclampsia. T. F. Reilly, New York.  
40 Syphilis. (Concluded.) W. P. McIntosh, Portland, Me.  
41 The Spirit of 1908 in Medical Affairs. H. E. Lewis, New York.  
42 A Medical Need. F. C. Clark, Providence, R. I.  
43 \*Gastric Secretion in Old Age. J. Friedenwald, Baltimore.

31. **Orthotic Albuminuria.**—Fest concludes that in regard to orthotic albuminuria we are unable to give any chemical test an exclusive significance, as our chemical means so far are too limited. Orthotic albuminuria is of apparently obscure hematogenetic or functional origin of various natures, so that every case has to be considered individually and treated accordingly. Orthotic proteinuria merits attention only as a manifestation, not as a disease.

43. **Gastric Secretion in Old Age.**—Friedenwald reports observations on the gastric secretion in 27 persons over 51, and in no instance did any case present symptoms indicating the presence of any gastric disorder. He concludes that from these observations, as well as from those of Leifschütz and others, it is evident that the gastric secretion has a tendency to diminish in old age, and in a degree proportionate to the arteriosclerosis, and it is therefore unwise to attach too much importance to the absence of this secretion in individuals advanced in years, in the diagnosis of cancer of the stomach.

#### Journal of Inebriety, Boston.

##### June.

- 44 Relation of Alcohol to Physical Deterioration and National Efficiency. W. M. Eccles, London, Eng.  
45 Psychic Treatment of Inebriates. T. D. Crothers, Hartford, Conn.  
46 Coffee and Tea Poisoning. A. Gouget, Paris, France.  
47 Disease and Mortality from Alcohol. D. H. Kress, Washington, D. C.  
48 Gelseminin in the Morphine Habit. W. F. Waugh, Chicago.  
49 Alcoholic Insanity. M. F. Toner, Hanford, Cal.  
50 \*Certain Aspects of the Tobacco Question. M. Woods, Philadelphia.  
51 Mental Defects Following the Use of Alcohol. J. T. Fisher, Los Angeles.

50. **Tobacco.**—Woods singles out the tobacco question from other habits, inasmuch as this drug, he says, had no beneficial use in any medical sense, making it necessary or proper for us to recommend it. He denies that it aids digestion, that it



prevents lean people from getting stout or vice versa, that it possesses any power to preserve the teeth from decay, or to neutralize the poison of contagion. It is not a disinfectant or a remedy for any pathologic condition. While the Dispensary credits it, when moderately taken, with quieting restlessness, mental and corporeal, he holds that to treat such mere symptoms with a narcotic is merely to deaden the result of a disease while leaving the cause untouched. On the other hand, he lays stress on its evil influences and particularly calls attention to the practice among tobaccoists of enclosing suggestive and salacious pictures in tobacco packages. He suggests that the soporific calm and the obscene picture are hand and glove in the production of sexual immorality.

**Journal of the Indiana State Medical Association,  
Fort Wayne.**

*May.*

- 52 History, Causes and Prevention of Tuberculosis. M. Ravdin, Evansville.
- 53 General Management of Tuberculosis. J. Y. Welborn, Evansville.
- 54 Medical Treatment of Cystitis in the Female. E. R. Beard, Liberty.
- 55 Suppuration of the Accessory Nasal Sinuses. J. F. Barnhill, Indianapolis.

*June.*

- 56 \*Practical Application of Opsonic Therapy. J. V. Reed, and H. S. Thurston, Indianapolis.
- 57 Value of the Microscope and Test Tube in Diagnosis. B. W. Rhamy, Fort Wayne.
- 58 \*Ocular Tuberculin Reaction. G. F. Keiper, Lafayette.

56. **Opsonic Therapy.**—Reed and Thurston describe briefly the principles of opsonic treatment and its method of administration in acne, boils and furuncles, acute infections following wounds, old sinuses, gonorrheal, streptococcus and tuberculous infections, and infections of the mucous membranes and their glands. They discuss the respective merits of stock and autogenous vaccines and urge the importance of using the latter whenever practicable. They describe in detail, with illustrations, the technic of estimating the opsonic index. They regard the determination of the index for most bacterial infections as generally unnecessary, except for tuberculosis, in which disease it should be frequently taken, especially during the first few weeks.

58. **Ocular Tuberculin Reaction.**—Keiper summarizes the literature on this subject and concludes that the value of the ocular tuberculin reaction as a diagnostic test for tuberculosis can not be ignored.

**American Journal of Physiology, Boston.**

*June.*

- 59 \*Diastase in Cat's Saliva. A. J. Carlson and J. G. Ryan, Chicago.
- 60 \*Influence of Salts and Non-Electrolytes on the Heart. S. R. Benedict, New Haven, Conn.
- 61 Excretion of Bromids by the Kidney. W. Hale and C. Fishman, Ann Arbor, Mich.
- 62 \*Effect of Potassium Iodid on the Activity of Ptyalin. C. H. Neilson, and O. P. Terry, St. Louis.
- 63 \*Behavior of Muscle After Compression. L. J. Henderson, G. A. Leland, Jr., and J. H. Means, Boston.
- 64 \*The Resuscitation of the Glands and Muscles After Temporary Anemia. F. H. Pike, C. C. Guthrie, and G. N. Stewart, Chicago.
- 65 \*The Variable Factors Involved in Faradic Stimulation. E. G. Martin, Boston.
- 66 Relation of Ions to Fibrillar Contractility. R. S. Lillie, Philadelphia.
- 67 \*Excess of Chlorids in Lymph. A. J. Carlson, J. R. Greer and A. B. Luckhardt, Chicago.
- 68 \*The Lymphagogue Action of Lymph. A. J. Carlson, J. R. Greer, and F. C. Becht, Chicago.
- 69\* The Calibration of the Inductorium for Break Shocks in Faradic Stimulation. E. G. Martin, Boston.
- 70 \*The Refractory Period and the Period of Varying Irritability in Heart Muscles. W. H. Schultz, Baltimore.
- 71 \*Influence of Cold and Mechanical Exercise on the Sugar Excretion in Phlorrhizin Glycosuria. G. Lusk, New York.
- 72 Production of Sugar from Glutamic Acid Ingested in Phlorrhizin Glycosuria. Id.
- 73 \*Temperature Coefficient of the Velocity of Nerve Conduction. C. D. Snyder, Baltimore.
- 74 Galvanotropism in Bacteria. J. F. Abbott and A. C. Life, St. Louis.

59. **Diastase in Cat's Saliva.**—Carlson and Ryan found the saliva of the cat to contain a diastase, the action of which is much feebler than that of human saliva. The submaxillary saliva is stronger than that of the parotid gland and the diastatic action is greater in saliva secreted under excitation of the sympathetic than under that of the chorda tympani.

The diastatic content of the saliva is much less than that of the blood serum of the cat, but it is increased by the intravenous injection of human saliva or of pancreatin, but not by the injection of malt diastase. From these observations authors conclude that the diastase of the cat's saliva is not a specific secretion of the salivary glands, but is derived by transudation from the blood. A similar condition exists in the dog, although the dog's saliva frequently does not contain diastase at all.

60. **Heart Action.**—Benedict sustains the proposition that the rhythmic action of the heart depends on a certain degree of tonus, and the reason why a latent period is observed when a strip of turtle's heart is placed in solution of sodium chlorid is that time is required by the strip to reach the requisite degree of tonus. It is not caused by lack of calcium ions or of available oxygen, neither is it due to asphyxiation. The balance of experimental evidence is at present strongly against the acceptance of Langendorf's hypothesis, that the products of the heart tissue's own metabolic activity constitute the stimuli to rhythmic contractions. The facts also are against the assumption that oxygen and calcium compounds act by favoring oxidation. Under certain conditions non-electrolytes may induce a series of beats in ventricular tissue. The anion probably plays an active rôle in the action of salt solutions on heart tissue.

62. **Action of Potassium Iodid on Ptyalin.**—Neilson and Terry have found that potassium iodid both in the test tube and when given internally markedly increases the diastatic activity of the saliva.

63. **Compression of Muscle.**—Henderson, Leland and Means find that a pressure of 500 atmospheres is probably not in itself harmful to muscle tissue. The observed harmful effects of compression in other cases have been probably due either to too rapid compression and decompression, or, what amounts to the same thing, to irregularity in compression or in decompression.

64. **Resuscitation.**—The experiments of Pike, Guthrie and Stewart were conducted by producing prolonged anemia of the brain by clamping the cerebral vessels. The results seem to show that the secretion of saliva and of tears is in a measure independent of the nervous system, and may be revived on the introduction of artificial circulation, before the return of sensibility in the nervous system. It may also fail while the nervous system is still active. The flow of lymph does not seem to be dependent on the action of the nervous system. The muscles in all experiments in which they were subjected to the same conditions were found to be more easily resuscitated than the nervous tissues. The authors have seen no case of permanent paralysis following anemia which could be shown to be due to muscular and not to nervous causes. The excitability of the muscles to direct stimuli persists longer and returns earlier than that to indirect. The motor endings succumb more quickly than the muscles themselves. Spasms of the skeletal muscles originate in the central nervous system. They cease in the parts below the plane of section when the spinal cord is transected. Prolonged anemia of the mother accompanied by severe spasms resulted in the death of only one out of four fetuses. There was no evidence of the formation of any toxic substance during the convulsions that affected the fetus. There was no evidence of the occurrence of severe spasm of the fetus *in utero*.

65 and 69. **Quantitative Study of Faradic Stimulation.**—In his first paper Martin insists on the value to the physiologist, of a means of measurement of faradic stimuli, and discusses the factors determining the strength of such shocks. He concludes as follows:

If the values of faradic stimuli are to be expressed by a system of units, each unit will have to comprise the following factors:

1. One which shall state the efficiency of the particular inductorium used in terms of a standard, and also the efficiency of the secondary in the position it occupies relative to the primary, this factor being different for make and break shocks.
2. One which shall give the intensity of the primary current, corrected for voltage when make shocks are used, and, if necessary for the magnetization of the iron core, when break shocks are to be measured.
3. One which shall state the effect of the contact key used in terms of a standard.
4. A reducing factor for bringing make and break shocks to common terms, made necessary by the fact that they are to be measured by different calibrations.



In the second paper Martin deals with the calibration of the inductorium for break shocks and summarizes his conclusions, but as the latter are chiefly of technical interest, they are here omitted.

**67. Physiology of Lymph.**—Carlson, Greer and Luckhardt find a considerable increase in the chlorids of the neck lymph of the dog over those of the serum, and this amount is more than sufficient to account for the difference in osmotic concentration. The excess of chlorids in the lymph seems to these investigators to render the filtration and transudation theories of lymph formation untenable.

**68. Idem.**—Carlson, Greer and Becht show that the lymph is secreted in the salivary glands in opposition to the osmotic pressure, and they accept the conclusion that some other mechanism than that of osmosis must be depended on to explain the secretion of lymph. They call attention to what they say is now a demonstrated anatomic fact, that the lymphatic system is a closed system of vessels, and hence that the lymph found in these vessels is distinct from the lymph in the tissue spaces. The only factors coming into play in the production of lymphatic lymph are, therefore, the vessel walls of the lymph and blood capillaries. As the osmotic theory is insufficient, the authors suggest the action of a hormone to explain the production of lymph. They have produced some experimental evidence to show that such a hormone exists. Its mode of action is still uncertain.

**70. Heart Muscle.**—Schulz concludes his article as follows:

1. The absolute refractory period continues to bear a constant relation to the duration of systole, whether the agents used increase or decrease the irritability of muscle. In other words, if  $S$  equals the duration of systole and  $R$  the absolute refractory period, the ratio  $R/S$  is approximately constant.

2. It is suggested as a possible explanation of the absolute refractory period that on the initiation of a contraction all of the dissociable material is used up, and that the colloidal particles undergo a change in size and position, and that so long as these conditions obtain, it is impossible for the tissue to contract.

3. Experimental data suggest that the inorganic salts of sodium calcium and potassium play an important part in reforming the dissociable material, and it is probable that calcium in physiologic amount in some way acts as an accelerator.

**71. Phlorrhizin Glycosuria.**—Lusk believes that he has established the general validity of the ratio  $D:N=3.65:1$  in fasting and meat-fed dogs. He has shown that this ratio does not vary after the ingestion of fat and his present experiments indicate that cold and mechanical work, which greatly increase the combustion of fat, may under proper conditions be without influence on the  $D:N$  ratio. All these facts prove that while sugar is derived from protein it is not derived from the metabolism of fat. A large ingestion of fat may possibly lead to the formation of a small amount of dextrose from the rapidly absorbed glycerin component of fat, but this result has never been seen in his laboratory. Lusk criticises the work of Rubner and of Hartogh and Schumm, who obtained higher ratios than 3.65 to 1.

**73. Temperature Coefficient of Nerve Conduction.**—Snyder finds the temperature coefficient of nerve conduction to lie generally between 2 and 3, but in exceptional cases it is less than 2 or more than 3. These variations are not to be attributed to irregularities of the recording apparatus, but are unusual periods produced by some variation in the condition of the nerve itself. As they are not accounted for by the physical conditions, the author seeks a chemical explanation which he believes can be found in a difference in chemical time reaction of the conducting substances of the nerves. The observed constants admit of periodic arrangement in which the unusual or "freak" velocities take a normal and rational position. This periodic variation of velocity at constant temperature is explained by assuming that more than one complex of molecules exist in the nerve substance which, singly or in combination, by undergoing chemical change, brings about the phenomena of conduction. The several complexes differing from one another (possibly only slightly) in their chemical relations may thus also differ in their reaction times. This explains to some extent variations in the tempo of sensory and motor reflexes and even of "moods" and entire bodily activities. Theories based on the assumption that nerve conduction is a purely physical phenomenon are no longer tenable, because the temperature coefficients of the assumed physical phenomena are greatly less than for con-

duction of the nerve impulse itself. Any successful theory of nerve must take into account, or at least be in harmony with, the temperature factor.

#### Journal Missouri State Medical Association, St. Louis.

June.

75 Relations of the Medical Profession with the Public. W. S. Allee, Olean, Mo.

76 \*The Everyday Fight on Consumption. G. Homan, St. Louis.

**76. The Fight Against Tuberculosis.**—Homan appeals to the evidence of what has been done in the way of disease extermination with typhus, scurvy, leprosy, smallpox, etc. He points out that, whereas a hundred years ago the fact that a person's face was not scarred with smallpox was used as a mark of personal identification and mentioned in official descriptions, the opposite is nowadays the case, the presence of pitting, not its absence, being the remarkable feature. He urges systematic instruction of the coming generations in school in regard to the intelligent prevention of tuberculosis. The coming generation being well instructed would demand in no uncertain tone from their legislative and official servants the voting of ample means to prevent the cruel, needless waste of human life now prevalent.

#### Detroit Medical Journal.

June.

77 The Medical Profession: Then, Now and Hereafter. H. Wilson, Detroit.

78 It Pays to be Healthy. W. A. Evans, Chicago.

79 \*Early Diagnosis of Extrauterine Pregnancy. G. Van A. Brown, Detroit.

**79. Extrauterine Pregnancy.**—Brown emphasizes two points, to one of which he can find no reference in the literature, and to the other brief mention by only one writer. With reference to certain points of tenderness he believes that by a careful consideration of the following conditions one may be led to a certain diagnosis between appendicitis and extrauterine pregnancy: In appendicitis there is unilateral abdominal rigidity, with the extreme of tenderness over McBurney's point. If the trouble is anywhere in either broad ligament the extreme of tenderness is found over both the right and left lumbar ganglia, which are situated one inch and a half external to the umbilicus; the right one on a line from the anterior superior spine of the right ilium to the umbilicus, the left one on a line extending to the left anterior superior spinous process. As to the value of the blood count in excluding septic processes, he says that with pus present in either the tube, ovary, cul-de-sac, or appendix, there is a leucocytosis, which is not present in an unneglected extrauterine pregnancy. Other points which he considers erroneous are: 1. That temperature is necessarily subnormal in rupture of tube; it may be febrile. 2. It is not true that there is a fixed ratio in pulse and temperature. 3. Internal hemorrhage may be due to other causes, e. g., rupture of appendicular artery. 4. The presence or absence of uterine decidua can not be held of diagnostic importance, for chorionic villi may come from the tube and be found in the uterus, or uterine decidua may be cast off at the time of rupture, abortion, or on the death of the embryo, and thus be absent when sought for. He summarizes the salient points of diagnosis as follows: Disturbance of menstruation, short colicky pelvic pains, presence of a mass connected with adnexa, enlargement of uterus, no leucocytosis, and tenderness over both right and left lumbar ganglia.

#### Kentucky Medical Journal, Bowling Green.

May.

80 History of the State Board of Health. J. N. McCormack, Bowling Green.

81 Congenital Dislocation of the Hip. J. B. Richardson, Jr., Louisville.

82 Training. A Prophylaxis for Nervousness. E. D. Burnett, Louisville.

83 Etiology and Symptomatology of Abortion and Miscarriage. O. W. Doyle, Louisville.

84 Prophylaxis and Medical Treatment of Abortion and Miscarriage. W. B. Doherty, Louisville.

85 Surgical Treatment of Abortion and Miscarriage. H. A. Davidson, Louisville.

86 Experiences with Certified Milk in Cincinnati. O. P. Geier, Cincinnati.

87 Clean Milk in Its Economic and Medical Relations with Special Reference to "Certified Milk." H. L. Coit, Newark, N. J.

88 Treatment of Fracture of the Spine. J. T. Dunn, Louisville.



## June.

- 89 \*Complications, Prophylaxis, Prognosis and Treatment of Typhoid. J. C. McCreary, Cave City.
- 90 \*My Experience with Typhoid and Complications. D. H. Erskiletian, Hopkinsville.
- 91 Typhoid Fever. W. F. Hickie, Hubble.
- 92 Necessary Facts for a Complete Insurance Examination. B. J. O'Connor, Louisville.
- 93 Chlorosis, Secondary and Pernicious Anemia. V. Blythe, Paducah.
- 94 \*Lacerations of the Vaginal Outlet. F. H. Beard, Shelbyville.
- 95 Drainage of the Gall Bladder. G. B. O'Roark, Grayson.
- 96 Adenoids. H. C. Beasley, Hopkinsville.
- 97 Scarlet Fever. J. B. R. Cooper, Shively.
- 98 Cholecystectomy. A. H. Barkley, Lexington.
- 99 Inflammation of the Accessory Nasal Sinuses as a Sequel of Influenza. G. Purdy, New Liberty.
- 100 Action of Arsenic on the Human Economy from a Therapeutical Standpoint. J. F. Marrs, Boles.
- 101 Technic of New Perineorrhaphy (Waldo's). M. Casper, Louisville.
- 102 Mediastinal Tumors. W. H. Coleman, Louisville.
- 103 Acute Nephritis. H. D. Rodman, Bardstown.
- 104 \*Pathology and Treatment of Diseased Tonsils and Adenoids. G. C. Hall, Louisville.
- 105 Relationship Between Physician and Pharmacist. A. Dimmitt, Louisville.
- 106 Counter Prescribing and Unethical Advertising. C. H. Harris, Louisville.
- 107 Some U. S. P. and N. F. Preparations. W. Votteler, Louisville.
- 108 Etiology of Glaucoma. G. C. Hall, Louisville.

89. Typhoid.—McCreary discusses typhoid exhaustively. He emphasizes the need of being prepared to catheterize if kidney trouble occurs, describes the various complications as he has found or has not found them, and pays particular attention to treatment. He relies largely on intestinal antiseptics for drug treatment and changes them frequently, using salol, zinc sulphocarbonate, and copper arsenite. He dislikes antipyretics. Stimulants must be given only with judgment in regard to the individual case. Hydrotherapy in the form of cold sponging is serviceable, but he finds that cold baths will not do in children, old people, and the nervous. He discusses the special symptoms in detail.

90. Idem.—Erskiletian uses from the time of diagnosis until convalescence sets in, the following: Turpentine, as an agent which possibly will prevent intestinal hemorrhage; iron, as an agent which promotes digestion and improves the blood; sulphocarbonate of zinc, as a reliable intestinal antiseptic. To these he adds calomel as a disinfectant, secretory stimulant, and in one grain doses a laxative. Aconite and veratrum viride he considers contraindicated. Camphor is an excellent stimulant.

94. Abstracted in THE JOURNAL, Nov. 2, 1907, p. 1550.

104. Tonsils and Adenoids.—Hall arrives at conclusions which may be summarized as follows: While normal tonsils atrophy at adult life, diseased tonsils do not. Therefore early operation is indicated. The hyperplasia affects the entire gland, so complete removal is necessary. In very few cases is the tonsillotomy of use. A child should never be operated on forcibly while struggling and screaming; it leads to bad work and has a serious effect on the child's nervous system. Local anesthesia in older children, general anesthesia in younger ones, is preferable. Both tonsils and adenoids should be removed at one sitting.

## St. Paul Medical Journal.

## June.

- 109 \*Relation of Antral Sinusitis to Hay Fever and Asthma. J. E. Schadle, St. Paul.
- 110 Chronic Ulcer of the Stomach and Duodenum. W. J. Mayo, Rochester, Minn.
- 111 \*Treatment of Gastric Ulcer. C. L. Greene, St. Paul.

109. The chief points in this paper were discussed in a similar paper by the same author which appeared in the *Medical Record*, May 25, 1907, an abstract of which was published in THE JOURNAL, June 8, 1907, page 1986.

111. Gastric Ulcer.—Greene considers medical and surgical statistics misleading, and that much unnecessary operative work has been done without scientific diagnosis or therapeutics. He adds the following conclusions: Simple ulcer is always medical. Chronic ulcer is only surgical when persistently recurrent. Cases of moderate stasis and pylorospasm are not primarily surgical. Hemorrhagic cases are seldom fatal and yield a lower mortality under medical than under surgical treatment. Surgical relief is advisable in painful perigastric adhesions which are resistant to medical measures.

Perforation is a purely surgical condition. Proper medical treatment and after-control reduce recurrence to a minimum. The absence of this control in public clinics permits and justifies a freer recourse to surgery than would be permissible in private practice. In properly controlled private cases there is but a negligible mortality. The rigid plans of treatment and time divisions are an absurdity, and the practitioner should be governed by a knowledge of the fundamental principles involved, the clinical course, known conditions as to gastric secretion, and yet more as to motility, and the individuality of the patient. Absolute rest, mental and physical, the wise employment of alkalis, proper nourishment, demanding little of motility and secretion, exciting a potent digestive fluid rather than a profuse one, easily assimilable and nutritious food and psychotherapeutic control comprise all measures usually found necessary. Hospital care and the services of a trained nurse are of great importance. Patients should be kept under direct observation and control for at least one year after apparent cure. Results should be reported after five years. Cure is not complete until all local tenderness, rigidity and pain are relieved, blood is absent from the stools and the previous best weight of the patient regained. The requirements on the part of the surgeon should be quite as definite, and in both the claim to cure should be tested by a long immunity period.

## Louisville Monthly Journal of Medicine and Surgery.

## June.

- 112 Breast and Artificial Feeding of Infants. H. E. Tuley, Louisville.
- 113 \*Non-Valvular Heart Affections. J. G. Cecil, Louisville.
- 114 The Calmette Ocular Reaction for Tuberculosis. W. Cheatham, Louisville.
- 115 Proteid Digestion and Alkaloids. J. Burke, Manitowoc, Wis.

113. Heart Affections.—Cecil discusses non-valvular affections of the heart and says that much of the treatment usually resorted to in affections of the heart is misapplied, if not positively injurious and contraindicated. There is no doubt that the indiscriminate use of heart tonics and stimulants is positively hurtful. If there be edema, dyspnea and irregularity, digitalis, if used at all, must be most carefully watched and strychnin be given only in small doses, never exceeding 1/60 grain to the dose. Attention should be directed to avoidance of overstrain, overwork and excitement, both mental and physical, to relieving the heart of all extra work so far as possible, and, to favor this, overeating and drinking is prohibited. All the emunctories must be kept in action and rest and gentle exercise imposed.

## Annals of Ophthalmology, St. Louis.

## April.

- 116 Refraction. M. L. Foster, New York.
- 117 Principles on Which is Based My Operation for Cicatricial Ectropium of the Lower Lid. F. C. Hotz, Chicago.
- 118 Treatment of Sympathetic Iridocyclitis. Pathology of the Uvea or Tractus Uvealis. E. Borghetti, Wellington, New Zealand.
- 119 Sarcoma of the Right Orbit. H. Muetze, St. Louis.
- 120 Probable Congenital Circumscribed Defect in the Choroid, with Anomalous Pigment and Vascular Arrangement. W. Reber, Philadelphia.
- 121 Restoration of Contracted Sockets. W. Zentmayer, Philadelphia.
- 122 General Pathology of the Pupill. L. Bach, Marburg.
- 123 Zonula Ciliaris and Its Relation to Neighboring Structures. M. Salzmann, Vienna.

## Surgery, Gynecology and Obstetrics, Chicago.

## June.

- 124 \*Perforative Peritonitis. J. B. Murphy, Chicago.
- 125 \*Operation for Repair of Sunken Nose. J. F. Binnie, Kansas City, Mo.
- 126 Anemic Spot on the Duodenum, which May Be Mistaken for Ulcer. W. J. Mayo, Rochester, Minn.
- 127 Substitution of Whole or Half Joints from Freshly Amputated Extremities by Free Plastic Operation. E. Lexer, Königsberg, Prussia.
- 128 \*Surgery of the Gasserian Ganglion. S. H. Weeks, Portland, Me.
- 129 Unique Anomaly of the Great or Gastrocolic Omentum. W. M. Mastin, Mobile, Ala.
- 130 Diverticulum of the Appendix. G. B. Johnston, Richmond, Va.
- 131 Non-Parasitic Cysts of the Spleen. G. B. Johnston, Richmond, Va.
- 132 \*Some Debts Which Medical Science Owes to Surgery. W. H. Carmalt, New Haven, Conn.
- 133 \*Congenital Idiopathic Dilatation of the Colon. J. M. T. Finney, Baltimore, Md.
- 134 Technical Points in Cleft Palate Operation. H. M. Sherman, San Francisco, Cal.



- 135 \*Further Evidence in Support of the Theory that Hodgkin's Disease is a Type of Sarcoma. W. B. Coley, New York.  
136 \*How Frequently Do Gastric Ulcers Become Carcinomata? W. L. Rodman, Philadelphia.  
137 \*Infantile Hypertrophic Stenosis of Pylorus. F. E. Bunts, Cleveland, Ohio.  
138 \*Use of Sterile Oil to Prevent Intraperitoneal Adhesions. J. B. Blake, Boston.  
139 \*Pelvic Abscess with Reference to Rectal Drainage. A. MacLaren, St. Paul, Minn.  
140 \*Diagnosis and Treatment of Kidney Stone. A. D. Bevan, Chicago, and J. F. Smith, Chicago.  
141 \*Stone Tuberculosis of the Kidney, and Perinephric Abscess. G. T. Vaughan, Washington, D. C.  
142 \*Acute Unilateral Hematogenous Infections of the Kidney. G. E. Brewer, New York.  
143 \*Results of Operation on the Kidney for Tuberculosis and Calculus. A. J. McCosh, New York.  
144 Case of Plastic Repair in Old Gunshot Wound of Abdomen. J. K. Marden, Marsovan, Turkey.

124, 128, 132. Abstracted in THE JOURNAL, May 23, 1908, p. 1718.

125, 135, 138. Abstracted in THE JOURNAL, June 20, 1908, pp. 2104, 2105.

133, 139. Abstracted in THE JOURNAL, June 27, 1908, p. 2151.

136, 137, 140 to 143. Abstracted in THE JOURNAL, May 30, 1908, pp. 1823, 1824, 1825, 1826.

#### The Laryngoscope, St. Louis.

June.

- 145 A Consideration of the "Herd" Theory as an Etiologic Factor in Ozena. C. F. Theisen, Albany, N. Y.  
146 Pathology of Atrophic Rhinitis with Ozena. D. B. Kyle, Philadelphia.  
147 Treatment of Atrophic Rhinitis, Including Ozena. R. E. Myles, New York.  
148 Treatment of Atrophic Rhinitis. G. L. Richards, Fall River, Mass.  
149 Atrophic Rhinitis and Ozena. C. Rice, New York.  
150 Advantages and Disadvantages of the Endonasal Method of Operation for Empyema of the Frontal Sinus. R. H. Skilern, Philadelphia.  
151 Hemorrhage Following Quinsy. Ligation of the Common Carotid Artery; Recovery. Study of 51 Cases of Hemorrhage in Connection with Pharyngeal Suppuration. J. E. Newcomb, New York.

#### FOREIGN.

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

##### Lancet, London.

June 27.

- 1 \*Points in History of Antiseptic Surgery. Lord Lister.
- 2 \*The Defensive Arrangements of the Body as Illustrated by Incidence of Disease in Children and Adults. W. W. Cheyne.
- 3 Surgical Treatment of Non-Malignant Affections of the Stomach. F. Eve.
- 4 Melitensis Septicæmia. J. W. H. Eyre.
- 5 \*Nature and Causes of Taint in Miskured Hams (*Bacillus Fædans*). E. Klein.
- 6 Early Treatment of Protruding Incisor. J. F. Colyer.
- 7 Treatment of Malocclusion (Orthodontia). H. C. Highton.
- 8 \*Case of Migration of the Cecum Producing Obstruction of the Ascending Colon. J. Bland-Sutton.
- 9 Scurvy in South Africa, 1902-1904. D. M. Macrae.

1. Antiseptic Surgery.—Lister describes how, in 1865, he first put into practice the antiseptic principle in a case of compound fracture, by the application of undiluted carbolic acid on lint. The caustic action, however, formed a crust of dead tissue which, being preserved from external influences, was replaced by living tissue. This observation afterwards suggested the idea of the catgut ligature. He discusses the uses of carbolic acid.

2. Defensive Arrangements of the Body.—Cheyne considers only diseases due to the entrance of parasitic organisms, with special reference to the points of difference between children and adults. There are some diseases which practically occur only during childhood; and *vice versa*, there are certain diseases common in adult life which hardly ever affect children. Again there are many infective diseases which attack both adults and children, but the young are more especially susceptible to some, while their elders are more susceptible to others. Or, again, some diseases are more virulent in children than in adults, and *vice versa*. Perhaps the most striking fact of all, and the one to which he especially draws attention, is that in diseases which are common to both children and adults the organs and tissues which are attacked by the

virus may differ markedly according to the age of the patient. As instances, he cites the exanthemata, which are often spoken of as children's ailments. The pneumococcus attacks the body more readily in childhood than in adult life, i. e., the resisting power is less in children. The first line of defense resides probably in the epithelial tissues. "It clearly must be a local power residing in the epithelial cells themselves, or in the fixed cells on which they are situated, rather than any general condition such as the presence of opsonins in the blood." Children are more susceptible than adults to the gonococcus, which, moreover, in children, attacks epithelial tissues which are more or less immune in adults. Multiple abscesses of the skin and impetigo are common in children, but boils rarely occur, while in adults the reverse is the case. The second defensive arrangement he holds to be the endothelium, where they fix on the weak spots, e. g., endarteritis is common in syphilis. The local predisposition may to a considerable degree be a matter of pabulum. Ringworm of the scalp is common between 3 and 15 years, rare before and after. He suggests a difference perhaps in the chemical composition of the hairs in adults and children. Thread worms, again, are common in children, but equally rare in adults. This may be due to a difference in the secretions of the alimentary tract. Bacteria of the same species may display a special appetite for certain tissues, as fresh developments in an individual are apt to occur in connection with similar tissues. That the anatomic arrangement of various parts favors the deposit of micro-organisms can hardly be accepted as the only, or even as an important factor. The localization of the disease he considers in the main a vital question to be summed up under the term local predisposition. He dilates on this question and closes by pointing out that he has been unable to find any marked differences in the opsonic index to different organisms at various periods of life corresponding to the variations in the incidence of disease and in their course at different ages; nor has any difference in the opsonic index to various infective organisms been pointed out as regards sex, and yet there are noticeable variations in the incidence and severity of these diseases in the two sexes. He refers to Wells' observations on the opsonic index in infants (*Practitioner*, May, 1908, abstracted in THE JOURNAL, July 4, p. 80) and says that if his conclusions are found to apply to a sufficiently large number of cases they raise the question whether or not the significance of the opsonic index and opsonins generally is being properly interpreted. He asks, "May there not be some other interpretation of the variations in the opsonic index than that which is put forward by Wright, and which is being so extensively translated into practice?"

5. *Bacillus Fædans* and Tainted Hams.—Klein, having investigated the cause of the taint that occasionally affects hams during the curing process, reports the finding of a microbe, in length from 3 to 5 microns on the average, but varying between 1.6 microns and 14 microns, and 0.4 microns in thickness, straight or curved, ends more or less rounded, not motile, but forming linear chains and filaments. It is an obligatory anaerobe. He describes the mode of artificial culture and proposes for it the name *Bacillus fædans*.

8. Migration of Cecum.—Bland-Sutton describes a case in which "a loop consisting of the last few inches of the ileum and the ascending colon with the cecum and appendix, had been twisted on its own axis through half a circle and displaced upward and to the left," occupying the left kidney pouch. It caused obstruction of the ascending colon. Operation resulted in death sixteen hours later. Bland-Sutton calls attention to this complication because descriptions of it are not to be found in text-books or even in monographs dealing with intestinal obstruction. Its importance is obvious from the fact that the majority of the patients in whom it has occurred have died. This is probably due to delay in seeking advice.

##### British Medical Journal, London.

June 27.

- 10 \*Points in the History of Antiseptic Surgery. Lord Lister.
- 11 Cystic Tumor of Suprarenal Body Successfully Removed by Operation. A. H. G. Doran.
- 12 Two Cases of Lateral Sinus Thrombosis. E. Harrison.
- 13 \*Etiology and Treatment of Eczema. L. Kesteven.



- 14 Diving and Caisson Disease. N. H. Mummery.  
15 Compressed-Air Illness. C. G. Grant.  
16 \*The Mentally Defective in Prison. J. M. Rhodes.

10. See Abstract 1.

13. **Eczema.**—Kesteven says that while the theory that eczema is the direct result of specific dyscrasia, or "blood humors" has been dropped, the view that certain pathologic states are frequently the indirect factors in the causation of eczematous attacks may be accepted without cavil on the evidence of the multiform eczemata we meet with accompanying or following such states. The origin of such eczemata, however, is to be attributed to neurotic action. He applies that principle to the consideration of "gouty eczema," eczemas consequent on uterine disorders and in mental cases, especially imbecility, and even to cases in which a local irritation is the exciting cause. Eczema may thus be divided into two classes for purposes of treatment: (1) That from within, acting through the sympathetic chain of the functional system, may be denoted the ganglionic or idiopathic form; and (2) that arising from external or local irritation, the peripheral or traumatic. For treatment he speaks highly of the application of pure liquid carbolic acid. Tincture of iodine is also useful; or the following, which he describes as a "happy combination":

R. Tincturae iodii ..... 1  
Solutionis acidi carbolici (10%) ..... 9

This is applied on lint under oil silk. All these applications are painful for a short time, but the pain rapidly subsides, leaving a scab. Suprarenal extract is a good application prior to the carbolic acid, as it reduces turgescence and exudation. Greasy applications should be applied only in the dry desquamative stage.

16. **Mentally Defective Prisoners.**—Rhodes discusses the condition of the mentally defective criminal in British prisons and draws conclusions, some of which are here quoted as being of more than local interest. Prisoners should be classified so that those who (quoting Mercier) "have done wrong in the pursuit of gratifications for themselves by the intentional injury of others" shall be firmly dealt with, while the weak-minded, the ignorant, the misled, shall have the punishment "made to fit the crime," i. e., related to the actual degree of responsibility of the culprit. The present confinement of all prisoners alike is expensive; the dangerous criminals must be confined in prisons, but for less serious offenses the state farm would be more useful and remedial. An expert alienist should be attached to each prison, as in Belgium. The habitual drunkard laws, which now let many go uncontrolled until they are confirmed dipsomaniacs, should be remodelled on the lines of the Massachusetts laws.

#### Medical Press and Circular, London.

June 24.

- 17 \*Sciatica. R. A. Fleming.  
18 Gallstone Surgery. D. Kennedy.  
19 Diagnosis and Treatment of Syphilitic Neurasthenia. G. Millain.  
20 Treatment by Diet of Bronchial Asthma. A. C. F. Raba-gliata.

17. **Sciatica.**—Fleming divides sciaticas into three groups or types: 1. Interstitial neuritis and perineuritis, due generally to wet and cold, rheumatism or gout; (2) neuralgia; (3) pressure on the sciatic nerve or roots of the sacral plexus, as in pregnancy, a loaded bowel, etc. He discusses these types as regards pathology, clinically, diagnostically, etc., and confines himself in respect of treatment to Type 1. He recommends large doses of sodium salicylate and sodium bicarbonate, with rest for the limb. Acupuncture is beneficial, using at least six sterilized needles, and leaving them in for half an hour. Injections are used, but 80 per cent. alcohol and from 1 to 2 per cent. osmic acid should never be used. Electrical treatment he has found disappointing. He mentions the breaking down of adhesions and nerve stretching.

#### Clinical Journal, London.

June 24.

- 21 Inter-Relations of Abdominal and Thoracic Diseases. W. H. Allchin.  
22 Hematemesis; Its Varieties and Treatment. D. Duckworth.  
23 Treatment of Early Gonorrhea in the Male. W. W. Powell.

#### Journal of Tropical Medicine and Hygiene, London.

June 15.

- 24 Spirochetosis of Cypriote Fowls. G. A. Williamson.  
25 Rare Sclerostome of Man in Nyasaland. R. T. Lelper.  
26 Seven-Day Fever of the Indian Ports. F. H. A. Clayton.

#### Australian Medical Gazette, Sidney.

May.

- 27 Leprosy. J. A. Thompson.  
28 \*Treatment of Asthma and Other Chest Troubles, with Reference to Outdoor Sleeping. E. S. Jackson.  
29 \*Treatment of Asthma. A. Stewart.  
30 Value of the Ocular Reaction in Diagnosis of Tuberculosis. S. Gillies.  
31 Treatment of Tuberculous Joint Disease by Open Cut and Exposure to Sunlight. H. Swift.  
32 Management of Burns and Scalds. A. C. F. Halford.  
33 Four Successful Interscapulothoracic Amputations. W. J. S. McKay.  
34 Treatment of Increased Intracranial Tension. R. H. Martin.

28. **Asthma.**—Jackson insists on the importance of fresh air for asthmatics, and urges sleeping on the veranda, disregarding draughts. It is not enough to sleep with doors and windows open. In hot weather there is a greater tendency to perspire when sleeping indoors. He is convinced that over-sweating is one of the causes of asthma, as well as of other chest diseases, and it is important to watch the amount of clothing that patients wear.

29. **Idem.**—Stewart uses calcium iodid in 4 grain (0.26) doses with 5 minims of liquor arsenicalis (B. P.) thrice daily. When wheezing disappears the iodid is discontinued and liquor arsenicalis hydrochloricus (B. P.) in 10 minim doses thrice daily after meals is given and continued for three months. When active symptoms have disappeared, respiratory exercises should be begun—any exercise that produces breathlessness. Dumb bells, clubs, etc., are useless to an asthmatic, but skipping develops the respiratory muscles, increases the pulmonary capacity, and flushes the lungs with blood. Stewart has treated asthma on these lines in over 60 cases, with 75 per cent. of permanent benefit.

32. **Burns and Scalds.**—Halford insists on the inadequacy of antiseptics, which, to a large extent, are not only useless, but a hindrance, in the prevention of suppuration after burns. He quotes Hektoen and Riesman to the effect that it is the dryness in dry gangrene that renders infection with saprophytic bacteria difficult or impossible. He draws an analogy between the separation of sloughs after burns and scalds and the separation of the navel string of infants. Dryness and promotion of evaporation are the cardinal principles, when attainable. On mucous surfaces, however, antiseptics may be used. The risk of septic poisoning from mucous cavities is not so dangerous as on the cutaneous surfaces, due probably to the free diapedesis, secretion and drainage following injury there. As a powder for application has been suggested one part of calamine (native zinc carbonate) to seven of Fuller's earth.

#### Annales de Gynécologie et d'Obstétrique, Paris.

June, XXXV, No. 6, pp. 321-384.

- 37 \*Secondary Rigidity of External Os from Acute Puerperal Inflammation of Cervix. (Rigidité secondaire des bords de l'orifice utérin.) A. Couvelaire.  
38 Eversion of Uterus. P. Delbet.  
39 \*Treatment of Cancer of Female Genital Organs. J. L. Faure.

37. **Rigidity of External Os from Acute Inflammation During Labor.**—Couvelaire reports two cases of acute inflammation of the cervix during labor, inducing tumefaction and induration, and preventing the os from dilating. Both patients were primiparae of 24 and 26, respectively, and in each case a flap tore from the cervix during forceps delivery of a still-born child. There was evidently acute inflammation, hyperemia and much edema in the first case, but no edema in the second. In both, labor had been irregular and prolonged, with premature rupture of the membranes. Bacteriologic examination was negative.

39. **Cancer of the Female Genital Organs.**—Faure's article has been prepared to present at the International Surgical Congress at Brussels next September. He is an advocate of the abdominal route and reviews his experience as he has developed his technic. In 12 cases he operated by Wertheim's method and 9 of the patients operated on between 1902 and 1906 are in good health to date. Two have since died of recurrence, and one has been lost to sight. He discusses the



superior advantages of the abdominal route, especially when combined with the vaginal technic. The combined method allows dissection of the ureters much better than a laparotomy alone, while it prevents any hesitation in respect to the limits below of the parts to be removed. The vagino-abdominal operation is shorter than the abdominal operation alone, which is an important advantage for debilitated patients, especially if there are any complications.

**Archives des Maladies du Cœur, etc., Paris.**

*June, I, No. 6, pp. 337-400.*

- 40 Origin and Significance of the Protosystolic Wave of the Pulse in the Jugular Veins. L. Bard.
- 41 Mechanism of Propagation to the Apex of the Murmur in Mitral Incompetency. T. R. Bradshaw.
- 42 Pernicious Anemia and Kidney Lesions. M. Labbé and E. Joltrain.
- 43 Infantile Lymphoid Leukemia with Nucleated Corpuscles. B. Weill-Hallé and C. Aubertin.

**Bulletin de l'Académie de Médecine, Paris.**

*June 16, LXXII, No. 24, pp. 675-713.*

- 44 Gaseous Abscess in Displaced Liver. Conteaud and Le Dentu.
- 45 Hemimelia with Fusion of Fingers, etc. (Cas d'hémimélie avec syndactylie, synonychie et défaut de développement de plusieurs métacarpiens.) H. Hallopeau and François-Dainville.

**Presse Médicale, Paris.**

*June 17, XVI, No. 49, pp. 385-392.*

- 46 Frequency of Tuberculosis in Laundry Employés. (Métier et habitats des blanchisseurs dans leurs rapports avec la tuberculose.) L. Landouzy.
- 47 Official Disinfection in Rural Districts. J. Courmont.
- 48 Therapeutic Application of High-Frequency Currents. A. Zimmern.

*June 20, No. 50, pp. 393-400.*

- 49 Colloidal Silver in Infectious Diseases. (L'argent colloidal.) A. Netter.
- 50 Arrested Local Development from Burns in Childhood. (Atrophie numérique consécutive aux brûlures de l'enfance.) A. Daniel.

**Semaine Médicale, Paris.**

*June 17, XXVIII, No. 25, pp. 289-300.*

- 51 Pelvic Abscesses Secondary to Peritonitis. (Abscess pelvi-péritonitiques.) F. Lejars.

**Archiv für klinische Chirurgie, Berlin.**

*LXXXVI, No. 2, pp. 277-573.*

- 52 \*Treatment of Tetanus on Basis of Experimental and Clinical Studies. Especially the Attraction of Tetanus Toxin to Lipoid Substances. P. Bockenheimer.
- 53 \*Megacolon. (Zur Hirschsprung'schen Krankheit.) J. Petrivalsky.
- 54 \*Treatment of Phosphorus Necrosis. D. Teleky.
- 55 \*Experimental Transplantation of Suprarenal Tissue in Kidney. H. v. Haberer.
- 56 \*Primary Cancer of Appendix. (Primärer Krebs des Wurmfortsatzes.) T. Voekler.
- 57 \*To Hasten Recovery After Laparotomy by Allowing Patients to Leave the Bed Early. (Abkürzung des Heilungsverlaufs Laparotomierter durch frühzeitiges Aufstehen.) H. Kümmell.
- 58 Further Modification of Technic for Intestinal Anastomosis with Actual Cautery. E. Capek.
- 59 \*Postoperative Thrombosis-Embolism. A. Fraenkel.
- 60 Treatment of Pseudarthrosis Following Firearm Wounds. (Pseudarthrosen-Behandlung nach Schussverletzungen.) Hashimoto and So.

52. Treatment of Tetanus Based on Attraction of Lipoid Substances for Tetanus Toxin.—Bockenheimer calls attention to the valuable aid in prophylaxis of tetanus that can be obtained by taking advantage of the affinity between tetanus toxin and fats. It has been shown that snake venom can be bound with cholesterol and botulism toxin with lipoid substances, and he experimented with all these and with magnesium chlorid and sulphate, cod liver oil, liquid paraffin, olive oil, salves, vaselin and a Peruvian balsam salve. He describes his extensive research with guinea-pigs infected under conditions approximating those in man, and then given local preventive treatment. The best results were obtained with Peruvian balsam and vaselin. The former applied to the infected wound prolonged the period of incubation to twice the length of that in the controls. The addition of 10 per cent. antitoxin seemed to enhance this effect. If the tetanus developed it ran a much milder course. The same results could be obtained with a daily preventive injection of 0.2 c.c. per half pound of weight—smaller amounts being ineffectual. This is equivalent to 40 c.c. of antitoxin a day for a person weighing 100 pounds. He reviews the experiences with tetanus at von Bergmann's clinic during the last 25 years—

a total of 29 cases with a mortality of 86.2 per cent. Three of the 20 patients who were treated with antitoxin recovered, one after amputation of the injured arm followed by antitoxin injected by every route. In every case terminating in recovery the incubation period had been long. He is an advocate of amputation or extensive excision, in case of severe injury, at the outbreak of the tetanus. In case of local tetanus, developing in the first two weeks, amputation gives the best chances for recovery. In local treatment he prefers hydrogen dioxid as it checks the growth of the tetanus bacilli and also destroys putrefaction bacteria. This local cleansing should precede the application of the Peruvian balsam salve every day.

53. Megacolon.—Petrivalsky says that we must distinguish between congenital megacolon and the secondary dilatation of the large intestine from various causes, principally from unusual length of the sigmoid. The true congenital megacolon is the result of a histogenetic anomaly of the mesentery, especially of its vessels, and of the wall of the intestine.

54. Treatment of Phosphorus Necrosis.—Teleky has encountered 11 cases at Vienna and describes them in detail. Ten of the patients had been employed in match factories and the other had been taking phosphorus internally for four years on account of osteomalacia. The necrosis was in the lower jaw in nine cases, in the upper jaw in four, and in two cases both jaws were involved. The case histories show the great advantages of patient waiting until the sequester has been spontaneously thrown off. This required about 11 months, but the process then was at an end, while early resection was mutilating and, owing to the impossibility of distinguishing the actual limits of the process, the disease generally continued its ravages uninfluenced. Conservative expectant treatment includes incision and drainage, antiseptic lavage of the cavity, and excochleation of the fistulous passage with extraction of the entirely detached sequester. An attempt to introduce a prosthetic appliance at once proved unsuccessful in one case. Phosphorus necrosis of the lower jaw does not offer favorable conditions for such measures.

55. Transplantation of the Suprarenals in the Kidneys.—Haberer transplanted one of the suprarenals into the kidney in 86 animals, including 61 dogs and 6 cats. Good functional results were obtained in 50 per cent. of the cases in which the pedunculated suprarenal was inserted in a slit in the kidney. Both the medulla and cortex survived, and both seemed to be equally important for the functioning of the organ. When the suprarenals were not functioning a typical syndrome was observed terminating in the death of the animal.

56. Primary Cancer of the Appendix.—Voekler reports two typical cases and reviews seventy-eight in the literature. At no other point in the body does cancer make its presence known so early. The inflammatory reaction on the part of the appendix leads to operation while the lesion is still in its incipency, which is the reason for the good prognosis.

57. Hastening Recovery After Laparotomy by Having the Patients Leave Bed Early.—Kümmell presented this appeal at the recent congress of the German Surgical Association with the arguments in favor of allowing the patients to get up the first day in some cases, on the second day in others, and the third day in all cases in which the operative wound is healing aseptically without fever. No inconveniences were observed in any instance.

59. Postoperative Thrombosis.—Fraenkel states that eighteen deaths from postoperative embolism of the pulmonary artery occurred in the Vienna General Hospital in 1906. Most of the patients were robust, and in advanced convalescence. He ascribes the thrombosis to metastatic infection from the wound or vicinity of the operation. The chief factor is paralysis of the intestine from the infection and inflammation. This is the source of the disturbances that appear later at remote points, such as parotitis, joint and bone affections and postoperative thrombosis—all conditions which may be regarded as septic metastases. Varicose veins afford a predisposition to thromboembolism. In a number of cases autopsy showed that the embolus in the pulmonary artery came from a fresh coagulum in a varicose vein in the leg. He regards



every case of postoperative thromboembolism as a warning for revision of the entire system for insuring asepsis, as it shows a defective link somewhere in the chain. After the operation every effort must be made to combat any tendency to paralysis of the intestine.

#### Beiträge zur klinischen Chirurgie, Tübingen.

June, LVIII, No. 2, pp. 289-569.

- 61 The Galalith Intestinal Button. (Galalith-Darmknopf.) V. Lieblein.
- 62 \*Hernia in Sacrosciatic Foramen. (Beiträge zur Kenntnis und Kasuistik der Hernia ischiadica an der Hand des ersten radikal operierten und geheilten Falles.) E. Köppl.
- 63 \*Relations Between Thymus and Exophthalmic Goiter. (Beziehungen der Thymus zum Morbus Basedow.) Capelle.
- 64 Backward and Outward Subluxation of the Astragalus with Subluxation of the Cuboid Bone. Reith.
- 65 Arterial Blood Pressure in Surgical Kidney Affections and Appendicitis. (Verhalten des arteriellen Blutdruckes bei chirurgischen Nierenkrankungen und Appendicitis.) T. Kato and Kotzenberg.
- 66 \*Plastic Operations on Kidney Pelvis and Upper Segment of Ureter for Hydronephrosis. (Plastische Operationen am Nierenbecken und oberen Ureterabschnitt bei den Retentionsgeschwülsten der Niere.) F. Kroiss.

62. Sciatic Hernia.—Köppl says that only 23 cases of hernia in the sacrosciatic foramen are on record in the literature for 150 years. He recently encountered such a case and corrected the tendency to hernia by a radical operation, the first time it had been attempted, to his knowledge. The pain from compression of the nerve by the hernia is important for the diagnosis, especially when accompanied by the ordinary signs of hernia. Differentiation is difficult and has been made only in the rarest cases.

63. Relations Between the Thymus and Exophthalmic Goiter.—Capelle comments on the remarkable frequency of the coincidence of an abnormally large thymus with severe exophthalmic goiter. He discusses the possibility of being able to diagnose the persisting large thymus during life. This question is of extreme importance for surgical treatment of exophthalmic goiter as the persistence of the thymus immeasurably enhances the risks of the operation. The condition of the heart is the touchstone for operative treatment, and experience has shown that the persisting large thymus is an almost invariable accompaniment of severe heart disturbances in these cases. He states the facts as: "A large Basedow thymus is, so to say, pathognomonic for a weak Basedow heart, incapable of standing the stress of an operation." He reports several instructive cases of this type, the patients standing resection of the thyroid without mishap, but the evening of the same day the heart developed "delirium cordis" and the patients succumbed in a few hours. The operations had been done under ether. Nothing was found at autopsy to explain the fatalities except a hyperplastic thymus. In 60 autopsy records that have been published, unusual size of the thymus was mentioned in 79 per cent. of the cases. Percussion, palpation, Roentgenoscopy and signs of the status lymphaticus may reveal the condition of the thymus. The discovery of enlargement of other glandular organs, the spleen, tonsils and follicular glands of the tongue, suggest the possibility of a persisting large thymus, a condition which may also be suspected when thymus preparations cause an aggravation of the exophthalmic goiter symptoms.

66. Plastic Operations on Kidney Pelvis and Upper Segment of Ureters.—Kroiss reviews the operative treatment of hydronephrosis from anomalies of the pelvis or ureter—a total of 102 operations which he describes in detail with 33 illustrations. His attention was attracted to the subject by a case of hydronephrosis of a solitary kidney, at Schloffer's Innsbruck clinic. He has also had occasion to perform a plastic operation in three other cases. The results of operative treatment in all this material have been excellent as a rule.

#### Berliner klinische Wochenschrift.

June 15, XLV, No. 24, pp. 1121-1164.

- 67 \*What Should Be Taught Regarding Dangers of Infectious Diseases in First Aid Courses? (Was soll der Arzt über die Gefahren der Infektionskrankheiten in den Samariterkursen lehren?) F. Hueppe.
- 68 \*Postoperative Occlusion of Duodenum. (Duodenaler Ileus nach Operationen.) L. Landau.
- 69 \*Treatment of Ileus. W. Braun.
- 70 \*Nature of Leukemia and Its Treatment. (Wesen des leukämischen Krankheitsprozesses und die therapeutische Beeinflussung desselben.) E. Grawitz.

- 71 Maneuvers for Artificial Respiration. (Manuelle künstliche Atmung Erwachsener.) G. Meyer and A. Loewy.
- 72 Precipitin Reaction in Syphilis and General Paralysis. (For-net'sche "Präcipitat"-Reaktion bei Lues und Paralyse.) F. Plaut and W. Heuck.
- 73 Roentgen and Anatomic Study of Duodenum. (Sonderstellung der Pars horizontalis superior des Duodeni in röntgenologischer und anatomischer Beziehung.) G. Schwarz.
- 74 Apparatus for Functional Tests and Training of the Heart. (Apparat zur Funktionsprüfung und Training des Herzens.) M. Herz.
- 75 \*The Use of Carbon Dioxid Snow in the Treatment of Nevi and Other Lesions of the Skin. (Kohlensäureschnee zur Behandlung von Hautkrankheiten.) W. A. Pusey.
- 76 \*Examination of Fundus of the Eye by Transillumination of Orbit from Nasopharynx. (Neue Methode der Untersuchung des Augenhintergrundes und des Bulbusinnern.) C. Hertzell.
- 77 Present Status of Endonasal Surgery. FINDER.

June 22, No. 25, pp. 1165-1212.

- 78 \*Subcutaneous Continuous Drainage of Ventricles of Brain in Hydrocephalus. (Subcutane Dauerdrainage der Hirnventrikel beim Hydrocephalus.) F. Krause.
- 79 Glycosuria Experimentally Induced by Cauterization of Inner Surface of Intestine. (Glykosuria, experimentell hervorgerufen durch Verätzungen und Verschorfungen der Innenfläche des Darmes.) F. Eichler and H. Silbergleit.
- 80 \*Congenital Muscular Rigidity and Dislocation of Hip Joint. (Little'sche Krankheit und Hüftluxation.) G. A. Wollenberg.
- 81 Torsion of Pedicle of Gall Bladder. (Stieldrehung der Gallenblase.) R. Mühsam.
- 82 \*Secondary "Implanted" Abdominal Cancers. (Implantationscarcinome im Abdomen.) A. Tilp.
- 83 \*Palpation of Normal Pylorus, etc., and Expiratory Gurgling. (Palpation des normalen Pylorus und der normalen grossen Kurvatur, und ein neues akustisches Phänomen, das expiratorische Gurren.) T. Haussmann.
- 84 \*Action of Drugs on the Blood Serum. (Wirkung der Arzneimittel auf das Blutserum.) J. Schwarzmann.
- 85 \*Cure of Chronic Bronchitis by Breathing Exercises. (Heilung der chronischen Bronchitis durch Atmungsgymnastik.) H. E. Knopf.
- 86 \*Under Water Examination and Treatment in Gynecology and Obstetrics. (Subaquale Untersuchung und Behandlung in der Gynäkologie und Geburtshilfe.) O. Tuszkai.

67. Preventive Medicine in First-Aid Courses.—Hueppe presented this address at the First International Congress for First Aid, held at Frankfurt recently. It is an appeal for the rudiments of the causes and dangers of infectious diseases to be included in the instructions in the system of "Samaritan" or "first-aid" lectures. He preaches constructive hygiene and the importance of educating the public in the idea that cleanliness is more than half of disinfection. "Indeed," he says, "disinfection is only a special and magnified form of cleanliness." He mentions that in the recent smallpox epidemic at Vienna, transmission of contagion by currents of air transporting the desiccated material was abundantly proved. Dried material from the pustule was formerly used in the Orient for variolization by insufflation of the dried substance into the nose. He thinks that enlarging the scope of the first-aid instruction will immensely enhance the usefulness of the present systematic training in first aid now in vogue in Germany and Austria.

68. Treatment of Postoperative Ileus.—Landau refers especially to the symptom-complex of sudden collapse and uncontrollable vomiting of almost pure bile, the vomiting never being feculent. In two recent cases the diagnosis of severe peritonitis seemed unmistakable, but turning the patients so that they lay face downward banished all the symptoms at one stroke. The trouble is an arteriomesenteric occlusion of the duodenum. The entire root of the mesentery, from which the heavy small intestine is hanging, has become strangulated. The kinking of the duodenum may be followed by dilatation, paralysis and ptosis of the stomach, and the heart action is sure to suffer. By assuming the prone position the trouble is mechanically corrected, and all disturbances subside. Ignorance of the benefits of the change of position to the ventral decubitus may have fatal results, the patient apparently succumbing to peritonitis and heart failure. He discusses the mechanism of this "duodenal ileus" and the cooperation of various factors, remarking that it may be observed after trauma or may even occur spontaneously. He thinks it wiser not to purge too energetically before a laparotomy and to allow nourishment early, to ward off the possibility of this postoperative duodenal ileus.

69. Treatment of Ileus.—Braun discusses the treatment of mechanical ileus, its indications and its results. His views are based on an experience of 69 cases. A delay of from 12 to 24 hours before intervention seals the fate of the patient in many cases of volvulus of the intestine, strangulation and



invagination. In one child, the invagination became almost irreducible in 6 hours; in another case gangrene developed in 24 hours after occlusion from constriction by Meekel's diverticulum. In occlusion from adhesions and stoppage, the interval before the catastrophe is generally much longer, but even here fatal collapse is liable to occur at any moment. The indications are therefore for rapid as well as judicious measures. In 6 cases the ileus was cured by injections; in 33 cases laparotomy was required, and in 30 palliative measures, puncture or enteroanastomosis. He regards puncture of the intestine through the intact abdominal walls as too dangerous, but advocates for appropriate cases a Witzel slanting fistula. This allows the contents of the intestine to be evacuated with a small incision in the intestine and no escape of the contents around the small flexible cannula he uses for the purpose.

**70. Leukemia and Its Treatment.**—Grawitz has had 41 cases of leukemia in his charge in the last three years, and this experience has shown that the different types of blood formation in this disease respond differently to treatment. In 26 cases with mixed-cell findings in the blood, 12 of the patients were in the earliest stages and 10 of these were clinically cured by Roentgen treatment, except that 3 had transient recurrence after a year or two of health. Two of this group were improved, but recurrence was soon observed and the ultimate outcome is unknown. In 14 cases in which the leukemic process was of several years' standing, one patient has been cured for two years, one died uninfluenced; the others showed more or less improvement but no permanently favorable results. Some have died since, and the fate of the others is unknown. In the 15 cases of lymphoid findings, only one patient can be regarded as cured. One has died since of an intercurrent affection, 2 were improved, but have since died of recurrence. The others showed slight or no improvement. By thus classifying the various types, the effect of Roentgen treatment can be better estimated. Complete restitution need not be expected in cases of deep-rooted defective blood production, but earlier diagnosis and better Roentgen technic will certainly improve the prospects in leukemic conditions.

75. This article was published in *THE JOURNAL*, Oct. 19, 1907, page 1354.

**76. Illumination of the Fundus of Eye from Nasopharynx.**—Hertzell introduces his ophthalmodiaphanoscope into the rear of the mouth. The light illuminates the orbit from the rear and shows a number of instructive features in the eyeball and behind it in the orbit which have hitherto escaped the usual ophthalmoscope.

**78. Subcutaneous Continuous Drainage of the Ventricles in Hydrocephalus.**—Krause has derived great benefit in a number of cases from the use of a light silver tube introduced into the ventricle. The outer end is slit up on each side and these tongues are turned back at right angles on the outer surface of the skull. This prevents the tube from slipping in too deep, while it is held in place by suturing the periosteum over the turned back ends of the tube, leaving the lumen open. The skin flap is then sutured in place. The tube thus conveys the fluid from the ventricle into the subcutaneous tissue, and it is left in place for months. He gives illustrated descriptions of several cases. In the one case of acute hydrocephalus the child died, but other factors were responsible for the fatality. In one case he combined the intubation with a flap valve with good results. In one case puncture allowed removal of a tumor in the cerebellum. The patient developed asphyxia several times during the operation, but relief was obtained each time by puncture, allowing escape of fluid under high pressure. In a case of tumor in the cerebellar-pontine angle, puncture of the subdural space materially reduced the dangerous symptoms of pressure on the brain. He commends this method of transient and permanent drainage, although his experience with it has not been conclusive. He is convinced that it is rational and may reduce the dangers of many operations on the brain.

**80. Congenital Muscular Rigidity and Dislocation of the Hip Joint.**—Wollenberg has examined 10 cases of Little's disease with the Roentgen rays. In 6 the hip joints were apparently normal, but in the others there was complete luxation in 3, bilateral in 1, and subluxation in the fourth case. He has

collected from the literature 17 cases of Little's disease complicated with dislocation of the hip joint. Spasm of the muscles can be counteracted by myotomy of the abductor and flexor muscles of the hip joint, which in combination with tenotomies permits the use of the limb, and is the best prophylaxis of dislocation of the hip. Fixation of the leg in abduction in a plaster cast and splint reduces the possibility of the head of the femur slipping out of place. He advises correction of the dislocation believing that appropriate myotomies and tenotomies will aid in preventing recurrence. His cases confirm the possibility of a mechanical origin for dislocation of the hip joint, both of the congenital and acquired types.

**82. Implantation Cancer in the Abdomen.**—Tilp reports a case in which the genital organs showed extensive inoculation metastases besides numerous hematogenic and lymphogenic metastases from a primary carcinoma in the gall bladder. He knows of only two similar cases on record in which secondary cancer of the uterus was the result of implantation. A secondary neoplasm of the ovary, uterus or intestine, of this kind, might deceptively simulate a primary growth.

**83. Palpation of Normal Stomach and Gurgling During Expiration.**—Hausmann has perfected a method of deep palpation which reveals the viscera distinctly. He aims to push the organ back against the posterior abdominal wall and then determine its outlines. This is done during expiration after a very deep inspiration. The fingers are drawn downward, the procedure being facilitated by the rising of the stomach and colon during expiration. He has found that it is thus possible to palpate the normal pylorus in 18 per cent. of the persons examined. As the fingers pass over the fold of the greater curvature it feels like a step, over which the finger is drawn. As this is done the fingers separate the stomach into two parts, and any fluid in the stomach noisily regurgitates from one part into the other. He regards this "expiratory gurgling" as an ideal method for determining the position of the stomach, especially the level of the lower margin. As a rule, this margin is 5 or 6 cm. above the umbilicus, but he has found a great difference in the location of the umbilicus in different persons, ranging from 2 to 10 cm. above the line connecting the spines of the ilium. He cites some examples to show the important information that may be learned by his technic, especially for exclusion of the stomach as the site of a palpable tumor.

**84. Action of Drugs on Blood Serum.**—Schwarzmann states that the agglutinating properties of the blood serum increased to a marked extent in rabbits and dogs taking sodium iodid. He thinks that these experiences open a new line for research in regard to the action of drugs.

**85. Cure of Chronic Bronchitis and Asthma by Breathing Exercises.**—Knopf has been successful in curing chronic bronchitis by systematic courses of deep breathing. The exercises are done with the trunk bare, before a large mirror, inspiring through the nose and expiring through the mouth. Some persons breathe too superficially or they contract the abdominal muscles during inspiration. This latter bad habit can be one of the factors in bronchitis and asthma, and it must be combated and the patients taught to breath properly and not to cough except to expel the secretions. These exercises in deep breathing improve the general health to a remarkable extent and cure chronic constipation, and regulate the circulation until the patient says that he "feels like a new man." Knopf affirms that systematically practiced deeper breathing is not only the most certain expectorant, but also the only one that is entirely harmless. The only drawback is a slight dizziness sometimes noticed at first, evidently a sign of anemia of the brain, but it occurs only at first. No other system except that of locomotion is so much under the control of the will as the respiratory system, and he believes that respiratory therapy promises good results in many morbid conditions in heart and blood vessels, skin and nervous system, and in metabolic disturbances.

**86. Examination and Treatment Under Water in Gynecology and Obstetrics.**—Tuszkai for fourteen years has been making a practice of examining the abdomen with the patient reclining in a bathtub. The abdominal walls relax and allow palpation of otherwise inaccessible organs. He has thus been



able to diagnose a pregnancy in the sixth week and to follow the growth of the skull of the fetus and thus to determine the best moment for intervention with contracted pelvis. This extreme facility afforded by the water is more than can be explained by mere relaxation of the muscles or soothing of the nerves; physical factors must cooperate in the effect. In one case an incarcerated tumor in the small pelvis, compressing the ureters, could be reduced under water, thus allowing the patient to be prepared for its proper removal. Even general anesthesia does not permit such exact examination as the water bath, while the latter has the advantage that the tender spots can be accurately located. He commends this "subaqual technic" as a great improvement which deserves wide application. Not only water but other fluids increase the possibilities of palpation. Interesting findings were obtained with rabbits and dogs placed in fluid tallow, plaster or wax.

#### Correspondenz-Blatt für Schweizer Aerzte, Basle.

June 1, XXXVIII, No. 11, pp. 345-376.

- 87 Transplantation of Muscles. (Muskeltransplantationen.)  
Brandenburg.

June 15, No. 12, pp. 377-408.

- 88 Successful Removal of Epicerebral Sarcoma in Region of Left Sensory Motor Convolutions. E. Tschudy and O. Veraguth. Commenced in No. 11.

#### Deutsche medizinische Wochenschrift, Berlin.

June 18, XXXIV, No. 25, pp. 1081-1128.

- 89 Morbid Depression and Its Treatment. (Depressionszustände.)  
R. Sommer.  
90 Existence of Rudimentary or Abortive Forms of Muscular Dystrophy and Their Treatment. (Gibt es Formen frustes oder rudimentäre Formen der muskulären Dystrophie (Erb), und ist deren Heilung möglich?) A. Marina.  
91 \*Removal of Gravid Tube by Vaginal Route. A. Dürrssen.  
92 Rat-Bite Disease. (Ätiologie der Rattenbisskrankheit.) M. Ogata.  
93 Determination of Suprarenal Products in Blood and Urine. (Nachweis von Nebennierenprodukten im Blut und Harn.)  
N. Waterman and R. J. Boddaert.

91. Vaginal Extirpation of the Gravid Tube.—Dürrssen has removed the pregnant tube by the way of the vagina in 93 cases, with one fatality. Another patient died from peritonitis following a fall after leaving the hospital. This experience includes thirteen years; he found this technic possible in about two-thirds of the cases. He would not advise it unless the operator is especially skilful in vaginal technic and unless he can count on two skilled assistants. Under these conditions, Dürrssen commends anterior colpoceliotomy in a tubal pregnancy of from one to three months in case the tube is still intact, or in case of hemorrhage if the condition of the patient allows proper preparation, or with tubal mole with or without a hematoma. In case of older and larger hematocele he advises opening into it from the posterior vaginal vault or by a laparotomy.

#### Deutsche Zeitschrift für Chirurgie, Leipsic.

May, XCIII, No. 3, pp. 237-324.

- 94 \*Ivory or Rubber Substitute for the Lower Jaw After Exarticulation. (Kieferersatz bei Exartikulation des Unterkiefers.)  
F. König.  
95 Cutaneous Tuberculin Reaction in Surgical Affections. (Kutan-diagnose der Tuberkulose bei chirurgischen Leiden.) J. Malls.  
96 \*Successful Removal of Emboli from Pulmonary Artery. (Fall von Embolie der Lungenarterie nach der Methode von Trendelenburg operiert.) R. Sievers.  
97 Appendicitis and Pregnancy. F. Weber.  
98 Concrements Forming on Threads After Gallstone Operations. (Fadenrezidiv nach Gallensteinoperationen.) H. Flörcken.  
99 Apparatus for Compressing Pelvis in Trendelenburg's Operation for Exstrophy of Bladder. (Beckenkompression bei Operation der Blasenektopie.) Wilms.

94. Prosthesis After Exarticulation of Lower Jaw.—König has inserted a prosthetic appliance in four cases after exarticulation of the lower jaw. In his latest case the patient was a woman of 68, and a piece of ivory was inserted to take the place of part of the jaw removed on account of a tumor of the ascending branch of the jaw in a toothless mouth. The results were extremely satisfactory. The ivory becomes ar-rod enough to allow a little ingrowth of bone tissue which anchors it firmly.

96. Extraction of Embolus from Pulmonary Artery.—Trendelenburg has proposed during the last few months active intervention in cases of otherwise fatal pulmonary embolism. He has shown that it is feasible on animals, but in the one

clinical case in which he applied it the patient succumbed in the course of the operation. Sievers has been more successful, and here relates the particulars of a case in which he was able to remove the emboli and terminate the operation, allowing a survival of the previously pulseless patient for fifteen hours. The symptoms indicated nearly total obstruction of both main branches of the pulmonary artery. The emboli removed were 15 and 21 cm. long by 7 to 12 mm. in diameter.

#### Medizinische Klinik, Berlin.

June 14, IV, No. 24, pp. 895-932.

- 100 \*What Operations Can Be Done Without Requiring After-Care in Hospital? (Das Gebiet der ambulatorischen Operationen.)  
J. Sternberg.  
101 \*Venesection and Circulatory Disturbances. (Aderlass und Kreislaufstörungen.) Halm.  
102 \*Poisoning from External Application of Resorcin. (Resorzinvergiftung bei äusserer Anwendung.) H. Nothen.  
103 Traumatic Intussusception of Urethra. H. Hans.  
104 Traumatic Prolapse of Rectum. (Eingeweideprolaps infolge erhöhten Innendruckes.) F. Schilling.  
105 Microsporon Epidemic at Berlin. B. Chajes.  
106 High-Frequency Apparatus for Keating-Hart Technic. F. Des-sauer.  
107 Kant's Relations with Medicine and Pharmacy. (Immanuel Kant als Arzt und Apotheker.) A. Kohnt.  
108 Quack Remedies Made in Thuringia. (Königseer Olitäten.)  
C. Reissig. Commenced in No. 22.

100. Operations on Out-Patients.—Sternberg thinks that the number of operations after which the patient can be allowed to go home is much larger than generally realized. As children can easily be carried, almost all operations on them permit this, and all operations that do not interfere with the patient's walking. He has even performed thus amputation of the breast, with removal of the glands in the axilla, thyroidectomy and operations on the bones for caries, or on the soft parts for fungus, allowing the patient to go home at once. He begins to prepare the field for the operation several days before by applying a large dressing wet with a 1 per cent. solution of aluminum acetate and tartrate with a little glacial acetic acid, the whole being covered with oiled silk. This does not act so vigorously as aluminum acetate alone. This dressing is renewed daily, and the day before the operation the field is thoroughly cleansed with benzine, hot water and soap, followed by a large compress with glycerin and tincture of soap, for the last twenty-four hours. The operation is done during the first whiffs of ether, the so-called *Aetherrausch*. Special attention must be paid to ligation of all the visible vessels, both arteries and veins. After the operation he applies a dressing to the entire half of the head in an operation on the face with a few turns of starch-paste dressing outside, and after operations elsewhere in proportion. These large extensive dressings, made stiff outside, not only protect the wound against infection from neglect or curiosity, but reduce the pain by limiting the movements of the parts.

101. Venesection in Heart Disease.—Halm relates a number of cases to show the excellent effects of venesection when the circulation in the lungs is interfered with. The circulation in the lungs provides a regulating reservoir for the blood, and the effect of venesection is felt here first and most intensely. Especially in arteriosclerosis, permanent benefit is derived from venesection, possibly from reduction of the viscosity of the blood. Experiments on himself showed that venesection induced a feeling of agreeable lassitude, an outbreak of sweat, and somnolency. Among the experiences related was the arrest of incipient edema of the lungs in severe heart disease in a hard drinker and the relief of distress in a patient with emphysema of the lungs and secondary weakness of the right ventricle.

102. Intoxication from Resorcin.—Nothen has observed two cases in the last year in which external application of a resorcin salve caused severe intoxication. One patient was a healthy young man and the symptoms simulated threatening uremic coma at first. He had used in one day about 30 gm. of the resorcin for seborrheic eczema on back and limbs. The salve was removed with ether; heat was applied to the extremities, camphor injected and venesection done, and the patient regained consciousness four hours after the incision and recovered. The other patient was an infant with pemphigus, 11 days old. He was found dead in less than twenty hours after the pemphigus patches on head, breast and arms had been dressed with a 3 per cent. resorcin-vaselin salve.



## Monatsschrift für Geburtshilfe und Gynäkologie, Berlin.

June, XXVII, No. 6, pp. 681-789.

- 109 \*Dysmenorrhea as Result of Traction on Peritoneum. (Dysmenorrhoe durch Bauchfellzerrung.) II. Sellheim.  
110 Prolapse of Normally Located Placenta. (Vorfall der Nachgeburt bei normalem Sitz.) R. Stern.  
111 Embryonal Ovarian Tumors. (Embryoiden Geschwülsten des Eierstocks.) A. Redlich.  
112 Primary Abdominal Pregnancy. J. Lovrich.  
113 Inelplent Chorioepithelioma with Metastasis in Vagina. M. Brenner. Commenced in No. 5.

109. **Dysmenorrhea the Result of Traction on Peritoneum.**—Sellheim ascribes the pain to the changes in the size of the uterus during menstruation, pulling on the parietal peritoneum. This may occur by undue shortness of the ligaments or by adhesions. The loosening of the ligaments and adhesions during the course of a pregnancy explains the cure of dysmenorrhea in many cases after childbirth. The dysmenorrhea is sometimes cured also by courses of treatment which stretch or loosen the ligaments and adhesions or relieve constipation. In all cases the combination of the dysmenorrhea with sensitive, short, thick and tightly stretched ligaments, should always suggest the necessity for reducing the traction on the peritoneum by measures to stretch or alter the circulation in the ligaments. An effectual measure is an electromagnet applied to the abdomen which rhythmically attracts and releases iron rings, balls, etc., in the vagina. He thinks this is better than digital massage of the genitals in such women as they are liable to be psychically somewhat unstably balanced. In one case he severed the abnormally taut ligaments, but after a transient improvement the result was bad; the disturbances recurred, severer than before. Either the patient had an unsuspected tendency to hysteria or neurasthenia or the severed ligaments must have soon grown together again.

## Virchows Archiv, Berlin.

June, CXCII, No. 3, pp. 384-564.

- 114 \*Experimental Tuberculosis of Kidney with Ligated Ureter. (Tuberkulose und Blutströmung.) J. Meinertz. Commenced in No. 3.  
115 Implantation of Embryonal Tissue. (Implantation embryonaler Gewebe.) W. Bogoljuboff and P. Owschinnikow.  
116 Suprarenals: Secretion Granules—Edema—Weight. (Nebennieren.) O. Scheel.  
117 Chemical Study of Melanoma. C. Neuberg.  
118 Origin of Hematoma on Heart Valves in New-born Infants. (Entstehung der Herzklappenhämatome bei Neugeborenen.) H. Meinhardt.  
119 Extensive Production of Hyalin in the Arteries. (Ausgedehnte Hyalinbildung in Arterien.) E. Ritter.  
120 Embryologic Study of Rare Malformation. (Eine seltene menschliche Missbildung.) E. Falk.

114. **Tuberculosis and the Blood Current.**—Meinertz describes research on experimental tuberculosis of the kidney as it developed with or without ligation of the ureter. The modification in the circulation through the kidney by ligation of the ureter caused certain distinct modifications in the development of the tuberculosis in these organs. The results harmonized with those observed in diffuse miliary tuberculosis, confirming the predilection of the process for organs with amore sluggish circulation.

## Wiener klinische Wochenschrift.

June 18, XXI, No. 25, pp. 933-930.

- 121 \*Protection of Cattle Against Tuberculosis. (Tuberkulose-schutzimpfung beim Rinde.) J. F. Heymans.  
122 Determination of Biliary Pigment and Its Clinical Importance. (Nachweis von Gallenfarbstoff und dessen klinische Bedeutung.) F. Obermayer and H. Popper.  
123 Pathogenesis of Heberden's Nodules. (Heberdensche Knoten.) F. Pineles.  
124 Changes in Blood in Myxedema. (Veränderung des Blutbildes bei Myxödem.) J. Bence and K. Engel.  
125 Composition of Blood in Relapsing Fever. (Blutzusammensetzung bei der Febris recurrens.) G. Kleseritsky.  
126 "Dust" in Spermatic Fluid. (Spermakotien.) E. Wiener.  
127 The Seashore in Tuberculosis of Upper Air Passages. (Einfluss der deutschen Meere auf die Tuberkulose der oberen Luftwege.) A. Hennig.  
128 Behavior of Human Skin in response to Various Bacterial Poisons. (Ueber das Verhalten der menschlichen Haut gegen verschiedene bakterielle Giftstoffe.) C. v. Pirquet.

121. **Sac Method of Immunization of Cattle Against Tuberculosis.**—Heymans describes a method which has been applied to 4,000 cattle since 1905, and which he believes enhances the resisting powers of the animal. He calls it the "sac method." A sac made from part of a reed is filled with 1 mg. of living tubercle bacilli, diluted with powder; the mouth of the sac is tied and collodionized, and the sac is then intro-

duced under the skin of the animal. Tests have shown that a sac like this filled with tuberculin and placed in a vessel of physiologic salt solution allows diffusion of the tuberculin through the intact membrane of the sac. A tuberculous cow soon shows the typical reaction when a sac containing 0.5 c.c. of raw tuberculin is inserted under the skin. When the sac contains live bacilli they thrive so long as they obtain the necessary nutrient substances by diffusion. Tests on guinea-pigs have shown that the bacilli remain alive and secrete their specific substances in the organism of the inoculated animal so long as the substances which diffuse into the sac are not completely bactericidal, that is, as long as the animal's organism has not acquired adequate immunity. The sac heals in the tissues, forming a nodule resembling a tubercle. After six or eight months the nodule atrophies, the bacilli die, and if the contents of the tubercle are injected into a guinea-pig after 12 or 18 months no tuberculous infection follows. Experience shows that an animal bearing one of these sacs seems to be protected against experimental and spontaneous tuberculous infection to an extent hitherto unattained. He discusses the mechanism and cites his six previous announcements on the subject since 1904.

## Zeitschrift für Geburtshilfe und Gynäkologie, Stuttgart.

LXII, No. 1, pp. 1-176.

- 129 Incontinence of Urine from Female Hypospadias and Its Treatment. (Incontinentia urinae bei Spaltbildung der weiblichen Urethra.) R. Teller.  
130 Threatening Internal Hemorrhage from an Ovarian Perithelioma. Laparotomy. Recovery. L. Goth.  
131 Melanotic Cancers of Vulva. (Bösartige pigmentierte Geschwülste der Vulva.) H. Hinselmann.  
132 Endometritis, and Importance of Plasma Cells in Inflammation. E. Weishaupt.  
133 \*Treatment of Eclampsia. K. Möhlmann.  
134 Lower Segment of Uterus. H. F. Barbour.  
135 Vater-Pacian Corpuscles in Fallopian Tube. E. Ries.  
136 Study of Isolated Surviving Dog Kidneys Flushed with Placenta Juice. (Beobachtungen an mit Placentasaft durchströmten Hundenieren.) P. Mathes.  
137 \*Attempt to Determine the Eclampsia Toxin by Experiment. (Versuch das Eklampsiegift auf experimentellem Wege nachzuweisen.) V. Albeck and J. E. Lohse.

133. **Treatment of Eclampsia.**—Möhlmann reviews the experiences at Olshausen's clinic at Berlin with 104 cases of eclampsia, 1906-7. The mortality was 15.4 per cent. for the mothers and for the children 24.04 per cent. The convulsions did not recur after delivery in 64.4 per cent. In 21 cases expectant treatment was followed by spontaneous recovery without the necessity for hastening delivery. The practitioner should weigh well the conditions in each case to decide whether the eclampsia itself or the supposedly indicated immediate artificial delivery is fraught with most danger for the patient.

137. **Eclampsia Toxin in Amniotic Fluid.**—Albeck and Lohse relate experiments with animals injected with amniotic fluid from eclamptic and non-eclamptic puerperae. Changes were found in the liver in the guinea-pigs injected with the eclamptic fluid resembling in every respect those observed in the livers of women succumbing to eclampsia. Nothing of the kind was observed in the organs of guinea-pigs injected with amniotic fluid from non-eclamptic women.

## Zentralblatt für Chirurgie, Leipsic.

June 20, XXXV, No. 25, pp. 753-776.

- 138 \*Intestinal Anastomosis of Mucosae with Rubber Sutures. (Darmanastomose mittels Gumminahrt der Schleimhäute.) F. Kuhn.  
139 Temporary Turning Back of Both Jaws. (Temporäre Aufklappung beider Oberkiefer.) M. Borchardt.  
June 27, No. 26, pp. 777-808.  
140 \*Antiferment Treatment of Suppurative Processes Without Incision. (Antifermentbehandlung eitriger Prozesse ohne Incision.) A. Peiser.  
141 Appliances for Positive Lung Inflation by Peroral Intubation. (Lungenüberdruck mittels peroraler Intubation und kontinuierlicher Luftpuffung in dem Intubationsrohr.) F. Kuhn.  
142 Resection of Common Bile Duct. A. de Graeuwe.

138. **Intestinal Anastomosis with Rubber Sutures.**—Kuhn gives an illustrated description of a method of exposing and suturing the mucous lining of the stumps of the intestine with rubber, using ordinary rubber bands for the suture material. By this means the lips of the stumps are coaptated with great pressure from the elastic rubber, while the rubber cuts through in time. Among the advantages claimed for the method are the possibility of absolute asepsis, no escape of the contents of the intestine and the easy, rapid technic.



140. **Antiferment Treatment of Suppurating Processes Without Incision.**—Peiser relates further experiences with his method of treating suppurating processes by supplying from without an antiferment to counteract the ferment naturally in the suppurating focus. It was described in *THE JOURNAL*, June 6, 1908, page 1951. He has found that it is possible to accomplish the desired effect by aspiration of the pus with a stout syringe and immediate injection of the antiferment serum. It is thus possible to avoid a disfiguring incision. He is now giving this method of treatment an extensive trial in cancer cases, generally using the effusion from the pleura or abdominal cavity, filtered and tested for its antiferment properties by E. Müller's plate method.

**Zentralblatt für Gynäkologie, Leipsic.**

June 20, XXXII, No. 25, pp. 817-840.

- 143 Extraperitoneal Cesarean Section. (Extraperitonealer Kaiserschnitt.) A. Czyzewicz.
  - 144 Hernia of Gravid Uterus After Conservative Cesarean Section. (Der kreisende Uterus als Bruchinhalt bei Bauchbruch nach konservativem Kaiserschnitt. Kaiserschnitt nach Porro.) W. Schmidt.
  - 145 \*Pathogenesis of Eclampsia. A. Dienst.
- June 27, No. 26, pp. 841-872.
- 146 Suggestion for Facilitating Removal of Laminaria Tents from Cervical Canal. (Vorschlag zur Erleichterung der Entfernung von Quellstiften aus dem Cervicalkanale.) L. Knapp.
  - 147 Two Cases of Decapsulation of Kidneys in Eclampsia. (Nierendekapsulation bei Eklampsie.) F. Kleinertz.
  - 148 Instrumental Abortion. (Anwendung der Abortzange.) F. Thomä.

145. **Pathogenesis of Eclampsia.**—Dienst explains his grounds for the assumption that the symptoms of eclampsia are the result of an overaccumulation of fibrin in the blood. The filaments of fibrin cause disturbances in the circulation, thrombosis and consecutive necrosis of the parenchyma, especially of the liver. The resulting insufficiency of the liver leads to imperfect neutralization of the toxins generated in the metabolism, thus inaugurating a vicious circle. Retention of salts is a further indispensable factor in the development of eclampsia, as the excess of fibrin alone is not sufficient to induce it. Pregnancy nephritis causes retention of salt and thus proves an indirect factor. The leucocyte count suggests that dropsy without albuminuria, "pregnancy kidney," and eclampsia are all links in the same chain.

**Gazzetta degli Ospedali e delle Cliniche, Milan.**

June 14, XXIX, No. 71, pp. 745-760.

- 149 \*Are Consumptive Camps and Hospitals a Menace to the Neighborhood? A. Randi.
- 150 \*Connection Between the Thymus and Asthma. (Degenerazione lacunare del timo ed asma di Richa-Kopp.) F. Pedrazzini.

149. **Are Consumptive Hospitals and Camps a Menace to the Vicinity?**—Randi declares that hundreds of consumptives under proper discipline are not so dangerous for the community as a single tuberculous person not taking due precautions to render his expectoration harmless.

150. **The Thymus and Asthma.**—Pedrazzini reports three cases of sudden death in young children, the so-called "thymus deaths." He reviews the literature and shows that an unusually large thymus or one with merely a part enlarged or abnormally hard may press on the organs or nerves in such a way that any accidental congestion, abnormal pushing up of the diaphragm from distention of the abdomen or irritation of the vagus, as from difficult gastric digestion, helminthiasis or intestinal disturbances, may upset the balance and induce severe suffocation or sudden death. The thymus need not be very large for this to occur. A spasmodic cough may also be caused by compression from the enlarged thymus or from an indurated patch in the thymus, as he shows by several examples. The asthma described by Richa and Kopp may also be the work of the enlarged thymus. Removal of the thymus has been done successfully, but Pedrazzini prefers chondrotomy of the first costal cartilages, close to the sternum, as affording relief from compression while the simplicity of the operation commends this technic. It usually has to be done as an emergency intervention.

**Policlinico, Rome.**

June, XV, Medical Section, No. 6, pp. 241-288.

- 151 Viscosity of Putrefying Blood. (Ricerche viscosimetriche sul sangue in putrefazione.) C. Ferrai.

- 152 \*Toxicity of Urine and Stools and Intestinal Putrefaction in Infants Fed on Foods Rich in Albumin. (Tossicità urinaria e fecale e putrefazione intestinale in bambini nutriti con alimenti ricchi di albumina.) A. Longo.
- 153 Deviation of Complement in Syphilitic Infection and in Parasyphilitic Affections. F. Costantini. Commenced in No. 5.
- 154 Blood Formula in Malta Fever. (Formula ematologica nella febbre di Malta.) A. Tomaselli.

152. **Toxicity of the Urine and Stools in Children on an Albuminous Diet.**—The metabolic findings in the cases reported show that the toxicity was least on a vegetable diet, increased slightly on milk, still more with meat, but was highest with eggs. Intestinal putrefaction was least pronounced with milk, more with vegetables, still more with meat, and highest of all with eggs.

**Nordiskt Medicinskt Arkiv, Stockholm.**

April, XL, Surgical Section, Nos. 3-4.

- 155 \*Value of "Combined Method" in Treatment of Rectal Carcinoma. (Wert der "kombinierten Methode" bei der Behandlung des Rektumkarzinoms.) J. Berg.
- 156 Surgical and Anatomic Study of Exophthalmic Goiter. (Morbus Basedowii.) J. Landström.
- 157 Roentgen Diagnosis and Treatment of Bladder Stones. (Bedeutung der Röntgenographie für die Diagnose und Behandlung der Blasensteine.) J. Berg.

155. **Treatment of Cancer of Rectum.**—Berg has performed 156 operations for cancer of the rectum, on 93 men and 57 women, since 1890. The radical operation was done in 108 cases, with a mortality of 12.9 per cent. The comparative harmlessness of extirpation from below is demonstrated anew by his experience, also the great benefit liable to be derived from colostomy and the lack of annoyance from the new anus. The patients soon learn to manage it excellently. One of his patients with inoperable rectal cancer lived in good condition for nearly five years with his new artificial anus. Autopsy showed the entire pelvis filled with a single cancer mass. The "combined method" allows extirpation of cancers which otherwise would be deemed inoperable. He declares that it deserves wider application than has been the case hitherto, not merely as an operation of last resort, but early for high cancers of the rectum, for which it presents a number of advantages. Patients should always be warned of the possibly eventual necessity for colostomy in all operations of the kind. As this procedure has proved so satisfactory, it is not wise to enlarge the field of the radical operation too far.

## Books Received

LEHRBUCH KLINISCHER UNTERSUCHUNGSMETHODEN FÜR STUDIERENDE UND AERZTE. By Theodor Brugsch, Assistent der II. mediz. Universitäts-Klinik, in Berlin, and Alfred Schittenhelm, a. o. Professor der inneren Medizin, in Erlangen. Part I. 320 pages, 351 illustrations. Parts 2 and 3, 620 pages, 350 illustrations. Paper. Berlin: Urban & Schwarzenberg, 1908.

SURGERY. By John Allen Wyeth, M.D., LL.D. (University of Alabama), President of the New York Academy of Medicine. Cloth. Pp. 816, with illustrations. Price, \$7.00. New York: Marion-Sims Wyeth & Co., 1908.

THE PATHOLOGY OF THE EYE. By J. Herbert Parsons, B.S., D.Sc. (Lond.), F.R.C.S. (Eng.), Assistant Surgeon, Royal London (Moorfields) Ophthalmic Hospital. Vol. IV, General Pathology. Part II. Cloth. Illustrated. Price, \$3.50. New York: G. P. Putnam's Sons, 1908.

INDEX-CATALOGUE OF MEDICAL AND VETERINARY ZOOLOGY: Hygienic Laboratory. Bulletin No. 37. By Ch. Wardell Stiles, and Albert Hassall. Paper. Pp. 401. Washington: Government Printing Office, 1908.

CHRISTMAS VS. FOURTH OF JULY. By Asenath Carver Coolidge, Author of "The Independence Day Horror at Killbury," etc. Paper. Pp. 39. Price, 25c. Watertown, N. Y.: Hungerford-Holbrook Co.

BORDERLAND STUDIES. By George M. Gould, M.D., Formerly Editor of the Medical News. Cloth. Pp. 311, with illustrations. Price, \$1.25. Philadelphia: P. Blakiston's Son & Co., 1908.

GOLDEN RULES OF DIETETICS. By A. L. Benedict, A.M., M.D., Buffalo. Author of Practical Dietetics. Cloth. Pp. 407. Price, \$3.00. St. Louis: C. V. Mosby, 1908.

QUAIN'S ANATOMY. Vol. I. Embryology. By T. H. Bryce. Cloth. Pp. 275, with illustrations. Eleventh Edition. Price, \$3.00. New York: Longmans, Green, & Co., 1908.

BELASTUNGSLAGERUNG. By Ludwig Pincus, Frauenarzt in Danzig. Paper. Pp. 152, with illustrations. Price, \$1.00. Wiesbaden: Verlag von J. F. Bergmann, 1905.

TRANSACTIONS of the American Association of Genito-Urinary Surgeons. Vol. II. Paper. Pp. 413, with illustrations. New York: The Grafton Press.

ST. FRANCIS HOSPITAL. Hartford, Conn. For the Year 1907. Paper. Pp. 63. Hartford: Transcript Job Print, 1908.

ANNUAL STATEMENT of the Directors of the Poor of Blair Co., Pa. For the Year 1907. Paper. Pp. 23.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOLUME LI

CHICAGO, ILLINOIS, AUGUST 1, 1908

NUMBER 5

## Address

### THE BORDERLINE OF LARYNGOLOGY, RHINOLOGY AND OTOTOLOGY.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON LARYNGOLOGY AND OTOTOLOGY, AT THE FIFTY-NINTH ANNUAL SESSION, AMERICAN MEDICAL ASSOCIATION, 1908.

HANAU W. LOEB, A.M., M.D.

ST. LOUIS.

In acknowledging my obligation to the Section which has honored me, I can not do better than to bring before you certain phases of the development of our specialty. While a tremendous advance has been made in every portion of our work, the most interesting of all lies on our borderline where we meet the work of others whose investigations reach or overlap our own.

The process of limitation which has been going on in every field of human activity has had two great functions. It has permitted a far more specialized and thorough study, and it has narrowed the field by concentrating the view.

That every division of science and art has thus been subjected to a rigid scrutiny and uncompromising investigation must be admitted, and that the total effect of this research has been productive of far-reaching results can be determined by even a casual observation. But what a sacrifice there has been to the understanding of the broader side of knowledge! We have rushed pell-mell to develop our own little sphere of activity. We have dissected it and probed it and turned it inside out; but we have forgotten that outside of it there is a world, a vast world, filled with others whose aims, like ours, are directed toward the advancement of a little corner of knowledge without the slightest reference to, or perhaps interest in, the greater domain of science and human activity.

This development of specialism which received its impetus with the dawn of nineteenth-century research is evolving its own remedy. For, ever and anon, do we see evidences of a growing disposition to look over the border into the adjoining fields and to associate the great truths of one department of knowledge with those of another or of many others with a view of correlating them for the greater truth. Not only this, but the confines of the various fields are being encroached on again and again, boundaries are modified, and the whole aspect is altered even in a few years. Compared to these the boundary changes which are effected among nations through the instrumentality of wars, revolutions and the greed of man are but insignificant and unimportant.

In no department of medicine has this been more manifest than in laryngology and otology. These certainly did not begin as surgical specialties, nor were they indeed associated together. The time is within the

memory almost of some of our youngest colleagues when the professor of internal medicine was the lecturer on laryngology. Even now the enforced association of the chest with the larynx in the last few decades has kept many a man so highly concerned in physical diagnosis that he has had no opportunity to enter the more logical field of associated surgical conditions. The combination of the eye with the ear, though illogical, remains still a factor largely in view of their accidental association years ago, and because the smaller size of many communities still forces such association as a means of livelihood. However much we may desire this association to continue, these specialties are surely drifting apart and soon will be free of one another.

By a process of natural evolution the ear, nose and throat have become affiliated. Thus laryngology, which was first a slight bud on the parent medical stalk, has joined with another—rhinology—and the two have grown steadily together. Long afterward, they have stolen bodily another offshoot from the parent body—otology—already well developed, and the three together have waxed in importance day by day. With the unfolding of time, who shall say what this association will bring forth, who shall say how it will change and what it will accumulate and what will be abstracted from it?

But the adjacent fields invite us, not only because we are to include some of theirs within our own possessions, but also because their very proximity renders them factors in our development. They modify our work, for as their investigators dig deep into the substratum they find veins of truth which lead them to claim a part of our own domain, or which bring them in closer touch with us.

As we look over the borderline and study our neighbor's work as it pertains to ours, we see the landmarks of the ever-changing limits of days gone by.

When the investigations and work of Garcia, Czerniak, Turek and other pioneers opened up the larynx to study during life a tremendous advance was made, for the larynx came into view, though, of course, through the medium of a mirror. By this agency we have been able to cast our influence on the other fields of medical activity and to appropriate an ever-increasing portion for ourselves.

What was first simply a diagnostic aid became a means of surgical intervention, and a whole array of patients whose condition it was not possible previously to differentiate now became amenable to local treatment.

The surgical instinct was in this wise cultivated and laryngologists with greatly improved surgical technique and abundant facilities for local observation began to wander into more distinctly surgical fields. Removal of laryngeal growths, *per viam naturalem*, was soon followed by thyrotomy and more extensive operations, until now even the more radical operations like laryn-



gectomy are gradually being brought into the laryngologist's domain. The result of all this has been so to change the character of our work that we now have a specialty essentially surgical in place of the quasi-medical one which it was at its inception. How much more greatly has this been established since the path-finding work of Kirstein and Killian, and many of our own colleagues in America like Jackson, who have changed the mirror view of the larynx into a direct view, who have set the image right instead of reversed, and who have brought it within six or eight inches of our examining eye instead of twenty-four. Already the possibilities of this method have become manifest, and foreign bodies in the trachea, bronchi and esophagus have come more closely into our range of usefulness, while tumors, strictures and other conditions involving these structures are made susceptible of diagnosis and treatment. Jackson has shown how practically the whole gastric mucosa may be viewed *in situ*, and very properly maintains, at least for the present, that the work should be done by the laryngologist who is accustomed to identifying conditions in a small field.

Close to the borderline of the larynx lie the lungs, which very naturally are greatly concerned in whatever affects their port of entry. A great variety of conditions call for a correlated study of the lungs and the larynx as well as of the other organs of the upper respiratory tract.

Investigations directed toward the better understanding of tuberculosis show, in many ways, how much there is still to be learned of the relation which the laryngeal affection bears to the disease in the lungs.

The nervous system has been invaded pacifically by the laryngologist, as evidenced by a study of chorea, tabes and other nervous affections, not to speak of the value of laryngoscopic observations in pressure on the recurrent and other conditions involving the nerve supply of the laryngeal muscles. The examination of the larynx is of special value in tabes, particularly since laryngeal paralysis is one of the earliest symptoms, appearing often before others that are more classical. Bearing on this subject, Freundenthal, in his paper to be read at this meeting, takes issue with Harland and shows from examination of numerous cases that the conclusions of Semon, Kraus, Burger and others, as to the frequency of laryngeal paralysis in tabes, are justified.

Laryngeal manifestations of hysteria are too well known to require more than passing comment to show how we are developing along the borderline of neurology.

No more potent influence on the art of singing has been exerted of late years than that of laryngology. In fact, this is one of the most promising fields along our borderline. The keen interest manifested in the subject by our colleagues all over the world has been effective in cultivating a study of the vocal art along proper lines. Defects of speech, however, have not received the attention which they merit, except at the hands of a very few. When we consider how much good there is to be done in this regard and how clearly it falls within our province, it is most surprising that more interest is not taken in this subject. It is to be hoped that the persistent efforts of Gutzmann, Makuen and others will be rewarded by the more general acceptance of this line of activity as a part of our work.

The pharynx has also added to our field of work by encroachments along its borders. The investigations

with respect to the function of the tonsils have opened up a great storehouse of study. The throat is thus seen to be a factor in some of the most serious affections, among the most important of which are rheumatism, tuberculosis, meningitis and endocarditis. Although final evidence is wanting, it is within the range of positive probability that many of the more general conditions have their origin in a bacterial invasion through the tonsil. The investigations of Goodale go a great distance toward the confirmation of this assumption. Quite recently Wood was able, by rubbing a virulent culture of bovine tubercle bacilli on the surface of the tonsils of hogs, to inoculate the tonsils; and he succeeded in finding the tubercle bacillus in the regional lymph glands of the neck within five days after inoculation.

The influence of adenoids on the general system and on neighboring structures is so well known that comment is almost unnecessary. It would be very strange indeed, if the warm moist character of the adenoid mass did not provide a highly satisfactory medium for bacterial growth, whereas the more physical changes result from the decided nasal obstruction which it occasions. The far-reaching effects of adenoids have added school hygiene to our borderline branches; indeed, examination for adenoids constitutes the most important part of the medical inspection of schools. In addition to these we must cite more remote conditions, such as psychoses, dementia præcox, aprosexia, etc., all of which may result from the presence of adenoids.

Cleft palate has come within our range in consequence of the fact that our province has become extended on the surgical side. It is certainly just as logical for the laryngologist to close up the floor of the nose or to obliterate a congenital cleft in the soft palate as it is for him to remove an obstruction of the nose. In the early history of laryngology operations of such magnitude were not performed by the laryngologist, but now the situation has changed in that the radical mastoid and laryngectomy call for as much understanding of surgical technic as any other surgical undertaking. The methods used for relief of serious tonsillar hemorrhage, such as suturing the two pillars and ligation of the carotid, indicate how our surgical work is assuming higher technic.

Though a late addition to our specialty, the study of the nose has given evidence of tremendous activity. Until the advent of cocaine it was but a small factor. The anesthetic properties of cocaine made it possible to develop the surgery of the nose along its most progressive lines. Beginning with the cauterization of the nasal mucosa, we have run the gamut of operative procedures until now we have a most highly developed surgical character of work. Witness the saw operations for ridges and spurs, the punch, cutting and crushing operations for deflections with the various retention devices as pins, solid splints, hollow splints of Mayer, block tin splints of Braden Kyle, compressed cotton of Simpson, all largely replaced by the submucous operation, which has been developed among others by Boeninghaus, Krieg, Killian, Hajek, Freer and Ballenger.

The other wall of the nose has likewise been subjected to this process of surgical evolution, as shown in the greatly improved technic now used. As suggestive of future development in this particular we need only mention the highly ingenious method devised by Yankauer for suturing the nasal mucosa, and the submucous operation on the outer wall of the nose, to be presented by Canfield at this meeting.



All these are strictly within the limits of our work, but they are to be considered as evidence of study along our borderline in the field of surgery.

Sinus surgery, however, shows our encroachment on the field of surgery far more specifically, for we have appropriated the whole subject.

Radical operations on the accessory sinuses are far more frequently undertaken by the rhinologist now than the simple ones twenty-five years ago. It was culpable for him to venture into the antrum at that time and almost a crime for him to undertake a frontal sinus operation. But with our growing methods of diagnosis, impossible of performance without rhinologic technic and understanding, these operations are a part of our task and we do not shirk our responsibility.

The sinuses bring us back again to our old associate, ophthalmology, but not in the same way and for the same reasons as in the past. The more special relation which the eye bears to the sinus, not in any sense understood when they were associated, called for this study. As a more detailed investigation into this subject is being made it is remarkable how much influence we find the accessory sinuses to have on the eye. Numerous reports of blindness and other conditions have been made where the diseases of the sinus were the cause and where their cure was followed by relief from the ocular trouble. Among the many conditions coming within this range may be mentioned orbital abscess, orbital phlegmon and optic neuritis. A growing field for study and observation is thus being spread out before us and we find ourselves peacefully appropriating territory from our neighbor, who was formerly our medical sovereign.

The borderline between dentistry and laryngology has been invaded many times during the past twenty-five years. Beginning with the study of the antrum, it has extended so as to include many of the conditions with which the two branches of medicine are concerned. The maxillary sinus, which at first was considered as belonging exclusively to the domain of the dentist, or perhaps of the surgeon for the more radical work, has now been fully acknowledged as a part of our task. When alveolar puncture was practically the only remedy available besides the radical operation the dentist had full sway, but as the antrum has come to be recognized as an extension of the nose its therapeutics has been moulded accordingly. The intranasal operations are greatly to be preferred where anything short of a radical operation is possible. In addition, the more extensive operations fall naturally to the lot of the rhinologist, who from the nature of things must have these cases under investigation during the period of preliminary observation and treatment.

In malocclusion of the teeth those who practice the specialty of orthodontia have long ago recognized the almost universal etiologic influence of adenoids. Before undertaking the mechanical treatment necessary to correct the malocclusion and the irregularities in the growth of the teeth which so greatly mar the facial beauty, the almost invariable rule is to have the adenoid growths removed.

Otology has been long regarded as a specialty, first in association with the eye, then as an independent one, and later as an associate of laryngology. All the earlier writers on general diseases discussed ear affections, but little was known beyond what affected the external ear.

The first dispensary for ear diseases was founded by John Cunningham Saunders in 1805 under the name of the London Dispensary for Curing Diseases of the Eye

and Ear, but later the treatment of the ear was discontinued. However, John Harrison Curtis, a student of Saunders, established an institution for the treatment of ear diseases which was more permanent. One was established in New York in 1820 for the treatment of both eye and ear diseases.

In those early times the field of otology was necessarily limited and little was understood either of the pathology or treatment of middle-ear diseases. This was mainly due to the inefficiency of examination, which was made by allowing the sunlight to fall into the external auditory canal. With the advent of reflected light the surgical side of otology underwent rapid development. However, it has only been during the past twenty-five years that anything like a proper understanding of the surgical aspects has been possible. During that time our whole knowledge of mastoid diseases and their therapeutics has been developed.

It is through the agency of the mastoid that we again step over an important borderline and invade the field of cranial surgery, to such an extent that every otologist who does even an ordinary amount of aural surgery comes sooner or later into the domain of cranial surgery. And this tendency is growing—in fact, it is becoming recognized. As indicative of this, I need only call your attention to the joint session of our own section with that of surgery for the purpose of discussing cranial surgery, the first time, I believe, that such an association has been made. This correlation of work and study is bound to be productive of good results, for there is yet much to learn of intracranial surgery as it applies to otology, rhinology and other specialties as well.

The recent work of Barany in the differentiation of labyrinthine conditions adds not a little to the influence which we have on our neighbors over the border. The diagnosis of cerebellar tumors and other processes going on in that region is thereby greatly advanced.

Otologists have long been concerned in the deaf and dumb and in the methods by which their lot is made more bearable. In recent years, however, there has been far less interest manifested, perhaps on account of the overwhelming development of aural surgery. There is still much to be done in this beneficent field of work and it can be effected only by a cooperation of otologists with teachers of the deaf and with those whose philanthropic tendencies are directed toward this great work.

I have still to mention certain surgical procedures which several years ago were considered entirely outside of our range but which are being undertaken by an ever-increasing number of laryngologists and otologists. Chief among them are plastic operations on the external nose and ear, ligation of the jugular and carotid, removal of cervical glands, goiter and hare-lip operations and neuroplasties like facio-hypoglossal anastomosis which Joseph Beck has just brought into notice by his report of six cases.

Thus we see how our work has been broadened by the study of adjoining fields, how our neighbors have yielded to us possession of some of their choicest lands and how we have assimilated them so that our portion is now a well-outlined part of medicine, full of possibilities and encouragement for study. It is not hampered by narrow prejudice or intolerance to progress. On the contrary, we have invited the most serious investigation and we have appropriated the results of research from all departments of science.



The devotees of laryngology and otology have not been content to accept their life work as simply a means for earning a livelihood—they have not been willing to use it as a mere catch-penny device for the accumulation of wealth. They are found earnestly studying their special problems, even though they were required, in the hope of finding solution, to wander into the realms of all the pure and applied sciences. Witness what investigation has been made by Killian in embryology, Denker, Onodi, Cheate and Turner in anatomy, Siebenmann and Wright in pathology, Wingrave in bacteriology, Fraenkel, Katz and Shambaugh in histology, Zwaardemaker and Bezold in physiology, Edelmann, Gradenigo, Hammerschlag and Kyle in chemistry and physics—research of the highest merit, accepted throughout the world.

From small beginnings, and without great encouragement, we have journeyed through the few years since our establishment and have reached a point in our activity where our work is recognized as one of the great component parts of medicine, respected, honored and commended for its progressive development, for its notable achievements and for the high position which it has attained.

537 North Grand Avenue.

### Original Articles

#### MIDDLE-EAR SCLEROSIS, OR ATROPHIC MIDDLE-EAR CATARRH.\*

W. SOHIER BRYANT, A.M., M.D.  
NEW YORK CITY.

This condition depends on trophic changes and, in contrast to a multitude of clinical forms that have been described under various names, it has a comparatively simple pathology. The clinical appearances vary with the location and degree of the pathologic change and with the structure and tissue affected. However, since the treatment is not dependent on these circumstances, it is only confusing to go into minute details in regard to the clinical pictures. Not only does the appearance change with every conceivable combination of the part affected but also with every stage of the pathologic change. The forms which the sclerosis may assume are as numerous as the combinations of stages and anatomic parts will allow. For instance, the sclerosis may be located in any part of the tympanum and the various pathologic changes may be going on at the same time. Formerly this great diversity caused considerable confusion in our understanding of the subject. In reality, however, the condition is exceedingly simple and includes not only the "dry catarrhal" but also the suppurative process. The symptomatic importance of the otosclerosis varies according to the location of the pathologic change. The most harmful location is that in the neighborhood of the foot plate of the stapes, while the most readily diagnosticated occurs in the drum membrane where the changes are in plain sight.

Otosclerosis begins with a general or localized disturbance of circulation of the mucous lining of the middle-ear tract. This disturbance is irregular in its course and is subject to marked intermissions and remissions,

especially at its inception. Anemia may be noticeable from the start or there may be initial hyperemia with fibrosis or hyperplasia of connective tissue. The connective tissue contracts and anemia follows the compression of the blood vessels. This anemia causes the sclerosis. The sclerotic mucous membrane appears stiffened, thickened and gray and sometimes contains macroscopic deposition of lime salts. The sclerotic process first affects the mucous membrane; next the submucous or periosteal layer is affected because the blood supply derived from the mucous layer has been partially cut off. The periosteal layer goes through the same degenerative change as the mucous layer, but with this difference, namely, that here the deposition of lime salts is more extensive and takes the form of hyperostosis.

In spite of the fact that the pathologic changes are identical and that their resultant effects on the function of the sound-conducting mechanism are the same, except for the sloughing and erosion of the suppuration, it is not customary to consider the results of suppuration under the head of otosclerosis. The chief cause of great loss of hearing after suppuration of the middle ear is sclerosis. This is not, however, the special result of suppuration; that is to say, the great impairment of hearing is due not to the loss of parts but to the fact that the functions of the remaining parts have been impaired. This impairment is brought about by contractions of the fibrous tissues consequent to the inflammation and stiffening of the mucous and submucous layers.

We shall only mention in passing the labyrinthine extension of otosclerosis in hyperostosis and rarifying osteitis of the labyrinth capsule. As a consequence of the altered nutrition of the periosteal layer of the tympanum, the adjacent bone suffers from malnutrition, so that vascularization sometimes results and hyperostosis may take place to such a degree that the fenestral and labyrinthine spaces are obliterated.

The etiology of these mucous membrane disturbances of the middle ear is varied. The most important cause is circulatory disturbances of the tympanum following reduced patency of the Eustachian tube. The next most important cause is the result of fibrosis from inflammatory processes of the tympanic mucosa, resulting in decreased blood supply due to fibrous contractions and the shutting off of the vessels. The least common cause is found illustrated in the so-called otitis media catarrhalis insidiosa. Here there is absence of primary middle-ear change other than the altered vasomotor action due to impaired function of the general or sympathetic nervous system consequent on general or nerve exhaustion chiefly occurring in menstrual or puerperal difficulties or in mental strain.

In most cases the diagnosis is readily made by inspecting the drum membrane. If the tissue of this membrane shows any changes other than those due to acute inflammation or loss of continuity, sclerosis is thereby indicated. These changes are increased or decreased transparency of long chronicity, and increased rigidity or relaxation of the membrane. Incipient sclerosis is indicated by subacute inflammatory conditions of the drum membrane with opacity and thickening due to the increase of fibrous tissue. Changes in the color of the drum membrane consequent on chronic congestion of the promontory are also indications of otosclerosis. When the so-called insidious form is present with a normal drum membrane the diagnosis is made by the functional tests which indicate an impairment

\* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



of the sound-conducting mechanism not to be explained except by reduced stapes mobility.

#### TREATMENT.

1. Treatment is directed to the correction of the systemic primary cause of the disturbed tympanic blood supply. Most important are general hygiene and systemic tonics, rest and correcting any local cause of the general nervous disturbance.

2. Treatment is directed to the nasopharynx in order to remove the causes of disturbed tympanic blood supply. The nasopharynx must be put in as perfect physiologic condition as possible.

3. Treatment is directed to the tympanic or tubal cause of altered tympanic blood supply which must be improved by local medical and surgical means. The tube must have its function completely restored. External mechanical obstructions to its action must be removed and astringents applied to the lining membrane.

4. Treatment is directed to the substitution of normal cell elements for the pathologic results of the sclerotic process. It is desirable to stimulate the tympanum violently in order to excite a reaction by which new blood vessels are formed and the circulation is restored, part of the sclerotic tissue absorbed and the normal tissue stimulated.

5. Treatment is directed to the restoration of the functions of the various parts of the sound-conducting mechanism. To this end we have at our disposal the various forms of massage and inflation. These are all good if used with caution. The indications for their use are restoration of normal mobility to these parts. Counter indication is the hypermobility due to stretching of the connective tissue beyond its limit of elastic recovery.

#### PROGNOSIS.

The prognosis without treatment is that the otosclerosis will follow an irregular course with increasing loss of hearing. Prognosis with treatment is favorable inversely with the advance and importance of the location of the sclerotic process. It is more serious when the foot plate of the stapes is involved and less so when the drum membrane is the part chiefly affected. Prognosis is good for arrest of the process. It is also good for improvement of hearing except in the extremely advanced cases. Sometimes the results of treatment are negative, and consequently chronic progressive deafness continues on its course unobstructed. More often there is very satisfactory improvement in hearing and arrest of the process. Most often there is an amelioration of the deafness and an arrest of the process. The result of the author's experience has been that 90 per cent. of advanced cases have improved; in the other 10 per cent., in spite of treatment, no improvement of the deterioration has followed; and 100 per cent. in the less advanced cases have shown an improvement.

CASE 1 (No. 14765).—Otosclerosis due to general causes.

*History.*—A physician, aged 44, had noted some deficiency in the hearing of the right ear for several years. Of late this had been growing decidedly worse. He had been very much overworked.

*Examination.*—There was slight opacity, retraction and contraction of both membranes; the left ear was the worse. Eustachian tubes were pervious but not normal. There was slight relaxation of the drum membranes. Watch was heard in the right ear at 7 inches; in the left at 11 inches. Low tone limit: In right ear, 67 single vibrations; in left ear, 61 single vibrations. High tone limit: In right ear, 40,000 single vibrations; in left ear, 42,000 single vibrations.

*Treatment and Result.*—Thirty-seven days later, after better hygiene and a little rest, but no local treatment after the first visit, the drum membranes were improved in appearance. Hearing for the same watch: Right ear, 13 inches; left ear, 16 inches. The improvement, he says, has continued to increase.

CASE 2 (No. 14500).—Otosclerosis of nasal origin.

*History.*—Patient, a woman, aged 38, had been troubled with poor hearing for a long time and had received much treatment by many specialists.

*Examination.*—There was slight tinnitus, deafness and stuffed feeling. The drum membranes were thickened and slightly depressed; the light reflex was very small. Right ear heard watch at 9 inches; left ear at 21 inches. Low tone limit: Right ear, 67 single vibrations; left ear, 23 single vibrations. Turbinals were thickened and there was pharyngeal lymphoid hypertrophy.

*Treatment and Result.*—Valsalva inflation was positive and improved the hearing. Nitrate of silver was applied to the nasopharynx. Two days later the left ear heard watch at 5 feet; the right ear at 24 inches. Patient was perfectly satisfied with the result and has remained so a year and a half.

CASE 3 (No. 14640).—Otosclerosis due to disturbance of the Eustachian tubes.

*History.*—A physician, aged 41, first noticed defect in hearing fifteen years ago, following scarlet fever. There was no pain or suppuration at that time.

*Examination.*—The right membrane when first seen, was contracted, color fair; the left membrane was white and contracted. Tubes were patent with slight obstruction to Valsalva inflation. Watch was not heard. Politzer's aecometer was heard at 5 feet in the right ear; at 7 inches in the left. Low tone limit: 256 single vibrations for both ears. High tone limit: Left ear, 34,000 single vibrations; right ear, 30,000 single vibrations. Bone conduction was reduced in both ears.

*Treatment and Result.*—Stimulating astringents to nasopharynx and mouth of tubes. A month later right ear heard Politzer's aecometer at 9 feet and the watch at 2 inches; left ear heard the aecometer at 54 inches. Patient says that hearing has continued to improve.

CASE 4 (No. 12029).—Otosclerosis consequent to acute catarrhal inflammation of the middle ear.

*History.*—A woman, aged 40, had a severe attack of influenza eleven years ago. At that time there was no pain or discharge, but deafness and buzzing, like a buzz-saw and sounds of escaping steam.

*Examination.*—Both membranes, when first seen, were depressed and cloudy. Low tone limit by air: 118 single vibrations in both ears. High limit: 78,000 single vibrations in both ears. Politzer's aecometer was heard in right ear at  $\frac{3}{4}$  inch; in left ear at  $\frac{1}{2}$  inch.

*Treatment and Result.*—Four days later, after astringent stimulation of the mouths of the tubes the hearing tests were: Politzer's aecometer in left ear was heard at 5 inches; in right ear at 13 inches. Tinnitus occasionally stops now, and when present it is very faint. Improvement has been maintained.

CASE 5 (No. 12021).—Otosclerosis characterized by thick, opaque drum membranes.

*History.*—A man, aged 54, had noted that he was growing deaf of late.

*Examination.*—The drum membranes were white, opaque and flat; the right ear was the worse. Politzer's aecometer was heard at 1 inch.

*Treatment and Result.*—Three weeks later, after treatment with nasopharyngeal stimulating astringents and inflation, aecometer was heard at 6 feet.

CASE 6 (No. 14409).—Otosclerosis due to deposition of lime in the drum head.

*History.*—A man, aged 69, who appeared very old, had had increasing deafness for eight years, with buzzing tinnitus. There was a bad family history for deafness in old age.

*Examination.*—Membranes were slightly depressed and opaque; there was calcification of interior superior quadrant. Aecometer was heard in the right ear at  $7\frac{1}{2}$  inches; in left ear at  $5\frac{1}{2}$  inches. Watch was not heard by bone or air. High limit tone perception: In left ear, 46,000 single vibrations; in



right ear, 30,000 single vibrations. Low tone limit: 67 single vibrations in both ears.

*Treatment and Result.*—Astringents; stimulation of nasopharynx and nasal fossæ. Five months later the right ear heard the watch at 1½ inches. Improvement continued for a year, when hearing began gradually to decrease from rapid senile deterioration.

CASE 7 (No. 14214).—Atrophic thinning of the drum membrane.

*History.*—Woman, aged 49, had deafness which had been increasing for many years.

*Examination.*—Left tympanic membrane was thin and transparent. Tube was patulous. In left ear, Politzer's acoumeter was heard at 4 inches; in right at 12 inches.

*Treatment and Result.*—Astringents to nasopharynx; splint on the drum membrane and massage. Forty-five days later Politzer's acoumeter was heard in the right ear at 8 feet; in the left, at 6 feet. The improvement continued to increase and has remained satisfactory.

CASE 8 (No. 13092).—Rigidity of major ossicles.

*History.*—A woman, aged 35, had deafness following influenza, slowly increasing for five years with annoying tinnitus.

*Examination.*—Membranes were retracted with normal color; there were no light reflexes. Siegle showed malleus immovable. Tubes were impervious to Valsalva inflation. High tone limit: 38,000 single vibrations. Low tone limit: 256 single vibrations. Politzer's acoumeter was heard in the left ear at 2½ inches; in the right at 3 inches.

*Treatment and Result.*—Inflation and stimulating astringents to nasopharynx. Eight weeks later, light reflexes had returned. Politzer's acoumeter was heard in the left ear at 6 inches; in the right at 13 inches. Mobility of malleus was partially restored.

CASE 9 (No. 14177).—Relaxation of major ossicles.

*History.*—A woman, aged 39, in the left ear had patulous tube; there was paracusis of Willis. She had had constant tinnitus for twelve years; whistling like ferry-boats for ten years, and later a noise like escaping steam and a noise like that from the effects of quinin. Attempts at listening increased the tinnitus.

*Examination.*—Poltzer's acoumeter was heard at 34 inches. Tympanic membrane was slightly thickened; it moved bodily outward on inflation, carrying with it the malleus, short process and all. Perception of low notes was decreased; of high notes, increased. Bone conduction was much increased.

*Treatment and Result.*—Application of collodion to the drum membrane and stimulating astringents to the nasopharynx. After forty-five days the ossicles seemed to be held in place more tightly. Politzer's acoumeter was heard at 8 feet. Improvement continued.

CASE 10 (No. 14268).—Stapes fixation, not osseous. Improvement following treatment and marked recrudescence of the affection on interruption of treatment.

*History.*—A woman, aged 45, had been deaf for twelve years; the condition was first noted after birth of a child. She used to have loud tinnitus; now she has but little. She had neurasthenia two years ago.

*Examination.*—Tympanic membrane in right ear was sunken and clear, but dark; good reflexes. Left ear was about the same. There was some congestion of malleus. Siegle showed mobility of mallei. High limit tone perception: Galton in left ear, 43,000 single vibrations; right ear, 26,000 single vibrations. Politzer's acoumeter was heard in right ear at 1 inch; in left ear at 1½ inches. Low tones were deficient. Bone conduction was slightly increased. Gillette test was negative.

*Treatment and Result.*—Stimulating astringents to nose and nasopharynx, and antral massage. Four months later Politzer's acoumeter was heard in right ear at 8 inches; in left at 6 inches. The treatment was interrupted. A year later the above-noted improvement was lost. Politzer's acoumeter could not be heard in right ear; and in the left ear it was heard at 1 inch. High tone limit: Right ear, 16,400 single vibrations; left ear, 23,000 single vibrations. Bone conduction was somewhat reduced. She could hear loud conversation at 6 inches. The membranes looked well, but were slightly congested.

CASE 11 (No. 13036).—The insidious form of middle ear catarrh with a drum membrane that appeared normal. One year's duration.

*History.*—A man, aged 24. Deafness in the family.

*Examination.*—Drum membrane was normal. There were buzzing tinnitus and sounds like the ocean, and various other noises. Politzer's acoumeter was heard at 12 inches.

*Treatment and Result.*—Astringent application to the nasopharynx. Fifty-two days later Politzer's acoumeter was heard at 8 feet. Watch was heard in right ear at 6 inches. Tinnitus was very faint. The improvement has continued.

CASE 12 (No. 13071).—Otosclerosis with tympanic congestion.

*History.*—A woman, aged 74, in whom hearing had been diminished some years.

*Examination.*—Drum membrane had small reflexes, good color; it was contracted but not retracted. Politzer's acoumeter was heard in right ear at 10 feet; in left ear at 27 inches. Watch was not heard.

*Treatment and Result.*—Intranasal and nasopharyngeal treatment for thickened mucosa with stimulating astringents. Twelve days later Politzer's acoumeter could be heard in right ear at 15 feet; in left ear at 42 feet. Two years later the same watch could be heard at 4 inches in both ears. Improvement continued; there was very slight decrease during four years, due to senile change.

CASE 13 (No. 14411).—A resistant case of otosclerosis.

*History.*—A man, 37 years old, in whom ten years of deafness "followed a series of bad head colds; took a year for it to get bad."

*Examination.*—Tinnitus was variable; sometimes loud. He heard loud sounds but understood no words. He read lips fairly well. Valsalva inflation was imperfect. Tympanic membrane in right ear was flat, retracted, thick and pink; in left ear it was the same, but white. I could not make an accurate test of the hearing power, it being extremely slight.

*Treatment and Result.*—Many varieties of treatment were employed for a year and a half without any apparent effect on the ears except to make the tubes nearly normally patulous. After seven months of treatment, Edelmann-Galton whistle could be heard in left ear; 24,000 single vibrations, heard by air positively. After four months, Edelmann-Galton whistle (10,426 single vibrations) could be heard in the left ear; right ear, 13,800 single vibrations. Four months later Valsalva inflation was nearly normal. Edelmann-Galton whistle could be heard. High tone limit: In right ear, 6,800 single vibrations, heard at 3 inches; in left ear, 9,950 single vibrations. Left ear could hear 6,800 single vibrations at 11 inches.

#### SUMMARY.

Otosclerosis is due to trophic changes when disturbances in the blood supply have produced malnutrition of the tympanic contents and walls. The primary causes of the changed circulation are local and general. All varieties of chronic middle-ear catarrh and the stiffening following middle-ear suppuration are various phases of middle-ear sclerosis. Except in very advanced cases, the prognosis is good for arresting the process and improving the hearing.

#### DISCUSSION.

DR. NORVAL H. PIERCE, Chicago: For the diagnosis of otosclerosis two factors are necessary, a patulous tube and an unaltered tympanic membrane, a membrane that appears by otoscopy to be quite normal. In some cases there may be other changes, changes in the tympanic membrane, in the Eustachian tube. Then other factors are present which are entirely foreign to otosclerosis. It may be that Dr. Bryant uses the term in a different sense from the way I do. Indeed, the retention of the term "otosclerosis" is unfortunate as it is misleading in its significance; "spongification of the labyrinthine capsule" is more exact, and gives at once to the mind an intelligent idea of the location and character of the pathologic process. Bezold gave us the following points in diagnosis in connection with absence of change in the Eustachian tube



and tympanic membrane: progressive deafness, considerable loss of hearing for the lower tones, about thirty-six double vibrations a second, the osseous conduction for the A fork greatly increased, and the osseous conduction for the small A-1 fork greater than the aerial conduction. By manometric tests at postmortem on Bezold's case it was found that the footplate of the stapes was fixed in the fenestra ovalis. Microscopic examinations showed that there was osseous fixation and that these changes were due to a resorption of the normal ivory-like bone in the capsule and the reposition of soft, spongy bone which had for its end stage a morphology similar to the cancellous tissue of the long bones. There was no change of this sort in the bone of the tympanic cavity other than about the footplate of the stapes, nor was there any change in the contents of the cavity. This was later proved by more than a hundred postmortems. There is one other type, and that is the one in which this spongification takes place elsewhere than about the foot plate of the stapes. There may be areas of spongification about the various semicircular canals and the cochlea without stapes fixation. These cases are just the reverse of stapes ankylosis. There is shortened negative Rinne, lessened osseous conduction, without loss in the lower scale. This is confirmatory of Helmholtz' theory that the dense walls of the labyrinth act as a resonance organ of the internal ear. All through Nature, wherever there is a cochlea, that cochlea is surrounded by dense, ivory-like bone. It is necessary for normal hearing. When it becomes softened or cancellous, and changes in relation between the perilymph and the lymph circulating through the bony channels occur, then we have the various phenomena that exist, the tinnitus and the deafness in otosclerosis. In Dr. Bryant's cases there is no otosclerosis. His cases are tubal in their nature, as evidenced by the changes in the tympanic membrane and the increase of audition following inflation. We have the most happy results in our treatment of these cases. But when the diagnosis of otosclerosis or spongification of the labyrinthine capsule is made it were best to abstain from inflation, massage and all of those manipulations which in middle-ear disease are beneficial. Not only are these operations without benefit in otosclerosis; they are harmful. The patient should be cautioned against exhaustion from whatever cause, together with overheating or chilling of the body, as any of these conditions may be and all have been followed by most disastrous and sudden progress in the course of the disease.

DR. C. F. WELTY, San Francisco: Dr. Bryant's classification is wrong and confusing. Otosclerosis is dependent on a definite pathologic lesion of the sound-perception and the sound-conduction apparatus. If cases are permanently benefited by treatment, they are cases of some other pathologic lesion than otosclerosis. The appearance of the drum membrane has nothing whatever to do with otosclerosis. Occasionally a pinkish appearance of the membrane is produced by the color of the inner ear showing through an atrophic drum membrane. Grunet said that all such cases were made worse by treatment. The cases of otosclerosis that come to me are returned to the physician sending them with a statement that more good can be accomplished by keeping the patient in good health physically than by anything an otologist can do. Kerner says that all cases of otosclerosis are hereditary, and that the only recommendation to be given these people is not to marry. For the last two years I have been advising all married female patients with otosclerosis not to become pregnant, for with each pregnancy the deafness and tinnitus is increased; and if any do become pregnant an early abortion should be done, so that the ears will not materially suffer. I am not positive that this early abortion will prevent the increase of the ear symptoms. However, in the light of modern therapeutic abortion, it should at least be considered.

DR. E. R. LEWIS, Dubuque: Dr. Pierce and Dr. Welty have given an absolutely unfavorable prognosis in these cases of otosclerosis which I think possibly is a little extreme. I agree absolutely that the sclerosis is a distinct entity in which the prognosis is generally very bad; but Politzer has reported having seen some improvement in cases which were associated with the gouty diathesis and hereditary syphilis, and these cases have shown slight improvement under his treatment

directed against the particular diathesis that the patient showed.

DR. NORVAL H. PIERCE, Chicago: I said nothing about the prognosis in cases of otosclerosis. It has been misnamed progressive deafness. Some of these cases are not progressive at all. They begin and continue for years with only the slightest amount of deafness. There are cases, unfortunately, that have very rapid progress, but these are very rare, as a matter of fact. It is the rule in the otosclerosis or spongification of the labyrinthine capsule that they reach a certain stage and stay at that point for years. The prognosis, therefore, as regards hearing in spongification of the labyrinthine capsule is not necessarily very bad.

DR. J. HOLINGER, Chicago: What does Dr. Bryant call atrophic middle-ear catarrh? Where is the atrophy? What is the pathology of his atrophic middle-ear catarrh? I have been speaking about these tuning-fork variations, about the pathology of these cases for nearly ten years. The prognosis of these cases is, as Dr. Pierce says, not at all so bad as to complete loss of hearing; but as to complete recovery of hearing it is bad. I have still to hear of or see a patient that regained his hearing in a case in which the tuning-fork examination and the history were clear. One point, however, in the treatment has been overlooked, and I think it important. Patients should be guarded from any overexertion. That comes back to the question of blood pressure; not low blood pressure, but high blood pressure. If these patients with otosclerosis constantly overwork, work sixteen hours a day and overdo everything, very likely the deafness will increase to total deafness. This is the explanation why all massage treatments invariably are followed with bad success in these cases.

DR. J. E. LOGAN, Kansas City, Mo.: I believe that Dr. Bryant has outlined in his paper more the effect, or the sclerotic conditions pure and simple as they exist in the middle ear, producing an atrophic condition of the drum and not the spongification spoken of by Dr. Pierce. To my mind the scleroses of the middle ear are so dependent on the ventilation of the middle ear through atrophic changes manifested in the tube, that whenever the tube has been obstructed or there has been a lack of ventilation of the middle ear, atrophic changes take place. With fifteen pounds pressure to the square inch on the outside and less than that, or none, inside, changes such as named are bound to take place. The conditions found in otosclerosis are entirely different from those resulting from the spongification of the labyrinthine capsule or the petrous portion of the temporal bone. But ventilation is necessary. In regard to the patulous tube, although apparently there may be plenty of ventilation, or plenty of opening, often there is closure of that canal throughout some of its course; strictures may exist, and I think it would be well in every case to investigate by means of the bougie.

DR. GEORGE E. SHAMBAUGH, Chicago: The term "otosclerosis," used to include adhesive forms of middle-ear disease, simply helps to perpetuate a misconception in regard to the real nature of otosclerosis. The term was originally applied to this condition by von Tröltzsch, because of a misconception regarding the real pathology of the trouble. If we examine a number of cases of deafness, and attempt to make a diagnosis of the cause of deafness from the appearance of the drum membrane, the cases will naturally be divided into two groups: First, those cases in which the thickening, retraction or scarring of the membrane points to middle-ear disease as the cause of deafness; and, second, those cases in which a perfectly normal drum membrane points to internal-ear trouble as the cause of the deafness. When this second group of cases is tested with the tuning forks, it will be found that in some of the cases the tuning-fork tests will indicate clearly diseases of the sound-perceiving apparatus as the cause of the deafness, whereas in other cases the tuning-fork tests will give all the typical reactions characteristic of disease of the conducting mechanism. It was to this last group of cases, in which was found a normal membrana tympani and Eustachian tube, and in which the tuning-fork tests indicated obstruction in the conducting mechanism as the cause of the deafness, that



von Tröltseh applied the term "otosclerosis," meaning an atrophic form of middle-ear catarrh as distinguished from the hypertrophic form which invariably produced decided alterations of the membrana tympani. We now know that a primary atrophic form of middle-ear catarrh is not the pathology of these cases of otosclerosis, but that we have in reality to deal with a primary disease of the bony capsule of the labyrinth, and that the tuning-fork tests pointing to obstruction in the conducting mechanism are explained by the fact that this disease of the capsule quite early produces a bony fixation of the stapes in the oval window. In every case examined postmortem in which, from the appearance of the drum membrane and the tuning-fork tests the diagnosis of otosclerosis had been made, without exception, the ankylosis of the stapes as the result of disease of the labyrinthine capsule has been found.

As to prognosis, when we understand the pathology of otosclerosis there can be no question as regards improving the condition when bony fixation of the stapes has taken place. In some of the incipient cases, however, before the stapes becomes firmly fixed, a decided improvement in the hearing will occasionally result from inflation of the tube and massage of the ossicles. Such improvement is, however, only temporary, as the progress of the disease will overcome any loosening up of the stapes that may be brought about. I mention this particularly because the statement is often made that in incipient cases the diagnosis between otosclerosis and middle-ear catarrh can be made by noting the improvement from treatment in middle-ear catarrh, whereas in otosclerosis no improvement is possible. This is, however, not strictly true.

### PSYCHOTHERAPY.\*

LEWELLYS F. BARKER, M.D.

BALTIMORE.

Some physicians, like men who are told that they have used prose all their lives without knowing it, are astonished at the statement that no small part of their function as practitioners consists in the use of psychotherapeutic influences. Ever since the primitive mother began to kiss the sore finger of her crying child to make it well the human race has, partly instinctively, partly consciously, resorted to mind cure in one or another of its diverse forms to assuage its sorrows, to relieve its anxiety or to mitigate its pain. For these alleviations, sometimes priests, sometimes physicians, sometimes laymen have been agential.

There has been much disagreement as to the definition of the word "psychotherapy." Some have supposed that it is synonymous with treatment by hypnotism or suggestion; others have assumed that it is limited in its applicability to psychic diseases and still others have fallen into the error of regarding its effects as wholly psychic (in the abstract or metaphysical sense), not realizing that, in medicine, guided by the conception of psychophysiologic identity, such purely psychic influences are not conceivable. As medical men, we may be permitted, at any rate for purposes of description, to distinguish as psychical, the subjective side of brain activity, and as physical, the objective side of it, even if we admit that our total knowledge of the latter results from phenomena or psychic events, the external cause of which is obscure. Asking permission then of the metaphysically inclined to speak in these terms as thus medically defined, it may be said that we know of no way of affecting a human being psychically except through stimuli which excite his afferent nerves, or through stimuli applied directly to his brain. The

nerves carry the excitation to the central nervous system and traversing chains of neurons impinge finally on the neurons of the cerebral cortex. Certain of the excitations here set up correspond to certain sensations, feelings and ideas. Pure sensations and pure ideas, independent of physical conditions in the cerebrum physiologists assume do not exist. If this assumption be accepted then it is obvious that any influence which exerts a psychic effect also produces a physical change in the body, and we can well understand how physical and chemical influences which lead to alterations in the structure and function of the neurones of the pallium may have a profound effect on the psyche. In other words, every form of psychotherapy is also a form of physical therapy, and to avoid confusion with spiritualism or other mystical conceptions it might be better to speak of psychophysical influences and psychophysical therapy than to use the terms in vogue. Medical psychotherapy knows nothing as yet of telepathy or thought-transfer through other than recognized physical channels. In the present state of our knowledge at any rate *eine Psychotherapie ohne das Mittelglied der Empfindung ist Humbug.*

Psychotherapy has through the ages been instinctively practised but only comparatively recently has it begun to be consciously and systematically used. Suggestion is, and always has been, one of the most powerful of remedial agents.

At all times a large part—not all by any means—of the treatment of disease by drugs has in reality consisted of psychotherapy. Certain examples of this stand out conspicuously in the history of medicine. The use of theriaca had great vogue for centuries after its introduction by Andromachus of Crete. Orvietan was long believed to be a sovereign remedy against poison, the opinion being almost universally received by the learned as well as the vulgar. Red coral was strongly recommended by Rhazes in certain cases and antimony was at one time (after the cure of Louis XIV. in 1653) the most frequently prescribed of drugs. When one thinks of the enormous number of substances and preparations which have come and gone, each highly vaunted in its time for its marvelous effects, one begins to realize the larvate psychotherapy in treatment by drugs. This pharmacological psychotherapy has for the most part been instinctive, the physician believing in the virtues peculiar to the drug, and the patient believing in the physician. Sometimes psychotherapy by drugs has been consciously employed, as in the use of the placebo and in the pill of methylene blue. One thing that makes judgment so difficult regarding pharmacotherapy in any given case is the lack of means of determining satisfactorily the part which psychic influences have played in the result obtained. We must be grateful to experimental pharmacology for the help it promises to bring. It has been well said that "it is we ourselves who give to many medicaments their efficacy, and their good effects persist as long as does the faith of physicians and patients in their virtue."

The cures which from time immemorial have been attributed to magic or to supernatural means are naturally regarded by medical men as instances of success through psychotherapy also. It was the belief of the patient which did the work; shrewd Paracelsus, physician and alchemist, writing of faith-cure four hundred years ago said: "No matter whether the object of your faith is real or false, the results you get will be equally good." Read the accounts of the way the won-

\* Read in the Symposium on Therapeutics, at the Twenty-third Annual Meeting of the Association of American Physicians, Washington, May 12, 1908.



derful results were obtained by treatment in the temples of Isis in Egypt and those of Esculapius in Greece and you will find recorded an elaborate organization of suggestive measures which rivals that of the best equipped modern sanatorium. Indeed, in the pilgrimage to the temples, the preparatory practices, the temple walks, the sacrifices with musical accompaniment, the prayers, the therapeutic conversations with the priests and, above all, the oracular dreams, we recognize a series of experiences so pregnant with psychotherapeutic possibilities that we wonder whether some healers of to-day are not too simple or too lackadaisical to make their work effective.

The doctrine of magnetism dates from Paracelsus' time; out of it grew mesmerism at the end of the eighteenth century, and it was one of Mesmer's pupils who, following the example of his master and trying to cure by the "universal fluid," accidentally threw a patient into hypnotic sleep. The history of hypnotism has been so often and so well written that I need not deal with it here. The scientific studies of Braid, Liébeault, Bernheim, Charcot and Janet (to mention chiefly foreign names) have thrown a great deal of light on hypnotic phenomena, and even those who are opposed to the use of hypnotism as a therapeutic agent can scarcely fail to be grateful for the new knowledge gained concerning the human mind through investigations into its nature. The study of hypnotism too has led to a great increase in interest in the effects of suggestion made in the waking state, both heterosuggestion and autosuggestion.

More important, perhaps, has been the revival and development of psychotherapy by persuasion rather than by suggestion; in this form of mental treatment the higher mental powers of the patient are directly appealed to, the cure being brought about largely through the re-education of the patient by rational therapeutic conversations instead of through the exercise of authority or through mere unmotivating suggestion. DuBois of Berne, Dejerine and his pupils in Paris, Oppenheim in Berlin and various clinicians in this country have been especially interested in this form of psychotherapy.

Isolation as a psychotherapeutic measure should not go unmentioned. It is the great merit of Dr. Weir Mitchell that he saw the protective benefits of isolation and realized its aid in instituting any regular physical and psychical régime in the treatment of the severer forms of the psychoneuroses; he made it an important element in his so-called rest-cure and others who employ it in selected cases are loud in its praise.

A striking fact about several forms of psychotherapy is their origin, at least in germ, outside of the ranks of the medical profession. Isolation, for example, arose in antiquity as a self-inflicted discipline in the practices of the anchorites, hermits and monks, who withdrew themselves from society into deserts or solitary places, sometimes as a penance, but more often to avoid the temptations of the world, to devote themselves to contemplation and religious exercises, and to attain to a peace and calm otherwise denied them. To many men and women there come times in life when separation from the world seems to be a necessity; they feel that they must get away from people, from the duties of society, from an unsatisfactory environment. The "retreat" of the Catholic church meets this need for some. The summer vacation in the wilderness satisfies it for others.

Psychotherapy by suggestion was largely extramedical in source. It began in the form of secret remedies of

quacks, in the performance of miracles, in the use of charms, philters, talismans, amulets, phylacteries and mezuzahs, and in the application of magnets and metals. The laity have been fertile in the devising of impressive suggestive measures from the earliest times down to the era of Perkins tractors, proprietary medicines and electric belts.

Even persuasion, the last psychotherapeutic method to be thoroughly employed consciously by physicians, dates back to the stoic philosophers with Seneca as a type, and to the confessors and moral directors of the church. These men worked out excellent methods for helping the aboulie and the victims of morbid scruples to overcome their inertias, their doubts and their fears.

In the United States, the development of psychotherapy outside the medical profession has been perhaps as notable as inside it. Nowhere, unless in Germany, have "patent" and proprietary medicines been more in vogue. In the wide-spread mind-cure movement here we see a development of great importance, designated by one of our leading psychologists as the only decidedly original contribution of the American people to the systematic philosophy of life. The "new thought" advocates and the christian science healers combine suggestion in the waking state with more or less persuasion; in the "Emmanuel church movement" (which through medical aid separates so-called organic from so-called functional cases) the clergymen who treat the functional disorders use suggestion in the waking state, persuasion, and also, to some extent certainly, suggestion in hypnosis.

Despite the fact that psychotherapy has been so prominently extramural in source and prevalence it is to be said for medical men that when convinced of its efficacy and legitimacy they have been willing to adopt it. Further, for the foundation of the theory of the subject and for nearly all actual scientific knowledge regarding it the world has to thank the investigations of members of our profession. Any neglect, recalcitrance or protestation on the part of physicians in the matter have been due, in my opinion, partly to a desire to avoid even the appearance of evil and humbug, partly to the exercise of so much zeal in those physical, chemical and biologic studies which are flooding our science with new light that less time and attention have been devoted to psychologic and psychiatric studies than they deserve.

While the main field of application of psychotherapy is in the treatment of the psychoneuroses, it has also functions in combating the psychoses on the one hand and the whole group of somatic diseases on the other. All symptoms which can be influenced by the nervous system are more or less accessible to psychotherapy. Moreover, in the carrying out of any physical methods of treatment the patient must be led to have belief in their efficacy and he must be brought to a willingness to do what is recommended. The establishment of medical obedience, as well as the awakening of confidence, which precedes it, are essentially psychotherapeutic procedures.

Attempts have been made to classify psychotherapeutic methods into: (1) those which act chiefly by virtue of the particular feeling-tones (in the pleasure-pain series) which accompany the sensations called forth by the method used; and (2) those which act through the intellectual processes excited by the measures employed. The former are naturally more successful in affective disturbances, the latter in intellectual. But the mind is after all a unity and we nearly always have to deal



with both classes of disturbances in the same individual and therefore require to use both sets of methods.

In treating abnormal affective states we may try to get rid of the painful sensations and ideas (negative feeling-tone) by the substitution of pleasurable sensations and ideas (positive feeling-tone). Amusement, diversion, exercises are resorted to for this purpose. We encourage the patient to go to the play or the opera, to play golf or bridge or "what-am-I," to enter more fully into social life; or we recommend a trip to Atlantic City or to Hot Springs or to Europe. We help the handicapped to find suitable remunerative occupation and we try to transplant the misunderstood into a more sympathetic environment. The methods of treatment in which rewards and penalties are used also come in here; they may be employed with patients of all ages but require infinite tact on the part of the physician; individualization must always be kept carefully in mind.

In treating patients through the intellect we use either suggestion or persuasion. Very different definitions are given to these two terms by different writers. In suggestion, we make no effort to use ideas which will explain to the patient why his interpretations of his symptoms are wrong, but we tell him they are wrong and rely on the authority we have over him to make the suggestive idea effective. Or in some other way we make the mind of the patient (without his control) accept some good idea. When using persuasion we lead the patient by means of his reason (with his control) to accept an idea and so to arrive at a new opinion. We speak of heterosuggestion or heteropersuasion in these cases, but we should similarly discriminate between autosuggestion and autopersuasion. In autosuggestion one fixes in his own mind an idea the truth or falsity of which he has not carefully examined and criticized; when on the other hand the idea is not accepted until carefully verified the instance is one of autopersuasion or self-instruction.

Heterosuggestion may be given in the waking state or in hypnosis. In order that suggestion may be successful, faith in authority must in some way be aroused. Quacks excite this authority idea by non-ethical, illegitimate methods. Marvelous therapeutic results are advertised and testimonials of the cured are distributed. Priests help to arouse it by moral and religious appeal, sometimes ascribing the cure to supernatural agencies. The pilgrimages, prayers, relics and heaps of crutches help to enliven faith. "New thoughters" advertise the successes resulting from the acceptance of what they regard as an important philosophic system, involving among other things a belief in the saving grace of optimistic moods and healthy-minded attitudes. Christian science does it by combining the ideas of religion and philosophy into a system, denying the existence of disease, and advertising widely the cures of those whose symptoms have disappeared as soon as they have fully accepted the doctrine.

Physicians awaken confidence and inspire the idea of authority by their scientific training, and by their mode of inquiry and of examining the patient. The young man without reputation can arouse faith if he have a suitable personality and be well trained in the methods of taking the anamnesis and of making the physical examination. Blood counts, bacteriologic cultures, determination of opsonic indices, tuberculin tests, sphygmographic tracings, x-ray photographs and the whole paraphernalia of clinical diagnosis not only give real information to the physician but they also excite belief.

After the thorough examination, a definite diagnosis, briefly stated to the patient, prepares him to hear what the treatment is to be and leads him to submit to it hopefully.

Suggestion in the waking state may be larvate or direct. In treating functional nervous disorders many physicians resort to larvate suggestion. They recommend massage, or a diet, electricity or a drug or a combination of several measures and tell the patient that he will get well. They see the patient again from time to time and assure him that he is incontestably better, and try gradually to establish in him the conviction that he is being cured and, finally, that he is cured. The conscientious physician (when using larvate suggestion) does not, as a rule, prescribe measures which can not of themselves do any good whatever, but always tries to use means which will, through their physical effect on the body, aid at least to some slight extent the psychotherapy in restoring health. The more faith he has himself in the bearer of the larvate suggestion the more, other things equal, he is likely to excite in his patient.

The advantage of hypnotic suggestion lies in the greater susceptibility of the patient to heterosuggestion in this sleeping state. Every *hypnotiseur* develops his own technic of producing hypnosis though all the methods have in common the suggestion of sleep. The patient's belief is aroused before hypnosis is undertaken and the sleep is suggested, usually by the aid of certain physical methods (fixation of sight on a bright object; strokes or passes; pressure on the eyes, etc.). No rigid routine is satisfactory; any method must be adapted to the individual case, and the most skilful hypnotizers are resourceful in little tricks which aid in strengthening the suggestion and in inducing sleep. Therapeutic suggestions, repeated several times, are usually given in the more superficial stages of hypnosis (somnolence and hypotaxia) rather than in the more dangerous deeper stages (somnambulistic sleep with hallucinations and amnesia). The dangers of hypnosis have been exaggerated by some and under-estimated by others. We know now pretty well what they are and methods for avoiding them have been and are being worked out. In this connection the process of de-suggestion as advocated by Bernheim seems to be very important. Certainly no one except a medical man or a trained psychologist should use hypnosis; needless to say, a third person should always be present.

In psychotherapy by persuasion the physician has opportunity for the exercise of the highest powers of his own mind and he makes his appeal to the best qualities of the minds of his patients. The principles are those of education in general; indeed psychotherapy by persuasion might well be designated medical pedagogy. It involves training of the voluntary attention, schooling of the emotions and rational education of the will. It is the most rewarding of the psychotherapeutic methods and seems destined to occupy a large part of the energy of medical practitioners. By its aid the physician is able to rid a patient's mind of harmful ideas and associations, refuting them, or, by ignoring them, leading the patient to forget them. With its help too he creates new ideas and associations in the mind, supplementing perhaps a limited or faulty early education and environment; through occupation-therapy of various sorts he may teach the patient to find health and satisfaction in work. And here the medical psychotherapist joins hands with the great army of educators—the teachers, the clergymen and the social service workers of his time.



The diseases chiefly amenable to psychotherapy, namely the psychoneuroses, are most troublesome to treat when their management is not understood, but many a mind with its door apparently permanently closed to healthy influences will speedily open to him who knows how to find the key to its lock. No physician has the key to all the doors he is asked to open; I know of no psychotherapist who has all successes and no failures; but any intelligent medical locksmith may learn how to gain entrance to many abnormal minds if he interest himself in the problem. It is saddening and discouraging to meet with some of the somatic derelicts we see in our offices and in the hospital wards (victims of large white kidney, thoracic aneurism, non-compensable myocardial insufficiency, dementia paralytica or carcinoma ventriculi) for in these cases we realize how little as yet we are able to offer them in the way of help. It is gratifying by contrast to see certain of the psychoneurotics who have been, perhaps, miserable invalids for years, burdens to themselves and to their friends, reclaimed by suitable means, made well again and equal to normal life. The limitations of psychotherapy are definite; they are given by the capacity of the individual brain for education and by various physical and social factors. It is matter for satisfaction that its field of application is as broad as workers on the subject are finding it to be. It remains for the future to reveal to us all the opportunities of which we may take advantage in extending and improving the activities of that great organ of adaptation in our bodies—the cerebrum. Here lies a fruitful territory for clinical research.

Psychotherapy has had such a "yellow streak" in it that many medical men have refrained from utilizing to the full the good in it. This is one reason why it is desirable that conservative, scientifically trained men should work with it and let us know their experience concerning its advantages on the one hand and its limitations and dangers on the other. Its use should be preceded in every case by the making of an accurate diagnosis by our best methods. It is no cure-all, but in certain cases it is indispensable, and with all patients it is a valuable supplement to other forms of therapy.

6 Franklin Street, East.

## ANEURISM OF THE HEART.

WITH REPORT OF A CASE ASSOCIATED WITH MEDIASTINO-PERICARDITIS.\*

J. B. MELROY, M.D.  
MEMPHIS, TENN.

Little space is given to the consideration of this subject in text-books on the principles and practice of medicine, or even in those on diseases of the heart. By the earlier medical writers the term "cardiac aneurism" was used to signify enlargement of the heart. Thus Auenbrugger and Corvisart used the terms "aneurysima activa," signifying enlargement from hypertrophy, and "aneurysima passiva," signifying enlargement with dilatation. Several years later John Hunter and his nephew Matthew Baillie, gave to the term its modern significance, viz., a partial dilatation of the cardiac wall; hence aneurism of the heart was often spoken of as partial aneurism.

In the general literature to-day three different condi-

tions are spoken of under the term aneurism of the heart, namely:

1. Aneurismal dilatation of the coronary arteries, which may vary in size from a mustard-seed to a cherry, may be multiple or single, and is due to sclerosis or embolism of these vessels.

2. Aneurism of the valves of the heart, by which is meant a cavity in the substance of the valve, containing pus or other inflammatory products, clotted blood or debris. These arise from small areas of endocarditis, either on the surface or in the substance of the valve, and according to Drasche, who does not agree with some other authors, is more frequent in the mitral valve.

3. Aneurism of the cardiac wall.

The first two conditions are almost wholly of pathologic interest, but their inclusion under the term "aneurism of the heart" has somewhat confused the statistics on the subject.

It is to the third condition, or aneurism of the cardiac wall, that I shall refer in this paper. This is not of very frequent occurrence, as will be seen from the statement of Philip D. Bourland, who was able to find but two cases reported by American authors during thirteen years prior to 1904. In 1867 Pelvet collected reports of eighty-seven cases from the world's literature up to that time. In 1883 Legg made cardiac aneurism the subject of his Bradshaw lectures, in which he collected reports of ninety cases, probably including those of Pelvet. According to Warthin, more frequent reports of the condition have been made since that time, and there are now in the literature reports of possibly three hundred cases.

### REPORT OF CASE.

*Patient.*—D. R., white, male, aged 49, was admitted to St. Joseph's Hospital, Dec. 24, 1907, to the service of Dr. W. T. Brann, to whose courtesy I am indebted for the privilege of observing the case. The patient complained of shortness of breath and dropsy.

*Personal History.*—Family history was negative. The patient had frequent attacks of malaria in Arkansas; also had grip, pneumonia and gonorrhea. He was kicked by a mule several years ago, losing the sight of his right eye. He had never had rheumatism and denied syphilis; had used alcoholic drinks moderately and had worked hard. About two years prior to this admission, he came to St. Joseph's Hospital complaining of shortness of breath and dropsy. According to the patient, after a prolonged stay, he returned home apparently well, and had no further trouble until a short time before his last admission.

*Present Illness.*—He had some pain in the chest, the location of which he was unable to define. It had not been severe, had not radiated to the side of the neck nor to the arm, and had not been associated with the fear of death. He had difficulty in getting his breath, especially on exertion, and at times the dyspnea had been so great as to require him to sleep sitting up. He had lately had some edema of the feet and ankles and had suffered with swelling and fulness of the abdomen.

*Physical Examination.*—The patient was a fairly well-nourished man. The skin was subicteric, the mucous membranes pale; there was a cataract in the right eye, slight edema of the feet and legs; no glandular enlargements.

*Chest:* There was dyspnea and slight impairment of respiratory expansion at the left base. There was a pulsating tumor in the chest wall, in the apex region. This pulsation seemed to be expansile and to correspond to the apex impulse. There was no systolic retraction in this area nor in the left back. There was some pulsation of the carotids, though not marked. The jugulars were not distended on deep inspiration and there was no diastolic collapse of these vessels. The peripheral veins were abnormally full. The abdomen was distended, but there was no distention of the abdominal veins.

\* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



**Palpation:** Vocal fremitus was possibly diminished over the left lower chest. The pulsating tumor was connected with the apex impulse, which was in the seventh interspace half an inch within the anterior axillary line. It was distinctly expansile. There was no thrill present nor any diastolic shock. It was rather forcible and lifted the palpating finger in all directions. The radials were palpable. The pulse was somewhat irregular in rhythm and much weaker than one would expect from the heaving character of the apex impulse. There was no perceptible irregularity of the pulses nor appreciable collapse. The lower border of the liver could be felt below the right costal border on deep inspiration. The spleen was barely palpable, and there was little tenderness in these regions.

**Percussion:** The note over the left lower chest posteriorly was very dull, almost flat. The area of cardiac dullness was markedly increased downward and to the left, where it did not extend beyond the limit of the apex impulse. Dullness extended also to the right of the sternum.

**Abdominal Cavity.**—There was a considerable quantity of free fluid.

**Auscultation:** Over the lungs the breath sounds were feeble and indistinct at both bases, especially posteriorly. The heart sounds at the apex were distinct and no murmurs were associated with them. At the base there was a soft, feeble murmur, heard only in the third interspace to the right of the sternum. This had very little, if any, area of transmission, and pressure with the stethoscope did not intensify it. Neither the aortic second nor the pulmonic second was accentuated. The urine and blood were not examined.

**Diagnosis.**—The diagnosis of fibroid myocarditis, hypertrophy and dilatation of the heart with cardiac insufficiency and aneurism of the left ventricle was made. Dr. Frank Jones saw the patient and concurred in the diagnosis.

The patient continued in the hospital, being up and down until February 8, when he expired suddenly on getting up to stool.

**Autopsy.**—Thirty-six hours after death; nutrition fair, weight about 150 pounds; height about 5 feet 10 inches; skin sallow. Scar 1 x 2 inches just above the right nipple. Globular enlargement over the fifth, sixth and seventh interspaces two and a half by three inches wide, two inches outside the nipple line. Abdomen distended; lower extremities edematous to the body. Rigor mortis not marked. No decomposition. Postmortem lividity in all dependent portions of the body and about the shoulders. Irregularity of the right pupil. Some of the mediastinal glands enlarged. Both pleurae adherent. The left pleura markedly thickened; no fluid in either pleural cavity.

**Pericardium:** Adherent to both pleurae. Both layers thickened. The parietal layer completely adherent to the epicardium, obliterating the pericardial cavity. The heart enormously enlarged and removed with the pericardium; removal effected with great difficulty, owing to the dense adhesions of all the structures in the mediastinum. Weight after opening with all clots removed, 1,145 grams (48.5 ounces). Blood in all the cavities. Chicken-fat clots in the auricles. The walls much hypertrophied and the cavities dilated; the left ventricle wall 1 inch, the right 5/16 inch thick. A large dilatation about the size of an orange sprang from the apex of the left ventricle anteriorly. The communication with the left ventricle marked by a well-defined fibrous ring 2 inches in diameter. The width of the swelling, at the greatest diameter, 5½ inches; depth, 3 inches. The sac formed by roughened endocardium and myocardium (which was thicker on the anterolateral surface, but only about one-fourth as thick as the ventricular wall, the posterolateral wall being apparently without myocardium, very thin), and both layers of the pericardium adherent at the apex to the pleura and a portion of the seventh rib, which was partially eroded. The cavity filled with dark clotted blood.

**Pulmonary Orifice:** Three and a half inches in circumference, valves thin, smooth and apparently competent. Tricuspid 7/8 inch; valves smooth and closing orifice.

**Aortic Orifice:** Two and three-fourth inches. Valves not sclerotic. Orifice apparently closed by valves. Slight fenestration of the middle cusp.

**Mitral Orifice:** Four and seven-tenth inches. Valves normal. Heart Muscle: Fibroid changes.

**Coronaries:** Open in the antriculoventricular grooves. Orifices somewhat contracted. Vessels sclerotic.

**Root of Aorta:** A few recent atheromatous patches.

**Kidneys:** Enlarged; left larger than the right. Left peculiarly lobulated, containing an old scar and a small cyst. Capsules stripped with difficulty. Surface red; on cut surface, fibrous tissue increased. Cortex somewhat thickened. The organ dripped blood.

**Abdomen:** Peritoneum smooth except in the hepatic region, and contained a large amount of dark fluid.

**Gall Bladder:** Filled with a dark greenish fluid; walls thickened. Slight adhesions to surrounding structures.

**Liver:** Enlarged. Dark red. Surface uneven, hobnail in places. Fibrous tissue distinctly increased. The organ dripped blood. Capsule thickened, presenting the appearance of Curschmann Zuckergussleber.

**Spleen:** Enlarged. Cut surface dripped blood. Fibrous tissue increased. A supernumerary spleen about the size of an English walnut attached to the organ.

**Microscopic Examination.**—Sections of tissue were fixed in formalin, embedded in celloidin and stained with hematoxylin and eosin for microscopic study.

**Heart:** In some areas the terminal coronary arteries were blocked, showing typical anemic infarcts. The fibrous tissue was generally increased. In many areas the muscle cells were necrotic, which seemed to be the result of lack of nutrition. Endarteritis had caused obstruction of the arteries, which formed areas of fibrous myocarditis of, what Cowan describes as, the para-arterial type. There were also areas of fibrous overgrowth—perifascicular fibrosis—which corresponded to the same author's periarterial fibrosis.

Sections through the aneurism showed adhesive pericarditis, degeneration of the myocardium and marked overgrowth of fibrous tissue.

**Pathologic Diagnosis.**—Hypertrophy and dilatation of the heart, fibrous myocarditis, aneurism of the left ventricle, mediastinopericarditis, cirrhotic liver, multiple serositis, and cirrhotic kidney. The microscopic findings in the liver should have been included, as these are important in connection with mediastinopericarditis.

#### CAUSES AND USUAL LOCATION OF ANEURISM OF THE HEART.

According to Warthin, aneurismal dilatation of the heart wall may be congenital, due to defective development of the heart muscle, and found in infants and young children. This may occur in any part of the heart wall, but is more frequent in the membranous portion of the ventricular septum.

The acquired form may be acute or chronic. The former may be due to inflammatory process in the heart. In this case the upper part of the septum is likely to be the seat, especially if the result of acute mural endocarditis; or a dissecting aneurism may result. Myomalacia cordis may be the starting point of this form of aneurism, which usually increases rapidly in size and progresses to rupture.

The majority of these dilatations, however, are chronic and result from the weakened cardiac wall giving way under intra-cardiac pressure. This may occur at any age, but more frequently in advanced life. Walshe, writing on the subject in 1851, says that it has hitherto been most frequently observed between the ages of 20 and 30 and in very advanced life, or in those periods of life when the agents are operative in producing the cardiac changes on which the condition depends, namely, syphilis in the young and the various heritages of old age, senility and fibrosis.



For the same reason it is much more frequent in men than in women. In a total of two hundred and eight cases collected by Hare from various authors, he found that 74 per cent. were in males and 26 per cent. in females.

Several pathologic processes have been described as giving rise to the weakening of the cardiac wall which results in aneurism.

According to Cowan, whose admirable work on the fibres of the heart I have drawn on in the preparation of this paper, the French writers especially have suggested that pericarditis may be an occasional cause of aneurism. He describes the theory of these writers thus:

If the two layers become adherent over a small area, the point of adhesion will be less mobile than the rest of the heart, and, with each systole, traction will be put on the part, and in course of time dilatation will result. The initial inflammation produces alterations in the superficial myocardium, and the chronic irritation resulting from the constant stress of the traction gradually leads to a fibrous condition of the aneurismal sac. . . . The objection to this theory may be stated as follows: Local pericardial adhesions are common and aneurism is rare, and the myocardium is but little involved in chronic pericarditis. I have never seen any fibrosis from such a cause even remotely resembling the fibrous sac of an aneurism. The pericardium, too, is not a fixed point, and it seems more reasonable to suppose that it and not the heart wall is dragged on by the systole of the ventricle. It is only in rare cases, where mediastinal adhesions fix the pericardial sac to the bony thorax, that such a mechanism seems possible.

I have quoted thus at length because the pathologic findings in my case apparently bear so directly on this point.

The widespread mediastinopericarditis, the firm union of the two layers of the pericardium over the aneurism, and their adhesion to the chest wall, would at first sight seem to furnish an ideal example in support of the theory of origin of aneurism from pericarditis. A more careful study of the case will, I think, show the widespread fibroid changes in the myocardium due to sclerosis and thrombosis of the terminal branches of the coronary arteries. The fact that the obliterated pericardial cavity is clearly recent over all areas except immediately over the aneurism, and the fact that mediastinitis is also more recent than the aneurism, show that pericarditis is at all events not the most important factor in the production of the aneurism.

Scars resulting from traumatism to the heart muscle and from gummata have also been shown to be rarely the cause of these aneurisms.

Most authors state that the conditions may occasionally depend on fatty degeneration independent of myocardial fibrosis. Cowan again thinks that the evidence here is not conclusive. There was no evidence of fatty degeneration present in my sections.

Undoubtedly the great bulk of the cases are due to myocardial fibrosis which results from the complete or partial obliteration of the coronary arteries—which, I think, is the cause in this case.

This explains also the most frequent seat of the lesion, which is in the apical third of the left ventricle, and most frequently here on the anterior surface.

According to Hall's statistics, the site of the aneurism in 112 cases was as follows: Left ventricle, 92 cases; right ventricle, 1 case; left auricle, 2 cases; ventricular septum (muscular part), 8 cases; ventricular septum (membranous part), 7 cases; auricular septum, 2 cases (Hare). This also coincides with the fact pointed out

by Huchard that the left coronary artery, the descending branches more especially, is much more frequently abnormal than the right.

The aneurisms vary in size, from the size of an English walnut to the size of a child's head. They are usually single, but may be multiple. The opening into the cavity of the heart is usually large, but it may be small, rendering the aneurism distinctly saccular. The sac contains clotted blood, and the walls are composed of endocardium, myocardium and both layers of the pericardium, which is nearly always densely adherent. It may erode the chest wall, as this one had partially done.

#### SIGNS AND SYMPTOMS.

There are no distinctive symptoms of cardiac aneurism, although, as Walshe says, almost every known symptom of cardiac disease has been present in these cases. Physical signs are usually equally lacking. It is only when the aneurism is large and favorably located that an antemortem diagnosis is possible. It was the expansile tumor clearly connected with the apex and its heaving character associated with a very weak pulse which enabled us to arrive at a diagnosis in this case. How seldom the diagnosis is made may be seen from the statement of Hall, who says that an antemortem diagnosis was made only once in seventy-six cases.

The signs and symptoms present are almost always due to the associated pathologic conditions, chiefly to chronic myocarditis, which was prominent in this case. These symptoms may, however, be any one of those characteristic of the three clinical groups of myocardial diseases, namely, those in which sudden death may occur without previous indications of heart trouble, those in which there is arrhythmia, cardiac asthenia, etc., and those with general arteriosclerosis and hypertrophy and dilatation of the heart.

#### ASSOCIATED LESIONS.

This case illustrates so well those cases described by Pick as pericarditis, with pseudo-cirrhosis of the liver and known under a variety of names, such as mediastinopericarditis, multiple or polyserositis, Concato's disease, perivisceritis, etc., that I wish to speak concerning the diagnosis of this feature of this, to me, very interesting case.

These cases of mediastinopericarditis may be divided into three groups clinically: 1. The silent, without signs or symptoms. 2. Those presenting all the features of cardiac disease. 3. Those in which the main features are hepatic.

In this case, while the physical signs of adherent pericardium were not prominent, the evidence of thickened pleura, the fixation of the apex beat and the frequency with which concretic pericardii is known to occur with cardiac aneurism, together with the hypertrophied and dilated heart, the enlarged and tender liver, and especially the marked ascites, out of proportion to the amount of edema present, should have led to the recognition of this condition which was found at autopsy.

#### TERMINATION.

In rare cases the sac has been obliterated by laminated clots. It is surprising how few of these chronic cases terminate in rupture of sac. Legg found this termination in only 7.7 per cent. of ninety cases. By far the most frequent termination is from cardiac insufficiency from myocarditis, as was the mode of death in this case.

Porter Building.



## DISCUSSION.

DR. ROBERT PREBLE, Chicago, (exhibiting a boy with a cardiac aneurism): This patient was shot a few months ago, the bullet entering to the left side of the sternum and at the time giving no special cardiac disturbances. Later the patient developed a characteristic aneurism at the upper and outer portion of the left ventricle.

DR. JAMES B. HERRICK, Chicago: Dr McElroy's paper recalled the case, seen by me five or six years ago, of a colored man, about 30 years old. At autopsy, in addition to some valvular trouble, extensive adhesions and a mediastinopericarditis were found, as well as a chronic fibrous myocarditis. In one of the areas of cardiac softening, near the tip of the left ventricle, a rupture of the myocardium, evidently preceded by an aneurismal dilatation, had occurred; this rupture, instead of occurring directly into the open pericardium, occurred in a weakened spot between the two adherent surfaces of the pericardium that were apparently dissected apart by the blood. This little sac of pericardium had, at the time of death, reached the size of a goose's egg. The interesting clinical feature in this case was that, high up in the epigastrium beneath the xiphoid cartilage, was a visible, palpable, pulsating tumor, and over this could be heard a systolic bruit. The case presented many perplexing clinical features which made the diagnosis somewhat difficult. It was only at autopsy that the real nature of the trouble was learned; then the little sac communicating with the left ventricle was clearly disclosed.

DR. WILLIAM J. BUTLER, Chicago: I had a patient, a boy, 10 years of age, who had primarily a congenital stenosis of the pulmonary arterial tract. He acquired a septic endocarditis involving the pulmonary orifice. In addition to this, which had been diagnosed clinically, there was found at autopsy an aneurism, the size of a walnut, of the right ventricular wall. It had apparently resulted both from an involvement of the mural endocardium and underlying myocardium in the inflammatory changes, more or less fatty degeneration of the myocardium in general and the increased pressure in right ventricle.

DR. JAMES B. McELROY, Memphis: The diagnosis of these conditions is possible only when the aneurism is favorably located. A most favorable and valuable diagnostic point is the heaving character, the apex-impulse and expansile character, which is only possible when the aneurism is favorably located; then and only then, in my judgment, is a diagnosis possible. In contrast to ninety cases diagnosed postmortem, I have met but one case that was diagnosed antemortem.

## CHRONIC PANCREATITIS.\*

JOHN B. DEAVER, M.D.  
PHILADELPHIA.

Perhaps the most important advances in abdominal surgery of recent years have been those made toward the elimination of digestive disorders, that is, the recognition that by surgery we are able to attack successfully not only the acute and obvious lesions, such as acute appendicitis or intestinal obstruction, but also those dependent on more obscure lesions of the stomach, biliary system and pancreas.

As the importance of the pancreas in the process of digestion was recognized by pathologists long after painstaking investigations had served to bring us to an understanding of gastric and intestinal physiology, so also the surgery of pancreatic conditions has been considerably behind that of the other abdominal viscera.

This is due to a number of reasons. The pancreas is deeply situated and almost inaccessible for direct surgical interference. Its functions being but little under-

stood, their derangements naturally were not recognized, and those finer tests in physiology were as yet unknown.

The work of Fitz brought the attention of the profession to acute pancreatitis, but it was many years later that the chronic form of inflammation of this organ was clinically recognized, even though it had been pathologically studied by many observers.

## PATHOLOGY AND ETIOLOGY.

As to pathology, chronic pancreatitis may be subdivided into the interlobular and the interacinar forms. For the purpose of the surgeon it is sufficient to state that the most frequent form is the interlobular, and that it is this form with which we have to deal in the pancreatitis complicating disease of the biliary passages. The interacinar form is due to systemic conditions not yet understood and is therefore correspondingly unfavorable to direct or local attack.

The etiology of chronic pancreatitis is of the utmost importance. There is no doubt that its most frequent cause is some interference with the free discharge of the pancreatic secretion, either associated or unassociated with an ascending infection. As by far the most common cause of such obstruction is the lodgment of a gallstone in the ampulla of Vater, or other part of the common duct, the frequent association of the conditions is at once explained. The occurrence under such circumstances of a pancreatitis, either acute or chronic, is not inevitable, but it is very common. The damming back of the pancreatic secretion with dilatation of the ducts and interference with function is in itself sufficient to cause a chronic inflammation of the gland. Yet in most instances we have no doubt to deal also with an added infection ascending the duct of Wirsung and joining its action to the other cause of inflammation. If the infection be virulent, acute pancreatitis may supervene—if of diminished virulence, we have the chronic form of pancreatitis as a result.

When the duct of Santorini is so situated that it can take the place of the duct of Wirsung, the main duct of the pancreas, as an avenue of discharge, pressure on the duct of Wirsung does not bring about such dire results, yet an infection at the same time active may nullify this action and lead to a pancreatitis even in the absence of a marked stasis in the secreting ducts.

The feature of infection would account for those cases of chronic pancreatitis which we find in those cases of gallstone disease in which the stone does not actually occlude the common duct. The very presence of the stones presupposes an infection of the biliary passages at one time or another, and when this is present there is little doubt that the whole biliary tract is involved. In a certain proportion of these cases the pancreatic duct would, of course, become infected also, and as the infection causing gallstones is known to be a subacute one—by some organism of diminished virulence—we have in the condition causing the gallstones one which also will cause a pancreatitis.

Indeed, most of my cases of chronic pancreatitis have, contrary to the general rule, occurred in patients in whom no gallstones were present. Yet in almost every case I could discern either the presence of an infection as shown by the bile, the congestion and an inflammation of the gall bladder, or the fact that there had been some cholecystitis, as evidenced in a shrunken and distorted gall bladder, or the presence of pericholecystic adhesions.

So while duct obstruction plus infection furnishes the most likely cause of chronic pancreatitis, either factor

\* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



alone is sufficient to cause this condition. The rôle of infection alone is also demonstrable in those cases in which a chronic pancreatitis follows on a long-standing gastroduodenal catarrh. Several cases have come under my notice and have been reported by other surgeons. I have in mind particularly one case in which this was so, and in which the occurrence of the pancreatitis was directly traceable to a chronic gastroenteritis. It is important in these cases to bear in mind the fact that the supposed gastroenteritis thought to precede the pancreatitis may in reality have been its first manifestation instead of its precursor.

Blocking of the pancreatic ducts by calculi in them or by new growths of the common duct or the ampulla of Vater may be mentioned as among the rarer causes of chronic pancreatitis.

In some of my operations I have noted the association of a chronic pancreatitis with cirrhotic conditions of the liver, and in a number of cases which have come to autopsy from the medical wards of the German Hospital the two conditions have existed together.

Many other causes of chronic pancreatitis have been claimed. At the German Hospital it has been found at autopsy in cases of cardiorenal disease, tuberculosis, pernicious anemia, syphilis and other conditions.

There is no doubt that were microscopic examinations made of the pancreas many instances of beginning change would be found in cases where the organ feels and looks entirely normal. It is a well-known fact among surgeons that in quite a few instances in which in life the pancreas is found to be markedly indurated and congested, at autopsy, held some hours after death, the organ presents no macroscopic evidence of disease and is entirely normal to the touch.

The diagnosis of chronic pancreatitis in life was thought some years ago to be impossible, except in those cases in which the metabolism was so greatly disturbed that evidences of this were most markedly shown in both urine and feces. As surgeons have had opportunity of studying the organ on the living subject at operation, we have come to associate certain clinical symptoms with a condition of chronic pancreatic disease, and it may even be asserted that a somewhat definite syndrome has been established. In spite of this, I can not agree with Mayo Robson when he characterizes it as being easy to diagnose. At the present time by far the majority of cases are unrecognized except at the operation or necropsy.

#### SYMPTOMATOLOGY OF THE DISEASE.

In considering the symptomatology we must remember that the symptoms are caused in three ways, and may thus be divided into three groups:

1. Those which depend on the local lesion, i. e., the local manifestations of disease in the upper abdomen.
2. Those which come as a result of the interference with pancreatic secretion, i. e., a form of indigestion.
3. Those depending on interference with the internal secretion of the pancreas—shown principally in the occurrence of diabetes and in the pancreatic reaction in the urine.

1. *Symptoms Depending on a Local Lesion.*—The local symptoms are essentially unimportant as compared to the systemic ones. The patient will at times complain of some epigastric pain, occasionally localized somewhat to either side of the median line. Tenderness in this locality may also be present. The presence of a tumor has been described by some, but I

have never been able to satisfy myself of the presence of this sign in chronic pancreatitis.

A general symptom, dependent often on local mechanical interference, is jaundice. We would naturally expect to find this in those cases in which the pancreatitis is associated with gallstone disease, but it occurs also when this is not the case. This in some instances is due to the partial obstruction of the common duct by swelling of the head of the pancreas and would be particularly liable to occur when the duct runs within the substance of the pancreas, as it does in about two-thirds of all cases. Occasionally the jaundice appears to have been a coincidence, i. e., to have been caused by cholangitis resulting from the gastroduodenal catarrh responsible for the onset of the pancreatic lesion.

Mayo Robson has lately offered the suggestion that many instances of catarrhal jaundice, especially of the chronic form, are due to a pancreatic lesion, i. e., that the engorged pancreas by pressure on the choledochus is responsible for the jaundice. This contention he has supported by the report of a number of cases in which the pancreatic disease was discovered by other tests; operation in all cases brought a permanent cure. I am not prepared to admit that all cases of catarrhal jaundice are pancreatic in origin. But the possibility should be borne in mind when we have to deal with forms of the disease which are resistant to the ordinary medical and dietetic treatment.

At times the damming back of the bile will give rise to distention of the gall bladder, which organ may even become palpable. In these instances the symptom is more apt to confuse than to help us, as it would lead us to believe the condition to be primarily biliary. This, however, would not be of such moment, as surgical interference is indicated in either case.

The local signs, as I have stated, are in themselves not significant and gain importance only when associated with other signs of pancreatic trouble. The jaundice, of course, would give us a clue, but as often as not it, as well as the local signs, leads us to suspect disease of the bile ducts or cholelithiasis, when the lesion is in reality pancreatic.

2. *Symptoms Due to Interference with Pancreatic Secretion.*—The digestive symptoms due to interference with the pancreatic secretion are of the utmost importance. The patients often have anorexia, fulness in the epigastrium and eructations of gas. Associated with these we often have diarrhea of an intermittent or continuous form, in which the stools are large and often grayish in color and contain an excess of free fat.

This combination of such an indigestion with the local signs of a lesion in the upper abdomen should lead us to suspect a pancreatic condition at once.

Occasionally we become aware of the presence of a chronic pancreatitis by an acute exacerbation. Several instances have come to my notice in which this was so, with history about as follows: The patient, previously in fairly good health, was taken ill with symptoms of a lesion in the upper abdomen: pain here was preceded by a chill and followed by marked prostration and cyanosis. These in turn were succeeded by fever with the development of a dulness in the upper left abdomen and lower part of the chest. The Cammidge tests, A and B, were both positive.

It is true that many other portions of the gastrointestinal tract when diseased give us symptoms of indigestion, but each lesion will be found on close study to give rise to a more or less characteristic form. Thus,



in chronic gastric ulcer we have pain after eating, vomiting, hyperacidity and a tendency to constipation. The stools show us no excess of fats and undigested muscle fiber as in pancreatitis, but often give us signs of hemorrhage—such as the occult blood test. The associated epigastric signs are also often more severe, and inflation of the stomach may at times show us a considerable degree of dilatation. Jaundice also is not found.

Chronic gastroenteritis or colitis may give us persistent or intermittent diarrhea. Yet the localizing signs are all to be found in the lower abdominal segment. The stools are often watery and they show us no evidence of impaired digestion of fats.

In chronic appendicitis, constipation and not diarrhea is the rule. The indigestion is usually of a less marked grade than in either pancreatic or gastric lesions and does not exercise such a deteriorating effect on the patient's health in general. Then again we often find a history of acute attacks of appendicitis, or else of chronic soreness and tenderness in the right iliac fossa. The stools also show nothing characteristic.

The emaciation and weakening which the indigestion of pancreatic disease brings with it is insidious in onset, but in late cases most marked and intractable and furnishes another symptom, if it may be so called. But when the disease has progressed to this stage the diagnosis as a rule interests us more as a curiosity preceding autopsy than as an indication for treatment.

In spite of the apparent distinctness of the symptomatology of chronic pancreatitis, its differentiation is not always easy. Its onset is often most insidious, and one or another point in the symptom-complex is not present. Jaundice may not occur; the local signs may be practically absent. The examination of the feces is at times inconclusive and often demands skill in examination not easy to obtain.

Then again, in those cases in which the pancreatitis is associated with gallstone disease, the latter in almost all cases overshadows the often more dangerous pancreatic condition. And so well known are the symptoms of disease of the gall ducts compared to those of the pancreas that physicians are prone to consider the symptoms of a chronic pancreatitis as being the aberrant ones of cholelithiasis, even when the distinction is comparatively plain.

3. *Symptoms Due to Interference with the Internal Secretion.*—The third group of symptoms—those depending on disorders of metabolism, due to interference with the internal secretion of the pancreas—are really the most distinctive of all and give us the most definite basis for a diagnosis of pancreatic disease.

Diabetes has been long recognized as being often associated with pancreatic disease. Unfortunately, when this condition has supervened, the pancreatic lesion is often too far advanced for any marked improvement by any method of treatment, either medical or surgical. In some cases it must be remembered that the glycosuria is not due to a true diabetes resulting from interference with the internal secretion of the pancreas, but is due to the absence in the alimentary canal of its secreted ferments, and in some instances may be a pure alimentary glycosuria associated with pancreatic disease. It may be noted here that the interacinar form of chronic pancreatitis, affecting as it does the islands of Langerhans earlier than the interlobular form, is more apt to give us an early and intractable diabetes.

The reaction discovered by Mr. Cammidge I believe to be an aid in the diagnosis of pancreatic disease. It

is true that the originator and his collaborators have been able to get more positive results from its use than others, but it has been found of value in many cases. I am inclined to regard it for the present, in the hands of most investigators and laboratory workers at least, as a fairly constant sign of pancreatic disease, rather than of great value in the differential diagnosis.

It will be seen, then, that the majority of cases of chronic pancreatitis, either associated or unassociated with gallstone disease, may be diagnosed with a fair amount of certainty if sufficient care be taken. They are cases in which the history must be most carefully taken and the patient's memory for details at times taxed to the utmost. In conjunction with this the study of the urine and feces should be undertaken by one who is an expert. The results in this line of work by the unpracticed are more likely to be misleading and confusing than of any real aid to the diagnostician.

#### TREATMENT.

Granted, then, that the diagnosis of chronic pancreatitis has been made, or that chronic pancreatitis is discovered on the operating table, what should be our line of treatment?

It can not be denied that the efforts to benefit patients suffering from chronic pancreatitis by the use of pancreatic extracts, derivatives or substitutes have been futile in all but a few instances. In these the results have at times been remarkable, but the treatment is, as a rule, irksome, especially when a strict diet must be followed. Not only this, but as no effort is really made to restore the pancreas itself to function, its action by its internal secretion is lost, and in spite of the substitution of its ferments metabolic disturbances generally increase.

Medical treatment also is entirely unable to really reach and remove the cause of the pancreatic lesion—to give the pancreas a chance to functionate again the normal way. Surgery in many of these instances will enable us to attain a radical cure. It does this in two ways:

1. By removing the underlying cause of the pancreatitis when this is to be found in an obstructed choledochus.

2. By enabling us to overcome the infection in the biliary and pancreatic ducts.

When the pancreatitis is secondary to gallstone disease, as is the case in so many instances, removal of the calculi, together with free drainage of the bile ducts, in most cases leads to a complete subsidence of pancreatic symptoms. The obstruction being removed, the pancreatic ducts have an opportunity of again emptying themselves and the irritating bile is no longer forced into them by back-flow. The coexisting infection of the biliary passages is cured or rendered harmless by the drainage instituted at the time of operation, and thus the pancreas is enabled to take its place as the main factor in the whole cycle of digestion. The benefit to the chronic pancreatitis in many cases of gallstone disease doubtless accounts for the wonderful restoration to complete health of those patients who are found to be weakened and emaciated to a degree not explainable by the mere biliary condition.

When the gall ducts are found clear, and the infection which has given rise to the chronic pancreatitis has subsided, drainage of the organ by way of the biliary passages nevertheless exerts a remarkable curative effect on the lesion. This is especially true when the pan-



creatic condition is diagnosed and the patient operated on while it is in its incipency, before the so-called catarrhal pancreatitis has really become a chronic interstitial interacinar lesion.

The choice of operation in dealing with chronic pancreatitis resolves itself into a decision between simple drainage of the biliary ducts or a cholecystenterostomy. I have used both methods, and each has its advantages in special cases. When gallstones are found in conjunction with pancreatic disease, or when the latter is found during a gallstone operation, I consider the drainage indicated by the biliary condition to be sufficient. Thus, if we have stones in the choledochus, a choledochostomy should be performed in the usual manner. The operation of cholecystostomy is to be preferred when we find a pancreatitis the result of a still active infection of the bile ducts or when the pancreatitis is discovered in its incipient or catarrhal stage.

Cholecystenterostomy is indicated when the pancreatic condition is well advanced and we wish to procure permanent drainage. This operation is not my choice when much biliary infection is present, as I always prefer surface drainage when marked infection is manifest. This operation also I consider to be more grave than ordinary cholecystostomy, and I have found it to be attended by a higher mortality in my own operative work. Especially does this become true when we are dealing with a gall bladder not well suited for the procedure.

The indications for surgical interference in chronic pancreatitis I consider to be found in the diagnosis itself, unless some circumstance prohibits it. Thus, I would not operate in the presence of marked organic disease of other organs, nor would I be prone to advise operation in patients who are *in extremis*.

Moderate anemia and glycosuria are not contraindications to operation in pancreatic cases, as both are often greatly benefited when the metabolism of the body is restored to its normal status. My results in chronic pancreatitis have been such as to encourage me to further operative work in this direction. The immediate mortality is still quite high, due in large part to the extremely weakened condition of the patients, the grave associated conditions, and especially the tendency in those patients in whom we find both jaundice and a pancreatic lesion, to uncontrollable hemorrhage.

The details of the operative technique are not matters of extreme difficulty, and improvement in results must come from earlier diagnosis. In gallstone cases the patients should be operated on before chronic pancreatitis supervenes, and other cases of pancreatitis unassociated with lesions of the biliary passages should be recognized sooner than they now are.

## PANCREATITIS IN ITS RELATION TO GALLSTONE DISEASE.\*

WILLIAM D. HAGGARD.

NASHVILLE, TENN.

The pancreas is the most sequestered organ in the body and has only recently yielded up, in part, the secrets of its incorrigible inflammations. The clinical knowledge of its pathology has been obtained in operations on the gall tracts. Its natural history has been

unraveled and, while in the past its recognition has been uncertain, it can now be identified during life in a considerable number of instances, both in its acute and chronic form. It is important in all operations on the upper abdomen that the surgeon should examine with detailed care the head of the pancreas, not only to determine the existence of pathologic changes, when present, but also to appreciate the "feel" of the normal gland. The fact that the Mayos found the pancreas to be involved in 6 per cent. of all the operations on the gall tracts is sufficient indication of its importance, as well as of the causal relation between gallstones and diseases of this neighboring gland. They further found 81 per cent. of pancreatic diseases to be the result of, or coincident with, gallstones. Egdahl regards biliary lithiasis the most frequent single cause. Osler says that forty-five out of one hundred and five cases were associated with gallstones. Robson found pancreatic implication in 60 per cent. of cases in which gallstones were in the common duct. Out of 118 cases Quénu and Duval in 46 cases found stones in the gall bladder or cystic duct; in 20 cases in the common duct; in 8 cases in the ampulla of Vater; in 2 cases in the duodenum, near the ampulla; in 28 cases in the entire tract; in 10 cases undetermined, and in 3 cases in the stools. Mayo observed pancreatitis to be four times as frequent when the stones are in the ducts as when they exist in the gall bladder (18.6 to 4.45). The head of the gland is involved seven times as often as the entire gland (124 to 17). Nearly two-thirds of common ducts are surrounded by the head of the pancreas, which, if swollen, causes obstructive jaundice. In the other one-third an independent opening of the duct of Santorini may act as a safety valve.

Opie discovered the rôle which a small (pea-sized) stone lodging in the ampulla of Vater plays in converting the common and pancreatic ducts into a through channel, allowing bile to be injected directly into the pancreas and thus produce the acute type of infective and hemorrhagic pancreatitis.

Robson has established on an indefensible basis the relationship of gallstones in the common duct and chronic interstitial pancreatitis. It is probable that stones simply render the organ more vulnerable to bacterial invasion.

Flexner asserts that modified bile, with diminished salts and increase in colloid, sets up chronic pancreatitis. Fresh and unaltered bile gaining entrance to the pancreas begets acute changes. If an impacted gallstone does not cause bile to enter the pancreas direct, simple obstruction and retention of the pancreatic secretions, if infected, will cause inflammation.

Desjardins thinks that micro-organisms find their way through the duct of Santorini into the Wirsungian duct and back into the duodenum, thus causing infection in the "triangle of inflammation" when there is obstruction. This could not occur in one-third of the cases for in 21 per cent. the duct of Santorini is impervious and in 10 per cent. it does not communicate with the duct of Wirsung.

Regurgitation of fatty materials from the duodenum into the duct where it had been dilated from the previous passage of a gallstone has been suggested by Hess as a causative factor.

Robson operated in fifty-two cases of the chronic interstitial type which were due to gallstones and in forty-six cases in which there were no gallstones. Of this latter group it has been said that gastrointestinal disor-

\* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



ders caused about 30 per cent., of which one-half are in alcoholics. Among other causes which have been mentioned are typhoid fever, pyemia, malaria, mumps, appendicitis, trauma, embolism, gastric or duodenal ulcer.

The acute type is so sudden and severe in its onset, attended with such agonizing pain and followed by such extreme prostration that it has been denominated "the pancreatic drama." The pulse is rapid with rise of temperature. Vomiting occurs at once and is persistent. First, the stomach contents are regurgitated, and then the intestinal, simulating acute obstruction, although gas is passed. The lips are livid, the extremities cold, the entire body of a cyanotic leaden hue. Dyspnea is often present and constant splitting backache has been observed (Erdman). The pain is excruciating, paroxysmal and deep seated and is uncontrollable with ordinary doses of morphia. Collapse is extreme. Tenderness is diffuse, and the whole picture is that of "the acute abdomen." There is some epigastric induration in the first twenty-four hours, but the consecutive distention soon obliterates it. There is no glycosuria. Erdman and Thayer found no sugar in five cases each. Patients die in collapse in forty-eight to seventy-two hours. This type occurs oftenest at about the age of 50, in fleshy subjects addicted to alcohol.

Acute peritonitis from perforation of viscera is closely simulated. The actual diagnosis is very inexact. Of fifty cases, twelve were diagnosed as perforating gastric ulcer; twelve as intestinal obstruction; four as acute peritonitis; two as appendicitis; two as cholecystitis; one as strangulated hernia; one as angina pectoris; in eleven no diagnosis was made and in the remaining five the diagnosis of pancreatitis was correctly assumed. Fortunately the operative indication is equally imperative in most of the conditions which appear to be in evidence. Owing to the extreme fatality the operation is urgently demanded. Ebner says that out of ninety-six patients 90 per cent. who were not operated on died, and of those operated on 52.8 per cent. survived. Körte saved six patients with fat necrosis.

The laboratory examinations of the urine and feces are so laborious and consume so much precious time in the acute cases and are really so inconclusive that it does not seem wise to delay exploration to have them made.

The distinctive tissue change is fat necrosis. It results (when there is obstruction) from penetration, into the tissues adjacent, of pancreatic juice and certain ferments, which split the fat into its component fatty acid and glycerin. The latter is absorbed and the former unites with the lime-salts to form yellowish-white non-elevated opaque spots about the size of a millet-seed that look like droplets of candle grease. Fat necrosis points as unerringly to the pancreas as jaundice does to the liver. There is also marked exudation. The colon and omentum are gorged with fluid. In the omentum there have been observed clumps as large as sausages (Brugsch and König).

In the subacute or suppurative form the onset is less sudden and severe. Chill, fever and leucocytosis are present and an epigastric tumor gradually develops. Although constipation is the rule, fatty stools and occasionally fragments of necrotic tissue may appear. A less violent course is pursued, sometimes ending in resolution. These cases frequently terminate in suppuration, which burrows in a bizarre way. Operation is not so immediately necessary in the subacute cases unless suppuration demands evacuation.

Chronic pancreatitis occurs in individuals with previous painful epigastric attacks which often declare their gallstone origin. There is midline tenderness, slight fullness, pain referred to the left side, to the kidney and left scapular region. There is extreme loss of weight which, with the pigmentation of the skin, frequently gives rise to the inference of malignant disease. Jaundice is commonly present and may exist for many months. Nearly all cases of so-called catarrhal jaundice are in reality pancreatic catarrh or actual chronic pancreatitis. The intense irritation of the skin in jaundice is indicative of pancreatic and not biliary origin. The common duct is surrounded in the lower third of its course by the head of the pancreas in 62 per cent., which when swollen produces obstructive jaundice. In 38 per cent. the duct runs behind the pancreas and, although it might be enlarged, no pressure jaundice will result.

Uncomplicated gallstones are most easily identified by their early history. Typical attacks, without jaundice, then attacks followed by jaundice and attended with ague-like symptoms with no tumor, betoken the lodgment of stone in the choledochus. In chronic pancreatitis induration is often made out, and the tenderness is central rather than under the right arch. Gallstones that do not encroach on the common duct do not give the pancreatic urinary reaction of Cammidge and the feces are alkaline. In pancreatitis the motions contain large quantities of undigested food and are greasy because of the unsaponified fat. They are light in color and bulky.

In chronic pancreatitis Schmidt's bag test is said to show the nuclei undigested in the meat fibers of a small cube which is sewn in a silk bag that is taken into the stomach and recovered from the stool.

In many instances the head of the pancreas has felt like cancer at the time of operation and has been so diagnosed, but the patients have really been cured by removal of the stones and drainage, showing the induration to have been an interstitial thickening of the pancreas. Still it is quite possible in many instances to detect the late cases of cancer without operation. The condition lacks the acute onset, pain and fever. The gall bladder rapidly becomes distended. The feces quickly turn white. There is hematemesis and melena and, lastly, the enlargement of the cervical glands, ascites and edema.

Degenerative changes in the pancreas may destroy its control of the metabolism of carbohydrates and produce diabetes. It rarely occurs in the interlobular form of pancreatitis, but almost uniformly in the interacinar form when the greater part of the gland is replaced by scar tissue which crowds out the cell-islets of Langerhans.

Sugar was found by Cammidge in 6 per cent. of Robson's sixty-five cases of common duct stone.

While diabetes is not a common result of gallstone pancreatitis, it may happen that delayed operation will permit an ordinary interlobular type to advance into the interacinar form with its tell-tale glycosuria.

The operative indication for the acute cases is unmistakable. Incision of the acutely inflamed pancreas with drainage often suffices. The peritoneum should also be drained when there is that peculiar beef-broth serum present. If the patient's condition permits the complicating gallstones should be rapidly removed and drainage instituted.

In the chronic cases drainage of the bile passages, while indirect, is most effective. It is an anomalous illustration of a palliative operation being also a curative



one. A thorough search with finger and probe after the removal of the obvious stones is essential to insure none being left. It is especially difficult to detect them in the pancreatic portion of the duct. The common duct is best drained temporarily with a catheter introduced up to the junction. Permanent drainage is to be established by cholecystenterostomy if there are no gallstones. Sidney Phillips observed a disagreeable diarrhea when the gall bladder was attached to the colon, but in two instances I have seen no unpleasant symptoms. The duodenum, instead of the colon, is undoubtedly more desirable, as it delivers the bile into its natural channel where it is physiologically needed.

148 Eighth Ave., North.

#### DISCUSSION

ON PAPERS OF DRS. DEEVER AND HAGGARD.

DR. ARTHUR DEAN BEVAN, Chicago: In the development of this new surgery of the pancreas, members of this Association have played the most active part. I refer to the memorable work on pancreatic cysts by the late Nicholas Senn; the splendid work on acute pancreatitis by Fitz., and the pathology of the pancreas by Opie.

In connection with injuries of the pancreas, two things have impressed me as being of great importance. First, the diagnosis can not, as a rule, be made without an exploratory laparotomy, which is best made under gas anesthesia. Second, we must provide for most thorough drainage and also for thorough protection of the abdominal wall against the digestive action of the pancreatic juice. The latter, I think, is best done by oxid of zinc paste.

In acute pancreatitis the diagnosis, although difficult, is by no means impossible. In a general way those cases which have a clinical picture midway between ileus and perforation, with a definite line of tenderness in the pancreatic region, and some swelling, are very suggestive of acute pancreatitis; but the diagnosis must be made by exploratory operation under gas anesthesia. It is not always necessary to interfere in these cases. In three of my cases the operation was purely exploratory. A definite diagnosis of acute pancreatitis was made. There was no definite swelling nor any evidence of suppuration in the region of the pancreas; no gallstones to remove, and I simply made the operations exploratory, with immediate closure of the wounds, and all three patients went on to recovery. On the other hand, where there are gallstones they should be removed, and if there is swelling and evidence of hemorrhage and suppuration, drainage should be instituted.

A most interesting group of cases are those in which it is impossible to differentiate between carcinoma and chronic interstitial pancreatitis. I think that here the rule should be to take the optimistic side. Three times in one winter I made the brilliant diagnosis in my service at the Presbyterian Hospital, after exploratory operation, of carcinoma of the pancreas and very gravely told the relatives of the diagnosis. We sent the patients home to die. Those three patients went on to perfect and complete recovery after cholecystenterostomy. That has been a most instructive thing to me, and now I take the optimistic side in these cases and do a cholecystenterostomy with the hope that the case may be one of chronic interstitial pancreatitis and not carcinoma.

DR. CARL BECK, Chicago: The coincidence of pancreatitis and gallstones is by no means rare or exceptional. The numerous reports of the coexistence of these two pathologic conditions, the large number of experiments on animals, and the clinical observations prove the truth of these two statements. The reason why of late we understand a little more about these conditions is that we now make our diagnosis of pathologic conditions at the operating table and not at the post-mortem. The erroneous views of former times were due to the examination of this organ post-mortem. The tissues of no other organs undergo such rapid changes as do those of the gall bladder and pancreas. The diagnosis of diseases of the pancreas is difficult, and we hailed the Cambridge test

with enthusiasm as a great help; but there is only one means of making a definite diagnosis, and that is by exploratory operation.

At the present time the position of the surgeon relative to this question of pancreatitis and cholelithiasis can be summed up in four points: First, knowing the great danger of acute pancreatitis, leading to abscess or fat necrosis, every time acute pancreatitis is suspected an exploration must be made, even during the attack. The dangers of hemorrhage and perforation are insignificant compared with the danger of acute pancreatitis. Second, in all cases of gall-bladder operation an examination of the pancreatic field should be made, and if a threatening abscess or necrosis is found, this part should be drained through the foramen of Winslow or gastrohepatic omentum backward, according to the nature of the case and the findings. Third, in all cases of acute pancreatitis and fat necrosis the gall tracts must be examined carefully for stone on account of the common existence of gallstones with pancreatitis. Fourth, there are no other means at present of saving the patient's life except thorough drainage forward toward the abdominal wall and backward.

DR. WILLIAM L. RODMAN, Philadelphia: It has been made very clear to us in these admirable papers that it is practically impossible by the clinical symptoms and signs always to diagnose diseases of the stomach, and that even after a laparotomy it is not always possible to differentiate between benign and malignant disease. We have all accepted these conclusions so far as the stomach is concerned, and we have practically agreed in view of this difficulty of making a diagnosis between the several affections of the stomach that it is better to err on the safe side in our practice, and do a more radical procedure when it can be done without materially increasing the risk. It seems that what is true of the stomach and gall bladder and ducts is just as true, and in a way truer, of the pancreas. I thoroughly agree that it is simply impossible to diagnose at all times either acute, subacute or chronic pancreatitis. In one case after exploring the pancreas and being positively certain that I was dealing with malignant disease of the stomach, I closed the abdomen, after establishing drainage of the gall bladder, and found a tumor the size of a fist at the head of the pancreas. The patient's jaundice soon passed away; he rapidly gained in weight, and now, three years after the operation, is perfectly well.

Chronic pancreatitis is a more common disease than we have thought it was hitherto. In the great number of operations that are being done at the present time on the gall bladder and ducts, we should take care lest too radical surgery be done in the way of removing the gall bladder, unless it is absolutely necessary, because the only successful way of treating chronic pancreatitis is by drainage. If cholecystectomy be done where cholecystotomy would have answered all indications, and the patient subsequently develops marked pancreatitis, what is to be done? Of course, we can, as Robson does, drain the common duct, which acts as a gall bladder, but this is a far more radical procedure than draining the gall bladder itself. Therefore, it seems to me that the lesson to be drawn from these papers and discussions is that we should practice more conservative treatment of the gall bladder in doubtful or borderline cases that come to us. Dr. Deever has drawn particular attention to the fact that the two conditions are often associated and that they can not be differentiated. This is just what we ought to understand, when we reflect on the anatomy of the pancreas, and the fact that these stones often coexist in the pancreas and the gall ducts. A stone in the common duct will cause retrojection of bile into the pancreatic duct or the duct of Wirsung, and pancreatitis may follow. In a recent case of acute pancreatitis the symptoms markedly simulated those of acute intestinal obstruction.

DR. WILLIAM H. WATHEN, Louisville, Ky.: It is almost impossible to make a positive diagnosis of acute pancreatitis and differentiate it from some disease of the right hypochondriac region. Until we have made an exploration we may resort to an analysis of the urine and not find pancreatic disease. We may find pancreatic disease where there is a reasonably good digestion of the products of food by these secretions, but we



do know from what we have learned that the symptoms are sufficiently significant in every case to indicate an exploration: that by this exploration we can, as a rule, make a sufficiently accurate diagnosis to enable us to recognize these cases, and that the treatment is nearly always complete drainage. The practice of removing these structures is now rapidly becoming obsolete. Drainage and the removal of any obstruction in the duct are indicated. Hence the failure to make a perfect diagnosis of disease of one of these structures is not of much importance, provided that we know that the exploration is necessary, and that we institute the proper treatment.

DR. JOHN B. DEEVER, Philadelphia: Doctors must study their cases of indigestion more thoroughly. They must not be satisfied with diet and drugs in many of these cases. I called attention particularly to the class of acute pancreatitis, and especially the acute exacerbations occurring in the presence of chronic pancreatitis in which no drug is doing more harm than morphin given indiscriminately. Too many doctors when called to see a patient with pain in the abdomen are apt to resort too quickly to the hypodermic syringe. A physician might as well give his patient hydrocyanic acid. A prominent citizen of Philadelphia recently died of pancreatitis because he had morphin shoveled into him. That is the harmful effect of morphin.

DR. W. D. HAGGARD, Nashville, Tenn.: One of the diagnostic symptoms of acute pancreatitis is that you can hardly give enough morphin to stop the vomiting, backache and pain. It is one condition in which morphin does not absolutely mask the symptoms. I urge the withholding of the drug and the wisdom and importance of operating early in most acute abdominal cases. When the abdomen is opened and fat necrosis is found, it will invariably point to the presence of pancreatitis.

### MAY NOT DRINKING WATER, WHEN POLLUTED WITH SEWAGE, BE ONE MEDIUM OF DISSEMINATION OF THE TUBERCLE BACILLUS?

SAMUEL G. DIXON, M.D.

Commissioner of Health of Pennsylvania,  
PHILADELPHIA.

The tubercle bacillus may be introduced into the animal economy in various ways. The usual portals of entry are the mouth, nose, or an abraded surface. In cows it may obtain entrance through a milk duct or by way of the vagina. That it sometimes enters the fetus *in utero* through the medium of the circulation must be admitted, notwithstanding the opinion of many physicians to the contrary. Veterinarians tell us that it is not uncommon for cows to drop infected calves. This, of course, is entirely apart from a so-called inherited predisposition to tuberculosis, which may be either physiologic, consisting of such a condition of the tissues, and more especially of the mucous membranes, as will afford a receptive and favorable environment for the growth of the organism; or anatomic, depending on a conformation of the thorax, such as the deformities known as chicken-breast, winged chest or hollow chest, which interfere with the full and healthy development of the lungs. It may, of course, be introduced artificially by inoculation, as demonstrated on the lower animals. When it enters by the mouth and nose, it may as dust pass directly into the air passages and lungs, or, being detained in the mouth, be swallowed with the saliva and so reach the digestive tract. Contained in food or drink, it may pass directly into the stomach and intestines.

It has been definitely proved that it may penetrate the healthy mucous membrane of the intestinal tube, pass into the lymphatic circulation without leaving the

slightest lesion or trace of its passage, find its way into the thoracic duct, so into the general circulation and finally into the lungs. Therefore, its presence in the lung, coincident with its absence in the intestinal wall, does not all prove that it was not originally introduced in food or drink.

The early tuberculous affections of infancy, meningitis and tabes mesenterica, are generally due to the use of infected milk or to artificial feeding.

These considerations prepare us for the question whether, in view of the thousands of human beings who are expectorating tuberculous matter and depositing it with their urine and feces, great numbers of these bacilli must not find their way into our streams and constitute a source of pollution of our drinking water in many instances.

This inquiry is particularly pertinent in regard to the opportunity for dairy cattle to become infected themselves and to convey the infection to their milk if they drink from streams close to the source of pollution. Any one who has watched cattle drinking in a stream can readily understand how this might occur. Even when they do not wade in to a sufficient depth to immerse their teats and udders, in their efforts to drive away flies they throw the water dripping from their mouths and from the ends of their tails over their sides and udders. From the stream they usually go direct to the milking. With the carelessness which prevails on the average farm the milker finds no difficulty in mixing the milk which is distributed over the outside of the teats with any organic filth which may be clinging to them, as well as to his own hands, and allowing it, so contaminated, to drop into the milk pail.

### EXPERIMENTS TO ASCERTAIN THE PRESENCE OF TUBERCLE BACILLI IN SEWAGE.

In order to remove this hypothesis of the possible contamination of water supplies from the realm of mere theory and place it on a substantial basis, I have been conducting a series of experiments, with the cooperation of Dr. Herbert Fox, chief of the laboratories of the State Department of Health to determine whether tubercle bacilli may be found in sewage, and, if so, to what extent. The pollution of water supplies by the excreta of typhoid fever, of dysentery, of cholera and of diarrhea, has been so evident and of such constant occurrence that it has filled our field of vision to the exclusion of the possibilities of such pollution by the poisons of other diseases. Tuberculosis is one which has been thus overlooked. I know of no investigations made or published in order to determine the facts in this matter up to the present time.

So far my researches have been limited to the examination of the sewage from the Rush Hospital for Consumption and Allied Diseases, West Philadelphia, the sewage from the White Haven Sanatorium for Consumptives, and the mixed sewage from the sewer outlet at South Street Bridge, West Philadelphia.

The sewage from the main outlet into the sewer from the Rush Hospital, taken November 24, was largely fluid, containing some solid fecal matter, and what was apparently refuse from the kitchen.

The sample was well shaken, the solid portions broken up with a rod and portions of 1, 2.5, 5 and 10 and 20 c.c. pipetted into centrifuge tubes, the first four being made equal to the bulk of the last one, with sterile water. These tubes were centrifuged for eleven hours, with one



intermission to remove supernatant liquid and add fresh sterile water to them. After centrifugalization the solid sediment was spread on glass slides, using the entire 1 c.c. at the bottom of each tube. These slides were stained with Ziehl-Nielson carbol fuchsin for five minutes; one set was decolorized and counterstained with a saturated solution of methylene blue in absolute alcohol, and another was first decolorized with a 25 per cent. solution of sulphuric acid in absolute alcohol and counterstained with Loeffler's, while a third was decolorized and counterstained by Pappenheim's solution. This last method was used to corroborate the findings of one set of Rush Hospital sewage samples and those from White Haven. In every instance that tubercle bacilli were found in smears decolorized by the 25 per cent. sulphuric acid in absolute alcohol, they were also found on preparations treated with the Pappenheim solution. This method is declared a final tinctorial test by Pappenheim,<sup>1</sup> Simon<sup>2</sup> and Rosenberger (as yet unpublished). Every slide was subjected to the search of an hour under a one-twelfth oil immersion Zeiss with No. 6 compensation ocular. The following counts are given on the methods in which the slides are decolorized by the sulphuric acid alcohol method, because of the clearness of the field.

One undoubted tubercle bacillus was found on the slide containing the sediment of 1 c.c.; 2.5 c.c. showed three tubercle bacilli; 5 c.c. showed seven; 10 c.c. showed ten, and tubercle bacilli were found to be present in the centrifuged portion of 20 c.c., but their number was not counted. All these figures represent the search of one hour with a mechanical stage.

On December 17 another sample was taken at the same place. In this sample the result was practically the same as that above outlined. The number of organisms demonstrable in the slides made by identical methods was found to decrease appreciably when the sewage was kept under artificial conditions, that is, in large dark bottles in the icebox.

	Weeks elapsed.—			
	0.	1 week.	2 weeks.	4 weeks.
No. of organisms in 1 c.c. ....	1	1	0	0
No. of organisms in 5 c.c. ....	6	3	1	1
No. of organisms in 10 c.c. ....	8	+	2	1
No. of organisms in 20 c.c.				
(Average 3 counts) . . . . .	+	6	2	2

Samples were taken Jan. 4, 1907, of the sewage from the bactericidal filter-plant of the White Haven Sanatorium for Consumptives. Portions were taken from the mixed sewage, from the solid sediment after filtration, and from the effluent. The samples were given exactly the same treatment outlined for the sewage at the Rush Hospital, and equal volumes taken. The counts by the sulphuric acid alcohol method and the preparations decolorized and counterstained by the Pappenheim solution are practically identical. The counts are given according to the sulphuric acid alcohol method for the reason above mentioned.

In the stained sediment from 1 c.c. and 5 c.c. of the mixed sewage no tubercle bacilli were found, but they were found sparsely when the sediment of 10 c.c. was stained. This sediment stained so diffusely with methylene blue that it was practically impossible to see all fields clearly and some may have been overlooked. The solid sediment was removed from one of the chambers eighteen inches below the surface, as far down as was possible to reach. It was a dark, foul-smelling mass,

about the consistency of feces and not dry as far down as could be seen. The mass was macerated with an equal quantity of sterile water, well mixed with the rod and portions centrifuged. The sediment of 1 c.c. of this mixture showed two tubercle bacilli after an hour's search. The effluent from this filter plant was taken directly into the bottle as it bubbled out of the ground about 200 feet down hill from the separation chamber. It was a turbid fluid and showed a bacterial count of 350,000. Typical acid-fast bacilli could be demonstrated in quantities of 10 c.c. after the search of one-half hour. They were in clumps and not easily enumerated. The sediment of smaller quantities failed to show any such organisms.

The sewage from the Schuylkill river was taken at the mouth of the sewer below South Street bridge, West Philadelphia. One hundred cubic centimeters were centrifugalized for twelve hours, the sediment thoroughly mixed from the several centrifuge tubes, recentrifugalized and dried in the hot air oven, softened with normal salt solution, again centrifuged, the supernatant liquid poured off, dried again in the hot-air oven, softened with salt solution and spread on four glass slides for staining purposes. The reason for these several washings was the presence of a scum or coating over the sediment when dried after the first centrifugalization. No organisms in any way comparable to the *Bacillus tuberculosis* could be found. In preparations decolorized by 5 per cent. hydrochloric acid no acid-fast organisms were found; this was done to see if the smegma bacillus was present in the sewage. There were no masses of dejecta, but the fluid had a distinct fecal odor.

The experimental efforts at producing tuberculosis in guinea-pigs have been omitted up to this point because they can be treated together, their results being uniformly negative. The sediment in the several instances directly after centrifugation was subjected to temperatures of 60, 65 and 70 C. for fifteen, seven and two minutes, respectively, with the hopes of killing off the sewage organisms, particularly the spore-formers, without doing any damage to the tubercle bacilli. Guinea-pigs inoculated with this heated sediment either succumbed shortly after the inoculation or, when they survived this, failed to show any pathologic lesion of tuberculosis. In order to have the organisms in their vegetative state sediment from a large amount of sewage was incubated at 35 C. for twenty hours, centrifuged for a few minutes and this sediment subjected to heat as above outlined. The second centrifugalization was only done long enough (about twenty minutes) to throw down a sufficient sediment with which to work, a complete sedimentation requiring time sufficient to permit further spore formation. The results of inoculation into guinea-pigs were also negative. In smears made from some of the injection material the typical acid-fast organisms were found, but they could not be discovered in smears made from the peritonem or organs of pigs dying shortly after injection.

This does not prove that the acid-fast bacilli were not tubercle bacilli. The discovery by stain of tubercle bacilli in sewage does not prove that they were viable. When taken direct from the sewer of the Rush Hospital and White Haven Sanatorium it is assumable that they still live when so recently from the human body. The fact that no tuberculosis was produced does not militate against our assumption of the identity of these acid-fast organisms because of the few that were introduced.

1. Berl. klin. Wchnschr., 1898, No. 37.  
2. Clinical Diagnosis, 1904.



inasmuch as we were obliged to use small quantities of the sediment to lessen the action of the accompanying germs which we could not kill or remove. Attempts at cultivation with pieces of organs and coagulated blood serum were, of course, failures.

#### EXPERIMENTAL WORK ON THE VIABILITY OF TUBERCLE BACILLI AND SEWAGE ORGANISMS.

At the outset of this work some hope was placed on the effect of sunlight on the sewage organisms. Later eosin with its well-known bactericidal activity was added to our means of removing the contaminating bacteria. Early in our experimentation the effect of sunlight on tubercle bacilli smeared and dried on filter paper was determined. Direct sunlight on these papers was sufficient to kill the tubercle bacilli in twelve minutes (April, 1907). The bacteria-bearing strips were exposed in open Petri dishes and then transferred to tubes of glycerin veal agar on which the stock was growing well at that time. In July and October, 1907, experiments on the effect of sunlight and eosin on the surface growths in flasks were made. The experiment was set as follows: One set of flasks was kept as control and one was used as control and exposed to the sunlight; to one set of flasks was added 0.03 per cent. eosin solution and on the surface of the third set a 2 per cent. eosin in gelatin was smeared in as thin a film as possible. While I am aware that this procedure is not satisfactory to determine the lethal sunlight exposure, it was hoped that some assistance might be given toward determining what would happen to tubercle bacilli in a thin layer of emulsified sewage sediment exposed in these flasks. The possibility of error in this technic is manifest. It is striking, however, that the transplants from the sets which were exposed in flasks smeared on the outside with eosin did not grow after one hour exposure, although the two tests were made when the sun's power is quite different—July and October.

#### EFFECT OF SUNLIGHT AND EOSIN ON SURFACE GROWTHS.

	Control.	$\frac{1}{2}$ hr.	1 hr.	2 hrs.	4 hrs.	8 hrs.
August 19:						
Control dark.....	+	+	+	+	+	+
Control without eosin.....	+	+	+	+	+	+
Eosin in solution 0.03 %..	+	+	+	+	+	+
Eosin smeared on surface..	+	+	+	+	+	+
October 19:						
Control dark.....	+	+	+	+	+	+
Control without eosin.....	+	+	+	+	+	+
Eosin in solution 0.03 %..	+	+	+	+	+	+
Eosin smeared on surface..	+	+	+	+	+	+

It appears from this that the photodynamic power of eosin is effective after half an hour, or an hour at least, on tubercle bacilli. It restrains growth after transplantation, at any rate.

In making a control experiment with sewage a fresh positive Rush Hospital sewage was rapidly centrifugalized and the sediment allowed to germinate twenty hours in 90 per cent. by bulk of bouillon. This was again rapidly centrifugalized and a thick emulsion of the sediment placed in our usual tubercle bacilli flasks to the depth of about two millimeters. These were placed in lots like the last experiment, one set as control, one received 0.03 per cent. eosin and the third had a gelatin coating of eosin. The results of their growth after direct sun exposure on a very bright day (although Dec. 14, 1907) require no chart. Transplants made with a loop and with the extreme point of a straight needle, touching only the surface, gave marked positive growth of contaminating organisms after four hours.

The results of exposing dried sewage on filter paper as was done with the tubercle bacilli was likewise disap-

pointing. The germinated sewage was rapidly sedimented and this mass ground up to a state approaching perfect homogeneity. It was then distributed by a pipette in equal quantities on slips of filter paper which were placed in a vacuum desiccator without acid for ten minutes, at the lapse of which they were still a little damp. The exposure to the sun was made in two minutes after removal from the desiccator, the time elapsing from removal from the incubator to the sun exposure being about forty minutes. The slips were then exposed directly to the sun for one, two, five, ten, thirty and sixty minutes and transplanted to neutral bouillon. Every exposure grew well.

It is evident from these few sunlight and eosin tests that longer exposure is required to kill the sewage organisms than would suffice to restrain growth of the tubercle bacilli, and that this technic is therefore impracticable.

We are dealing with such a small number of organisms in this sewage compared to the number usually employed to produce artificial lesions that some means must be found to render sewage organisms entirely innocuous, which means must be such that will not harm the tubercle bacillus itself. Dr. Fox and I are still working on this problem, but can not as yet report much progress. The finding of tubercle bacilli in smears made from sedimented sewage of tuberculosis hospitals by eminently trustworthy methods, is sufficient proof to us that these organisms are present in such sewage and may therefore be in the watercourses into which the sewage flows.

#### SOME PRACTICAL CONSIDERATIONS IN THE TREATMENT OF INFLAMMATION.\*

JAMES EDWARD POWER, D.M.D.

PROVIDENCE, R. I.

To treat intelligently any and all of the pathologic conditions which may present themselves in the oral cavity the practitioner, whether he be a physician or dentist, must understand the underlying process which is productive of these conditions, namely, inflammation.

Inflammation has been defined so many times that it is now a difficult matter to select a definition that will be accepted by all. Perhaps one of the best definitions is the one propounded by Grawitz, wherein he says that "inflammation is the reaction of irritated and damaged tissues which still retain vitality." The reaction referred to by Grawitz includes a number of successive changes, commencing with stimulation or irritation and ending with suppuration or pus formation. In conjunction with, and as a result of, the process just referred to, we have a manifestation of four other important conditions, dolor, rubor, calor, tumor—pain, redness, heat and swelling.

#### THE INFLAMMATORY PROCESS.

By way of preface, I shall briefly describe the changes which take place in the living tissue as a result of inflammation, because it is on this that I shall base my reasons for the treatment of the conditions to which I shall refer later. Sutton compares the local systemic conditions of inflammation to a conflict of living men, instead of living cells, and it is worth repeating here,

\* Read in the Section on Stomatology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



as it may explain many of the numerous changes which take place and which cause heat, redness, pain and swelling.

The leucocytes are the defending army, the vessels its lines of communication, the leucocytes being, in effect, the standing army maintained by every composite organism. When this body is invaded by bacteria or other irritants, information of the invasion is telegraphed by means of the vasomotor nerves, and leucocytes are pushed to the front, reinforcements being rapidly furnished so that the standing army of white blood corpuscles may be increased to thirty or forty times the normal number. In this conflict, cells die, and often are eaten by their companions. Frequently the slaughter is so great that the tissues become burdened by the dead bodies of the soldiers in the form of pus, the activity of the cells being proven by the fact that their protoplasm often contains bacilli in various stages of destruction. These dead cells, like the corpses of soldiers who fall in battle, later become hurtful to the organism which during their lives it was their duty to protect, for they are fertile sources of septicemia and pyemia.

The other symptoms, which are known as the cardinal symptoms, may be clearly explained by the following example: We will compare the blood vessels to flexible rubber tubes. Under normal conditions, the system provides for the passage of a certain quantity of blood through these tubes or blood vessels. Now, if anything, whether of a chemical or a physical nature, is introduced into any part of the body, and can interfere with or destroy the natural harmony of the part, the system will try to expel it, because it is a foreign body, and as long as it is present it will act as an irritant. The first changes which take place in the tissues, as a result of this irritant, cause a swelling of the tissues in which the blood vessels are imbedded, thus subjecting the elastic sides of the blood vessels to pressure and reducing their caliber. The same quantity of blood must then pass through the arteries as would pass through under normal conditions. We have present, therefore, this condition: Blood rushing through the vessels at an increased rate of speed on account of their diminished caliber. The rushing of blood against the sides of the vessels causes friction. Stimulation of the dilators of the vasomotor nervous system follows, allowing a greater amount of blood to rush to the capillaries and to redden the surface of the part. Heat also is generated from the friction produced by this rush of blood against the sides of the vessels: this general disturbance produces stimulation of the nerve terminals, and causes pain. All the symptoms are now accounted for, except impairment or loss of function. This last step I shall pass, as we can readily see that it is made possible only by the presence of these other symptoms which I have tried to describe.

In approaching all cases of inflammation, the first step in progressive treatment is the removal of the cause. This, I am sure, is accepted by all as the proper step to pursue, regardless of what part may be involved. Yet members of both the medical and dental profession, whose acts we must perhaps attribute to carelessness, are constantly making exception to this rule, and it is for this reason that I desire to present to this body some of the conditions and cases which are constantly coming under my observation.

First, we will consider the treatment of abscessed teeth, a pathologic process which I believe is miscalled more often than any other condition which I can recall at this time. How many times do we hear the intelligent but thoughtless practitioner refer to them as ulcerated

teeth, and this by men who, if requested to define abscess and ulcer, would promptly reply that an abscess is a circumscribed cavity filled with pus, and that an ulcer is an open granulating sore. Now, if an ulcer is an open granulating sore, how can a tooth become ulcerated?

#### PATHOLOGY OF ABSCESS FORMATION

In order to build a foundation on which to base my future remarks, I shall briefly describe what takes place both in the tooth and in the surrounding tissues during the formation of an abscess. The commencement is in the involvement of the pulp. This may be effected by a blow from some external force, from the leverage brought about by careless extraction, or from improper treatment of irregularities of the teeth. Any of these forces will cause undue pressure on the vessels entering the apical foramen of the tooth; a strangulation of the vessels then takes place, the nourishment of the pulp is suspended and its vitality destroyed.

The same condition may also be caused by the direct pressure of a filling placed against the pulp, by the direct action of micro-organisms on the pulp by virtue of a carious condition of the tooth, or by the indirect action of thermal changes passing through a metallic filling which has been used to restore a carious tooth, or, again, by the action of arsenic or other drugs sometimes contained in filling material. Whether or not the cause is direct or indirect, physical or chemical, the same pathologic phenomena will first manifest themselves in the pulp of the tooth.

When the blood supply is interrupted or cut off, the pulp ceases to be nourished and a degeneration takes place. All the progressive steps of inflammation which I have described will occur in the pulp and, if not interrupted, will terminate in the formation of pus. The tooth becomes a foreign body and the system tries to expel it. The lodgment of the tooth in its bony socket prevents the accomplishment of this end and we have two opposing forces: First, the system trying to expel the tooth, and, second, the position of the tooth in the jaws preventing this expulsion. Thus we have present irritation, the first step of inflammation. Then what happens?

The inflammatory processes repeat themselves in the tissues outside the tooth substance, and the system partially accomplishes its end by loosening the tooth. All abscessed teeth will become loose some time during the process which I am describing. A breaking down of the surrounding tissues follows, with the formation of more pus in the tissues adjacent to the diseased tooth. Finally the pus will manifest itself by burrowing in the line of least resistance, through these tissues to the outer surface, often breaking through the face and making an ugly wound. Or, by infection, the inflammatory processes will repeat themselves in the bony substances, causing necrosis, which often endangers the life of the individual as in the case which I shall describe. One thing is certain, that as soon as any tooth becomes a foreign body from any cause, Nature never does and never will submit to its presence. The action of the system in trying to expel foreign bodies is many times beautifully illustrated in the cases where needles broken in the tissues of the fingers will present themselves later in the tissues of the arm.

#### THE FALLACY OF WAITING.

Now, if the removal of the cause is the first progressive step in the treatment of inflammatory condition



why do men persist in advising patients not to have abscessed teeth extracted until the swelling of the face subsides, and in supplementing this advice by stating that the extraction of the tooth would be a very dangerous procedure? Would these same men advise non-interference with a gangrenous appendix until the swelling of the abdomen had subsided? Would they recommend leaving a piece of steel in the eye, a piece of glass in the foot, or a splinter in the hand until the swelling of these parts had subsided? If they would not so advise, why do they do so in cases where a tooth is involved? If they do recommend postponing the extraction, I believe that I am justified in saying to them that they do not act on the fundamental principles of pathology, and that, therefore, they should not assume that responsibility which is associated with the treatment of disease which many times involves a life. Of course, I do not recommend the extraction of all abscessed teeth, because many times the skilled dentist, by proper treatment, may prolong their period of usefulness for many years. What I do maintain, however, is that if the tooth is condemned the swelling of the face or other conditions should not interfere with its removal, and the sooner it is extracted the better.

In the treatment of inflammation we may be required to employ external applications. Shall we advise the application of heat or cold? Judging by my own experience, in both hospital and private practice, I believe I have seen more damage result from the application of hot poultices to the face than from any other one cause which I can remember. Here, again, I am forced to conclude that the practitioner who advises the application of heat in the first stages of inflammation for the purpose of aborting the abscess formation is not giving to his patient the proper treatment, and also that his advice does conflict with tried and true theory and practice in the treatment of inflammatory conditions.

I stated in the earlier part of this paper that, besides the removal of the cause, the removal of any of the cardinal symptoms would be a progressive step in the treatment. I believe that every condition which presents itself in inflammation is dependent on the preceding ones. In the early stages heat seems to be one of the predominating features. I apply ice, therefore, to remove this condition by keeping the parts cool through vasoconstriction, believing that I am limiting, if not entirely checking, the progressive action of the factors producing heat. I am describing the treatment I would recommend in the incipient stages of inflammation before the abscess had formed.

I can not understand why practitioners apply hot poultices to prevent a condition which is not only made possible by heat, but is greatly aggravated thereby. Heat is one of the cardinal symptoms, one of the conditions we wish to eliminate on account of the important function which it performs in accomplishing that which we are trying to prevent, yet even in view of this fact I heard two of our most reputable men make the statement last winter that they would apply ice only in cases where pus was present, and would apply heat in all other cases. Basing the treatment on my conception of what inflammation really means, I will say that I am satisfied to use ice in all cases, except where pus has formed, or where the inflammatory process has so far progressed as to make certain formation of pus and hence render impossible the abortion of an abscess. If pus has already formed, then I resort to the knife rather than to poultices.

preferring a clear incision to a ragged wound which is always made by pus forcing its way through the tissues and finally leaving an ugly scar.

#### AN ILLUSTRATIVE CASE.

The following case will show what often may be and many times is the result of the treatment which I am condemning: I was called to see a child 5 years of age who was suffering from an abscessed temporary tooth. He had been taken to a dentist for advice some days previous. The dentist told the child's parents that to extract the tooth would be a very dangerous procedure. The tooth was not extracted and the pain and swelling increased from day to day. The mother finally took the child to a physician for advice. He confirmed the advice already given by the dentist, but supplemented it by telling her to apply hot flaxseed poultices to the child's face. In forty-eight hours the poultices accomplished their end and caused an irreparable injury. The tissues became distorted and the pus finally forced itself through.

The physician continued to treat the child during the next five weeks, at the end of which time the whole of the left superior maxilla and a portion of the malar bone were involved by necrosis. I was then asked to see the patient and found him in the condition just described. Pressure on the face anywhere below the line of the eyes would cause a large quantity of thick pus to flow from the break in the tissues under the eye, also from the nose and from the mouth. I advised an immediate operation, first explaining to the mother the possibilities of such a step in so serious a case.

Two operations were performed on the child; the first consisted in removing a large part of the superior maxilla from the lateral tooth back to the tuberosity of the superior maxilla. This section did not extend to the center of the hard palate. The method employed consisted in placing my finger between the teeth and cheek, holding the cheek out of the way while I dissected the cheek from the bone in such a manner that I could pass my finger up by the side of the jaw through the opening under the eye. By so doing I was able to simplify the operation as well as getting a continuous passage. Irrigation also was made more thorough, and the small particles of necrotic bone which have the power of re-infecting the parts operated on were washed away. At the end of four weeks a second operation was performed, which consisted in the removal of a portion of the malar bone.

To prevent the opening which existed under the eye from closing from the outer surface I placed powder in it. The secretion from the eye mixing with the powder formed a hard mass. The motion of the tissues against this hard mass produced irritation, which was causing more inflammation. Finally, after experimenting with several antiseptic powders, I found one on which water had little if any effect. Every morning I broke the adhesions on the outer surface which had formed during the night and filled the depressed raw cavity with this powder. After a few days granulation began to take place in the cavity and the wound closed from the bottom. Restoration of the contour was the result instead of the unsightly depression and distortion of the eyelid, which would have been present if the wound had been allowed to close from without inward. The restoration of the contour of the cheek, when the patient was discharged, was due to the tissues becoming cartilaginous and filling the space formerly occupied by the bone.



Every step in this operation was carried out inside the mouth. I always avoid making incisions in the external surface of the face if it is possible so to do. If, however, we are obliged to make an external incision it is better to make it through one of the natural wrinkles of the face, for then, as shown here, it will at least be partly concealed. Following the second operation the case progressed favorably for five or six days. Then pus began to form again and was working back toward the ear. You can readily understand the dangers and complications which might arise if the pus reached the temporomaxillary articulation. So I made a small incision a little farther back on the external surface of the cheek near the ramus of the jaw, of which no trace was left.

#### THE KIND OF INCISION.

Some writers express the belief that in order to evacuate the contents of an abscess it is necessary to make the incision the entire length of the abscess. In those cases in which the incision is made within the oral cavity the length of the incision is not important. But when (even if seldom) the incision is to be made externally, our attention should be directed to the cosmetic effect which our treatment will have. Under such circumstances a large incision is unnecessary. I usually make the incision of sufficient depth to reach the pus but as short as possible, seldom making it longer than the blade of the knife, and in a number of instances much shorter, always using gauze to keep it open.

I have seen many operators after opening an abscess exert pressure on it for the purpose of expelling the pus. I believe that this part of the treatment is not necessary. It causes a great amount of unnecessary pain and may, by bruising the already pathologic tissues, be productive of more inflammation, with a probable absorption of the pus into the circulation because of this pressure. The dangers which may result from such practice are so broad that I hesitate even to define their boundaries. Pressure should not be made on the sides of the abscess after it has been incised. The natural tendency of the tissues to resume their normal condition will, by their own contraction, without external interference, accomplish everything that is desired, with less pain and with better results.

#### HYPODERMIC INJECTIONS.

As there are many cases in which the improper use of the hypodermic syringe has caused much trouble, perhaps it is within the scope of this paper to direct attention to a few of the reasons why this trouble occurs so often. It seems hardly necessary in this age to refer to the importance of sterilized instruments, but on account of some errors which have been caused by ignorance and indifference on the part of the operator it may be useful in considering this problem of hypodermic medication to refer briefly to the need of asepsis.

First, we should use an anesthetic with whose ingredients we are thoroughly familiar. Second, we must be sure that the instruments which we are about to use are sterilized. In my practice, even though I am sure that the instruments, especially the hypodermic syringe, are surgically clean, I always pass the needle through a Bunsen flame. This will destroy any micro-organisms that may come in contact with the needle between the time of sterilization and the time at which I use it. I always use an all-metal removable piston syringe for this purpose, removing the piston and filling the barrel through the top rather than drawing the fluid

through the needle point. I have seen operators, even within the past year, inject a local anesthetic into the gum after first filling the barrel by introducing the needle point into the vessel containing the anesthetic and drawing the latter through the needle into the barrel. Subsequently they have injected the fluid into the gum tissue, refilling the syringe by repeating the process just described. It is easy to understand that if the needle point which is sterilized is introduced into the diseased tissues and then into the bottle of anesthetic, the anesthetic will be contaminated. The next patient, regardless of how much care may have been exercised in sterilizing, will have injected into his tissues a solution containing micro-organisms which can and may destroy not only the vitality of the part but perhaps his life as well.

#### GIVE THE SOLUTION TIME TO ACT.

Why is there such a variation in the results which are obtained by the different men who have used local anesthetics in performing minor surgical operations, such as the extraction of teeth, etc.? It would seem that many times the operator does not allow sufficient time to elapse for the anesthetic to accomplish its end. In his anxiety to extract the tooth, before the effects of the anesthetic pass away, he really extracts the tooth without anesthesia. After the injection of the anesthetizing fluid it is best to wait from thirty seconds to a minute, sometimes even a longer period, before commencing to operate.

In a majority of cases in which we resort to local anesthesia the parts are already in a highly inflammatory condition. Again, the first step in the treatment should be, if possible, the removal of the cause. In the case where a tooth is the cause we should exercise much care in introducing the anesthetic into the tissues because in treating one condition we may start an equally serious one. The technic is perhaps the most important step in the whole procedure, not only from the viewpoint of making the injection of the anesthetic effective, as well as the extraction of the tooth painless, but from the more important point of avoiding a future condition which is not only more troublesome to treat, but which has associated with it a greater danger than accompanies the condition which we are now treating.

Before injecting the anesthetic wash the whole mouth by syringing it with warm water which contains a portion of any of the many mouth washes. The selection of this must be left to the judgment of the operator. Next wash the surface of the tissue into which the hypodermic needle is to be introduced with 70 per cent. alcohol. In this way we have prepared the field of operation and have reduced, so far as we can, the danger of forcing more bacteria into the already diseased tissues.

#### THE TECHNIC OF INJECTION.

The needle is inserted into the gum tissue at a right angle to the tooth. Before exerting any pressure on the piston withdraw the needle a short distance, but not, of course, entirely out of the tissues. This will leave a space between the end of the canal which the hypodermic needle has made by its first insertion and the needle in its new position. Next, when we press the piston, the pressure which would ordinarily be exerted on the tissues if this space did not exist is reduced and the pain is slight. I press the piston as lightly as I can at first in order to give the anesthetic an opportunity to



become diffused before forcing it into the tissues. Then I gradually increase the pressure on the piston, and the tissues assume a whitish appearance in the form of a circle in the area of the needle.

In many cases this process must be repeated before anesthesia is complete. In such cases I reintroduce the needle in the manner described, always placing the needle within the whitened circular area, no matter how many injections are required. If I can keep introducing the needle into this whitened area, which by virtue of the pressure and the anesthetic becomes larger each time, the only acute pain which is experienced by the patient is that from the first introduction of the needle.

I do not try to inject the anesthetic around the end of the root of the tooth, first because I find that the results are just as good without doing so, and I avoid also another danger. I treated some patients in whom the operator had introduced the needle into the tissues parallel with the abscessed tooth, aiming to get the anesthetic as near the abscess as possible, and then forcing it into the tissues under high pressure. If we reflect for a moment on the condition of the tissues in the region of the abscessed tooth we will readily see that they are all stretched and distorted and their tonicity, which would under normal conditions be present, is destroyed. We must bear in mind that the pus which is contained in the abscess sac is only prevented from commencing a pyemic or septicemic career by a thin membrane which may be easily broken.

Now, if the operator places his needle so that the anesthetizing fluid can be forced into the already over-filled abscess sac, the sac may be broken by the pressure of the anesthetic forcing its way into it. If this does happen, there is a probability of the micro-organisms which fill this sac entering the circulation and producing a septicemia. The condition just described is one in which the abscess is completely formed, but the same principles which are involved in this case are involved in every case from the commencement of the formation of an abscess to its completion, and the dangers which I have tried to describe are in proportion to the stage of the disease which we are treating.

I have purposely avoided reference to the minor details on the subject of inflammation because I am recording the practical experience for the busy practitioner, the exigencies of whose life compel him to get at the facts quickly.

248 Butler Exchange.

### INTERSTITIAL GINGIVITIS.\*

EDWARD CORNELIUS BRIGGS, M.D.

Professor of Materia Medica and Therapeutics, Harvard University  
Dental School.  
BOSTON.

While the term "Riggs' Disease" conveys a pretty definite meaning to the profession and to a majority of the laity, many of the profession have felt that it was not a term of sufficient scientific import and rather tended to emphasize the poverty of nomenclature in the dental department of medicine.

This led to the search for a more scientific name, and "pyorrhea alveolaris" became almost universal. This term, being descriptive of but one of many symptoms, failed to satisfy most of the students of this disease, and

it remained for Talbot to point out that in all cases there was an underlying inflammation of the connective tissue of the gingiva and to suggest the name of "interstitial gingivitis."

#### CAUSE.

The cause of interstitial gingivitis is still a question of dispute, although many theories have been put forward, some, if not all, of utmost plausibility. The truth of the matter probably is that the causes are many, or rather, that many are the conditions in the economy which give rise to the disturbances in the nervous and circulatory system producing the breaking down of the tissues about the roots of the teeth.

That it is a local expression of systemic disorder seems to me the best solution, and this is the opinion reached by many of our best observers. The opponents of this theory argue that as the disease does not exist where there are no teeth, it is, therefore, a purely local disease. This seems to me a specious argument, which if carried out to the fullest extent would admit the existence of few if any diseases of general or systemic origin when the result of that disease expresses itself in definite localities. Take, for instance, gangrene of a toe: Would the absence of that toe and, therefore, of disease in that member preclude the possibility of the organic malady which tends to gangrene?

By many observers a connection has apparently been traced between interstitial gingivitis and rheumatism; this is in turn refuted by those who find cases in which no rheumatism can be traced. It is my belief that both are but expressions of metabolic disorganization.

Various other constitutional diseases, such as renal, heart and liver disturbances, have been charged with the paternity of interstitial gingivitis. Each disease has in individual cases been apparently proved guilty, but the very failure at other times to find the result and the alleged cause associated seems to prove that back of them all is a common cause.

In the attempt to find such cause it may be well to see if it is possible to trace a condition precedent to these diseases and common to them all.

Goldthwaite, in his investigations of rheumatism, finds more than a coincidence in the presence of pus as an antecedent in many cases of rheumatism. Elimination of pus from the frontal sinus, antrum, tonsils and alveolar regions has given great relief in his cases.

Many grave renal diseases, while causing untold misery from the fact that the disorganized kidneys can not eliminate toxic and irritating products of metamorphosis, are, according to one authority, caused by irritation from products of faulty metabolism, due to imperfect or improper digestion in the alimentary canal.

Talbot, writing on autointoxication, says that interstitial gingivitis is found in full sway in Bright's disease, diabetes, rheumatism, gout, asthma, nervous disorders, etc., before these diseases have become of sufficient importance to be observed by the physician.

Fletcher, the advocate of thorough mastication, who holds the distinction of having created a new word in our vocabulary, namely, "to Fletcherize," maintains that if his precepts are followed and perfect digestion thereby produced, muscular pain or soreness can not occur. Muscles may become fatigued and refuse to act, but the sensations of cramp or lameness which most people feel after prolonged or unusual exertion exist only in those cases where there has been either improper digestion or faulty elimination or both.

\* Read in the Section on Stomatology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



The conclusion, therefore, seems to follow that the ultimate cause of interstitial gingivitis is the common cause of many chronic organic diseases, that is, toxins in the intestinal canal, whether they be poisons absorbed from some external source or thrown off as a result of physiologic chemical action on food good in nutritive quality but wrong in quantity or improperly prepared for the alimentary canal.

Cause and effect: What a problem it is to prove which is which! If interstitial gingivitis occurs about a malposed tooth, is it simply because the tooth is there and because its position harbors the disease? Or has the malposition led to improper mastication, faulty metabolism and the breaking down of interstitial tissue at a weak spot?

Does the deposit of calcareous substance on the teeth cause interstitial gingivitis? Or has a weak and flabby mastication produced autointoxication, permitted the deposits to form, and thus presented a nidus for the interstitial inflammation?

It is my belief that the first cause lies in the intestinal tract and that given perfect conditions there will be no interstitial gingivitis. Mark the words, "perfect conditions"—the various and often comparatively slight causes which contribute to imperfect conditions will be touched on in the section of the paper devoted to treatment.

Intestinal putrefaction produces indican in the urine, and as indican will always be found in excess in cases of pus formation, it seems logical to charge the indican in the tissues with being largely responsible for the condition which leads to the breaking down into pus.

As causes of intestinal putrefaction Fossune cites the following:

1. Improper mastication, resulting in gastritis with lessened hydrochloric acid.

2. Gastritis, the lessened hydrochloric acid stimulating pancreatic secretions. In such cases delayed digestion carries the peptones too far down the tract to be absorbed and the coli communis changes it to indol, skatol, etc.

3. Excess of sugar, due to catarrh following fermentation and accompanied by much mucus so that digestion is delayed by (a) impoverished juices and (b) mechanical obstruction caused by presence of too much mucus.

4. Excess of proteids, with normal digestion.

5. Too much fat in food, mechanically interfering with absorption, though the digestion and the quantity of proteids are normal.

6. Slow digestion, with normal quantity of proteids.

7. Lack of bile, thus favoring putrefaction, as bile is strongly antiseptic.

8. Weak muscular action of the intestines.

Talbot lays great stress on autointoxication as a cause of this disease and has pretty conclusively shown that the uric acid habit is not a cause of interstitial gingivitis, but, like interstitial gingivitis, is only an expression of disturbed nutrition.

As has been said, observers have always shown a tendency to connect interstitial gingivitis with other systemic diseases—diseases whose origin is generally conceded to be due to faulty metabolism. Hence we find one man attributing the disease to rheumatism, another to gout, another to diabetes, etc., ignoring the fact that all these diseases have a first cause, which is faulty metabolism, and that, given the first cause, interstitial gin-

givitis becomes established, even in very young children (as scurvy) before the other diseases are diagnosed.

The treatment may be divided into, first, preventive and, second, curative, and each subdivided into local and systemic.

#### PREVENTIVE TREATMENT.

*Local.*—Inasmuch as it has been shown that the blood vessels of the gingiva become choked with the products of metabolism, it becomes an absolute necessity that the circulation should be assisted in every way possible.

Hence the advantage is seen of massage, of mildly stimulating mouth washes and, above all, of the stimulation resulting from the hand-polishing system for which Smith is the sponsor.

The patient should be instructed in the use of the tooth brush, it being a well-known fact among careful observers that many who brush their teeth faithfully many times a day never really clean them.

Inflammation of the mucus membrane, due to malocclusion or impaction, calls for the necessary correction, as such irritation easily becomes the starting point of interstitial gingivitis. This, perforce, leads to much regulating of the teeth, which was formerly neglected when there was no visible deformity, and to regulating at a much earlier age, since interstitial gingivitis, given the necessary condition for development, is no respecter of age.

And this again leads to the subject of Fletcherizing, or the thorough and proper use of the teeth. Without their proper physiologic and anatomic use, all organs and members of the body tend to waste away or become a prey to disease, and the teeth are no exception. It, therefore, becomes evident that even a perfect set of teeth perfectly cared for can not be maintained in perfect health without perfect use.

No stomatologist fulfils his mission who, though he may be in his technical care of the oral cavity, fails to hammer into the mind of his patient the paramount necessity of the thorough use of the teeth in mastication.

*Systemic.*—I fancy that any one who has followed me thus far recognizes that I at least believe that the starting point of interstitial gingivitis lies in the alimentary canal and that faulty metabolism, whether due to imperfect digestion and assimilation of true foods or to the ingestion of substances not properly classed as foods, such as alcohol, makes for a condition of the interstitial tissue which lends itself easily to inflammation.

As Talbot has reminded us, the blood vessels in the alveolar process can not readily expand to the pressure of the blood, and if that blood be charged with toxins, then with high pressure and sluggish circulation the breaking down into inflammation becomes easy. Thus physicians are brought face to face with the importance—yes, the necessity—of teaching temperance to their patients. Overeating and overdrinking are bound to fill the system with ptomains and ptomains largely of the toxic variety, and perhaps the worst thing about overdrinking is that it leads to overeating.

It should not be imagined that the small eater is necessarily not an overeater. He often eats some special kind of food to excess, as witness the sailors on long voyages who eat salt pork (and often not heartily) and become affected with scurvy (interstitial gingivitis).

Infants improperly or scantily fed have scurvy; and sometimes with plenty of variety at hand a man, through some perversion of taste, persists in eating



some particular kind of food which the system can not properly eliminate. Tea, coffee, alcohol and tobacco all have their charm, and almost every adult is a devotee of one or more of these stimulants. They are not foods; in fact, each to a greater or less degree, according to its use or abuse, becomes a factor in upsetting the physiologic balance. The patient, then, must be taught that if he dance he must pay the piper. At the age of 30, when the anatomic structure is complete, there is not the demand for tissue building that there was in youth. All material not necessary for the repair of the natural wear and tear of the machine consequently becomes a clog in the system and interferes with the circulation. I have found that two meals a day are amply sufficient for a fairly strenuous life the last twenty years. Again I call attention to Fletcher and the tests of his endurance as made at Yale. Youths should eat proper food properly, and adults should refrain from overeating and eating in ruts. Though the diet may be simple, yet its simplicity should contain a variety. If there must be a cereal every morning, it should be varied from one day to another—not a difficult matter in these days of so-called “breakfast foods.” And so with any article of food, constant and continued repetition should be avoided.

#### CURATIVE TREATMENT.

*Systemic.*—For the patient presenting himself with a well-established case of interstitial gingivitis it is necessary to pursue an active and somewhat drastic course, both systematically and locally. The systemic treatment will be considered first.

To clean out the intestine I prefer to use podophyllin in centigram doses, giving two at night, followed by a saline on arising; then, to purify the intestinal canal, an intestinal antiseptic tablet made up of the sulphocarbolates of zinc, lime and soda, one at noon, another at night. The podophyllin is repeated the second night and the rest of the treatment the next day, and so on until the physician is reasonably satisfied that the bowel has been thoroughly scoured and purified. This should be followed up with phosphate of soda, 60 centigrams, *t. i. d.* for an indefinite period, or until the local treatment is finished and the patient put on the general preventive treatment.

If there is much soreness of the gingiva or dark red spots, tender on pressure, indicative of a gouty tendency, salicylic acid or aspirin, 30 centigrams, *t. i. d.*, will often act magically. In obstinate cases it is well to try iodid of potassium, 30 centigrams, *t. i. d.*, not only because the presence of iodine in the system acts most kindly in all cases of inflammation of mucous membrane, but also because the physician can never be entirely sure that a specific taint is not complicating the case. The usefulness of iodine in mucous inflammation, and also the fact that interstitial gingivitis may often be the first indication of arteriosclerosis, make hydriodic acid a timely remedy in such cases.

Calcium sulphid, an old remedy for sterilizing the system and checking the formation of pus, has of late received renewed attention from practitioners who have found it possible to get a pure preparation. It seems to be a clinical fact that saturation of the system with calcium sulphid, about gm. 20 to gm. 30 in twenty-four hours, will check the formation of pus in both alveolar abscess and in interstitial gingivitis. From my own observation and practice I am convinced of its efficacy.

The opsonic index has been taken in this disease.

Treatment in accordance has been given a trial and favorable results reported.

The patient should be commanded to chew his food thoroughly, eating only what he can so chew.

The diet should be regulated, correcting the patient's tendency to take certain foods to excess and adding to his diet wholesome foods which he has eschewed owing to dislike or a fancied belief that they disagree with him. If the patient is over 30 the amount of flesh food ingested should be limited and the use of underdone meats discouraged. Almost invariably, on inquiry, it will be found that patients with interstitial gingivitis drink but little water. The deleterious effect of this habit in cases of interstitial gingivitis is too obvious to need further elucidation to the professional mind, but it is a condition too often overlooked. Six to eight glasses of water a day is little enough, yet few are they who drink as much. Obvious also is the importance of fresh air, exercise and deep breathing; yet these simple means for the establishment of good circulation are too often slighted or, because so obvious to the professional mind, their value is left for the patient to discover for himself.

To him the observance of these hygienic rules means simply an increase of his appetite, the indulgence of which in nine cases out of ten is just what should be avoided. It is elimination which should be sought, not further ingestion.

Old age, Metchnikoff says, is caused by the putrefaction of food in the colon. Measures to arrest or prevent this putrefaction tend to prolong life. He recommends lactic acid ferment and suggests buttermilk as a simple form of treatment.

Based on his suggestions, there are now on the market tablets of lactic acid ferment which, it is asserted, produce a clean, sweet colon and hence freedom from arteriosclerosis. I have been trying the effect of these with apparently good results. Patients will be found with well-marked interstitial gingivitis whose diet seems most correct. The patient may avow that he has a perfect stool with daily regularity, but on close questioning will admit that the stools are foul. It is in such cases that Fletcherism is demanded, for it should be remembered that Fletcher maintains that his method produces a stool absolutely free from odor. As a matter of fact these patients admit in nine cases out of ten that they bolt their food.

While realizing the importance of the practice of thorough mastication in these patients, it is well to remember the excellent temporary effects of intestinal antiseptics. Various writers have called attention to indications for treatment of the alimentary canal from observations of the condition of the tongue; for instance, a broad, thick, pallid tongue calls for alkaline treatment, both locally and systemically, and a pinched, dry, red tongue is evidence of need of acid treatment.

*Local.*—While the treatment up to this point has called for the keen attention and skill of the stomatologist, it is now that he has the final word and here that his skill and faith in his works bring about the real cure. For with interstitial gingivitis once established nothing will avail without the most thorough, persistent and intelligent local treatment.

Riggs, who wrote on this disease and to whom all honor is due (although I do shrink at giving the unscientific name of Riggs' disease to interstitial gingivitis), laid the greatest stress on the necessity of thoroughly scaling the teeth. Younger, who has done more



for the cause than any other living man, has hammered at this point most insistently. He says that the teeth must be scaled and that if to scale one tooth properly takes all of a long sitting the time must be so occupied and the one tooth done most thoroughly. He, as well as Riggs, has given the profession a set of scalers of great value to the operator. There are many others, notably Harlan, who have emphasized the importance of thorough scaling and devised instruments to facilitate the removal of deposits. I only wish to say that they have not put the matter forcefully enough. Those who have had experience in transplanting and replanting teeth know that a tooth should not only be clean and free from tartar, but that it must be smooth and polished. Many of the scalers of finest temper and cleverest design fail to leave the tooth in this condition and, therefore, they fail. The set of instruments invented by C. M. Carr do not scrape or draw-shave the teeth but plane them. When the tooth has been thoroughly planed by these instruments it is as smooth as glass. The varying lengths of operating shafts, curves, angles, etc., in devising which Carr has shown his genius, make it possible to reach every part of all teeth and their roots. He naturally emphasizes the importance of the perfect smoothness and cleanliness of the roots. In individual cases he can probably make his position good. His error is in considering the matter closed at that point and in not going deeper into cause and prevention. To sum up the instrumentation or operative treatment in interstitial gingivitis I do not hesitate to state that if with the teeth *in situ* the operator can produce the same freedom from deposits and the same polish that he could with the tooth in his hand and a cuttlefish disk in his engine, then he may be sure of curing for the time being any case of interstitial gingivitis. It is for the progressive operator to find the ways and means for doing this.

For the comfort of the patient and to enable the operator to work with deep and sure effect, it is almost a necessity to inject an anesthetic. Following are two good prescriptions for local anesthesia:

R.	gm. or c.c.	
Eucain hydrochloridi (B.).....	1 30	gr. xx
Chloretone .....	1  or	gr. xvss
Fluidextracti hamamelidis, ad.....	120	℥3iv
M. et sig.: For hypodermic use.		
R.	gm. or c.c.	
Cocainæ hydrochloridi .....	1 90	gr. xiv
Chloretone .....	1  or	gr. xvss
Fluidextracti hamamelidis, ad.....	120	℥3iv
M. et sig.: For hypodermic use.		

The eucain solution is for those who dread cocain or where the operator fears its effects, the cocain being perhaps surer in its anesthetic effect.

It is for the operator always to remember that if for any reason he can not perfect the smoothness of the tooth *in situ*, it remains for him to extract, polish and replant. While the consensus of experience shows that such teeth are apt to become subject to absorption and come out after about seven years, yet I have cases of perfect teeth after a lapse of twelve years since replantation. It is impossible to place too much emphasis on the importance of the fixation of the teeth after such an operation, and also of teeth (not replanted) that have been loosened by the disease. Splints for this purpose are designed for temporary or permanent use, according to the necessity of the case.

It is now over ten years since I first made the assertion that, in proportion as teeth afflicted with intersti-

tial gingivitis are in serious condition, in just that proportion is the removal of the pulp a necessary preliminary treatment.

Time and experience have only emphasized the conviction, and it is advised that the pulp be surgically removed where the disease has involved the root for at least half its length. In the majority of such cases the pulp will be found in an irritable condition, conducive to pulp stones or exostosis, and in the case of multiple roots one or more are often found with the pulp dead. The removal of the pulp by pressure anesthesia, as previously described by me,<sup>1</sup> is easy and simple.

Remedies and medicines in treatment must now be considered. The cleansed pocket needs something to stimulate the soft tissues to new granulation and to contract and heal around the root. Lactic acid in 50 per cent. solution is excellent and deserves trial. Aromatic sulphuric acid should always be in mind, especially if the disease has gone far and involved the alveolar process. They both promote the throwing off of any diseased bone tissues. I have found a mixture of carbolic acid and caustic potash, in equal parts, of greatest benefit in destroying soft tissue that is not granulating well or where there are exuberant granulations.

Iodin or compounds of iodine, as iodid of zinc or iodid of silver, have a most beneficial effect, the compounds especially adding to the well-known beneficial action of iodine the astringent and antiseptic effect of the metals. At this stage of the treatment also trichloroacetic and monochloroacetic acids are useful. If the disease has not gone deep enough to warrant the removal of the pulp and yet exposes dentine that is very sensitive, nitrate of silver for the posterior and chlorid of zinc for the anterior teeth have their well-known uses. Adrenalin and chlorid of aluminum are excellent astringents to tone and constrict the soft tissues.

For the patient to use at home, the free application of bicarbonate of soda is prescribed for its well-known effect both on inflamed mucous surfaces and its obtunding effect on sensitive dentine.

Limewater, fallen somewhat into disuse, is a splendid alkaline astringent and detergent remedy. Salt, free and in solution, has often proved efficacious in reducing inflammation.

Mouth lotions made up of several carminatives in alcoholic solution do much to stimulate and tone sluggish mucous surfaces. The incorporation of perborate of soda in a tooth powder does much to keep the parts clean and aseptic.

Interstitial gingivitis is a preventable and curable disease, and the stomatologist who does not prove this fact to his patient fails in his duty.

129 Marlboro Street.

## DISCUSSION

ON PAPERS OF DRS. POWER AND BRIGGS.

DR. M. L. RHEIN, New York: I have for a long time been convinced that, while there is a well-marked condition known as gingivitis, when the alveolar tissues themselves are involved we should come nearer the truth if we would term that condition alveolitis rather than gingivitis. Both forms of the disease are present at times, but on the other hand gingivitis is sometimes present when alveolitis does not exist. The question of nomenclature ought to be settled. I wish that I could thoroughly agree with Dr. Briggs in attributing organic troubles entirely to faulty metabolism. I agree with him that faulty metabolism plays an important rôle in this condition. I have in this respect repeatedly recognized the

<sup>1</sup> Internat. Dent. Jour., April, 1894



value of what is known as Fletcherism. But, to illustrate the fact that faulty metabolism does not always play the initial rôle as the predisposing cause of this condition, we have renal trouble in children. This is not a question of faulty metabolism, the initial etiologic factor being the rapid development of the child physically. In such cases alveolitis often appears and urinalysis will show albumin, etc. Faulty metabolism may also be present, but only as a symptom, not as an etiologic factor. We should endeavor in our nomenclature to use great care in arriving at the true etiologic factor.

DR. EUGENE S. TALBOT, Chicago: I take issue with Dr. Rhein's views in regard to the etiology of this condition. He contradicts himself; the very fact that the child has had renal trouble and associated conditions shows so far as we understand pathology to-day, that those conditions are due to faulty metabolism, to want of proper assimilation and adequate distribution of the food to the tissues. Fletcherism should be taught in dental colleges. Oral hygiene and Fletcherism should be so impressed on the minds of the students that when they commence practice these will be the watchwords constantly in mind. Some of the best medical schools are already teaching Fletcherism, and it is considered one of the most important studies in connection with digestion and assimilation. The treatment, both constitutional and local, suggested by Dr. Briggs, is the best that can be recommended with our present knowledge of materia medica.

DR. N. S. HOFF, Ann Arbor: There is no serious disease that is more easily curable than interstitial gingivitis. It is curable in any stage, unless the extraction of the teeth is clearly indicated. Like many other diseases, however, the condition may recur. The whole subject of the treatment of this disease and the practice of oral prophylaxis is going to elevate the standard of all other operations. More than anything else that has come into dentistry in the last twenty years, the prophylactic treatment of Dr. Smith, that so many are using now, has elevated the standard of all operative procedures, and Fletcherism is going to help. Oral prophylaxis makes it imperative that we correct the malpositions of the teeth, and usually this is the first thing to do. We must retain all teeth possible to be retained, and keep each tooth in the best possible condition. This means practical oral prophylaxis and the cure of pyorrhea. This will finally revolutionize our system of crown and bridge work. The dentist of the future will have his hands full; he will have wonderful work to do. And if we are going to do what is expected of us in the future, how much is going to be expected of the dental college in the future! The course must be longer than three, four or five years for adequate dental preparation, and how we are going to get in a medical course with the dental is one of the things I can not understand. The ideals are becoming so high and the demands so great that in the future we shall have to specialize in dentistry more than ever before. We shall in a few years have more specialties in dentistry than medicine has to-day; no one man can do all the work required to be done in the future.

DR. ADELBERT H. PECK, Chicago: Hypodermic injections in inflamed areas must be used with the utmost care, and the medicaments should never be carried into the area of pus accumulation. I have seen most dire results follow such mistakes. The fixation of loose teeth is one of the most important matters to engage our attention in this connection. When the teeth are loose they should be fixed by some mechanical means so that they will be firmly held in position, thus avoiding continual irritation to the diseased parts in their daily use. The list of drugs Dr. Briggs has given is splendid. Iodin, in proper combination, is one of the best agents to be used in these conditions.

DR. N. S. HOFF, Ann Arbor: In regard to injecting cocaine for operations on abscessed teeth, as suggested by Dr. Power, I am in the habit of injecting into the peridental membrane entirely and not into the gum tissue at all. This method is very satisfactory to me. If I can not get the syringe point into the membrane I take a small Gates-Glidden drill at the right angle, make a small drill-hole alongside the root, and through this inject into the membrane only one or two drops. In that way I run little risk, and have never had any trouble.

DR. JAMES E. POWER, Providence: In the case which I described, the little patient was under the treatment of three different physicians during his illness. It is reasonable to believe from the condition of the child that these practitioners were thoughtless and careless in allowing the disease to progress so far. My object in presenting this subject is, through the medium of THE JOURNAL of the American Medical Association, to reach many thousands of physicians, and through them, patients that could not be reached in any other way, saving them unnecessary trouble and pain.

DR. EDWARD C. BRIGGS, Boston: As to "faulty metabolism" not being a blanket to cover all the conditions, it depends on what is meant by "faulty metabolism." The baby who does not get enough fat in the mother's milk (the rest of the food being right), is perhaps normal in its metabolism, but suffers because something is left out. Again, a well-nourished individual whose colon becomes subject to putrefactive changes may be all right in every other respect. He eats well, digests well, has normal dejecta daily; his heart, kidneys, lungs, etc., on examination are found to be apparently almost perfect; the only thing we can find is a foul stool. Correct that and local treatment begins to have effect. I had intended to lay stress on the importance of fixation of loosened teeth in interstitial gingivitis. It is absolutely necessary to devise some splint for temporary or permanent purposes.

## PHYSICS OF PHYSICAL SIGNS, WITH SPECIAL REFERENCE TO THE RESPIRATORY MURMUR.\*

H. D. ARNOLD, M.D.

Professor of Clinical Medicine of Tufts College Medical School;  
Assistant Visiting Physician at the Boston City Hospital.  
BOSTON.

In these days of modern scientific medicine the study of physical signs is not receiving as much attention as it deserves. Scientific medicine stands essentially for two things: accuracy of observation, and the basing of conclusions on facts rather than on assumptions or theories. We view with pride the advances in our knowledge of medicine acquired by work along these lines, and pride is justified when we compare our knowledge to-day with that of even a few decades ago. But we are mistaken if we assume that medicine has already attained the rank of a science, for we have as yet made only a few steps in that direction.

Unfortunately our knowledge of physical signs has lagged far behind many other branches of medical knowledge. It is far from deserving the term "scientific," and it has fallen into disrepute which is more or less well deserved. The scientific investigator avoids this chaos of empiricism and is attracted to other fields in his research work—the more the pity, for we need his help most where the darkness is greatest. And yet this is one of the most important fields of medicine. We must make our diagnosis before our patient is a proper subject for investigation by the pathologist, and the laboratory worker can as yet solve only a few of the troublesome problems of diagnosis. In a large majority of cases we must still depend on our study of the sick patient himself, by the use of our own senses aided by a few instruments of precision.

One reason for the disrepute of physical signs is that we do not sufficiently train our senses to keenness of perception. Again we fail to appreciate fully that these signs are based on the laws of physics, and we are too

\* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



often oblivious to the distinction between facts and fancy in our explanations. Until we rid physical diagnosis of these defects—imperfect or inaccurate observations, theories in place of facts, explanations that are both illogical and inconsistent with the known laws of science—it deserves the disrepute in which it is held by scientific minds.

Many of these illogical and ill-founded statements are hallowed by tradition. They were accepted by us as matters of course. They have become familiar by frequent use in the practice of medicine and stand in our estimation as established principles or facts chiefly because we have never questioned them critically. How many of them will stand close scientific criticism? The number that fail to meet these requirements is surprising.

Although our recent text-books on physical diagnosis are making some efforts in the right direction, they are still handing on many of these faulty traditions from generation to generation of medical students without even intimating that they are open to question. The text-books are open to severe criticism because they thus fail to discriminate between unfounded theories and established facts or well-grounded hypotheses. It is true that our knowledge of physical signs can not now be reduced to a satisfactory scientific basis, and that there are many problems that the science of physics is not yet prepared to solve. It is true that the medical men are not well enough trained as physicists to solve many of the problems and that the physicists are not working in this direction because they do not know what the problems are and do not realize their importance. We shall need highly trained physicists to help in the solution of many of these problems, just as we are now utilizing the services of highly trained chemists to investigate the problems of metabolism. But there is no need of waiting for this era of the future before making a beginning of our housecleaning. We can at least discard statements that are clearly inconsistent with the simplest principles of physics. In many cases we can estimate the degree of doubt about statements now accepted as truths. If an hypothesis is reasonable enough, we can accept it as such and use it as an aid in the search for truth. In this way we can at least determine more clearly some of the problems we want science to solve.

I believe that this is a most important matter in the future development of scientific medicine—a thing we shall never have until the methods in clinical medicine are scientific. At present we train students in the laboratories of the college and medical school to accurate, critical observation and to logical reasoning in accordance with the laws of science. But when we teach physical diagnosis—the foundation of clinical medicine—we pay little attention to scientific methods.

To illustrate these faulty methods I have chosen the respiratory murmur for consideration, although many other topics would make equally good examples. We are dealing with phenomena of sound. In the text-books the characteristics of the sound or murmur, as heard at various places on the chest, are described with fair accuracy. These sounds are compared as to quality, intensity, pitch and duration. The difference between the inspiratory sound and the expiratory sound at a given place is noted. The recording of isolated facts is fairly well done.

The recognition of two types of breathing sound is

the first generalization from these facts and is too obvious to cause dispute, but serious differences of opinion arise as soon as we attempt to explain why there are two types. This leads to questions as to how and where the sound originates; and opinions, theories and assumptions are bandied back and forth by the best authorities with little regard for facts or the laws of physics. And yet the answer to these questions could be determined by experiments more easily than the physiologist learns about the digestive processes.

In the absence of such proof by experimental evidence we have only hypothesis or assumption; we should offer it as such and not as an established truth. For example, there are two opinions as to where the inspiratory murmur originates. According to one, it originates only at the glottis and all modifications are due to changes caused as it is transmitted through the lung tissue. The other opinion agrees that one type of the inspiratory sound originates in this way, but maintains that the second type originates in the minute air spaces of the lung. High authorities may be found in favor of each of these two views, and the question can not be regarded as settled. But often the text-book cites one opinion as if it were an established truth and does not even mention the existence of the other.

When there exists such a difference of opinion among the best authorities this fact should be stated, and the text-books should decide in favor of one view or the other. It should make this decision because in its opinion the view accepted is more nearly in accord with known facts and scientific principles, and it should give its reasons fully. I do not know of a text-book that gives more than an imperfect exposition of this matter. These publications rely chiefly on authority and not on demonstration to prove points.

Neither do any of the text-books discuss intelligently the transmission of the sounds from their points of origin to the surface of the chest. It is but a matter of the applied physics of sound. We can understand it best by adopting the attitude of the physicist. He thinks only in terms of vibrations—of matter in motion. He recognizes the fact that sound vibrations exist at the surface of the chest in association with rhythmic breathing. He asks these questions: What causes these vibrations? Where do they originate? How are they transmitted from the point of origin to the point where they are heard?

If our text-books are to teach physical diagnosis scientifically, they must adopt these same methods and teach the physics of physical signs. In this paper the limitations of time compel me to do exactly what I criticize the text-books for doing—to state my position on doubtful problems without giving reasons. However, as I am now contending for methods of study and teaching and not trying to establish facts, I may be excused for not practicing what I preach.

The answers to the first two questions of the physicist are as follows: The vibrations arise at two places—the glottis and the point where the minute bronchus opens into its air sac. The cause is the passage of air with sufficient force through a narrow opening into a wider space beyond—it being a general principle of physics that under such circumstances the air is thrown into vibration as it emerges into a larger chamber. It is easily understood that the intensity of vibrations at the glottis should be great enough to make them audible, but a word of explanation is needed as to the other



source of sound. The immense number of the air sacs which contribute vibrations cause an audible sound when the vibrations from small numbers of the sacs would be inaudible.

We now come to the study of the way in which the vibrations are transmitted from these points of origin to the surface. It will not be out of place to recapitulate some of the principles of the physics of sound that are involved in this study. From the point of view of the physicist, sound is a form of energy, existing in the form of vibrations of matter. These vibrations are of such a character that they are capable of being perceived by the sense of hearing, provided they have a sufficient intensity and the rate of vibration falls within certain limits. In studying the transmission of these vibrations, then, we are studying the transmission of a form of motion from one set of particles of matter to another set. If these particles of matter are uniform, that is, if there is a uniform medium, the vibrations will travel in all directions at a uniform rate for that medium, but will lose in intensity as the square of the distance. Different media will transmit the vibrations at different rates and may accordingly be classified as good or bad conductors. Sound vibrations are more or less reflected when in the course of their transmission they come to a boundary between two media. Sound vibrations are also more or less refracted within a medium of uniform consistency but irregular extent. These principles of the reflection and refraction of sound vibrations cause the vibrations to travel more easily within the confines of any anatomic structure than to be transmitted to surrounding structures. Bodies of uniform, elastic structure are especially good conductors. Soft, relaxed tissues, like membranes, which are poor conductors, may become good conductors if they are put on the stretch.

It follows that the vibrations will travel a certain distance in all directions from their point of origin, depending on their intensity at the start and on the conductivity of surrounding tissues. They will travel better and farther in certain directions, which will be determined by the anatomic shape, the consistency, elasticity and tension of the structures that are thrown into vibration.

Let us consider first the vibrations originating during inspiration in the air sacs. They originate throughout the lung structure. They have intensity enough to be transmitted to the overlying chest wall, if it is in direct contact with the lung tissue, and will be carried by an ordinary chest wall to the surface with intensity enough to be heard by the ear. The intensity, however, is not sufficient to carry the vibrations on the surface far beyond the anatomic limits of the lungs, nor can they reach the surface if anything intervenes between the lung and the chest wall.

In case of vibrations originating at the glottis during inspiration, the problem is a little more complex. There are two sets of vibrations—those originating in the air column itself, and those originating in the vibrating vocal cords. The vibrations in the air column will be transmitted down the air of the air passages as in a speaking tube, and the vibrations from the vocal cords find their best line of transmission along the walls of the air passages. Both these lines of transmission (air conduction and tissue conduction) are good so long as the bronchi are of moderate size and have stiff walls. In

other words, the glottic vibrations are conducted throughout the inner part of the lung as far as the smaller bronchi extend. Between this point and the surface lies a more or less thick layer of lung parenchyma, which, with its minutely divided air spaces, is a poor conductor of vibrations. The glottic vibrations are distinctly audible at the surface over a thin layer of lung and the intensity diminishes with the thickness until it entirely fails to penetrate the thickest part, where we hear only the vesicular murmur. At intervening points we get a combination of the two types of breathing sound, and the predominance of one or the other is determined at any point by the anatomic relations beneath.

Let there be a little thickening of the lung tissue—as in the earliest changes of tuberculosis—and the laryngeal sounds are better conducted through the lung. The laryngeal element is found to be stronger than it normally would be at that point. This increases in proportion to the density of the lung tissue until with a solid area of the lung extending from the surface to the bronchi we get pure bronchial sounds.

Let us now consider the expiratory murmur. During expiration no suitable conditions exist in the lung parenchyma to cause audible vibrations and the vibrations come only from the glottis. Here the air is thrown into vibration as it rushes from the glottis into the pharyngeal space above, but these vibrations are practically all cut off by the vocal cords from reaching the air passages of the lung. The audible vibrations, therefore, come almost exclusively from the vibration of the vocal cords. These vibrations are transmitted (as in the case of inspiration) by tissue conduction through the walls of the air passages to the interior of the lung. They have not volume enough easily to penetrate the lung tissue. When, however, at the beginning of expiration the lung tissue is on the stretch these vibrations are faintly audible at the surface, but they become inaudible as soon as the lung loses this tension. The result is that over the thicker lung tissue the expiratory murmur is only a short puff at the beginning of expiration.

Let the lung tissue be slightly thickened, as in early tuberculosis, and there is better conduction of vibrations through it. The expiratory murmur is a little louder and longer. This increases with the density of the lung until with a consolidated lung there is a full bronchial expiratory sound.

With such an explanation of the respiratory murmurs, based on a consideration of the physics of the vibrations in the lung tissues, one gets an understanding of the complex combination of sounds in health and readily translates the variations that come with disease into terms of changes in the texture of the lung tissue. This is the real aim of auscultation of the respiratory murmur—to learn the texture of the lung tissue.

I do not claim that this explanation of the respiratory murmur is necessarily correct. It is based on hypotheses, not on facts proven by experiment, but it is consistent with the laws of physics and offers an intelligent basis from which to carry out further investigations which will confirm or disprove it. It is by steps of this sort that we shall advance to the truth, shall remove the opprobrium from which physical diagnosis now suffers, and shall introduce scientific methods into clinical medicine.



## DISCUSSION.

DR. GEORGE N. JACK, Buffalo: Many cases of asthma have been sent to me diagnosed as bronchial asthma. On careful investigation I would find the obstruction to be confined wholly to the common air tube, the bronchi being entirely free of all râles or signs of obstruction. As the condition in the larynx would clear up the dyspnea and wheezing would disappear. I know of no other way to explain how through all ages asthma could have been classed as a nervous spasm unless the mistake was due to the transmission of sound from the trachea-larynx to the bronchi. The condition is not a nervous spasm, but is due to an obstruction in the air tubes. For the last ten years I have alone maintained that asthma is not due to a nervous spasm of the air tubes, and very recently Gee of Oxford (in the Gee Medical Lectures, 1908, pages 140 and 160) has taken the same stand. The real or severe dyspnea of asthma originates from a plugging of the common air tube which no one would accuse of spasmodically contracting. When the obstruction is in the smaller bronchi and the common air tube is open, asthmatics will breathe quite freely with little dyspnea; in fact, they can at such times exert themselves with little dyspnea when the chest is full of râles of all sorts as the numerous small bronchi are never all plugged at the same time. Can there, then, after considering the facts in regard to respiration that Dr. Arnold has brought out, longer be any excuse for asserting that a wheeze that can be heard clear across the street can come from the small bronchi way down in the chest?

DR. HENRY SEWALL, Denver: I believe that the terminology used in expressing the findings of a physical examination, such as calling the sounds heard "moist" or "dry," is too much restricted to denoting the subjective impressions aroused, which differ for every examiner, and too little descriptive of the objective physical conditions in the field. It is highly desirable that our armamentarium be enriched with devices which shall limit the range of the personal equation. Some years ago I carried on some experiments in this field with interesting practical results. It will be admitted that the sounds perceived in auscultating the chest owe their intensity to two sources: first, the vibrations of the tone-producing body, which may be conducted to the ear according to known physical laws; and, second, sympathetic vibrations which depend on the elastic properties of the media surrounding the vibrating body and which more or less reinforce the original vibrations; indeed, in certain sound productions, as in human vocalization, the resonance sounds far outstrip in intensity the unaided vibrations that give them birth. To be brief, the resonance tones of the chest wall can easily be damped and deadened. The remaining sounds are those that come by direct conduction from the vibrating body. This feat can be achieved by use of the ordinary binaural stethoscope having only air conduction between the bell and the ear tubes. Apply such a stethoscope over the aortic area and the second sound of the heart may be heard of great intensity. If the bell of the instrument be now pressed firmly into the second right interspace the sound nearly or completely dies away. That is, the second sound, as heard in the aortic area, owes its intensity to sympathetic vibration of the chest wall. On the contrary, if the stethoscope is applied to the area of the cardiac impulse, where the vibrations are conducted directly to the instrument, no amount of pressure does away with the heart sounds. I have found in "stethoscopic pressure" perhaps the most accurate means of outlining the borders of the heart, a feat which is frequently so difficult. It is interesting to observe that an instrument depending wholly on air conduction is necessary to the success of this method. If the original wooden, monaural stethoscope is used, increase of pressure, for example, in the aortic area, does not deaden the sound, for reasons that are obvious.

DR. H. D. ARNOLD, Boston: The object of my paper is to stimulate the clinician to think. To-day men should be more imbued with the spirit of scientific research and scientific thought; then they would work and make some advance in the study of disease, the same as the laboratory workers had done, and then they would be a greater credit to modern medicine.

## REMISSIONS IN PERNICIOUS ANEMIA. \*

WALTER L. BIERRING, M.D.

Professor of Theory and Practice of Medicine and Clinical Medicine, State University of Iowa.  
IOWA CITY, IOWA.

It almost requires an explanation for presenting any phase of a subject that has been considered so extensively in recent years as pernicious anemia, but the phenomena of remissions form a sufficiently interesting chapter in the disease to warrant its being made the theme of this brief paper.

A remission signifies but an abatement of symptoms, and so rarely does a complete restitution take place that it is to be regarded as a temporary period of improvement and not a cure. The earlier writers who coined the term progressive pernicious anemia evidently did not give due cognizance to the phenomena of remissions, because a disease process that is subject to remissions of improvement, or periods of latency, can hardly be regarded as distinctly pernicious; the term progressive is applicable in that it is not possible to bring the process to a standstill or promote a cure.

Out of a series of twenty-five cases seen during the last two and a half years I have taken a few striking instances as illustrative of remissions in pernicious anemia.

CASE 1.—*History*.—C. W., a laborer, aged 53, was admitted April 8, 1907, to the University Hospital, complaining of weakness and pain in the legs. He was a moderate user of alcohol but denied venereal infection. The family history was negative. Three years previously he had had a fainting attack after which he was confined to bed for six weeks. In December, 1906, he began to notice weakness and pain in the legs which had grown slowly worse.

*Examination*.—When admitted the patient appeared very anemic and poorly nourished. The legs were weak and he was unable to stand alone. The knee jerks were diminished and there was paresthesia and a mild degree of ataxia in lower limbs. Urine examination was negative. Gastric analysis showed total acidity 35, free hydrochloric acid 10. The blood findings, with subsequent changes, are indicated in the following table:

TABLE 1.

Date.	Red cells.	White cells.	Per cent. Hb.	Poikilocytes. Macrocytes. Microcytes.	Nucleated red cells.	Polymorpho-nuclears. Per cent.	Lymphocytes. Per cent.	Large mono-nuclears. Per cent.
4-8-07	860,000	6,400	40	++	1 normobl. 2 megal.	64	30	6
4-10-07	945,000	4,600	20	++	.....	63	35	2
4-13-07	556,000	2,200	30	++	1 stippled. 1 megal. 2 normobl.	61	36	3
4-21-07	710,000	2,600	35	++	.....	48	50	2
5-2-07	1,320,000	6,800	35	mod.	.....	67	26	7
5-16-07	2,390,000	5,600	40	few.	3 normobl.	69	27	3.5
5-24-07	3,090,000	2,000	40	....	.....	65	33	2
7-7-07	3,350,000	2,700	48	....	.....	61	33	6
8-23-07	3,580,000	9,600	45	....	.....	82	17	1
9-27-07	3,720,000	9,800	55	few.	.....	83	16	1

*Treatment*.—At the time of the last blood examination the patient was able to walk anywhere without support, and generally felt well. The medication consisted principally of some form of arsenic. During the first three months of his stay he tolerated the drug very well, taking as much as 15 minims of Fowler's solution three times daily. Later an intolerance was manifest and only small doses, 3 to 5 minims, could be taken. The cacodylate of sodium was substituted, but even small doses of this preparation would lead to digestive disturbances, albuminuria, and puffiness of the face, compelling a discontinuance of the medicine. Although unable to take arsenic during the last three months of his stay, the improvement in his condition steadily continued. Gastrointestinal

\* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



symptoms were not present, except such as were evidently due to arsenic administration, and colonic irrigation was not a part of the treatment.

*Subsequent History.*—It became necessary to return the patient to the county farm in Iowa County about Oct. 1, 1907, where he continued to do well for several months, when he grew gradually worse and died in March, 1908. Unfortunately subsequent blood analyses and an autopsy examination were not obtained.

*CASE 2.—History.*—P. J., a farmer, aged 45, admitted to the University Hospital June 22, 1907, complaining of general weakness. Patient was married, had a family of five children, was a moderate user of alcohol, but denied venereal infection. The family and medical history were negative. In the summer of 1906 he complained of weakness in the back and shortness of breath. He continued to work until April, 1907, when he contracted a cold, coughed a great deal, but had no fever or pain. Shortness of breath became so marked that he had been unable to work on account of it and because of general weakness. He had occasional nausea and vomiting but no loss in weight.

*Examination.*—When admitted he was very anemic, skin of a lemon-yellow tint, sclerae icteric and mucosae very pale. A hemic murmur could be heard over the precordium. The spleen was palpable. His extremities were weak and the ankles and feet swollen. The blood findings are shown in the following table:

TABLE 2.

Date.	Red cells.	White cells.	Per cent. Hb.	Poikilocytes. Macrocytes. Microcytes.	Nucleated red cells.	Polymorpho-nuclears. Per cent.	Lymphocytes. Per cent.	Large mono-nuclears. Per cent.
6-22-07	1,470,000	860	60	++	.....	60	35	5
6-24-07	1,730,000	1,600	45	++	.....	62	34	4
6-27-07	1,430,000	2,000	40	++	1 normobl.	64	33	3
7-5-07	1,910,000	2,400	50	polychro-masia +	.....	66	29	5
7-8-07	2,110,000	4,200	40	mod.	.....	67	28	6
9-27-07	3,190,000	3,400	60	mod.	.....	68	26	5
10-2-07	4,050,000	4,600	65	few.	.....	68	28	4

*Treatment.*—During the three weeks' stay in the hospital he apparently improved. He returned to his home to be under the care of his family physician, Dr. H. A. Powers of Emmetsburg, Iowa, who lived nine miles from his home, so that he was only able to see him about once every week or ten days. The medication was confined to Fowler's solution, but he was never able to tolerate a larger dose than 10 minims three times daily. He gradually improved, and when he returned the latter part of September, 1907, to the hospital for a second examination, his general appearance was in keeping with the improvement shown by the blood examination at this time. He appeared well and claimed to be able to do full farm work without becoming tired, and aside from an occasional swelling of the feet in the evening he suffered no discomfort.

*Subsequent History.*—After returning home the patient continued well during the winter, but since March, 1908, he has gradually lost strength and is now confined to his house and unable to carry on any kind of work. I am indebted to his present attendant, Dr. Baldwin of Ruthven, for some carefully prepared slides of his blood, and from these I have estimated that a marked deterioration has taken place in his blood, since the examination last October, as poikilocytes, macrocytes and microcytes are numerous, and normoblasts are present to an extent of 0.6 per cent.

Although the serial blood analyses are incomplete, it seems appropriate to refer to a third case.

*CASE 3.—History.*—W. J. W., a retired farmer, aged 64, was admitted to the University Hospital April 3, 1906, complaining of general muscular weakness and shortness of breath. The patient did not use alcohol and denied venereal infection. The family and medical history were negative. About ten months preceding entrance he began to lose strength, and experienced shortness of breath on exertion, which gradually became more marked.

*Examination.*—Physical examination revealed a marked pallor of skin and mucus membranes. The spleen was not

enlarged but the extremities were very weak and the muscles soft and diminished in size. He was unable to walk without support. Reflexes and sensation were normal. The condition of the blood is indicated in the following table:

TABLE 3.

Date.	Red cells.	White cells.	Per cent. Hb.	Poikilocytes. Macrocytes. Microcytes.	Nucleated red cells.	Polymorpho-nuclears. Per cent.	Lymphocytes. Per cent.	Large mono-nuclears. Per cent.
4-3-06	690,000	4,800	30	mod.	1 normobl.	46	52	1.6
4-8-06	600,000	4,000	20	mod.	1 normobl.	42	56	2.0
4-13-06	520,000	4,800	12	mod.	.....	44	54	2.0
4-18-06	600,000	3,900	25	mod.	1 normobl.	39	59	2.0
5-2-06	580,000	5,900	11	mod.	.....	39.2	59.2	0.8

The blood findings show an unusually low count during the month's stay in the hospital, the leucopenia being only of moderate degree, with a marked increase in the percentage of lymphocytes and mononuclear leucocytes, the entire blood finding being suggestive of Ehrlich's aplastic type of pernicious anemia with possible lymphoid hyperplasia of the bone-marrow.

*Treatment.*—The patient did not bear arsenic well, being unable to take the smallest doses. Red bone-marrow, colonic irrigation and rest in bed, formed a part of the treatment without influencing the disease process in any way, and his condition when leaving the hospital was not improved. His home physician was an enthusiast on the therapeutic virtues of a remedy called "goat's lymph" and applied it, he claimed, with apparently good results, as the patient became strong enough to walk about the town, attended to most of his business duties and enjoyed fairly good health.

*Subsequent History.*—Six months later he again began to decline and died in February, 1907. During the period of temporary improvement the home physician received much praise while the former attendant was given a blessing of a different kind.

OTHER CASES IN THE SERIES.

Of the series of cases referred to in this paper one patient drifted into the care of a Christian Science "healer" and another underwent the manipulations of an osteopath—both patients having very low blood counts. In each instance the treatment was followed by a remission of improvement, a fact which permitted the healing measure applied at the time to receive all the credit of the apparent cure. A number of the further remissions were observed in other cases, occurring under a variety of conditions, but in no instance could the improvement be attributed to any one definite therapeutic measure.

In the first case mentioned the change of the patient from the county farm to the hospital, with the improved hygienic and dietary condition, was no doubt a strong factor. The second patient was treated at home where the conditions were unfavorable for frequent medical attendance. Improvement in the series occurred with and without the use of arsenic.

In several instances where fermentative changes in the intestines were a prominent symptom, high colonic irrigation with normal salt solution seemed to be connected with remissions of improvement. One case of the aplastic type, which was subsequently confirmed at autopsy, resisted all measures of treatment and became progressively worse. In a baby 10 months of age, with the blood picture of pernicious anemia, improvement followed the weaning and institution of a proper milk diet.

A certain parallelism is maintained between the changes in clinical signs and blood findings, the blood condition being usually a fair index of the degree of improvement in the patient and also of the reactive



changes in the hematopoietic organs, especially the bone-marrow.

Barjon and Cade and other French writers lay much stress on the value of the syndrome "leucopenie-lymphocytose" in diagnosis and prognosis. The disappearance of the leucopenia and modification of the leucocyte formula suggests improvement and lessens the gravity of the prognosis; quantitative and qualitative changes in the erythrocytes being equally indicative of improvement. While Ehrlich, Lazarus, Bloch, Stengel, Senator, Stockton, Cabot and other observers have referred to remissions as characteristic of pernicious anemia, there have been very few who have been able to bear out the enthusiastic claims of Grawitz, who has reported several instances of cures or complete restitution of the blood to its normal state.

#### CLINICAL AND EXPERIMENTAL PERNICIOUS ANEMIA.

Although the blood undergoes a marked improvement in the remission period, it still preserves certain abnormal features indicating that a disturbance in hemogenetic function continues to exist. In this respect the experimental pernicious anemias produced in rabbits differ from the disease occurring in the human person. In using 0.5 mg. doses of the glucosid saponin and 0.02 mg. doses of ricin (a toxalbumin from the seed of the castor-oil plant) to produce pernicious anemia in rabbits—corroborating the work of Bunting—I found in several instances not only does an animal become tolerant to the toxin, especially with saponin in small doses, but if the toxic agent is discontinued the blood gradually returns to the normal and a complete restitution takes place, all of which is in keeping with the statement of Bloch that certain predisposing conditions exist in the hematopoietic structures of the human species which favor the production and persistence of pernicious anemia in man.

An analogy exists between pernicious anemia and leukemia in that both are liable to remissions of improvement, both are evidently of toxic origin and associated with changes in the bone-marrow.

At best a remission is but an apparent cure, and the practical point that suggests itself is the need of reserve in prognosis and caution in interpreting the results of various therapeutic measures—as the most promising are frequently unstable, meaning an amelioration more often than a definite cure.

That pernicious anemia is an expression of a toxemia—probably enterogenic in origin—is borne out by clinical studies and experimental demonstrations, so that care of the digestive tract is a special factor in the treatment of all cases. The recent work of Herter attributing etiologic significance to specific fermentations in the intestinal tract is very suggestive and it will be of interest to learn further about his series of cases in which the treatment consisted of the removal by colonic irrigation of the *Bacillus aerogenes capsulatus* from the intestinal tract.

While the present lack of etiologic unity prevails it is evident that the explanation of the remission phenomena and the finding of a definite curative measure are problems still to be solved.

#### DISCUSSION.

DR. CHARLES G. STOCKTON, Buffalo: Flint, many years ago, pointed out that in pernicious anemia a disappearance of secretions and ferments from the stomach, and the etiology of the disease was laid to a gastric atrophy. As time went

by all gave up Flint's idea. It is a remarkable fact that he made the observation, so long ago, of the disappearance of the gastric secretions and ferments in the majority of cases of pernicious anemia. The secretions do not disappear in all cases, as has been pointed out to-day. In the cases that I have studied, and they amount to a considerable number, after a true remission I have not found a corresponding improvement in the digestive tract. There has been an improvement in certain cases; but those cases in which there was a great improvement in the gastric secretion were never cases of achylia gastrica, but seemed to be cases on the border-line; also the anemia turned out not to be true pernicious anemia. I think that we should be somewhat guarded in our classification of pernicious anemia. Cases that were formerly called pernicious anemia we hesitate to name. On the other hand, cases formerly called secondary anemias are now classed as pernicious anemia, and to that class belong the cases reported to-day. I have known these remissions to continue over a long period of time. One of the most typical cases I know of, lasting ten years, was followed by a remission which, so far as I know, still continues. I heard from this patient one year ago; he reported himself to be in perfect health. The blood count was very low and in every way the case was quite classical. I recall another case, that of a woman, who had four or five remissions, never severe but typical. These four or five remissions covered a period of eight years. These, however, were exceptional cases. From a clinical point of view these cases appear to be cases of pernicious anemia. There are few diseases that we seem to know better than this disease and yet its real nature remains obscure. As to the remedies bringing about remissions, I believe in a course of treatment not only by arsenic and hydrochloric acid, as recommended by Dr. Dock, but by colonic lavage and hygienic measures. I have seen patients get better who did not follow this course of treatment, yet I feel confident that good is accomplished by it.

DR. WILLIAM S. THAYER, Baltimore: I have seen one case of apparent recovery; this case was very similar to the one reported by Dr. Stockton. The patient was in Dr. Osler's ward in 1890, and presented the classical picture of pernicious anemia. The lowest blood count was 800,000 and the patient had a high color index, as well as poikilocytosis. After three or four months' treatment the blood count rose to 5,000,000 and over, and the patient left the hospital apparently well. Five years later the man came back again with all the signs of a carcinoma of the stomach. The blood then was absolutely normal. He soon left the hospital and I have never been able to get word from him since. Last year I saw a second case in which the blood appeared perfectly normal. This patient entered the hospital in May, remained two or three months and made a remarkably rapid recovery. The blood count was over 5,000,000 and the entire picture of pernicious anemia disappeared. The patient died in February.

DR. ALFRED STENGEL, Philadelphia: My experience has been that the more cases I see the less certain I am in making an absolute diagnosis of pernicious anemia. During the past two or three years I have seen a series of cases in which the blood picture was that of pernicious anemia, yet they differ so in their clinical course and in other respects, that I doubt whether I have made a correct diagnosis. In many of these cases there were evidences of intestinal disturbances. In one case there was a slight but continuous bleeding from the intestinal tract; the stools were constantly tinged with blood and the loss of blood in the aggregate must have been great. In another case the stools swarmed with infusoria which I could not identify. In three cases slight hemorrhages occurred, and these were occult in the stools. In another instance there were evidences of putrefactive changes in the feces. These cases all ran a typical course. All showed a rapid improvement when given intestinal lavage with simple water and instillations of nitrate of silver. All, however, relapsed eventually. Three or four patients have since died. The blood picture in these cases was largely that of pernicious anemia, but not sufficiently so as to make, in my mind, a diagnosis absolutely certain. In some of these cases the picture presented was typically that of pernicious anemia. In several



cases remissions occurred from time to time. One case under my care for a year or two at one or another hospital, has been treated at either the Pennsylvania or University Hospital during the past eight years, entering nearly every year. The patient has been under my care not less than three times. He presented a typical picture of pernicious anemia; there was no mistake in this case. With regard to the treatment, arsenic relieved many of the attacks. I have known of one case, which I reported, that has been under my care four different times in four different years with relapses. These relapses, as Mackenzie has said, running over a period of years, are not infrequent. An important point in drawing deductions is to learn to differentiate between the intense anemias, anemias especially of the pernicious types, and cases of genuine pernicious anemia; but how to draw a border line in these cases I do not know.

DR. W. M. McCABE, Nashville: I believe that if Dr. Herter is correct in his theory that pernicious anemia is due to anaerobic bacteria in the intestinal canal, then intestinal lavage is the proper treatment. I had a patient under my care at the City Hospital, in the service of Dr. John A. Witherspoon, with a leucocyte count of 3,000, an erythrocyte count of 1,500,000, hemoglobin index 1.5 per cent., nucleated red cells, etc. Appendicostomy was performed and the colon was irrigated twice daily with two gallons of saline solution. Several weeks after this treatment was begun the leucocyte count was 7,000, red cells 3,200,000, hemoglobin index 0.9 per cent., and no abnormal types of cells were present. It is especially interesting to note that examination of the stomach contents showed lactic acid in large quantities and an absence of free hydrochloric acid. This would be frequently examined to see if the free hydrochloric would return. At operation the stomach was examined and found somewhat contracted. No cancer was present.

DR. HUGO A. FREUND, Detroit: As a rule we should give a good prognosis in a given case of pernicious anemia, that is, for a relative length of time. All cases that I have seen came to me with a distinct and definite picture, but there were some cases, only a small number, that showed a rapidly progressive type. These are best described as primary progressive cases. I believe that the general practitioner should give a good prognosis in all the cases he meets, but only for a relatively short length of time. The influence of treatment is only relative; experience with these cases shows that but little difference is made whatever treatment is employed, whether by arsenic, hydrochloric acid, pancreatin, goat's lymph, osteopathy, Eddyism, or what not; all have been useful at times, however. There is a time when patients have blood crises, or blood showers; this I have noticed on many occasions. It has been asserted that when these showers occur dissolution is soon to follow. In a large number of cases watched at the University Hospital at Ann Arbor death did not follow; and these blood showers occurred in a large percentage of the cases. What does it mean? Probably it is an attempt on the part of the bone marrow to regenerate. If the body is attempting to restore the normal function of the blood it seems to me this is a propitious moment for such a restoration, and the giving of arsenic at this time is usually followed by beneficial results. Some of these patients persisted in a good state of health for a long time. I recall one case under observation for eleven years; I still hear from this patient and there has been no return of the symptoms. With these showers a low blood count has been noticed; cases have been reported of a low blood count, in which there has been a decided improvement following treatment; the patients get well. Some of these are remarkable cases. In these showers there usually occurs a larger percentage of red cells per centimeter than white cells. Lymphocytosis is an interesting phase in this disease; an increasing lymphocytosis was prognostic of dissolution.

DR. JOHN A. WITHERSPOON, Nashville: I had a patient, a man, 35 years old, who had a typical pernicious anemia so far as the symptoms and blood findings were concerned. I have always hesitated in advising appendicostomy and colonic irrigations; I have generally been able to get along without it. In this case, however, I believed it wise to give it a trial.

The result was that, with a patient evidently rapidly approaching dissolution, the man gained ten pounds in weight during the last ten days, and has made a marvelous improvement. Whether this improvement will be permanent or not I do not know; but it is a remarkable fact that in this case, with the patient progressively going to the bad, and apparently with but a short time to live, I should have such an excellent result from the use of colonic irrigations of normal saline solutions given twice a day; the recovery was certainly a rapid one. The fact that this patient gained ten pounds in weight in such a short time is good evidence at least of marked improvement in his powers of digestion. I shall try to keep in touch with this patient and report further in the journals. I am prejudiced against appendicostomy.

DR. JESSE S. MYER, St. Louis: I have a patient, a man 60 years of age, who has been under my observation for over a year. He came to St. Louis from Georgia in a state of perfect collapse. He had the most marked degree of anemia that I have ever seen. There was anasarca, dyspnea and the typical picture of the blood of pernicious anemia. The intestinal symptoms were very marked, and characterized by a severe and persistent diarrhea. Because the patient came from Georgia, where there are many cases of infection with *Anchylostoma duodenale*, and because of the marked intestinal symptoms, with traces of blood in the feces, with a blood picture of pernicious anemia, I felt justified in instituting the regular specific treatment for *A. duodenale*, even though I was not successful in demonstrating the existence of the eggs in the stools. Thymol was given in large doses and the improvement was so marked that in one month the patient was able to return to his home and resume his duties. At the end of six months, however, he reported that he was in a similar condition. His physician resorted to thymol again, but without any effect whatever and the patient died. The apparent response to treatment for infection with *A. duodenale* simply proved to be a coincident remission in the symptoms of pernicious anemia described by Dr. Biering.

DR. WALTER L. BIERRING, Iowa City: Dr. Stockton's statement that in remissions of improvement in pernicious anemia there is no return of the free hydrochloric acid in the gastric juice corresponds with that of Grawitz, who firmly believes in the possibility of a complete cure in pernicious anemia, and has reported two cases, one of five and the other of eight years' standing, in neither of which was there a return of the free hydrochloric acid in the gastric secretion, indicating that a complete restitution to the normal had not taken place. The view expressed by Dr. Stengel that a number of similar conditions are met in which a pernicious type of anemia prevails is very apt—as evidently such states as aplastic and metaplastic anemia, chloranemia, and severe instances of secondary anemia, are closely related, all being dependent more or less on changes in the bone marrow, resulting from toxic influences acting on this tissue and other hemopoietic structures. True pernicious anemia of the Biermer type is not as common as generally believed; in fact, it is a rather rare disease. Its greater frequency in later life supports the view that changes take place with age in the hemopoietic structures which predispose to the production of this disease.

The suggestion of appendicostomy as a therapeutic measure to facilitate the irrigation of the colon is very interesting. While colonic irrigation certainly influences toward improvement this does not mean that every case of pernicious anemia is necessarily colonic in origin. The uncertainty of our knowledge of the etiology, toxic agent and portal of entry makes it difficult to judge properly the merits of the different methods of treatment that are proposed in this disease.

Spermatocystitis.—N. E. Aronstam, in *Central States Medical Monitor*, states that spermatocystitis or seminal vesiculitis, as it is sometimes styled, is the most difficult pathologic condition to treat in the domain of genitourinary surgery. Not much time should be lost in internal medication, but the affection should be attacked from its very seat by manipulations, sounds and frequent irrigations. Even these measures may effect no results. Under these circumstances we must resort to a vasectomy.



## PELLAGRA.

## ITS OCCURRENCE IN THIS COUNTRY; REPORT OF CASES.\*

R. HARLEE BELLAMY, M.D.

WILMINGTON, N. C.

Pellagra is a trophoneurotic disease, affecting the cerebrospinal, digestive and cutaneous systems and characterized by an erythema. The immediate cause of pellagra is a fatty oil or extractive, called by Lombroso pellagrozein, that develops in fermenting and decomposing maize. This extractive is probably formed under the influence of a fungus. Poverty and unhygienic surroundings are predisposing causes, and most cases probably occur among the agricultural class, because they raise maize and eat it as a regular daily diet. Women are more often attacked than men, and children less often than adults. The disease occurs more often in patients between the ages of 30 and 50. As the erythema selects those portions of the body exposed to the sun's rays, it is more than probable that exposure to the sun is a factor in its development.

Belmondo believes that the disease is due to a specific organism. Lombroso experimentally produced in men and animals, with an extract from decomposed maize symptoms, analogous to those of pellagra. In Egypt pellagra occurs only where corn is eaten.

After a careful inquiry among farmers in regard to corn, I found the following facts:

1. Corn that is allowed to mature on the cob does not ferment or decompose after being gathered, and is suitable, as food, both for men and animals.

2. Corn gathered before maturing on the cob always ferments and decomposes. This process of fermentation is called "heating," and that of decomposition "rotting."

3. If this decomposed and fermented corn is fed to animals (except swine), it produces a condition called "blind staggers," which is accompanied by a severe diarrhea and inability of the animal to stand. It staggers from side to side, and is apparently blind. This disease is very fatal, 98 per cent. of the animals attacked dying, and if the animal passes through the acute attack, it is spastic and never able to work again, because of stiffness of the limbs. That the acute attack is analogous to acute pellagra, and the chronic condition to chronic pellagra, is probable.

4. Farmers have learned never to give decomposed corn to their stock. When visiting other people, some farmers will not eat bread or grits, for fear of it being made from decomposed corn.

5. The extreme end of the cob, which often projects from the end of the shuck, always decomposes, and farmers cut this off before throwing it into the bin.

6. When corn is planted, the farmers watch the hills, and if any fail to grow, they are replanted. In this way, when harvest time arrives, there is some corn not mature, and if it is used in this condition there is danger of the other corn becoming contaminated by it. The better class of farmers eliminate this corn, or leave it until it matures. In spite of this, some decomposed meal is marketed. When mixed with good meal, it is scarcely noticeable, and is sold at reduced prices to the very poorest. In this way, we account for the occurrence of pellagra.

Prior to 1907 pellagra was not recognized as occurring in the United States. During that year, Dr. G. H.

Searey<sup>1</sup> reported eighty-eight cases of acute pellagra occurring at the asylum for the (colored) insane at Mount Vernon, Ala. This epidemic was very fatal, 64 per cent. of the patients dying. The maize eaten at this institution was found to be decomposed and unfit for food.

A sporadic case was reported by Dr. T. C. Merrill<sup>2</sup> of Colorado, Texas, in September, 1907.

Dr. J. W. Babcock, of Columbia, S. C., reported to the State Board of Health nine cases of pellagra. Three of these cases were complicated by hookworms, and treatment for this condition helped them.

Besides the cases which I report, a half-dozen more have occurred in my community. That this disease has been occurring there for many years there is little doubt, as a careful inquiry among older physicians brings to light many unrecognized cases.

## PATHOLOGY.

There is fatty degeneration of the liver, kidneys, spleen, and myocardium; atrophy of the muscular coat of the intestines, and sometimes ulceration; atrophy, sclerosis and pigmentation of the skin; pigmentary degeneration of the cells of the brain, cord, liver, spleen, kidneys and heart; sclerosis of the crossed pyramidal tract in the dorsal portion; and degeneration of the column of Goll, in the median portion.

The posterior roots usually escape. Lombroso found Burdach's column and the posterior roots sometimes affected. There is, generally, involvement of the membranes of the brain and cord, with much thickening. The abdominal viscera are usually atrophied.

## SYMPTOMS.

*Chronic Form.*—The symptoms begin in spring, with lassitude, headache, and anorexia. The epigastrium is usually tense, and there may be nausea and vomiting. Diarrhea—serous in quality—soon follows. This may be very severe, numbering ten to forty stools a day. The tongue is inflamed, red and smooth. In ten days to two weeks, as a rule, there develops an erythema, confined to those portions of the body exposed to the sun. The parts most usually affected are the backs of the hands; next, the backs of the hands and forearms, elbows, face and neck, in the order named. Those who go barefooted usually have the erythema on the backs of the feet. The back and chest may be affected, but this is rare. Sandwith's Egyptian cases showed the elbows and forearms often involved. The erythema is usually bright red in color, very like sunburn, and disappears on pressure, unless hemorrhagic. There are often vesicles and bullæ, but there is little itching and burning compared to the extent of the process. Generally, in two weeks from the beginning, the erythema subsides, becoming brown in the center, and desquamation takes place, leaving a thickened, rough and brownish skin. After repeated attacks, the skin becomes sclerosed and pigmented and finally atrophies.

Application of salves and washes to the erythema does not benefit it. It seems to run a regular course, and if left alone, disappears earlier than if treated. The diarrhea is particularly stubborn, and will not yield. There is not the burning nor itching that is seen in other erythemata; for instance, genuine sunburn.

Toward late summer, the patient begins to improve,

\* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Searey, George H.: Epidemic of Acute Pellagra, THE JOURNAL A. M. A., July 6, 1907; xlix, 37.

2. Merrill, T. C.: Sporadic Case Diagnosed as Pellagra THE JOURNAL A. M. A., Sept. 14, 1907, xlix, 940.



and may feel perfectly well during the winter, until the next spring, when a recurrence takes place, with greater or less severity.

After the third recurrence, the patient usually becomes much emaciated; diarrhea increases in severity, and melancholia, increasing to dementia, occurs. There may be edema and foul sweats. Paralysis of the third nerve and changes in the fundus oculi have been observed: There may be epileptiform convulsions, paresis of extensors, and paralysis of the bladder. The knee jerks and all reflexes are much increased early in the disease, but toward the end they are either diminished or abolished. There is no albuminuria as a general rule, and ankle clonus is rare. Blood changes are unimportant. The disease lasts five years, on an average, but may be prolonged fifteen years.

*Acute Form.*—This begins with pain in the epigastrium, headache, nausea and vomiting. This is followed by a severe diarrhea and stomatitis. The stools are often bloody, and occasionally there is bleeding from the gums and tongue. The patient emaciates rapidly. The erythema follows the same course as in the chronic form. There is some elevation of temperature, but not higher, as a rule, than 102 F., usually ranging between 99 and 101 F. There is delirium and a typical typhoid course, which usually ends in death in ten days or six weeks. I have never seen a patient recover.

I have ten cases of pellagra to report; three of these are of the chronic form, and seven of the acute.

#### CHRONIC CASES.

*CASE 1.—Patient.*—Miss L., white, aged 45, American born, family history negative.

*History.*—The patient had enteric fever at 20 years of age, and malaria several times. She has never been strong, but fairly healthy as a rule. She does not use alcohol, and there is no history of syphilis. She uses snuff, moderately. During March, 1907, she had headache and some distress in the epigastrium, and vomited occasionally. This was soon followed by a severe diarrhea, which was painless, and serous in quality. She became much emaciated and very weak. In early part of April an erythema developed on the backs of hands and lower part of forearms. This was much like sunburn. Very soon a few bullæ and vesicles formed. There was very little burning or itching.

*Examination.*—The patient's tongue was red, smooth and painful. Her temperature was normal; pulse 100 to 120. The heart and lungs were negative; abdomen flat, and nothing abnormal on examination. The pupils were equal and reacted to light and accommodation. The reflexes were much exaggerated, and there was no ankle clonus. Urine contained neither albumin nor sugar, but an abundance of indican. Examination of the blood revealed a well-marked secondary anemia, no abnormal cells, and absence of leucocytosis.

*Course of Disease.*—The erythema persisted for three weeks; then the skin became much thickened, with a brown hue, and exfoliated, leaving a rough, thickened brown skin beneath. The diarrhea continued through the summer, during which time the patient was very weak, and became much emaciated. She was much depressed, and cried often. In October, 1907, she seemed perfectly well. In April, 1908, she had a recurrence. She is now in the country, and her symptoms are much more severe than they were in the original attack.

This patient lived on a farm with a niece. Her corn supply gave out in December, 1906. She bought corn elsewhere, and used this during the winter and spring. Her niece, who lived with her, did not eat corn in any form, but patient did so daily. An examination of this corn showed that it was unfit for food.

*CASE 2.—Patient.*—Mrs. D., widow; aged 56; American born, family history negative, except that one brother had tuberculosis.

*History.*—The patient was never a very strong woman, but had no sickness of note. She never used alcohol and had no syphilitic history. She felt bad during February, 1907: was often nauseated, and had no appetite. A severe diarrhea began in March, 1907, and was accompanied by stomatitis, the tongue being especially painful. An erythema confined to the backs of the hands developed in a few days. This was like sunburn, and there were a few bullæ and vesicles. She was much emaciated, and starved herself because of diarrhea.

*Examination.*—The patient's temperature was 98.4, pulse 110. Heart and lungs were negative; the abdomen was flat, with some tenderness on pressure. The abdominal viscera were negative. The urine contained neither albumin nor sugar, and blood showed secondary anemia.

*Course of Disease.*—The erythema subsided in a month, leaving a brownish, thickened, rough skin. The patient had diarrhea continuously until September, 1907, when she improved, gained flesh, and diarrhea subsided. During the winter she seemed well, with the exception of some mental depression at times. In March, 1908, recurrence took place, but was not so severe as the original attack. The diarrhea was not so severe, but stomatitis more so, the tongue being especially inflamed, red and smooth. The erythema was confined to the backs of hands as in the original attack, and was never red, but was brown in color from the beginning. The skin exfoliated, leaving the backs of hands brown, smooth and atrophic in appearance. The patient was much depressed mentally and showed some evidence of melancholia. The reflexes were much exaggerated and there was some spasticity about her gait. There was no elevation of temperature, and the pulse was 90. Examination now showed that the abdomen was negative, and heart and lungs the same. The urine was diminished in quantity, but contained neither albumin nor sugar. There was some anemia.

This patient's chief diet was corn bread and grits, a sample of which could not be procured.

*CASE 3.—Patient.*—Mrs. W., aged 36; American born. Family history negative.

*History.*—The patient was always healthy, up to March, 1906. At that time she had epigastric pain, headache and nausea. This was followed by a severe diarrhea, serous in character. In April an erythema developed on the backs of hands and forearms; it looked like sunburn, and was accompanied by vesicles. The patient was sick all summer; apparently recovered in October, 1906, but relapsed in the spring of 1907, having the same symptoms as in original attack, except in a severer form. She again apparently recovered in the winter of 1907, but again relapsed in March, 1908, at which time I saw her, with Dr. T. M. Green.

*Examination.*—The patient was now much emaciated and had a severe diarrhea. Her tongue was red, smooth and very painful. On the backs of hands and forearms, over and below each eye, on each side of back and front of neck, there was the evidence of a subsiding erythema. This condition was also evident on the under surface of forearms and on elbows. The skin was very brown over these areas, and in some places almost black. It was rough and much thickened. Erythema appeared only on face and neck during this recurrence. The patient had dementia, preceded by much mental depression. Her reflexes were much exaggerated, and sense of pain and temperature much retarded. There was slight ankle clonus, and pupils responded sluggishly to light and accommodation. The heart and lungs were negative. The abdomen was flat, with some enlargement of the spleen. The blood was negative. The urine contained albumin and casts.

This patient died May 19, 1908.

She had eaten corn bread daily and grits occasionally; a sample could not be obtained.

*Autopsy.*—The liver and kidneys appeared atrophied. The spleen was slightly larger than normal. Microscopically there was fatty degeneration of liver and kidneys, and extensive degeneration of the posterior and lateral columns of cord. The spleen and adrenals appeared normal. The brain and different levels of cord were not examined. There was some thickening of membrane of brain and cord.



## ACUTE CASES.

There were seven acute cases. Three patients were colored and four white; they ranged in age between four and forty years. They were all in apparent good health before attack. There was no history of syphilis in any; two used alcohol. One of these was a chronic alcoholic; the other used alcohol only in moderate amounts. They were all American born. They all ate corn bread and grits daily. One patient had myocardial degeneration. His urine contained albumin and casts. This condition was probably due to the alcohol which he used to excess. This patient's abdomen and lungs were normal, and his reflexes not exaggerated. An examination of the urine, heart, lungs, abdomen and reflexes of the other six showed them to be negative. The pupils of all reacted to light and accommodation. An examination of their blood showed an absence of leucocytosis, malarial parasites, and bacteria of all kinds. None had the *Ankylostomum duodenale*, or its ova, in the stools. The patients were all attacked suddenly, the first symptoms being headache, slight fever, 100 to 102 F., and some nausea. There was anorexia and some gastric distress. All had severe stomatitis, six bleeding from the gums. The tongue was red, and much inflamed in each case.

Three cases in children showed the erythema well developed on the dorsum of feet. In these cases there was much inflammatory edema of feet, with bullæ and vesicles. These children also developed erythema on the backs of hands and forearms, over each eye, and on back of neck. They went barefooted. One of the other four patients had erythema on the backs of hands and forearms, elbows and back of neck. In the other three, the erythema was confined to the backs of the hands. Erythema was symmetrical in all cases. All the patients had diarrhea. In four cases, it was very severe, numbering thirty to forty stools a day; in two, about fifteen stools per day; and in one, three to eight stools. In two cases, stools always contained blood in abundance, and in one case, occasionally. The diarrhea in other cases was always serous in quality.

The erythema at first could not be differentiated from sunburn, but in a few days the skin became livid and vesicles developed. The skin gradually thickened, lost its angry look, and in two or three weeks, all erythema had disappeared, leaving a brownish red and thickened skin. In those cases which lasted only ten days, these changes could not be seen.

There was delirium in six cases, and in three it was well marked, for it was necessary to hold the patients in bed forcibly. The chronic alcoholic was not delirious, and diarrhea was not severe in his case, yet the erythema and stomatitis were particularly severe.

After a few days or a week, temperature was either normal or not above 100 F. In six cases there was gradual emaciation, loss of strength and development of stupor. The patients gradually passed into the typhoid state with delirium, carphologia and finally death from toxemia.

All these patients died. Three lived six, eight and ten days, respectively. One lived three weeks, two lived a month, and one lived six weeks. Every drug thought indicated, including arsenic and specific treatment, was tried in earlier cases, but, as this treatment gave no result, the other cases were treated symptomatically. In three cases autopsy was made, except on the spinal cord and brain, and nothing abnormal found. It was impossible to examine the nervous systems. Postmortem was refused in other cases. I am sorry that I can not report

the pathologic changes in these cases, but circumstances prevented it. That we have genuine pellagra in the South I am sure, and there is no doubt in my mind that the above were genuine cases of the disease.

## DISCUSSION.

DR. WILLIAM S. THAYER, Baltimore: It is true that there are a great number of cases of pellagra to-day. To pellagra, like uncinariasis, not much attention was paid until many cases were reported. In a paper published by Dr. J. F. Babcock of South Carolina, who was in charge of the State Asylum, it was reported that there were cases of pellagra in the vicinity, and that a number of cases had been found in the asylum. I saw a case one or two years ago that might have been one of this disease. It was remarkable how symmetrical the changes were, involving the hands, the forearm, with the formation of bullæ, scabs, etc. At the time I saw this case I thought of pellagra, but there were certain symptoms suggestive of myxedema present. I cured this patient by thyroid. I doubt not but that in a few years there will be as many reports of cases of pellagra as there have been of uncinariasis since the work of Stiles.

DR. JOHN L. DAWSON, Charleston, S. C.: Undoubtedly this disease, pellagra, exists among us and is not recognized. Since the paper by Dr. Babcock several cases have appeared in the city of Charleston and surrounding country. I have seen three cases, none of which would have been diagnosed had it not been for the publication of the paper by Dr. Babcock.

DR. ALFRED MEYER, New York: Is it not proper for the state and country to take cognizance of such a disease as exists in and about Charleston, and to suggest certain measures for its effacement, such as described by Dr. Bellamy? If some authority were obtained, as by the national Food and Drugs Act, some power of controlling this disease might be had. Perhaps it is more common than supposed, and will be more commonly recognized in the future, and something should be done for its suppression. I advise drawing attention to governmental rather than to individual medical efforts for the prevention of the spread of pellagra.

DR. R. H. BELLAMY, Wilmington, N. C.: When changes take place in the corn after its gathering, it has been gathered before it was mature. The meal was obtained from the corn after the ferments had produced the condition. Many believe this disease to be due to a specific organism; but if this were so the corn and meal could not be the source of infection, for these foods are always cooked two hours, and any organisms which they might contain would be killed. We have reported these cases to the State Board of Health, and are now prepared to go before the State Board of Agriculture. We have obtained the consent of the farmers to study the disease, and the farmers have been asked to be more careful in gathering the corn. I have no doubt that there are one hundred cases occurring every year that are not recognized. I myself see from twelve to fifteen cases every year. Although the disease was not seen or at least not recognized in my part of the country before 1903, there are certainly plenty of cases there now, and generally of the acute type, that is, there are more of the acute than of the chronic form of pellagra.

---

**Local Pigmentation in Tuberculosis.**—M. Delmont-Bebet, *Progrès méd.*, May 2, calls attention to a peculiarity observed by him in several hundred infants afflicted with localized tuberculosis, namely, that the sun tan is much more pronounced in the affected parts. At the maritime hospital Berek, the children go without stockings in summer and so are exposed to the sun's rays for several hours of the day which quickly tan all exposed parts, and he noticed a marked difference in the intensity of pigmentation of the exposed surfaces of the affected limbs as compared to their fellows, the tan being much more pronounced on the former. In fact, it is easy to judge which side or member is affected by this sign. It persists after operation and in the recently cured, but M. Delmont-Bebet has not been able to say how lasting it may be in those long cured. It is not seen in rachitic infants or those affected with other non-tuberculous conditions.



## THE ASSOCIATION OF AGE AND INCIPIENT CATARACT WITH NORMAL AND PATHOLOGIC BLOOD PRESSURE.

A STUDY OF THESE CONDITIONS IN FOUR HUNDRED MEN ABOVE SIXTY YEARS OF AGE.\*

D. W. GREENE, M.D.  
DAYTON, OHIO.

As one studies the conditions of the eyes and blood vessels of elderly persons, especially of men above the age of 60 years, he becomes more and more convinced that certain changes are taking place in their tissues and organs with great uniformity. This uniformity is so pronounced as to suggest an inter-relation between these changes or the dependence of each on a common cause. These changes are incident to or at least associated with age, and are probably always degenerative.

The purpose is to show by statistics how uniform these changes are and their relation to each other, *if they have any*. It is desirable to emphasize the importance of age in its relation to cataract. The relation of age to blood pressure, *if any exists*, is not close and intimate. This will be shown later by statistics.

We are concerned at this time with the changes of age as we see them in the lens, and find them in the blood vessels by palpation and instrumental examination. It is difficult to estimate the influence of age in the etiology of blood pressure, since age is often associated with arterial sclerosis and high blood pressure, but not necessarily so, and can not be studied separate and apart from certain concomitant tissue changes or attributes which are believed to be pathologic themselves, and which those who indulge in excesses of any kind bring on prematurely.

The essential elements in the relation of age to cataract, close and intimate as they possibly are, have so far eluded demonstration, and statistics do not throw much light upon them. We know that the proportion of cataracts increases with each decade or half decade from fifty years upward, as shown by these and other statistics.<sup>1</sup> It is higher in the class of men with pathologic than in the class with normal blood pressure, but of the essential cause we know comparatively little. The works of Metchnikoff, "The Nature of Man," "Orthobiosis" and the "Prolongation of Life," give the best scientific exposition of age with which I am familiar.

Jackson,<sup>2</sup> of Denver, has given the statistics of 1,545 persons over 50 years of age, patients in Wills Eye Hospital, Philadelphia; 439, or 27.8 per cent., had some degree of lens opacity. Arranged in five-year periods, the per cent. showing such opacities was as follows: 15 per cent. between 50 and 55, 16.1 per cent. between 55 and 60, 30.2 per cent. between 60 and 65, and 77 per cent. between 65 and 75. Norris<sup>3</sup> has given statistics of 584 inmates of the poorhouse, between 50 and 60 years of age, in whom 264, or 45 per cent., had traces of cataract.

These statistics were compiled before the importance of blood pressure records were recognized, hence we lose whatever information such records might have furnished.

In the accompanying statistics age and incipient cataract have been considered at length and the result will be given further on, but the chief task I have assigned myself has been to show by statistics what influence, *if any*, arterial sclerosis and high blood pressure, or the causes which lead to them, have in the etiology of cataract. Theoretically there are many reasons why this influence should be great, but practically its importance seems to have been overestimated. For example, with normal blood pressure I have found in 59 men, between 60 and 65 years of age, 37.3 per cent. of cataract; in 79 men, between 65 and 70, 41.8 per cent.; in 35 men, between 70 and 75, 54.3 per cent.; in 20 men, between 75 and 80, 70 per cent.; in 4 men, between 80 and 85, 75 per cent. A steady but not pronounced increase is observed up to the period between 85 and 95, in which the number of cases of cataract is too small to be of any statistical value.

With pathologic pressure I have found in 57 men, between 60 and 65 years of age, 42.1 per cent. of cataract; in 61 men, between 65 and 70, 54.1 per cent.; in 44 men, between 70 and 75 years, 55.8 per cent.; in 22 men, between 75 and 80, 68.2 per cent.; in 12 men, between 80 and 85, 83.33 per cent., and one man, 95 years old, one cataract, or 100 per cent., thus showing a steady rise in the per cent. of cataracts with age, which is greater in those with pathologic than in those with normal blood pressure.

These statistics further show that 79.5 per cent. of these 400 men had blood pressure between 130 and 180 mm. Hg, and the largest number of cataracts were found between these limits of pressure. For example, 79 men, between 65 and 70 years of age, had 33 cataracts, i. e., 41.8 per cent., with pressure under 160; 61 men, between the same ages, had 33 cataracts, or 54.1 per cent., with pressure above 160 mm. Hg. In other words, 61 men with pathologic pressure had the same number of cataracts that were found in 79 men with normal pressure, and the statistics also show that an increase in pressure of 41.4 mm. Hg in the pathologic over the normal class is accompanied by an increase of 17 cataracts, or 18.3 per cent. It is evident, therefore, that pathologic pressure, or the conditions which lead to it, have considerable influence in the etiology of cataract, and I can not agree with the statements of Fraenkel and Garipuy that it does not.

In my service in the eye department of the hospital at the National Military Home, near this city, abundant opportunities are offered for observing the association of these conditions, and it has been my privilege to conduct the examinations which form the basis of this paper in that great field. It is believed that their value is greatly enhanced by the fact that they have been compiled by a single observer and his assistant, from men of the same class, of the same general age, living under uniform conditions as to diet, hours of sleep, amount of exercise, and surrounded by the same temptations as to drinking and other vices, but at the same time subject to parental military control.

More than 6,000 men, 60 years of age and over, with an average age of 67.72 years, have been available for the purpose.<sup>4</sup> Only such have been accepted, however, as have been able to walk to the clinic for eye and ear treatment and as I have been able to examine in the limited time at my disposal. No selection of cases

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Oliver: A study of 3,436 cataracts operated by the staff of Wills Eye Hospital, Philadelphia. Trans. Am. Ophthal. Soc., xi, Part I.

2. Norris and Oliver's System of Diseases of the Eye, iv, 324.

3. Id., 289.

4. Annual Report of Board of Managers National Military Homes, 1907.



has been made, but no one has been accepted for the examination unless a satisfactory view of the lens, blood vessels and details of the fundus could be had in one or both eyes. (This has excluded all mature and advanced immature cataracts of both eyes.)

To this end one or two instillations of a 1 per cent. solution of homatropin has been used in every case, and the examinations have taken a wider range than for cataract alone and have included all intraocular diseases and conditions. While it is well known that cataract does not necessarily start in both eyes at the same time, as a rule it does, and when present can be detected in the lower inner one-third or one-half of the periphery in more than 95 per cent. of all cortical cases, as spokes or striæ or as masses of opacity. Magnus<sup>5</sup> places the per cent. at 82.69, but in my experience it has been much higher, as I have only seen cortical opacity begin in the upper one-half of the lens in three of 600 cases examined, *with a dilated pupil*. The small percentage of all kinds of cataracts which mature is well known.

The statement of Walther,<sup>6</sup> that "Every one becomes cataractous who does not die prematurely," seems to have some statistical support. The plausibility of the statement is strengthened if we believe that the changes in the lens which lead to cataract are degenerative, and that the changes of age are also degenerative, or the statement of Roemer that cataract is the result of direct poisoning of the cells of the lens, and if we accept the teaching of Metchnikoff that "all deaths are accidental and premature under present conditions, because of auto-poisoning by the products of intestinal decomposition," we reach a point where the inter-relation of all these conditions seems evident and their degenerative character apparent.

It seems to me that the essential, all important elements entering into the consideration of these subjects is wrapped up in their probably degenerative character, and their association together at a fairly definite period of life. When the effects of all of these influences are understood we shall know more of the etiology and pathology of age, cataract and blood pressure than we do at present.

The statement of W. J. Collins,<sup>7</sup> that "the cataractous process is not an exaggerated senile change, but due to disturbed nutrition of quite another nature, in so far as chemical and not morphologic changes are concerned," appeals to me as a fair statement at this time of the relation of age to cataract. The changes may be chemical or they may be morphological. They certainly amount to nutritive disturbances, and are closely related to the changes incident to age, if they are not one and the same thing. Roemer<sup>8</sup> has gone into the study of the subject from a different viewpoint, that of a direct poison acting on the cells of the lens, and attempts to show that cataract is probably due to the action of some cytotoxin on the protoplasm of the lens.

In relation to blood pressure itself, 200 men having so-called normal pressure, that is, under 160 mm. Hg, of the same general age, have been compared as to frequency of cataract with the same number of men having so-called pathologic pressure, that is, above 160 mm. Hg.

The examinations were made between 2 and 5 o'clock

in the afternoon, with the patient in the sitting posture, the arm supported and on a level with the heart, perfect quiet of body and mind being enjoined. The Janeway sphygmomanometer was used, with 12 cm. cuff, above the elbow. Two or three tests were made in every case, and the reappearance of the radial pulse was the basis from which systolic pressure was read. As frequent reference has been made and will be made to pathologic blood pressure, it should be understood that its connection with arterial sclerosis is assumed.

Many of the statistics have been compiled from the same material which was used in a previous paper.<sup>9</sup> Since that time 100 more examinations have been made along the same lines, so that for the statistics of the present paper 600 examinations and 555 blood pressure records are available. The paper contains the largest number of blood pressure statistics in association with age and incipient cataract with which I am familiar. Fundus blood vessel changes of arterial sclerosis have been extensively studied abroad by Gunn and many others; at home by Allaman, de Schweinitz and Reber of Philadelphia, Friedenwald, of Baltimore, Marple of New York, and many others, but the conditions of the lens, in association with age and blood pressure, I have found only briefly referred to in journals and at considerable length in an article by Fraenkel and Garipuy.<sup>10</sup>

As my own studies have been along these same lines, and are so at variance with those they have presented in regard to blood pressure, it may be profitable to briefly state the conditions under which they examined 193 persons, with mature cataract, before and after operation, and compare the conclusions they reached concerning the influence of arterial tension in its etiology with those I have found in incipient cataract, but under a different standard of blood pressure, at a higher initial age and in men only. They used five standards of arterial tension as follows: (1) Very feeble tension below 101 mm., (2) feeble tension from 101 to 120 mm., (3) normal tension from 121 to 140 mm., (4) high tensions from 141 to 160 mm., (5) very high tensions above 160 mm. I have used only two standards for arterial tension, because I have not found such a refinement of tension necessary or even desirable. The whole subject is as elastic as the pressures themselves, and fine distinctions as to the exact amount of tension are not possible. We know, in a general way, that age, sex, occupation, general conditions, etc., influence blood pressure so greatly that we can speak only of certain upper and lower limits for the normal. There can be no fixed upper limit for pathologic pressure, for obvious reasons, and the lower limit must be arbitrarily fixed. However, certain standards are sufficiently constant and desirable to recommend them for general use.

I have not met with a systolic pressure below 110 mm., and the average of these 400 records is 139.6 normal and 181 mm. Hg pathologic. Fraenkel and Garipuy report that five of their elderly patients had pressure of 100 mm. and below, measured by a Laulaine's apparatus, which is similar to the Riva-Rocci. They do not so state, but a narrow cuff was probably used, which would give a higher reading than the actual pressure, which it is generally agreed can only be obtained with an armlet of 9 cm. or wider.

These authors state, "In plain figures the normal pressure never exceeds 130 mm., yet even in the normal

5. Morris and Oliver's System of Diseases of the Eye, iv, 289.

6. Walther: *Id.*, ii, 323.

7. Ophthalmic Review, November, 1889.

8. Ophthalmic Year-Book, 1906.

9. Ophthalmology, January, 1908.

10. Studies Concerning the Arterial Tension in Cataractous Individuals, Arch. d'ophth., October, 1906.



a higher pressure may be found for a time." In my previous paper<sup>9</sup> I have reported the blood pressure records of 455 men above 60 years, with 130 mm. as the upper normal limit, and only had 17 cases under that standard, and only 125 cases with the upper normal limit fixed at 145 mm., and for the present paper it has been necessary to compile 555 records in order to find 200 men with blood pressure under 160 mm. Hg. It seems to me that a standard of 130 is too low for a class of elderly hospital and almshouse patients, many of whom must have been hard laborers at some period of life and sufferers from the deprivations and vices to which this class of persons are exposed, and that 160 mm. Hg is not too high an upper normal limit for them.

In reference to such a standard or upper normal limit for elderly persons, Janeway<sup>11</sup> says: "After 50 the average normal pressure varies from 130 to 145 mm. Hg (12 cm. cuff). Gumbrecht places it at 200 in old people, and Hansen at 170 mm. Hg (5 cm. cuff)." Other things being equal, blood pressure tends to rise higher in elderly persons than in those of middle life, just as it is higher in middle life than in childhood and youth. The reasons for this increase are self-evident if we accept the latest theories as to the pathology of arteriosclerosis and high blood pressure. They need not be considered in this connection. Fraenkel and Garipuy say further: "We

also find that age does not influence arterial tension; among the 80-year-old cataractous we have found two very high tensions (160 and 161 mm.), five normal ones and one very feeble one. The same figures are found in the different parts of life." I have not found so low tensions. In 16 men between 80 and 85 years I have found 13 incipient cataracts, 3 with normal pressures 130, 150 and 155 mm., and 10 with pathologic pressure from 167.5 to 235 mm.

Again, they state that "arterial hypertension is only exceptionally found in cases of senile cataract, based on their 108 cases. In 99 uncomplicated cases we have found 80 unelevated tensions, that is, 140 mm., 10 high tensions, not more than 150 mm., and only 9 with a very high tension." They state that these figures for arterial tensions are much lower than those found by them in glaucoma, and that M  o, in 13 old men, taken at random from the hospital with arteriosclerosis, found 177 mm. to be the lowest and 230 mm. to be the highest tension.

This does not seem to be a fair statement of the facts, as the pressures are used to affirm the contention that cataractous persons do not usually have arteriosclerosis and high tension. Without stating what the condition of the lenses was in these 13 men, it is certain that more than 50 per cent. of them had incipient cataracts, and

TABLE 1.—SHOWING AGE AND INCIPIENT CATARACT, IN 200 MEN WITH BLOOD PRESSURE UNDER 160 MM.

Age.	No. of Men.	Blood Pressure.			Cataracts.			
		Average.	Minimum.	Maximum.	Cortical. No.	Unclear. No.	Cortico-nuclear. No.	Total. No.
60	7	142.8	130	150	..	2	..	..
61	9	142.2	115	150	2	2	..	4
62	14	139.6	115	155	3	..	1	4
63	13	139.2	110	150	7	..	1	8
64	16	139.4	125	155	5	..	1	6
59					17	2	3	22
					28.8%	3.4%	5.1%	37.3%
65	22	138.2	110	155	8	..	3	11
66	20	137.5	115	150	4	1	3	8
67	16	144.4	110	155	4	..	..	4
68	8	140.6	130	150	5	..	..	5
69	13	138.8	125	155	3	2	..	5
79					24	3	6	33
					30.4%	3.8%	7.6%	41.8%
70	12	137.1	115	155	7	..	..	7
71	4	136.2	130	140	..	1	..	1
72	6	142.5	130	150	1	1	..	2
73	8	137.5	120	150	2	1	2	5
74	5	135.0	120	150	3	..	1	4
35					13	3	3	19
					37.1%	8.65%	8.65%	54.3%
75	3	135.0	130	140	1	1	..	2
76	5	145.0	135	155	2	..	..	2
77	5	133.0	120	145	3	..	..	3
78	4	143.8	135	155	1	1	2	4
79	3	138.3	130	145	3	..	..	3
20					10	2	2	14
					50.0%	10.0%	10.0%	70.0%
80	2	140.0	130	150	1	..	1	2
81	..	....	...	...	..	..	..	..
82	..	....	...	...	..	..	..	..
83	2	142.5	135	150	1	..	..	1
84	..	....	...	...	..	..	..	..
4					2	..	1	3
					50.0%	..	25.0%	75.0%
85	2	147.5	145	150	1	..	1	2
87	..	....	...	...	..	..	..	..
94	1	150.0	...	...	..	..	..	..
95	..	....	...	...	..	..	..	..
3					1	..	1	2
					33 1/3%	..	33 1/3%	66 2/3%
Averages.		139.6	125.8	150.4				
Total					67	10	16	93
								46.5%
Average age 68.51 years for 200 men.								

TABLE 2.—SHOWING AGE AND INCIPIENT CATARACT IN 200 MEN WITH BLOOD PRESSURE OF 160 MM. AND OVER.

Age.	No. of Men.	Blood Pressure.			Cataracts.			
		Average.	Minimum.	Maximum.	Cortical. No.	Unclear. No.	Cortico-nuclear. No.	Total. No.
60	8	183.8	165	220	1	..	..	1
61	7	174.3	160	190	3	..	..	3
62	17	172.9	160	210	6	1	2	9
63	13	182.3	160	250	6	..	..	6
64	12	170.8	160	200	2	2	1	5
57					18	3	3	24
					31.6%	5.25%	5.25%	42.1%
65	16	175.3	160	240	8	..	2	10
66	7	180.7	160	210	1	1	1	3
67	17	190.9	160	300	6	..	2	8
68	13	178.8	160	200	6	1	..	7
69	8	178.8	160	250	1	4	..	5
61					22	6	5	33
					36.1%	9.8%	8.2%	54.1%
70	18	180.0	160	220	6	..	2	8
71	6	190.0	160	255	1	1	1	3
72	10	184.5	160	230	4	1	..	5
73	5	188.0	160	215	2	2	..	4
74	5	210.0	170	260	3	1	..	4
44					16	5	3	24
					37.2%	11.6%	7.0%	55.8%
75	8	191.3	160	280	3	..	..	3
76	3	183.3	160	200	3	..	..	3
77	6	173.3	160	210	2	2	..	4
78	3	173.3	160	180	..	2	1	3
79	2	175.0	170	180	2	..	..	2
22					10	4	1	15
					45.4%	18.3%	4.5%	68.2%
80	4	185.0	160	220	1	1	1	3
81	1	180.0	...	...	1	..	..	1
82	2	207.5	180	235	1	..	1	2
83	4	167.5	160	175	1	..	3	4
84	1	165.0	...	...	..	..	..	..
12					4	1	5	10
					33 1/3%	8 1/3%	41.7%	83 1/3%
85	2	172.5	170	175	..	1	1	2
87	1	170.0	...	...	..	..	1	1
94	..	....	...	...	..	..	..	..
95	1	200.0	...	...	..	..	1	1
4					..	1	3	4
					..	25.0%	75.0%	100%
Averages..		181.0	162.1	215.0				
Total					70	20	20	110
								55.0%
Average age 68.55 years for 200 men.								

11 Clinical Study of Blood Pressure. p. 109



that if they had been kept under observation, and had lived long enough, probably 25 per cent. would have developed mature cataracts.

They continue: "When referring to the properly so-called senile cataract which is not due to any lesion of the deeper membranes of the eye, nor to a general disease, among 99 individuals examined 5 had very feeble tension (100 mm. and below), 30 had feeble tension (101 to 120 mm.), 45 had normal tension (121 to 140 mm.), 10 had high tension (141 to 160 mm.), and 9 had very high tension (above 160 mm.)" I reported the blood pressure in 50 cases of mature cataract, which ranged from 130 mm. low to 210 mm. high and averaged 161.3 mm., their ages between 60 and 85 averaged 68.5 years. The urine was not examined for albumin and casts in the first 500 cases, but has been in the last 100. The examinations add nothing to our knowledge along these lines.

Finally, it is claimed by these authors, "In the foregoing pages we have reported on the results of our researches concerning the permanent arterial tension in 108 cataractous individuals examined by us; the object was to find whether the arterial tension in the cataractous was sufficiently high to consider these patients as arteriosclerotics." Later they say, "A senile cataract is not usually accompanied by arteriosclerosis." I am able, with a much higher standard, to confirm their statements that age does not materially influence arterial tension except in the general way just referred to, but I affirm, basing my opinion on these statistics, that there is a close and intimate association between arteriosclerosis, pathologic pressure and cataract.

While the proportion of cases of cataract with pathologic pressure is not as great as might be expected, in considering arterial sclerosis and high blood pressure as causes of cataract, we should not forget that the deleterious influences which these may have on the nutrition of the lens need not depend on high pressure alone, since in a certain proportion of cases high pressure is an incident in the course of and not a cause of arterial sclerosis. It is a common observation that extensive disease of the palpable vessels can exist without high pressure, and it is conceivable that the obstruction to the lumen of such vessels could seriously interfere with the nutrition of the lens in cases where arterial tension is not above the normal.

In comparing the statistics presented in Tables 1 to 4 with those given by these observers, it must be borne in mind that we have used a different instrument, a different standard for recording blood pressure, have studied different stages of cataract and different classes of persons. If the percentage of incipient cataract I have found with arteriosclerosis and hypertension is higher than that found by these observers, some of the discrepancy can be explained by assuming that old soldiers furnish a more favorable soil for the development of sclerotic or connective tissue processes, than the class examined by them, but a large part of the discrepancy can not be so explained, but must be charged to the process of reasoning which enables different observers to reach different conclusions from the same observed state of facts. These blood pressure statistics are in harmony with the observations of the best authorities along this line of study.

It may be of interest to state, in closing, and is germane to the subject, that I have in the past four months furnished about 250 cataractous lenses, from men above 60 years of age, to Prof. W. H. Howell of the Johns

Hopkins physiologic laboratory, Baltimore, from the collection of such lenses in the National Military Home Hospital. Mr. Burge, working under the direction of Professor Howell, has found that "there is a marked decrease in the potassium and a corresponding increase in the calcium salts of the ash of such lenses." The work is not far enough advanced to reach any definite conclusion. I have Professor Howell's permission, however, to report this observation in advance of publication, for whatever it may prove to be worth. A full report will appear later in his laboratory bulletin. Mr. Burge's observation of the preponderance of the lime salts in such lenses suggests that the increase in these salts may be general throughout the body and may have some influence also in bringing about some of the processes which lead to aging and arteriosclerosis. The idea, I believe, has long been entertained that calcareous degeneration is one of the ultimate terminations of connective tissue proliferation in the arteries and perhaps in other tissues and organs.

TABLE 3.—SHOWING BLOOD PRESSURE WITH AGE AND CATARACT.

Blood Pressure.	No. of Men.	Age.			Cataracts.			
		Average.	Minim.	Maxim.	Cortical No.	Nuclear No.	Cort.-Nucl. No.	Total No.
110	4	65.5	63	67	1	..	..	1
115	4	64.8	61	70	1	..	..	1
120	6	71.0	65	77	4	..	..	4
125	5	65.6	62	69	2	..	..	2
130	36	68.4	60	80	11	3	2	16
135	21	69.3	61	83	4	2	3	9
140	45	66.9	60	79	17	1	3	23
145	18	70.3	63	85	5	2	3	10
150	51	67.3	60	94	21	2	2	25
155	10	68.2	62	78	1	..	1	2
200					67	10	16	93
160	43	68.9	61	83	16	7	3	26
165	10	68.8	60	84	4	1	1	6
170	38	68.1	60	87	10	6	6	22
175	13	68.8	60	85	7	1	2	10
180	32	69.3	61	82	9	2	2	13
185	4	67.2	61	73	..	1	..	1
190	21	70.5	60	76	7	1	2	10
195	1	71.0	..	..	..	..	..	..
200	13	71.8	64	95	6	..	3	9
205	3	70.0	63	75	1	..	..	1
210	5	68.6	62	77	2	..	1	3
215	2	71.5	70	73	2	..	..	2
220	5	70.2	60	80	1	..	..	1
225	..	..	..	..	..	..	..	..
230	2	69.5	67	72	1	..	..	1
235	1	82.0	..	..	1	..	..	1
240	1	65.0	..	..	..	..	..	..
245	..	..	..	..	..	..	..	..
250	2	66.0	63	69	1	1	..	2
255	1	71.0	..	..	..	..	..	..
260	1	74.0	..	..	..	..	..	..
280	1	75.0	..	..	1	..	..	1
300	1	67.0	..	..	1	..	..	1
200					70	20	20	110

TABLE 4.—SHOWING CATARACT WITH AGE AND BLOOD PRESSURE.

Cataract Kind.	No.	Age.			Blood-Pressure.		
		Average.	Min.	Max.	Average.	Min.	Max.
Cortical .....	67	68.9	61	85	138.5	110	155
Nuclear .....	10	69.5	61	78	139.0	130	159
Cort.-Nucl. ....	16	70.2	62	85	140.9	130	155
	93						
Cortical .....	70	68.9	60	83	183.8	160	300
Nuclear .....	20	71.9	62	85	173.3	160	250
Cort.-Nucl. ....	20	74.3	62	95	178.3	160	210
	110						

My thanks are due to Col. W. E. Elwell of New York, inspector-general and chief surgeon of the National Military Homes for permission to use the material for the paper. I am under renewed obligations to Maj. F. W. Roush, surgeon, for his cooperation in the work, which is respectfully acknowledged. My assistant, Dr. A. W. Bartell, of the medical staff, has given me valuable aid and assistance in the last 100 cases examined. Dr. J. W. Millette of this city, my assistant in St. Elizabeth's Hospital, has compiled practically all of these statistical



tables, and it is a pleasure to acknowledge that whatever of value they may have, in throwing light on the subjects of the paper, is due to the thorough manner in which he has presented the statistics by the above tables.

#### DISCUSSION.

DR. W. B. MARPLE, New York: On studying Dr. Greene's figures and some of my own, I could not escape the conviction that if there was any connection between senile lens changes and pathologic blood pressure it was not very apparent. It is very probable that if there was an intimate connection of this character we should have a harmony in our figures in the different decades or half-decades. Dr. Greene's figures on patients between 60 and 70 years show a larger percentage of cataracts among the patients with pathologic than among those with normal blood pressure, yet evidence of such connection is surely not very apparent among the patients between 70 and 80. In fact, among about the same number of patients between 75 and 80, those with normal blood pressure show a slightly higher percentage of cataracts than those with high pressures. My assistant, Dr. Krug, has recently examined one hundred cases among the patients between 60 and 80 years of age in the almshouse on Blackwell's Island, New York, having all the conditions as nearly as possible like those described by Dr. Greene. The patients were about equally divided between the two sexes. In each patient two observations of blood pressure on consecutive days were made, and the average of the two was taken. I can vouch for the carefulness with which the work was done. A careful study of these tables does not reveal any conspicuous difference. In the percentage of cataracts in the two cases and in some of the decades it appeared as though there was a higher percentage of cataracts among the patients with normal than among those with high pressure, as was the case also in some of Dr. Greene's tables. In all the decades the percentage of cataracts was 64 for the normal and 70 for the high pressure, but the number, 101 in all, was too small, as I consider Dr. Greene's numbers also too small, to warrant the formulation of any very definite ratio. In the higher decades the number of patients with high pressure was larger than of those with normal pressure. Dr. Greene may be on the right track, but it will need larger statistics to show to what extent high blood pressure becomes a factor in the causation of cataract.

Fraenkel and Garipuy bring out one point of real value in the possible connection between arterial hypertension and spontaneous intraocular hemorrhages which follow a cataract extraction. In forty-two cases with normal tension these observers had one hemorrhage (of the anterior segment), while in ten cases with very high tensions in which operation was performed they had three intraocular hemorrhages, one an expulsive one. In the case of expulsive hemorrhage the tension was found to be much higher than in the cases of hemorrhages in the anterior segment. Fraenkel and Garipuy say that if the examination of the cataract patient shows very high tension therapeutic measures should be employed before operating to reduce this tension and to maintain it at as nearly a normal degree as possible until healing is complete. In this way we may try to avoid the expulsive hemorrhage, which is the worst complication of this operation, and also the hemorrhages of the anterior segment which sometimes reduce a favorable result which we thought assured.

DR. EDWARD JACKSON, Denver: I think that so far as the present reported investigations point to a conclusion they point distinctly to an absence of any direct connection between increased blood pressure and cataract. The first table shows a very distinct connection between age and the occurrence of incipient cataract; in every five-year period a distinct increase. We must remember that there is a distinct increase in blood pressure with age. That is shown by all statistics. Taking that fact and Table 3, we find that with increase from 110 to 300 mm. there is no regular increase in the number of incipient cataracts. If we make allowance for the fact that the high blood pressures occur with the greater ages and in persons with senile changes, in whom incipient

cataract is also more common, I think that the table indicates that there is no other connection.

DR. R. D. GIBSON, Youngstown, Ohio: I visited the Soldiers' Home in Dayton a month ago and was impressed with the army of old men Dr. Greene has there to deal with—something like seven thousand. It is very fortunate that the opportunities are being put to use. Eighteen years ago Dr. Knapp, of New York, made the remark that we find senile cataract in one person in every three who attains the age of 70.

DR. LEARTUS CONNOR, Detroit: It is unfortunate that conditions under which the observations were made did not permit of inquiry into the cause of this blood pressure, also that other conditions associated with the formation of cataract have not been eliminated. The effect which blood pressure has on disturbances of metabolism in these patients is still undemonstrated. All observations come from those with whom the battle of life went badly; those in the poorhouse, and the old soldiers, whose nervous and nutritive systems had been badly disturbed. Before we can come to any definite conclusions we must know what changes the blood pressure makes in metabolism in different tissues of the body.

DR. G. F. KEIPER, Lafayette, Ind.: If blood pressure be responsible for incipient cataract then we ought to see more cataracts in younger subjects than we do because angiosclerosis is not confined to old people by any means, but occurs at any age, as any one may demonstrate for himself by means of the sphygmomanometer. There must be something else to account for cataract; this may be one of the contributory causes. A number of these lenses have been examined and there was found a marked decrease in the potassium salts and a corresponding increase in the calcium salts, which would seem to indicate other causes than blood pressure.

DR. OSCAR WILKINSON, Washington: In my opinion there is no branch of ophthalmology so neglected and no class of cases so ignored by the oculist as those with incipient cataract. It is the rule to say, "You have an incipient cataract; it may never bother you, but, if it does, come back and we will operate." That seems to be ignoring a pathologic condition that in any other part of the eye we would attack with the energy it deserves. I think that Dr. Risley sounded the keynote in regard to this condition when he said that it was not due to old age and the natural consequences of old age, but was a process that should be studied and treated, and I think that Dr. Greene is doing a great good. I have for years been working along this line myself and have come to the conclusion that when we pay attention to the processes of elimination and the proper correction of errors of refraction in these cases we can at least postpone the condition.

We all know that in a great many cases lenticular opacities increase rapidly. Patients will come with vision of 6/6, with partial opacity, and in three months will have lost as much as one-third of the vision. It would be interesting to know whether these gentlemen who have had the opportunity of studying the blood pressure have investigated it in relation to the rapidly forming lenticular opacity.

DR. J. L. THOMPSON, Indianapolis: How are we to explain or account for any opacity at the lower inner margin of the lens and in no other part of the body which remains stationary for twenty or thirty years and never results in complete opacity? I have numerous pencil sketches of this peculiar form of lens opacity in said region. I never tell a patient about it except when other parts of the lens are affected.

DR. D. W. GREENE, Dayton, Ohio: Up to the present time only the surgeon and the internist have availed themselves to any extent of the valuable lessons to be drawn from sphygmomanometric records. The fundus blood vessel changes of arteriosclerosis have been extensively studied by oculists, but so far comparatively little attention has been given to the cornea, uvea, lens, vitreous and intraocular tension in connection with arterial sclerosis and blood pressure. The plea of the paper has been for a wider and fuller study along these lines, limited in this paper to the condition of the lens under so-called normal and pathologic blood pressure.



I did not refer to the observation of Fraenkel and Garipay of which Dr. Marple speaks, but I am glad that he has called attention to so important a matter as intraocular hemorrhage in connection with blood pressure. Permit me to digress long enough to call your attention to a matter of equal importance, the association of high blood pressure (as I have repeatedly observed) with delayed healing of cataract wounds, caused in my judgment, by the plus tension so often associated with it.

I wish to call Dr. Marple's and Dr. Jackson's attention to a few figures on page 165, showing 79.5 per cent. of these four hundred men with blood pressure between 130 and 180 mm. Hg; and the largest number of cataracts were found between these limits of pressure. For example, seventy-nine men between 65 and 70 years of age had thirty-three cataracts, 41.8 per cent. with pressure under 160; sixty-one men between the same ages had thirty-three cataracts, or 54.1 per cent., with pressure above 160 mm. Hg. In other words sixty-one men with pathologic pressure had the same number of cataracts that were found in seventy-nine men with normal pressure, which shows an increase of 29.4 per cent. in the pathologic over the normal class. These statistics also show that two hundred men with an average blood pressure of 139.7 mm. Hg. had ninety-three cataracts, while two hundred other men with an average blood pressure of 181 mm. Hg. had one hundred and ten cataracts, showing that an increase in blood pressure of 41.4 mm. Hg. was accompanied by a corresponding increase of seventeen cataracts. Seventeen being 18.5 per cent. of ninety-three, the increase of cataract in those having pathologic over those having normal blood pressure is therefore 18.3 per cent., as already stated. This percentage is too high to be a mere coincidence, and although I do not pretend to say what its total significance is, I think that it shows that pathologic blood pressure or the condition back of it has considerable influence in the causation of cataract. It is hardly fair to interpret the statistics by decades and half decades because of the few men in each. The value of the statistics is in the correct handling of the figures.

It is not intended to imply anywhere in this paper, that arterial sclerosis or high blood pressure are primary conditions in the causation of cataract. It is too soon to make any such statement. My only purpose has been to present statistics showing their association. The causes and pathologic significance of arteriosclerosis and high blood pressure and even lens opacity itself must still be regarded as *sub judice*.

## Clinical Notes

### PERFORATING GASTRIC ULCER,

WITH REMARKS ON DIAGNOSIS AND TREATMENT.

B. VAN SWERINGEN, M.D.

FORT WAYNE, IND.

The following case will furnish the text for some observations which seem appropriate in the light of this experience:

*History.*—E. L. C., 62 years old, had had attacks of "indigestion" for many years. He sought no medical advice for these attacks of stomach trouble except on one occasion in the fall of last year, when he was put on a liquid diet for about ten days; then, the symptoms subsiding, all restrictions were removed and he felt comfortable until about May 16, 1908. He was visiting in Chicago at this time, and attributed the return of his gastric distress to indulgence in Chinese restaurant meals. He described the trouble as a heartburn, accompanied by belching and some distress in the epigastrium during the height of digestion. He never vomited in any of the attacks, nor did he ever have any pain shortly after eating. There was no history of melena. He had no tender spots in the epigastrium or in the back. He did not consult anyone about his last attack until he was taken suddenly with a very severe pain in the right hypochondrium on the night of May 19, 1908. This pain was paroxysmal and radiated to the right shoulder. He vomited several times during the attack. The

temperature and pulse were normal. He was not collapsed at the time of my visit, which was about half an hour after the onset. From the history of the indigestion and the character, location and distribution of the pain, a diagnosis of probable gallstone colic was made and one-half grain of morphia given hypodermically, after which the patient became tolerably comfortable and rested so until morning, when examination showed some tenderness in the right hypochondriac region and over the appendix. Rigidity of the right rectus and increased tenderness over the appendix were added as the day wore on, until the question arose whether it was not a case of gangrenous appendicitis from the start. The liver dulness was not obliterated, but fever and increase in the pulse rate appeared, and the patient was taken to the Lutheran Hospital for exploratory laparotomy just twenty-four hours after the pain began.

*Operation.*—The incision was made in the right rectus opposite the umbilicus, so that it might conveniently be extended up or down as seemed necessary. The appendix was found firmly adherent and some free pus seen in the abdominal cavity. This led to the opinion that the appendix was probably entirely at fault, and it was removed; but not until the appendix was entirely delivered was it seen that no perforation existed in it and that it was not accountable for the free pus. The reason that it could not be examined before removal was that on account of the adhesions the base had first to be ligated and severed from the cecum, and then the adhesions and mesentery tied and separated down to the tip. When the tip came into view there was to be found no evidence of acute trouble; so the incision was enlarged upward and the gall bladder palpated without result. Then the pylorus was examined and some plastic lymph found on its anterior surface, while the intestine in the neighborhood showed evidences of inflammation. While the examination was in progress, some greenish grumous fluid was seen to escape from a small opening, about the size of a lead pencil, located in an indurated area two inches in diameter on the anterior surface near the gastrohepatic omentum. Several Lembert stitches were taken with great difficulty on account of the inaccessibility of the ulcer, and the opening was closed. The pylorus seemed to have been narrowed considerably by the stitches, and the question of gastroenterostomy came up, but was decided negatively on account of the length of time the patient had already been on the table and the necessity for operating in the presence of an established peritonitis. Then, again, it was evident that the pylorus still had an opening, and it was thought best to wait for recovery and do a gastroenterostomy later if required.

*Subsequent Course.*—This was uneventful. The patient did not vomit again. Nothing was given by the mouth for five days, but he had three pints of water by the rectum each twenty-four hours, which was retained. Then water was cautiously given by the mouth, gradually increasing in quantity until the rectal injections were dispensed with and a liquid diet slowly reached. The patient had no return of his indigestion or any stomach distress whatever. Nine weeks after the operation he is on a rather liberal diet, including fish, white meats, cereals, eggs and milk, without any symptoms of gastric retention or pyloric obstruction.

The points in the case to which I desire to draw particular attention are the impossibility of differentiating the primary attack of pain from that of biliary colic, and the close resemblance of the symptoms presented twelve hours later to those of appendicitis. If this resemblance had not been present there might have been time for a gastroenterostomy had it been thought advisable to make it, but the finding of an adherent appendix led to its removal, which proved difficult and time-consuming on account of the old adhesions.

At the present time it seems that the course pursued in regard to the gastroenterostomy was wisest, for the patient has no pyloric obstruction, and an additional operation would have decreased his chances materially and unnecessarily.



During the colic the history of stomach trouble, taken in connection with the sudden onset of paroxysmal pain radiating to the scapula and shoulder and the persistence of liver dulness, made a perfect picture of biliary colic.

It seems to me impossible in a similar case to be sure of one's diagnosis before operation, but safety appears to lie in the recognition of the necessity for immediate laparotomy, which fortunately can be early determined, the exact anatomic diagnosis being completed with the abdomen opened.

208 Washington Boulevard, West.

### A CASE OF TYPHOID SPINE.\*

CHARLES OGILVY, M.D.

Adjunct Professor of Orthopedic Surgery, New York Post-Graduate School; Attending Surgeon New York City Children's Schools and Hospitals and New York Post-Graduate Hospital, Orthopedic Department.  
NEW YORK CITY.

*History.*—G. L., aged 56, had on July 14, 1907, what he terms a chill. The following week he did not feel very well, but continued his work, that of a bank teller. On July 24 he was taken to the nearest hospital suffering from a well-defined attack of typhoid fever. Cold sponge baths were given whenever the temperature rose above 102. These were continued for three weeks; then pneumonia developed. The lower lobes of both lungs were involved. Resolution followed in due course and the patient returned to his home three weeks later, having remained in the hospital for six weeks. His general weakness and disability were not more marked at this time than would have been expected. Three weeks after returning home he was able to get about fairly well, but always complained of stiffness in his back. Walking up or down stairs caused pain in the back, which was somewhat general, but more especially referable to the lower left dorsal region. An unsuccessful attempt was made to resume business. The pain gradually grew more severe. Massage and active and passive motion were advised, from which soon resulted an accentuation of the symptoms. Early in November jaundice developed. This quickly responded to treatment and within a week had entirely disappeared. The patient has had no second attack. In December steam baths were given, the after-effect of which was to depress and weaken the patient. The acute exacerbations of pain were now so severe at times that the administration of morphin was necessary. The actual cautery was used with slight temporary relief. Adhesive-plaster strapping was followed with better results, though administration of morphin had still to be resorted to. On Jan. 9, 1908, the case was referred to me by Dr. A. H. Moore of New Rochelle. At this time the symptoms of pain and distress were much accentuated. The slightest movement in bed caused a sharp shooting pain in the back, radiating toward the abdomen. Even the raising of an arm from the bed would cause a painful spasm. The patient also complained of marked tenderness over the costosternal junction of the sixth rib on the right side. Though a well-nourished man and of a naturally phlegmatic temperament, he was extremely nervous, and at times inclined to be hysterical. This was most noticeable when recounting the history of his illness, and especially when describing the pain. He wore a haggard, anxious look, which was not relieved between the painful spasms, but was exaggerated at these times.

*Examination.*—This showed a small but distinctly marked kyphosis of the seventh dorsal spine. To the left of this, of the size of the palm of the hand, was a hypersensitive area which was exceedingly tender on pressure. On either side of the spinous processes, in the dorsal region, there was marked hypersensitiveness and some swelling; a right dorsal curvature was also present. An enlargement of the sixth rib over the area complained of in front was distinctly palpable. This was quite painful on pressure. Breathing was painful. Knee-

jerk were exaggerated. Temperature was but half a degree above normal and pulse was 110.

*Treatment.*—It was not advisable to apply a plaster-of-Paris jacket because of the severity of the pain the application of the jacket would involve. A plaster-of-Paris bed was made. This included the thighs and extended upward, including the neck and shoulders. It was retained in place by a plaster-of-Paris bandage below and a muslin bandage above over the thorax. This bed was applied on January 11, from which time the patient began to improve. No morphin was afterward administered, and though the patient was very nervous for the following week, there were none of the severe attacks of pain previously noted. On January 28 the patient was allowed to sit up for half an hour. No ill effects followed and he was up every day after this date. After getting up he complained of stiffness in the knees. This was at first quite a distressing symptom, as was also stiffness in the shoulder joints. The latter disappeared; the former was still a subject of complaint at times to a slight extent, especially after the patient had remained seated for some time. On Feb. 6, 1908, the plaster-of-Paris bed was replaced by a plaster-of-Paris spinal brace. This was made six inches wide, extending from the spine of the first dorsal vertebra to the tip of the coccyx, and having a pelvic band of steel and an apron and shoulder straps such as used with the Taylor brace. This was worn day and night for the succeeding two months, being removed but once a day to allow the back to be sponged and powdered. An unsuccessful attempt was made to isolate the typhoid bacillus from the urine and feces, though it was not expected that we should find any at this time.

*Later History.*—On March 20 the patient returned to his place of business, remaining for one hour. From March 27 he was actively engaged in business. He had no pain whatever, but walked with a slight scoliosis, which he said was noticeable before his present illness, the right shoulder being higher than the left, as he expressed it. There was still some slight tenderness anteriorly over the sixth costosternal articulation. The kyphosis was still perceptible, but much less prominent and distinct. The knee-jerks were slightly accentuated. The general condition was much better than it was previous to the onset of the fever in July. The plaster-of-Paris spinal brace was still being worn during the day.

This case is of particular interest because of the age of the patient and of the severity of his symptoms, in addition to the presence of a kyphosis denoting bone change. It also accentuates the importance of perfect immobilization, as has been so well emphasized by earlier writers.

125 West Fifty-eighth Street.

### APPARATUS FOR CONTINUOUS SALINE ENEMAS IN PERITONITIS.

D. N. EISENDRATH, M.D.

CHICAGO.

Two of the chief factors in reducing the mortality after operations for general peritonitis have been the use of the Fowler position and the continuous rectal administration of salt solution as suggested by Dr. J. B. Murphy. One of the most difficult problems in connection with the use of salt solution per rectum has been to maintain it at a constant temperature. The usual custom is to surround a glass percolator with hot-water bags, which latter must be refilled frequently. I have devised a simple and inexpensive apparatus by which a constant temperature can be maintained either by the use of electricity or of an alcohol lamp or small Bunsen burner, and this has been employed in a number of cases at the Michael Reese Hospital.

It has seemed desirable to construct the apparatus so that either electricity or some other form of heat (gas or alcohol lamp) could be employed. It is designed on

\* Read before the Orthopedic Section, New York Academy of Medicine, April 17, 1908.



the plan of the filters which are used in bacteriologic laboratories for filtering agar agar. It is made of tin and consists of a double-walled water jacket (C) mounted on legs eight inches in height. The space within the jacket is conical and just large enough to hold a glass percolator with a capacity of one quart.

Rubber tubing is attached to the lower end of the percolator and connected with an ordinary rectal tube. The flow is regulated by a special screw cock in such a manner that a drop per second escapes into the rectum. It is possible for the patient to absorb ten pints in twenty-four hours. The lower level of the water should be eight inches higher than the bed so as to permit a

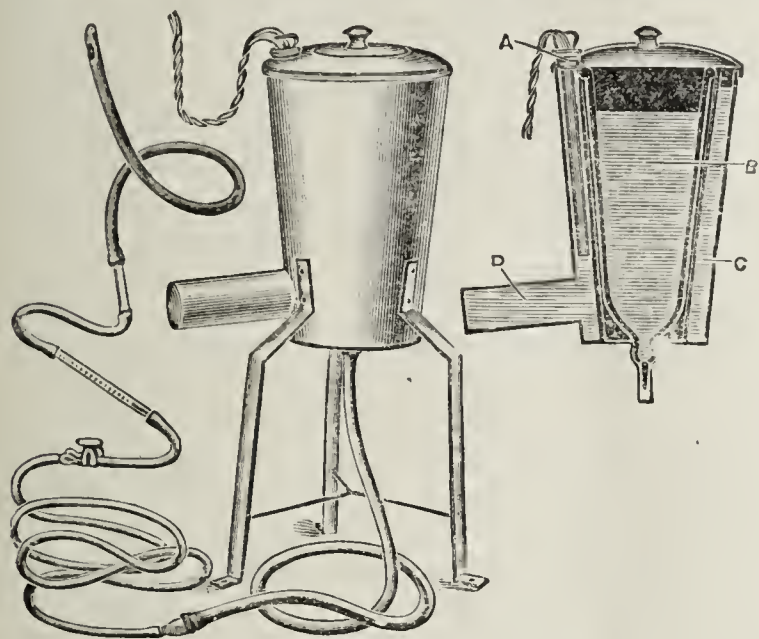


Fig. 1.—Apparatus for continuous saline enemas in peritonitis. A, thermophore; B, saline solution; C, water jacket; D, projection for heating the water over gas or alcohol flame.

continuous flow. If electricity be employed as a source of heat, a special thermophore A is used, which is inserted directly into the percolator B and maintains a constant temperature of 120 F., so that, allowing for an unavoidable loss of heat, the salt solution flows into the rectum at a temperature of 95 to 100 F. The cut incorrectly shows this thermophore inserted into the outer chamber. If gas or an alcohol lamp is employed (as might be necessary in private residences) the water in the outer chamber C is heated at the projection D.

103 State Street.

## Therapeutics

### SYPHILIS.

Dr. James Pedersen, New York, in the *Vermont Medical Monthly*, May, 1908, discusses the diagnosis and treatment of this disease. He divides the disease, as the patient first presents himself to the physician, into four groups: "In the first there is a sore, in the second a sore and an eruption, in the third either an eruption or a sore throat or both, and in the fourth there is nothing visible and, perhaps, nothing palpable. These groups are arranged in the order of their relative frequency of occurrence." Unfortunately for both physician and patient, "the typical Hunterian chancre is only found in the minority of cases." In the majority of patients the ulceration, chancre, or new growth, presents many non-typical signs. Pedersen believes that "every lesion on or about the genitals, occurring within seventy days after an opportunity for infection, may be a point of syphilitic inoculation." He also believes that "every

genital ulcer, however simple or however serious, should be regarded as the possible site of a mixed infection." Such suspicious ulcers should not be canterized unless the ulceration tends to spread rapidly or to erode. In doubtful cases the physician should express the probabilities to the patient, but mercurial treatment should be withheld "until the secretion from the ulcer has shown the *Spirochata pallida* or until enlarged inguinal glands, eruption or mucous patches in the throat have appeared." Pedersen does not believe that too much value should be placed "on the enlargement of the epitrochlear and axillary glands, especially in patients doing work that exposes the hands to frequent trauma."

While many writers on this subject believe that specific treatment should not be begun until the first eruption appears, Pedersen thinks that a doubtful case may be diagnosed and the treatment begun "when such symptoms as lassitude, headache, fever and nocturnal bone pain occur in such suspected patients." Such patients may have albuminuria and enlarged spleen, he states. It would seem generally advisable, however, in order to obtain the continued cooperation of the patient for the number of years that he must be treated, that, except in rare instances, specific treatment should not be begun until the first secondary symptoms are in evidence.

Pedersen emphasizes the great importance of general hygienic treatment in conjunction with the administration of the necessary drugs. In doubtful cases he would begin the preparation of the patient, if possible, by giving a vacation in which he spends his whole energies in improving his general health. Such a preparation of the patient, unfortunately, would ordinarily be difficult to institute. It should be emphasized, however, that, as Pedersen states, a nutritious, simple diet, total abstinence from alcohol and tobacco, a proper amount of fresh air and a proper amount of physical exercise are essential to the tolerance of the disease and the mercury.

Cauterization of the initial sore should be avoided, if possible, until the diagnosis has been established. Also no mercurial dressings should be applied until such a diagnosis has been made. Ordinarily cleanliness and protection and other antiseptics than mercury may be used. If the diagnosis is positive, cauterization may be done, but not frequently, and some mild mercurial dressing may then be applied. But whatever the dressing, it should not be irritant lest it cause inflammation of the surrounding tissues. If the chancre is syphilitic, when it is deemed best to administer mercury internally, it will rapidly heal without local mercurial applications.

During the mercurial treatment the patient should drink plenty of water to promote the activity of all the organs of excretion. The mercury will probably soon cause sufficient or even perhaps too frequent movements of the bowels. The care of the mouth, teeth and gums is important, and the patient can not be too carefully instructed in this matter. Any alkaline wash, or, if there are any erosions, peroxid of hydrogen applications, or a mouth wash of alcohol one part and water three parts, or a potassium chlorate mouth wash, and occasionally tannic acid washes and gargles are useful. Ulcerations in the mouth and throat will often heal rapidly after one or two applications of a 25 per cent. solution of nitrate of silver. Without ulceration in the mouth and throat the mucous membrane may be kept healthy by a thorough cleaning of the teeth two or three times daily, and the cleansing of the mouth and throat with alkaline solutions as represented by the following.



R. c.c.  
Liquoris antiseptici alkalini (N. F.) . . . . 500 | or Oi  
Sig.: Dilute with equal part of warm water and use three times daily as a mouth wash.

If there is simply a general redness and soreness of the mouth and gums, there is no application more soothing than potassium chlorate solution, as:

R. gm. or c.c.  
Potassii chloratis . . . . . 25 | or ʒi  
Aque . . . . . 500 | Oi  
M. et sig.: Use, undiluted, as a mouth wash or gargle, two or three times a day.

If there is any purulent condition of the mouth or gums, or any cavities of the teeth that can not be attended to immediately by a dentist (who should be told what disease the patient has for his own protection and that of the rest of his clientele), a dilute solution of peroxid of hydrogen makes the best cleansing mouth wash, as:

R. c.c.  
Aque hydrogenii dioxidi . . . . . 250 | or Oss  
Sig.: Dilute with four parts of warm water and use, three times daily, as a mouth wash.

Directly after using a peroxid solution the mouth should be cleansed with plain water or, better, an alkaline solution, as the above.

If it is thought best to use a tannic acid solution to cause a flabby mucous membrane to become more healthy, it may be used as follows:

R. gm. or c.c.  
Acidi tannici . . . . . 5 | ʒiiss  
Glycerini . . . . . 10 | or ʒiiss  
Aque, ad . . . . . 200 | ad ʒiiss  
M. et sig.: Use, undiluted, as a mouth wash or gargle, three or four times a day.

The patient should be thoroughly instructed as to the danger of his infecting others and the manner of such infection, as by napkins, towels, drinking cups, spoons, forks, or kissing. Such instructions should be most explicitly given if there are mucous patches in the throat.

There is as yet no serum treatment for syphilis, and there is no medicinal treatment whose success is at all comparable to that of mercury and an iodid. Probably the most frequent forms of mercury used internally are the protiodid (the green or yellow iodid), the biniodid (the red iodid), the bichlorid (corrosive sublimate), calomel, and blue mass, and the frequency of their use is probably in the order named. For inunction the blue ointment or the oleate may be used, and for hypodermatic administration Pedersen says that four forms of mercury are available: the bichlorid, the salicylate, the biniodid, and the mild chlorid (calomel). Mercurial fumigation should rarely, if ever, be done, as the amount that may be absorbed is beyond regulation and sufficient may be taken into the system to cause serious symptoms.

Hypodermatic administration is used when the disease must be gotten under immediate control, when the lesions are likely to become serious, as eroding ulcerations with perhaps palate perforations, or nasal perforations, or symptoms showing that gummata are forming in the central nervous system or elsewhere, or when inunctions are inadequate and medication by the mouth causes uncontrollable gastrointestinal disturbances. In rare instances hypodermatic medication may be used when it is necessary that the patient's family should not know that he is receiving medication. Some physicians advocate the hypodermatic administration of mercury in

every case of syphilis; the majority of physicians, however, have not adopted it. The advantages are that the patient comes more quickly under the influence of the drug, and one injection gives sufficient mercury for absorption to last a number of days (from five to seven), this infrequency when the symptoms are not serious. The disadvantage, and the reason that it is generally not selected by physicians, is the discomfort that it almost invariably causes. An all-glass syringe with a needle at least two inches long is used and the injection is generally made deeply into the gluteal muscles. Pedersen recommends as preferable for this purpose a bichlorid of mercury solution of the strength of  $\frac{1}{8}$  of a grain in 5 minims. This strength allows the physician to run up the dose from 5 to 10 minims, the capacity of an ordinary hypodermic syringe, allowing sufficient dilution. Hypodermic tablets of corrosive sublimate may be dissolved in sterile water at the time of the injection, or, as recommended, the following solution may be used:

R. gm. or c.c.  
Hydrargyri chloridi corrosivi . . . . . 625 | gr. xii  
Aque destillatæ . . . . . 25 | or ʒi  
M. et sig.: Corrosive sublimate for hypodermic use.  
[Each .30 c.c. = .008 gm.] [Each 5 m. =  $\frac{1}{8}$  gr.]

Sometimes the salicylate of mercury is preferred, and this may be suspended in an oil. The dose is from  $\frac{3}{4}$  of a grain (.045 gm.) up. This salt does not cause pain after injection.

The injection treatment of syphilis was further discussed in THE JOURNAL, July, 27, 1907, page 339. Dr. William S. Gottheil's article in THE JOURNAL for August 3, 1907, page 365, should also be referred to. The intravenous treatment of syphilis was discussed by Dr. G. Frank Lydston in THE JOURNAL, Nov. 16, 1907, page 1662.

The yellow iodid, or the red iodid, or the bichlorid of mercury, are the best salts of mercury for internal administration. The dose should begin small and gradually increase to the point of tolerance, unless before such a dose is reached the local lesions begin to disappear.

The teeth and gums should be carefully watched, and while it may be necessary to cause a little tenderness of the gums, stomatitis should not be allowed to develop except, perhaps, unavoidably in unexpected cases of idiosyncrasy to mercury. If nausea and vomiting, or diarrhea occur, the mercury must be stopped and some astringent iron administered. A slight looseness of the bowels may be tolerated. Sometimes it is advisable for a short period, until tolerance to mercury is acquired, to give a small daily dose of opium or morphin, as perhaps  $\frac{1}{10}$  of a grain of morphin once or, at most, twice a day. Such should not be long continued, and it rarely is necessary. It is also generally advisable, at least in the early months of the treatment, to give some iron daily, either as Bland pill or reduced iron tablet, in a dose of 3 grains, three times a day, after meals. Whether or not a bitter tonic is needed depends on the appetite of the patient. During all the early stages of syphilis the patient should be encouraged and his fears of future usefulness, or permanent or transmittable disease, quieted.

If it is deemed best to give the mercury by inunction the oleate is perhaps the best preparation, and a small amount, from the size of a pea to the size of a hazelnut may be rubbed into different parts of the body. This should generally be done daily, then every other day, and



later every third day. The patient should first prepare the part, and this had best be the inside of the thigh or the inside of the upper arm, or the side of the abdomen, and the parts used should be alternated and the round made from one part to the next in regular series. The skin should first be washed with soap and water, then dried, and then the oleate rubbed in. As soon as it is thoroughly rubbed in the part may be covered with a piece of flannel pinned to the underclothing. This allows absorption to continue and prevents staining the clothing. At least twice a week the patient should have a good hot bath, and, in fact, a patient under any continuous administration of mercury should have tub baths at least twice a week.

The length of time mercury should be given before the dose be reduced or when it may be intermitted, or whether or not it should be administered for the whole period of three years, is a subject still open to discussion. Pedersen does not state when a dose found sufficient should be diminished, but he does believe that the mercury should be given, or at least the treatment, for three years.

The question as to when an iodid should be given, or how long, or whether an iodid and mercury should be administered simultaneously, or when an iodid may be substituted for the mercury, is again a subject open for discussion. As Pedersen well shows, no hard and fast rule can be laid down for the administration of an iodid, but he advises that a squamous or a tubercular syphilide should call for both mercury and iodid of potassium treatment. Also when there is gummatous formation he believes the mixed treatment should be given. It is still a question whether, with no symptoms present, mercury should be continued through the three years or whether iodid should be substituted. It is also not positively demonstrated that mercury having long been administered may not remain deposited in different parts of the body, and doses of iodid given continuously may liberate such deposited mercury. In other words, the patient may possibly be still undergoing the action of mercury, although no fresh mercury is at this time administered. It seems advisable, however, with definite syphilitic manifestations, even with definite secondary, especially tertiary manifestations of syphilis, to use the mixed treatment. The patient is thus given every chance of the lesion becoming healed.

While the iodid of potassium is the salt most generally used, the sodium iodid is perhaps preferable, since the sodium element is not as debilitating to muscle tissue as is the potassium. This is especially true of the cardiac muscle. Hence when large doses must be given, or when the dosage must be prolonged, the iodid of sodium should be preferred. This salt also sometimes seems less likely to disturb the stomach.

The symptoms of iodism should be avoided if possible. These symptoms are coryza, frontal headache, reddening of the eyelids, a strong, metallic taste in the mouth, sometimes a profuse flow of saliva and gastric indigestion. It is unimportant whether the iodid is ordered largely diluted or in saturated solution, but it should never be ordered in any syrupy, nasty mixture. It is preferably administered in milk or in an alkaline water. It is generally best administered after a meal, theoretically best an hour after meals, as it slightly inhibits digestion. When an iodid is administered the yellow iodid, i. e., the protoiodid, of mercury should not be the salt selected for simultaneous administration, as

it is likely to be chemically changed into the biniodid (red iodid) of mercury, which salt would then be present in a poisonous quantity. The following prescriptions may be used:

R.  
Sodii iodidi ..... gm. 25  
Aque destillatæ, q. s. ad saturandum..... | q. s. ad sat. or 3i  
M. et sig.: Five drops with milk or water, three times a day, after meals.

Each drop of this solution represents a grain of the drug. The dose should be gradually increased until the amount given is deemed sufficient.

Or  
R.  
Potassii iodidi ..... gm. or c.c. 10 | or 3iiss  
Aque ..... 100 | fl3iii  
M. et sig.: One-half a teaspoonful, in milk or water, three times a day, after meals.

The iodids have been given in enormous doses, especially where gummata of the central nervous system has been diagnosed. It is a question whether such large doses are justifiable and even whether such large doses are of advantage. It is probable that ordinary fair-sized doses can do as much chemical and biologic good in causing resorption of connective tissue formations, the blood and cells being only able to absorb and utilize a certain amount of iodine, as could possibly be caused by enormous doses. In other words, enormous doses are illogical and are probably rapidly passed out of the body by the excretions.

Various other preparations of iodine are offered which are said to have the advantage of the above iodids in that they do not cause disturbance of the stomach and that they do not as readily cause iodism. When these preparations are analyzed and the exact amount of iodine which they contain discovered it is seen that the reason that they do not cause these symptoms is because the amount of iodine is so small. Consequently, if iodism is caused by potassium or sodium iodid, or they are not tolerated by the stomach, all the physician needs to do is to reduce the dose to that which will not cause disturbing symptoms, and it will then be as large a dose of iodine as would be given by an ordinary dose of one of the patented preparations.

It is possible that the thyroid gland is caused to atrophy earlier than normally by the prolonged action of mercury, and this may be a reason why in the later stages of syphilis, when connective tissue processes are so likely to develop, arteriosclerosis, locomotor ataxia, or some other sclerosis, that the iodids have been found to be of such value. An iodid in ordinary doses certainly stimulates the thyroid gland, and it is quite likely that when the condition to be combated is not serious, in the later stages of syphilis, a small dose of thyroid gland, as represented by two or three grains of the dried extract each day, may prove a valuable adjunct to the late treatment of syphilis, and may prevent, if given for a short period during each year, some of the degenerations which develop in patients who have had syphilis years before.

---

**Thoroughness.**—There are men who succeeded in the practice of medicine because of the single habit of thoroughness. The patients are completely examined and in an aggregate of cases though possessed of mediocre ability a large number of good diagnoses must result. A complete examination not only inspires the patient's confidence, but the physician's confidence in himself, and that in turn is felt strongly by the patient.—*Leucocyte.*



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, AUGUST 1, 1908.

## TUMORS OF THE TESTICLE.

Between the tubules of the adult testicle lie groups and strands of cells which are distinguished from ordinary stroma cells by their well developed cytoplasm, and whose structure is such as to suggest an active function. First described by Leydig in 1850 they have occasionally been referred to as "Leydig's interstitial cells," and in some of the other mammals they have been found to be more highly developed than in man. The French physiologists and pathologists in particular have maintained that these cells are responsible for the internal secretion through which the testicle influences the general metabolism, the development and the psychology of the adolescent and adult male. For analogy they may be likened to the islands of Langerhans of the pancreas, which are developed in the interstitial tissue between the proper tubules of the gland, and which produce the internal secretion of the organ while the tubules produce the external secretion. As evidence of the functional activity of these cells the following facts may be cited: If, because of obstruction of the seminal passages, the seminiferous cells of the testicle undergo atrophy, the evident effects of the internal secretion of the testicle are not lost, and the interstitial cells are found to persist. In cryptorchids with normal sexual development these interstitial cells are always found to be well developed, while in cryptorchids that fail to develop these structures are found wanting or hypoplastic; removal of retained testicle from cryptorchids produces the same effects on development and sexual activity as removal of normal testicles, although such retained testicles possess no seminiferous structures, but only the interstitial cells. If in animals with one undescended testicle the normal testicle is removed the animal usually develops normally, and in such cases the retained testicle will show what seems to be a compensatory hyperplasia of the interstitial cells.

In man the interstitial cells reach their greatest development in retained testicles, especially in cases of bilateral cryptorchidism. In such testicles, with poorly developed seminiferous tubules, the interstitial cells may form more of the total bulk of the organ than the tubular structures, and sometimes their volume is such as to compensate for the loss of tubular elements so

that the testicle may be of normal size. Dürck<sup>1</sup> has described as a special pathologic entity a form of hyperplasia of the interstitial cells, which he believes is primary and leads to a secondary atrophy of the seminiferous elements. This process occurs not only in ectopic testicles, but also in those in the normal site, and the proliferation sometimes takes on so extensive a character as to result in an actual tumor formation. Although it may be difficult to accept Dürck's idea of a primary hyperplasia of these cells leading to destruction of the other proper elements of the testicle, yet there can be little question that tumors of peculiar interest may arise from these interstitial cells. Pathologists have long known that the differentiation of many of the tumors of the testicle is often extremely difficult and peculiar forms of new growths are met with which are variously interpreted as sarcoma, endothelioma, perithelioma, angio-sarcoma, and even carcinoma. It is also well recognized that retained testicles are peculiarly prone to undergo malignant transformation, and it would seem that many of these tumors, both of ectopic and normal testicles, represent new growths derived from the interstitial cells.

Such tumors were recognized and described by a few pathologists years ago, but the subject is now again brought to light by the independent studies of Chevassu<sup>2</sup> in Paris and Kaufmann<sup>3</sup> in Göttingen, both of whom maintain the individuality of the tumors arising from the interstitial cells. In connection with the view that these cells are responsible for the internal secretion of the testicle, it is of interest to note that one of Kaufmann's specimens was removed from a mentally defective individual who was said to be sexually perverted. In all probability now that the characteristics of these tumors have been described they will be found to be not at all uncommon, and many pathologists will recall instances of testicular tumors of doubtful nature which were probably of this type.

## THE ETIOLOGY OF PULMONARY TUBERCULOSIS.

The present status of the question of the interrelations between bovine and human tuberculosis is ably summarized by Sir William Whitla, in the recent Cavendish lecture.<sup>4</sup> He details the salient points of the question from the discovery by Koch, in 1882, of the tubercle bacillus, and the subsequent startling announcement by the latter in 1901, of a specific difference between the bovine and the human types of tubercle bacilli. This announcement carried with it the revolutionary corollaries, first, that the human variety of micro-organism can not produce tuberculosis in bovines; and second, the far more pregnant one, if true, that the bovine variety can not produce tuberculosis in humans.

1. Verh. Deut. Path. Gesellsch., 1907, xi, 130.

2. Monograph, "Tumeurs du Testicle," Paris, Steinheil, 1906.

3. Verh. Deut. Path. Gesellsch., 1907, xi, 237.

4. Brit. Med. Jour., July 11, 1908.



These conclusions were so at variance with the accumulated experience of clinical observers that they raised a storm of protest, which naturally stimulated reinvestigation by a host of workers, with a view to proving or disproving Koch's pronouncements. "To any one," says Whitla, "who attempts to survey the extensive literature of this portion of the tuberculosis problem accumulated during the past six or seven years, the contradictory nature of the experimental results at first sight appears really astounding. Nevertheless," he continues, "amidst the chaos of conflicting opinions light can be discerned as clearly breaking, and I believe we are safe in concluding that the main issue has been demonstrated, even by the results of those experimentalists who still cling to a belief in there being a specific difference between human and bovine tuberculosis."

To physicians and sanitarians a clear understanding of the tuberculosis problem is obviously essential, since "as long as doubt or confusion exists, regarding the fundamental question of the practical identity or otherwise of bovine and human tuberculosis," all efforts toward efficient prophylaxis must be paralyzed. But, as Whitla says, the problem has "been so thoroughly attacked from so many standpoints that it is now safe to affirm that the main issue has been made clear," notwithstanding minor differences.

In 1898, Theobald Smith established "several decided differences between the human and bovine types," which are now accepted "both by the few who still cling to Koch's view and by those most strongly opposed to his conclusions." These differences are: 1, morphologic; 2, cultural; 3, chemical changes in the media, and, 4, differences of pathologic activity. Whitla describes the first three and then discusses the all-important fourth. Experiments with rabbits, guinea-pigs, and swine show clearly that these animals are all susceptible to infection by both types. The difference is not specific, but one merely of degree. While goats are much less susceptible to human than to bovine tuberculosis, Calmette and Guérin have shown that, not even in the insusceptible goat has there been established any fundamental difference between the action of the human and the bovine types of bacillus. As to the ox, it must be at once admitted, says Whitla, that the bovine type of bacillus exhibits for bovines a much higher infective potentiality than that of the human type. Regarding the converse view—that bovine tuberculosis is to be regarded as practically non-transmissible to humans—Whitla admits that its actual truth or fallacy is "outside the scope of direct experimentation," but he adds, "I am not without hope of being able to convince my hearers that its fallacy has been already amply proven by the very researches which are supposed to demonstrate the impossibility of producing bovine tuberculosis by the human bacillus." He then cites the inoculation experiments of Kossel, Weber and Heuss, for the German

Imperial Health Council, which are held to establish a fundamental distinction between the human and bovine types of tubercle bacilli. But he points out that, even if we accept these experiments unreservedly as absolutely conclusive proof of a true specific difference between the types, we are confronted by the fact that although it is unanimously admitted that the human type is not found in bovines, "there is practically the same unanimity that the so-called bovine type is often found in human tuberculosis." The only difference of authorities is as to the frequency with which it is so found. The experiments above cited, while showing that human bacilli inoculated into calves produced only local implication of the shoulder glands, also showed that young oxen inoculated with a similar dose of bacilli of the bovine type derived from human tuberculous lesions all sickened with general tuberculosis. Whitla further cites the statement of Weber, a firm believer in the constant differences between the human and bovine type, that "it must be emphasized that between the bacilli of the bovine type coming from the ox and the pig and the bacilli of bovine type bred from human tuberculosis, there exists no difference as regards their virulence for oxen." Whitla continues: "If we accept the view of Koch, that there is a vital or specific difference between the bacilli of human and bovine tuberculosis, the question has got to be answered, 'Whence come the bacilli of bovine type which so constantly are to be found in a considerable percentage of cases of human tuberculosis?' The answer can only be found in the obvious transmissibility of the tuberculosis of bovines to man, or else in an assumption which practically amounts to the same thing, that the ox and the human derive their infection from a common source. It would thus appear that the more important of Koch's two statements is amply disproven by the results obtained by his own followers who have labored to demonstrate that human tuberculosis can not be transmitted to the ox." But Whitla points out that even this last contention can not be proved, and that many experimenters have obtained results directly at variance therewith, and have further demonstrated to their entire satisfaction the practical identity of human and bovine bacilli. He accordingly accepts "the conclusions of the great majority of all recent workers in their agreement about the practical identity of human and bovine tuberculosis." He then passes to a consideration of the portal of entry of the bacillus and endeavors to show that "the intestinal route plays a far more important rôle in the production of human pulmonary tuberculosis than has been hitherto recognized."

It may, therefore, be unhesitatingly stated that, for practical purposes, at any rate, the possibility of tuberculosis being conveyed from bovines to humans must be admitted; it remains now to settle to what extent and by what channels such transmission takes place.



## ORGANIZED RESCUE WORK IN MINES.

Several recent explosions in mines, notably that at Courrières, in France, where hundreds of men lost their lives, while the evidence showed that they were alive long after the time when they were supposed to have perished, have impressed on governments the necessity for effective, properly organized rescue work. A government report, recently issued,<sup>1</sup> contains a review of what is being done in Europe for the organization of rescue work after serious accidents or explosions in mines.

There have been several such disasters in this country in recent years that make the subject of special importance to us. When an accident happens in a mine the readiness of comrades to risk their lives to save those who are in danger is the principal feature of the rescue work. As a rule, however, these men are but ill-trained, and dependable apparatus is not provided to enable them to penetrate some distance into the mine in spite of the presence of "after-damp." If it were provided, and if the men were trained in its use, very effective rescue work might be accomplished without that delay which renders the death of the victims almost inevitable.

The particular needs for these emergencies are breathing apparatus and a trained corps of rescuers who know the dangers and have been taught how to avoid them, or at least how to minimize them to a great degree. Both these requirements demand the assistance and oversight of physicians, or at least of those who understand respiratory dangers and are able to pick out proper subjects for such rescue work and to recognize the earliest signs of approaching exhaustion. In Austria and France the provision of rescue apparatus in mines is now made compulsory by law. In Germany it has been voluntarily adopted in all collieries. In Russia, when over fifty men are employed in one mine, it is provided that "every colliery where more than fifty miners are at work must have a rescue corps trained to work in irrespirable gases, that the number of men in such a corps must be equivalent to 4 per cent. of the miners at work, and that at least three sets of breathing apparatus fully equipped must be kept in readiness by each colliery." The breathing apparatus principally in use is a helmet appliance somewhat resembling a diver's helmet, through which fresh air is supplied from a distance by means of tubes, the respired air being conducted away. In recent years a pneumatophore has come into use and has given considerable satisfaction. In this the expired air passes through chemicals by which it is regenerated and can be breathed over again. This can be depended on to allow a man to work in irrespirable air for two hours.

It is felt, however, that the most important part of the work is the training of rescuers. This is now being done at a number of places in England and Scotland. A certain number of men are trained at each colliery, and in case of an accident those from near-by collieries

are summoned by telephone so that a considerable body of trained rescuers becomes available without much delay. A recent report of a commission appointed to investigate this subject, the commission consisting of practical mining engineers and medical and other experts, advised that at least thirty men in each colliery should be given regular instructions in the use of the various methods necessary in restoring ventilation to the shut-off portion of the mine as soon as possible and in rapidly bringing aid to those who are the victims of the after-damp of the explosion. The whole subject is in line with humanitarian advance and appeals to physicians more than to any others in the community. Such precautions will not often prove life-saving, but when they do they will, as a rule, prove the means of rescuing not a few but the many men who are likely to be imprisoned or overcome in these sad disasters.

## THE WHITE RACE IN THE TROPICS.

The optimistic opinions credited to Dr. Gorgas and others, as to the conquest of the tropics for the white man by the recent developments of medical science, are decidedly contradictory to the general ideas as to the essential unhealthfulness of those regions for our race. It has been demonstrated that the great scourges of malaria and yellow fever are avoidable, that the cause of tropical anemia is a controllable parasite and that the death rate in well-governed tropical cities can be brought down to a figure comparable to that of many municipalities in the temperate zone. A temporary residence in the tropics has lost many of its former terrors. The question still remains whether the northern races can permanently occupy the equatorial regions of the earth without disaster, or, at least, without undergoing mental and physical deterioration in the course of time from the effects of climate alone, admitting that the parasitic diseases of the tropics can be conquered.

In his recent article in *THE JOURNAL*<sup>1</sup> Anderson takes the extreme position that the tropics are deadly to the morale and vigor of the northern races and that only black and brown races can thrive or can successfully survive in these most productive portions of the globe. The historical facts which Anderson adduces in support of his views, however, lose most of their force when we consider that they all are of a date prior to the recent discoveries and many of them are, aside from this, poorly chosen for his argument. Buccaneers and military expeditions are not colonies and their disasters are not good evidence of the impossibility of serious attempts at colonization. For centuries the Spanish and Portuguese were the only nations permitted to colonize Latin America, and their active opposition was, as much as the climate, the reason of the failure of the one or two not very well organized attempts of colonists of the more northern Europeans in those regions. Against the

1. Daily Consular and Trade Reports, Bureau of Manufactures, U. S. Department of Commerce and Labor, June 25, 1908.

1. *THE JOURNAL A. M. A.*, May 30, 1908.



failures we may place the successful colonizations of the English in tropical Australia, the Germans in Brazil, the Americans in Hawaii, to say nothing of our own Gulf coast, which is at least subtropical. There is, moreover, no evidence that Germans or Anglo-Saxons would not have made as successful colonists in Spanish America, had they been permitted or sufficiently attracted there, as the Spaniards themselves.

It is still generally assumed that whites are unfit for hard physical labor in the tropics and that, subjected to such conditions, they must necessarily succumb. It is not absolutely proved, however, that this is anything more than an assumption, if the infectious and parasitic diseases of those regions can be guarded against. Undoubtedly there would be some physical changes and possibly other modifications, but whether any that would affect the vitality or virility of the race, if correct sanitary conditions can be secured, has not yet been demonstrated. Whether the modified tropical white man will be the moral and physical equal of the white man of temperate regions may be a question; humidity and heat combined are not favorable to the more intensified activity demanded by our highest civilization. There is a rational possibility, however, that if the hostile organisms of the tropics can be kept in abeyance those regions will in the future become far more habitable for the higher races than they have been in the past, and with the improvement of the means of communication the white man may in time become a bird of passage, so to speak, utilizing alike all latitudes.

#### COOPERATION BETWEEN THE MEDICAL PROFESSION AND LEGISLATURES.

The *West Virginia Medical Journal* for June contains an account of the recent meeting of the state association together with some editorial comments thereon. One paragraph in particular is worthy of note:

For the first time in its history the West Virginia Medical Association was officially recognized as an important factor in the public affairs of the state. A committee appointed at the recent extra session of the legislature for that purpose appeared before it to confer on the matter of a state tuberculosis sanitarium and to ask that a committee be appointed from its membership to advise and assist the legislative committee in the formulation of plans for such an establishment. This is the most auspicious beginning of what, we trust, will be a continued, although too long delayed, recognition of our association in matters of public and state concern.

This action of the state legislature is a striking sign of the change which has taken place regarding the attitude of the medical profession and the public to each other. There is no reason why important questions of public policy involving hygiene and sanitation which arise in each state should not be referred to the state society for advice and suggestions. Such cooperation will prevent some of the absurd blunders which have been made in past years by lawmakers who have at-

tempted to legislate on scientific matters and will greatly redound to the benefit of the people of the state. Such advances on the part of state legislatures should be encouraged in every way possible and members of our law-making bodies should be given to understand that the entire medical organization, from the county societies to the national body, stands ready at all times to assist by advice or suggestion in furthering the best interests of the people.

#### THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

The International Congress on Tuberculosis which convenes in Washington next month—September 21 to October 12—undoubtedly will be the most important of any meeting ever held for the discussion of the important question of tuberculosis. For this reason, and because it is to be held in this country, every American physician should help to make it a success, and one evidence of success will be a large active membership. If the coming congress is to compare favorably with that of Paris in 1905, the United States should furnish ten thousand active members, according to a statement issued by the secretary-general. If such a membership be attained, it must be through the hearty cooperation of every physician interested. It is therefore hoped that all who are able will enroll themselves as active members and in addition urge others to do so. There will be a full equivalent for the \$5 membership fee in the reports and publications of the congress, in addition to the fact that a splendid cause is being supported. Membership should be obtained as soon as possible, as the officials in making the preliminary arrangements want an approximate idea of the number who will attend. Applications may be sent to Dr. John S. Fulton, secretary-general, Washington, D. C., from whom also all information regarding the congress can be obtained.

#### THE LACK OF VITAL STATISTICS.

Under the facetious but pertinent heading, "Glass Houses," Dr. Cressy L. Wilbur, chief statistician of the Bureau of the Census, comments<sup>1</sup> on the frequent publication of the item about vital statistics in Turkey. To the question, "What is the death rate in your country?" the Turk is made to answer, "It is the will of Allah that all should die. Some die young, and some die old." To the question, "What is the annual number of births?" the Turk replies, "God alone can say—I do not know and hesitate to inquire." Dr. Wilbur very frankly calls attention to the fact that the American can give answers that are but little, if any more satisfactory than those given by the Turk. As to the death rate in the United States, the government has been endeavoring to find this out since 1850. The registration of deaths is dependent on the enactment and enforcement of state laws or city ordinances and only fifteen of the forty-six states have been accepted by the Bureau of the Census as having sufficiently complete registration of deaths so as to be dependable. As to births, the American does not know the exact number of births each year for his country as a whole nor for

1. *Charities and the Commons*, July 4, 1908, p. 449.



a single state, nor even for a single city. He also "hesitates to enquire" and has been hesitating for over a half a century, to take this matter up in a business-like and effective way. That one of the most enlightened countries on earth should even be comparable with the "unspeakable Turk" in the matter of vital statistics, is in itself, intolerable. There are signs, however, that this bad record is to be bettered and it is well worth the attention of all who can influence legislation on the subject.

#### A PREVENTORIUM LEAGUE.

Dr. William Ewart, in the *July Practitioner*, urges the formation of a league for the education of the profession and the public to the realization of the wider benefits that would accrue to the state from the establishment of "preventoria," rather than of sanatoria. By "preventoria" he means institutions—which need not be at all costly—to check the spread of tuberculosis at its source. This would be done by receiving and caring for children who are at present being systematically infected at home, through those cases of tuberculosis that are too advanced or too numerous for the sanatoria to receive. The home infection of the young is undoubtedly a most fertile source of the spread of tuberculosis, and the prevention of its inception in children is surely a still more important measure than the prevention of its further development in those already affected.

#### MR. TAFT ENDORSES A HEALTH BUREAU.

In his speech accepting the Republican nomination for President, Mr. Taft says: "I have long been of the opinion that the various agencies of the national government established for the preservation of the national health, scattered through several departments, should be rendered more efficient by uniting them in a bureau of the government under a competent head, and that I understand to be, in effect, the recommendation of both parties." There is probably no one better informed regarding the details of organization of the federal government than Mr. Taft, nor any one better qualified to understand the advantages to the public and the nation which would accrue from uniting all of our national public health agencies into a single compact organization. Mr. Taft's record as an executive officer is ample guarantee of action on this question, should he be elected president. As the Democratic national convention at Denver adopted a strong plank endorsing a bureau of public health, we may expect an equally positive endorsement from Mr. Bryan in his speech accepting the Democratic nomination. A plan endorsed by the two dominant parties should not fail of success. The question has no partisan aspects, and when presented for consideration to Congress at the proper time undoubtedly will have the support of all members regardless of party affiliations.

**Vaccination in England.**—The duties of the public vaccinator are rapidly disappearing in many small English towns by the inhabitants availing themselves of the conscientious objectors' declaration act.—*Med. Record*, June 27, 1908.

## Medical News

### DISTRICT OF COLUMBIA.

**To Enforce Food Law.**—As a result of the recent decision of the police court that prosecutions for the alleged sale of impure milk and food products can not be conducted by the District of Columbia, the Secretary of Agriculture has designated Dr. R. L. Lynch, district chemist, as a special assistant in the bureau of chemistry. Violations of the Pure Food Law will be prosecuted by the Department of Agriculture acting on data furnished by the health department.

**Vital Statistics.**—During the week ended July 4, there were reported to the health department of the district 136 deaths; diarrheal diseases leading with 29, followed by heart disease with 14, and tuberculosis with 13 deaths. Of the decedents 37 were under one year of age; 20 were 70 years old or over. During the same week 145 births were reported.—On July 4 there were reported in the district 339 cases of measles, 20 of whooping cough, 107 of chickenpox, 83 of typhoid fever, 12 of scarlet fever, and 7 of diphtheria.—The health and mortality record for the week ended July 18 shows that there were 142 deaths, an increase of two over the mortality of the previous week. There were also 142 births, of which 104 were white and 38 colored.

### ILLINOIS.

#### Chicago.

**Personal.**—Dr. Clarence S. Yoakum has been appointed instructor in physiology at the University of Texas.—Dr. and Mrs. William N. Senn, Dr. and Mrs. John B. Murphy, Dr. David F. Monash and Dr. and Mrs. Henry S. Tucker have sailed for Europe.—Dr. William A. Evans has been made professor of sanitary science at Northwestern University Medical School.—Dr. Thomas J. Sullivan has been made chief of staff, and Dr. Charles P. Caldwell, head of the dispensary, St. Bernard's Hotel Dieu Hospital.—Dr. Daniel N. Eisendrath has been made professor of surgery in the College of Physicians and Surgeons.—Dr. Silas T. Richman was elected supreme physician of the United Order of Foresters, at the annual convention in St. Paul, July 21.

### INDIANA.

**Personal.**—Dr. William A. Holloway, Logansport, is reported to be seriously ill.—Dr. Frederick W. Terflinger, formerly assistant medical superintendent of the Northern Indiana Hospital for the Insane, Longview, Logansport, has been appointed medical superintendent, vice Dr. Joseph C. Rogers, deceased.—President Winthrop E. Stone of Purdue University was recently presented a gold watch by the Indianapolis physicians affiliated with the Purdue Medical School.—Dr. Oran E. Druley, Anderson, lost an eye in a fireworks accident July 4.—Dr. William O. Gross, Fort Wayne, has been elected professor of toxicology in the Indiana University School of Medicine, Bloomington.

**June Disease and Death.**—The June death rate for the state was 10.7 per 1,000. The most prevalent malady was rheumatism, followed by diarrhea, tonsillitis, bronchitis, typhoid fever, cholera morbus, whooping cough, measles, cholera infantum, inflammation of the bowels, dysentery, intermittent and remittent fever, diphtheria, scarlet fever, smallpox, erysipelas, influenza, pneumonia, pleuritis, chickenpox, puerperal fever, typho-malarial fever and cerebrospinal meningitis. There were 97 cases of smallpox reported from 21 counties, with 3 deaths. Tuberculosis caused 344 deaths; typhoid fever, 27; pneumonia, 96; influenza, diphtheria and measles, each 8; scarlet fever, 5; whooping cough, 25; diarrheal diseases, 102; cerebrospinal meningitis, 9; puerperal fever, 13; cancer, 131, and violence, 194.

### KENTUCKY.

#### Louisville.

**City Hospital.**—At the August 5 meeting of the general council an ordinance will be favorably reported to provide for an election to decide whether or not there shall be a bond issue of \$1,000,000 for the equipment and furnishing of a new city hospital. The ordinance provides for 40-year bonds at the rate of 4 per cent, setting aside \$52,876 annually to cover interest on the bonds and the sinking fund. An increase of 3 cents on the tax levy will be necessary to take care of these bonds. The hospital committee appointed by the mayor, composed of 12 physicians, has decided to recommend a hospital on the pavilion plan, built of reinforced concrete, one, two and three stories high. The provisional plan calls for two general wings, of six wards each, opening off a common hallway. There is to be a group of three buildings connected



with the main building, to be used as a nurses' home, a free dispensary and a laboratory building. The present administration has declared itself unqualifiedly in favor of building the hospital, and it is believed that the bond issue will carry.

#### LOUISIANA.

**Medical Bill Passed.**—The Labbe medical bill, amended so as to exclude osteopaths from its provisions and to permit plantation midwives to carry on their vocation, was passed by the house July 2 without a dissenting vote.

**Personal.**—Dr. Rudolph Matas, New Orleans, is confined to his bed with a serious infection of the right eye, the source of which can not be definitely accounted for.—Dr. J. H. Pankey has been elected president, and Dr. Benjamin H. Talbot, a member of the Dodson board of health.—Dr. Beverly W. Smith and Sterling J. Gates have been appointed members of the Franklin board of health.

#### MASSACHUSETTS.

##### Boston.

**New Tuberculosis Camp for Children.**—The Boston Association for the Relief and Control of Tuberculosis which established the first institution for day care of consumptives, is about to establish a camp school on the grounds of the Bingham Hospital on Parker Hill avenue. A new temporary building will be erected with kitchen, store room, lavatories, shower baths, and dressing rooms. There will also be a separate small building for the doctor's office and dining-room and rest tents, hammocks and easy chairs. Vegetable and flower gardens will be laid out and the children will be taught how to care for them and will be given the products of their own gardens to carry to their homes.

#### MISSOURI.

**High Versus Low Buildings for Hospitals.**—A committee of the St. Louis Medical Society of Missouri, appointed to consider the plans for a new city hospital, advocated the building of three four-story buildings facing Lafayette avenue, instead of an eleven-story building as proposed by the health commissioner, Dr. H. Wheeler Bond.

**Licenses Revoked.**—The license of Dr. C. W. Jones, Columbia, is said to have been revoked on account of issuance of prescriptions for liquor for other than medical purposes. Dr. Jones is said to have sold liquor to negroes in large quantities, the prescriptions being issued from his sanatorium in Columbia.—The license of Dr. E. C. Duncan, Salem, is said to have been revoked by the State Board of Health on the charge of illegally prescribing liquor.

##### St. Louis.

**Municipal Tuberculosis Commission.**—An important step has been taken in the campaign against tuberculosis in St. Louis by the appointment of the Municipal Commission of Tuberculosis, of which Dr. William Porter is chairman. The commission is composed of nine citizens, whose duty it is to investigate the prevalence of tuberculosis and report findings and report recommendations for the limitation of the disease. The secretary is the only salaried officer. The probability is that the commission will be made permanent.

#### NEW JERSEY.

**Personal.**—Dr. H. E. Ricketts, Brooklyn, N. Y., has been appointed superintendent of the new Essex County Isolation Hospital, Newark, and Dr. Arthur D. Draper, Waltham, Mass., assistant superintendent.—Dr. Lewis H. Miller, Woodstown, fell down stairs, June 14, seriously injuring his leg.—Dr. J. E. Rayne and family, Atlantic City, sailed for the West Indies June 30.—Dr. James L. Perkins, Cranford, has been made health officer of the Garwood Board of Health.—Drs. Charles M. Gray, George Cunningham and Sarah Jackson are the medical members of the executive committee of the Vineland Antituberculosis Society.—Dr. John T. Connolly, city physician of Bayonne, sustained a fracture of the leg in an automobile accident recently.—Dr. Isaac Surnamer, Paterson, in a fight with a burglar, June 1, was knocked down with a chair by the thief, who was afterward captured.—Dr. Carl A. Gesswein, Plainfield, while trying to prevent a collision between his automobile and a bicycle, ran his machine into a tree and fractured his nose.

#### NEW YORK.

**Personal.**—Dr. William C. Porter, Albany, has been appointed physician, sixth grade, at the Hudson River State Hospital, Poughkeepsie.—Dr. Edward N. K. Meers, Albany, has

returned from London.—Dr. John Dugan has succeeded Dr. Frank G. Sherwood as health commissioner of Albion.

**Appointments of Regents.**—The State Board of Regents has selected Dr. Frank Rawlins to succeed Dr. Edward J. Goodwin as second commissioner deputy of education; Drs. Frank W. Adriance, Elmira, and Floyd S. Farnsworth, Plattsburg, have been reappointed members of the board of medical examiners, and Dr. Alfred H. Williams, Rochester, has been appointed a member of the board.

**Changes in Medical Faculty.**—The following changes have been made in the faculty of the College of Medicine, Syracuse University: Frank P. Knowlton, A.M., M.D., professor of physiology; Halbert S. Steensland, B.S., M.D., professor of pathology and bacteriology; H. D. Senior, M.B., F.R.C.S., professor of anatomy; Ernest N. Pattee, M.S., professor of chemistry; Richard H. Hutehings, M.D., Ogdensburg, lecturer on psychiatry; Ralph R. Fitch, M.D., Rochester, lecturer on orthopedics, and Charles V. Morill, A.M., New York City, lecturer on histology and embryology.

**Tuberculosis Tag Day.**—As the outcome of an effort to raise funds by a "tag" day in Schenectady, \$2,500 has been secured with which a day camp for tuberculous has been established, similar to that secured in Albany by the Central Federation of Labor. The day camp is not to be recommended as a permanent substitute for the sanatorium, but still it is a valuable compromise. Here the patients get plenty of fresh air and sunlight, and a suitable and sufficient diet of milk and eggs, but the main value lies in the instructions given as to the means of cure and prevention, whereby the patient may become a help to himself and cease to be a menace to others. By a similar effort Geneva has raised a fund whereby a visiting nurse may be sent to the homes of patients, to see that they are properly fed and cared for, and the patients and their families shown the means of cure and prevention of disease.

##### New York City.

**Personal.**—Dr. George G. Rambaud, president of the New York Pasteur Institute, has returned from Paris.—Dr. De Santos Saxe has been appointed instructor in genitourinary diseases in the New York Postgraduate Medical School and Hospital as the result of a competition in which each candidate presented an original thesis.

**Fight Against Noise Begins in Earnest.**—Commissioner Bingham issued an order July 18 for the suppression of unnecessary noises. A special effort will be made to stop the noise of street hawkers and of automobile horns in certain sections where they are most annoying. The heads of nearly all the hospitals and institutions of the city have expressed themselves as highly gratified by this step.

**Much Scarlet Fever.**—The Willard Parker Hospital notes a marked increase in scarlet fever. It has been shown that during April of last year there were 708 cases of scarlet fever in the hospital; whereas this last April there were 1,255 cases. Health Commissioner Darlington thinks that the board of estimate should appropriate sufficient money to provide proper care for those suffering from contagious diseases.

**Attribute Large Mortality to Flies.**—Although Dr. Daniel D. Jackson has made no such thorough investigation this year, as he did last year for the Merchants' Association, he declares with other observers that there are an unusual number of house flies this year and that the protracted hot weather has favored their increase and dissemination. He prophesies that this will lead to an increased number of cases of typhoid fever within the next few weeks.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ended July 18, 481 cases of tuberculosis, with 173 deaths; 203 cases of diphtheria, with 22 deaths; 312 cases of measles, with 13 deaths; 156 cases of scarlet fever, with 14 deaths; 50 cases of typhoid fever, with 8 deaths; 25 cases of whooping cough, with 6 deaths; 7 cases of cerebrospinal meningitis, with 7 deaths; and 35 cases of varicella, a total of 1,269 cases and 243 deaths.

**Must Allow Member to Resign.**—Dr. Charles J. Mooney has succeeded in resigning from the New York County Medical Society, that is to say, he has obtained a peremptory writ of mandamus decreeing that the county medical society accept his resignation handed in in December last. This, it is believed, is the final chapter in the suit against Champe Andrews, formerly counsel for the society, and Dr. Mooney, which has been in progress for more than a year.

**To Reduce Infant Mortality in Brooklyn.**—An elaborate campaign is to be put in full operation in Brooklyn against the high infant death rate in Brooklyn. The mother of every new baby born in the tenement-house districts of Brooklyn



will be visited repeatedly by one of the 25 nurses of the department of health, supplemented by personal visits from one of the matrons of the Brooklyn Children's Aid Society, 16 modified milk distributing centers and by the society's physicians. The instruction to be supplied is intended as a preventative of disease. Where change of air and scene is required the children will be sent at once to the Sea Side Home at Coney Island or to the Harriman Home.

**A Bad Year for Babies.**—The New York Conference on the Summer Care of Babies states that there has been an unusual increase in the number of deaths among children from diarrheal diseases this year. From June 1 to July 18 there were 1,132 deaths, while during the same period last year there were only 772. For the week ended July 18 there were 369 deaths of infants under one year of age. There were proportionately more deaths in Brooklyn than in Manhattan, and it was claimed that this is not due to sanitary conditions, but it is supposed that physicians erroneously credit deaths to other causes than diarrheal. There was also a remarkable increase in the number of deaths from tuberculosis. During the week there were 27 deaths from sunstroke.

#### NORTH CAROLINA.

**Antirabic Treatment.**—The State Board of Health officially announces the perfection of arrangements by the State Laboratory of Hygiene in Raleigh, for the administration of antirabic treatment. Dr. Charles A. Shore, state biologist, is in control of this new department, which is fully equipped for its work. Persons who are able will be expected to pay expense of treatment, but indigent patients will be cared for by the state without expense.

**Reunion.**—The alumni of the Jefferson Medical College, Philadelphia, who were in attendance on the state medical society met June 16 and organized the Jefferson Medical College Alumni Association of North Carolina and elected the following officers: Dr. Jacob F. Highsmith, Fayetteville, president; Drs. Eugene B. Glenn, Asheville, and William O. Spencer, Winston-Salem, vice-presidents, and Dr. William P. Holt, Duke, secretary and treasurer.

#### OHIO.

**Smallpox.**—In Shantytown, an addition to Troy, 16 concealed cases of smallpox have been discovered, and about 40 individuals are under quarantine.

**License Revoked.**—Despite the determined protest of Dr. J. A. Ambrose, Dayton, recently pardoned, after serving a term in the penitentiary for criminal malpractice, the State Board of Medical Registration and Examination revoked his certificate July 7.

**Ill and Injured.**—Dr. George W. Crile and Frank E. Bunts, Cleveland, narrowly escaped death July 18, when the horses which they were riding stepped on ground charged with electricity and were killed.—Dr. James W. Hughey, Washington Court House, underwent a surgical operation at Johns Hopkins Hospital, Baltimore, June 22.—Dr. Willard C. Rank, Newark, who has been seriously ill with septicemia, is reported to be improving.

**Oppose Advertising Practitioners.**—To the Muskingum County Medical Society, at its July meeting, was submitted a communication calling attention to the fact that the names of several members of the society have appeared in the lay press, notwithstanding rules forbidding any such publication. The secretary of the society was instructed to furnish all newspapers in the county the names of the members of the society, with the request that they be not published excepting with the special consent of the practitioners or as a paid advertisement.

**Faculty Changes.**—With the reorganization of the faculty of Starling-Ohio Medical College, Columbus, Drs. Clovis M. Taylor and Louis M. Early have resigned. Dr. Ernest Scott has been placed in charge of the pathologic department; Dr. Yeatman Wardlow has been made professor of clinical gynecology; Dr. Sherman Leach, professor of operative surgery; Dr. John H. J. Upham, professor of medicine; Dr. Elmer G. Horton, professor of hygiene and sanitary science; Dr. John D. Dunham, professor of diseases of the stomach and dietetics; Dr. J. Baldwin McComb, assistant professor of dermatology; Dr. Edwin A. Hamilton, professor of rectal diseases; Dr. Edward C. Buck, instructor in anatomy; H. R. Brubacher, lecturer in pharmacology and dean of the college of pharmacology; Dr. Charles J. Shepard, lecturer on dermatology; Dr. Verne A. Dodd, lecturer on minor and operative surgery; Dr. Jacob J. Coons, lecturer on laboratory diagnosis, and Dr. Andrew Rodgers, lecturer on obstetrics.

**Personal.**—Dr. Oscar R. Mickelthwait, Portsmouth, has been appointed surgeon of the B. & O. S. W. Ry. for the Hemden district.—Dr. Warren G. Murray, Dayton, recently returned after nine months in Europe.—Dr. Paul W. Tappan, assistant physician of the Dayton State Hospital, has resigned.—Dr. Mabel Richards, Lexington, has been appointed interne at Mt. Carmel Hospital.—Dr. P. A. Jacobs, Cleveland, is in London studying serum diagnosis and vaccine therapy.—Dr. Isabel Bradley on leaving Columbus State Hospital, was given a reception and presented with a handsome desk set.—Dr. Gordon F. McKim has been elected genitourinary surgeon of the staff of Springfield Hospital, vice Dr. Henry Baldwin, Jr., who becomes a member of the consulting staff.—Dr. Arthur G. Helmick has been appointed chief physician of the state penitentiary, vice Dr. John M. Thomas, resigned, and Dr. Dana W. Collison has been appointed night physician.—Dr. T. L. Baxter, assistant physician at the Athens' State Hospital, has resigned.—Dr. Walter W. Wetmore has been elected health officer of Conneaut, vice Dr. Otto N. Warner.

#### Cincinnati.

**Personal.**—Dr. Corliss Keller has been appointed first assistant at Longview Asylum, vice Dr. Willard Kendig, resigned.—Dr. McLeish has been appointed assistant physician at the Athens State Hospital.—Dr. Mary Isham has been appointed a member of the staff of the Columbus State Hospital.—Dr. William S. Keller has moved to St. Paul, Minn., to take up the practice of the late Dr. Jacob Schadle.

**Pasteur Institute to be Established.**—Drs. Asa B. Isham and Louis Schwab, medical directors of the City Hospital, have decided to open a Pasteur institute in connection with the hospital laboratory, to be in charge of Dr. Alfred Cole. It is the intention of the management to treat residents of Cincinnati without expense, but a fee of \$100 will be charged non-residents, the amount to be turned over to the hospital fund.

#### PENNSYLVANIA.

**Hospital Fire.**—A fire entailing a loss of probably \$75,000, broke out in the accessory buildings of the State Hospital for the Insane at Norristown, July 10. The fire was prevented from reaching the buildings occupied by the inmates.

**Proposed New Milk Law.**—As the result of a meeting of state officials held at West Chester July 16, a bill containing three important regulations on milk will be introduced at the next meeting of the legislature. One will provide that all cream sold must contain at least 15 per cent. butter fat. The other two provide that no milk shall contain added water, and that no butter fat at all shall be removed from milk; in other words, that milk must be sold to the consumers exactly as it comes from the cows.

#### Philadelphia.

**Another Public Bath.**—The contract for the construction of a public bath house was awarded July 18 to Edward H. Fonder for \$19,332. The new house is to be erected on the corner of Twelfth and Reed streets.

**Hospital Report.**—The report of the Methodist Hospital for June shows that 93 patients were admitted, 643 new patients visited the dispensaries, and 2,609 administrations were made in the out-patient department.

**Charitable Bequests.**—The will of the late Elizabeth Renz contains a provisional bequest of \$8,500, which is to be divided equally between the German Hospital and the German Protestant Home.—The will of the late Mary Burk bequeaths \$2,000 to the Pennsylvania Home for Blind Women.

**Hospital Improvements.**—Work of reconstructing the Preston Retreat has been started and the improvements in this old structure will cost about \$80,000. The present building was erected in 1837, and the proposed improvements will increase the capacity of the hospital from 30 to more than 50 beds. Modern bath rooms will be installed and two water towers will be erected at either end of the structure to ensure safety from fire. An elevator for patients will be constructed and a new heating and ventilating plant will be installed. The money for these improvements is derived from unimproved land belonging to the Preston Retreat.

**Medical Alumni Officers Elected.**—At the annual meeting of the alumni association of the University of Pennsylvania, Department of Medicine, held June 16, the following officers were elected: President, Dr. Charles K. Mills; vice-presidents, Drs. Wharton Sinkler, Philadelphia; Allen J. Smith, Philadelphia; H. H. Whitcomb, Philadelphia; Augustus S. Thayer, Portland, Me.; Theodore Diller, Pittsburg; Dewitt Sherman,



Buffalo, and Alonzo E. Taylor, San Francisco; historian, Dr. Roland G. Curtin; secretary and treasurer, Dr. Edward A. Shumway; executive committee (three years), Drs. Samuel S. Stryker, William J. Taylor, B. Franklin Stahl, J. Allison Scott, William Campbell Posey, William Pepper, Archibald E. Olpp, James Tyson, DeForest Willard, George E. de Schweinitz, Charles W. Burr, George C. Stout, and J. Gurney Taylor.

#### GENERAL.

**Reserve Medical Corps.**—More than one hundred members of the Reserve Medical Corps of the Army have been commissioned and assigned to duty at various stations, for the most part at posts where they have hitherto been on duty as contract surgeons.

**Change in Date of Meeting.**—The tenth annual conference of the American Hospital Association will be held at the King Edward Hotel, Toronto, Ont., September 29 to October 2. The date has been changed from the week of September 22 on account of the impossibility of securing hotel accommodations at that time.

**Selects Site for Hospital.**—Surgeon General Rixey, U. S. Navy, has recently visited the new naval training station at Lake Bluff, Ill., to inspect the work under construction and select a site for the naval hospital in connection with the station, for which \$250,000 was appropriated by the last congress. The surgeon general then went to New Fort Lyon to inspect the naval hospital for consumptives, which now has 120 patients.

**Yellow Fever in Cuba.**—Under date of July 13 the yellow-fever experts detailed by the superior board of health to investigate sanitary conditions in Daiquiri, Santiago province, states that yellow fever has been present in this district since April last. He had made positive diagnosis in 4 cases, and obtained notes on 10 other patients who had recovered. Since July 8, 4 cases have been reported, leaving 7 under treatment at the close of the week. The town has been quarantined and a detention camp has been opened near Santiago.—Two new cases of yellow fever were reported at Daiquiri, July 18.

**Gibbs Memorial Prize.**—The New York Academy of Medicine announces that the sum of \$1,000 will be awarded to the best essay in competition on "The Etiology, Pathology and Treatment of the Diseases of the Kidney." Essays must be presented on or before Oct. 1, 1909. New discovery or fruitful research will be considered the standard of merit, and essays must show originality in order to obtain the prize. The competition is open to regular practitioners in the United States. Essays should be transmitted to the committee of the New York Academy of Medicine on the Edward N. Gibbs Memorial Prize, 17-21 West Forty-third Street, New York.

**Death Rate in Panama and Canal Zone.**—Assistant Sanitary Officer Mitchell of the Canal Zone reports that in May, 1907, the annual death rate per 1,000 for white employes was 18.34; in May, 1908, the corresponding rate was 14.59. The death rates for colored employes in May, 1907, was 34.48 per 1,000, while in May, 1908, it was 8.82 per 1,000. The death rate for all employes in May, 1907, was 30.15 per 1,000, while in May, 1908, the rate was 10.44 per 1,000. The reduction as compared with last year is said to be due to the decrease of the number of deaths due to typhoid fever and pneumonia. All the deaths from these two diseases in May this year were among black employes.

**Medical Society Meetings.**—The thirty-fifth annual meeting of the Northern Tri-State Medical Association was held in South Bend, Ind., July 14, under the presidency of Dr. A. E. Bulson, Fort Wayne. Dr. William A. Dickey, Toledo, Ohio, was elected president. The next meeting will be held in Ann Arbor, Mich.—At the annual meeting and banquet of the Phi Delta Medical Fraternity, held in Brooklyn, July 1, 2 and 3, Dr. John N. Balderson, Brooklyn, was elected grand president; Dr. Edwin Hamcock, Albany, N. Y., grand vice-president; Dr. William E. Lippold, Brooklyn, grand secretary-treasurer; Dr. Charles Marshall, Chicago, grand chaplain; Dr. J. S. Modesitt, grand marshal, and Dr. Forrest Reese, Chicago, grand historian.

**Railway Surgeons Meet.**—The surgeons of the New Orleans and Northeastern, Alabama and Vicksburg, and Shreveport and Pacific railroads organized the Tri-Railway Surgeons' Association at New Orleans, June 11, with the following officers: President, Dr. Charles W. Bufkin, Hattiesburg, Miss.; vice-presidents, Drs. James J. Haralson, Forest, Miss., and Henry F. Wilkins, Rayville, La.; secretary, Dr. Joseph D. Martin, New Orleans, and treasurer, Dr. R. W. Thompson, Lumberton, Miss.—The seventh annual meeting of the

Frisco System Medical Association was held in Kansas City May 25 and 26. The following officers were elected: Dr. Samuel C. James, Kansas City, Mo., president; Drs. Joseph W. Ballenger, Carbon Hill, Ala.; James A. Foltz, Fort Smith, Ark.; Henry Z. Hissem, Ellsworth, Kan.; J. H. McMill, Mississippi; Harold H. Lucas, Chaffee, Mo.; Edward A. Mayberry, Enid, Okla.; Frank D. Smythe, Memphis, Tenn., and Wiley E. Sturgis, Stephenville, Texas, vice-presidents; Dr. A. D. Parce, St. Louis, secretary, and Dr. Walter A. Camp, Springfield, Mo., treasurer (re-elected).

**Destruction of Mosquitoes in Cuba.**—Major Kean of the medical corps of the U. S. Army, chief sanitary officer of Cuba, in a report to Governor Magoon, dated June 15, calls attention to the excellent work that is being done in the destruction of mosquitoes on that island. This especially applies to the zone about Cienfuegos and extending up the railroad as far as Santa Clara, which was severely infected last summer and fall. Inspections in Cienfuegos about the 1st of April showed a deposit of larvæ, on an average, in every ten houses inspected, whereas the inspection reports for the last three weeks show a breeding place of larvæ in every 51 houses, in every 64 and every 71 houses, respectively. The town of Palmira, where yellow fever occurred as late as January of this year, has been so thoroughly cleaned that in a recent inspection not a single deposit of larvæ was found in 112 houses examined. Similar good results have been achieved in Rodas and Santa Clara. In the Guines-Union zone in the southwestern part of Matanzas province, and the southwestern part of Havana province, which has been one of the most troublesome and persistent zones of infection in the island, this locality being responsible for the recurrence of yellow fever last spring; excellent work has been accomplished under the direction of Dr. Rodriguez Alonzo as special commissioner. In both of these zones it is believed that the stegomyiæ have been reduced below the yellow-fever limit. Sanitary officers are doing mosquito work with their sanitary brigades in all the municipalities of the island, but these zones are those in which, on account of the extended infection last summer, special mosquito work under a special commissioner has been deemed necessary. In Havana there are still harmless mosquitoes, but within the city limits mosquito breeding is practically at an end, as a breeding place is found in only about one house in 450 inspected, and of these considerably less than one-half are found to be stegomyiæ. The work in Santiago has been less satisfactory on account of the opposition of the people and the necessity of storing water in barrels because of the uncertain water supply. On this account and because of the persistence of the yellow-fever foci there, Captain H. D. Thomason, medical corps, U. S. A., was sent in January as special commissioner, and since April 1 has been assigned to station there. The work has lately shown steady improvement, and it is hoped in another month will be brought up to a satisfactory standard. Improvement is necessarily slow because it requires education, not only of those engaged in the work, but of the entire population.

**Civil-Service Examination.**—The United States Civil-Service Commission announces an examination to be held August 26, to select eligibles from which to fill vacancies in the position of clinical director in the Government Hospital for the Insane, Washington, at a salary of \$2,000 per annum, with maintenance in the hospital; and vacancies requiring same qualifications as they may occur in any branch of the service. Applicants must be graduates of regularly incorporated medical colleges and must have had ten years' experience in institutions for the care and treatment of the insane, and must have received special training in clinical and research work, in pathology and psychopathology; must have made contributions to medical literature of insanity and must have knowledge of some foreign language, preferably German. He will have general supervision of the medical work at the hospital, supervision and care of the hydrotherapeutic departments, operating room and the training school for nurses; all transfers of patients will be made through him and he will be in charge of the clinical records and see that they are uniformly maintained, and be in position to offer suggestions that recent medical literature may contain among the lines of clinical psychiatry. Applicants must not be over 35 years of age at the time of the examination. Application should be made to the United States Civil-Service Commission, Washington, D. C., for form 304 and special form. No application will be accepted unless properly executed and filed on or before August 26.—The United States Civil-Service Commission announces an examination for assistant surgeon for Freedman's Hospital, Washington, D. C., at \$1,500 per annum, at various places throughout the



United States. Applicants must be 20 years old or over at the time of the examination. The examination is open to all citizens of the United States, but it is understood to be the practice to appoint only colored persons to positions in the hospital. Application should be made to the United States Civil-Service Commission, Washington, D. C., for application form 1312.—Competitive examinations will soon be held under the rules of the United States Civil-Service Commission for pharmacist in the Public Health and Marine-Hospital Service, physician in Indian service, physician in the Isthmian Canal service, acting assistant surgeon in the Public Health and Marine-Hospital Service, and surgeon in the Coast and Geodetic Survey. Application forms and information in regard to this examination may be obtained by addressing the United States Civil-Service Commission, Washington, D. C., or the boards of examiners in Boston, Philadelphia, Atlanta, Ga., Cincinnati, Chicago, St. Paul, San Francisco, New York, New Orleans or St. Louis.

#### CANADA.

**A Course in Hygiene at the University of Toronto.**—The University of Toronto, during the next six weeks, will conduct a course in hygiene of twenty lectures. Dean Reeve of the medical faculty will take up the eye and ear; Dr. George R. McDonagh, the nose and throat; Dr. Charles Sheard, contagious and infectious diseases; Dr. Abbott, color blindness; Dr. William Oldright, general sanitation.

**Canada's Nostrum Bill.**—The Templeman bill respecting proprietary and "patent medicines" has passed the Canadian House of Commons. In these preparations the use of cocaine has been prohibited, as well as the excessive use of alcohol. When a manufacturer prints the formula on each package the medicine will not come under the act, while if certain potent drugs are used the names must be printed on the label.

**Annual Meeting of Ontario Medical Council.**—The annual meeting of the Ontario Medical Council was held in Toronto during the week ended July 11. For some time a certain section of the public press has been calling on the medical council to do its duty with regard to certain members of the medical profession throughout the province who were suspected of operations for criminal abortion; and the fact that recently there had been several cases before the courts of the province brought this meeting of the council prominently in the public eye. The result is that the council has appointed a prosecution committee to investigate the cases of these practitioners. There will also be instituted an inquiry into the recent examinations, particularly the intermediate examination, in which examination over 65 per cent. of the candidates were "plowed" (rejected). An interesting item on the week's program was the presentation to a former member of the Council and a past president, Dr. C. T. Campbell, London, Ontario, of an illuminated address. Dr. Campbell was connected with the Council for twenty-five years and resigned a year ago to accept a position as postoffice inspector under the federal government. He also retired from active practice at the same time. There are now on the register of the Ontario College of Physicians and Surgeons 3,807 members in good standing. The following officers were elected: President, Dr. S. H. Glasgow, Welland; vice-president, Dr. E. A. P. Hardy, Toronto; registrar, Dr. John L. Bray, Toronto; treasurer, Dr. H. Wilberforce Aikins, Toronto.

#### FOREIGN.

**Novarro Prize.**—The assistants of Professor Novarro of Genoa have decided to endow a prize to be called by his name and awarded perpetually for works marking progress in general pathology. Novarro's election to the senate was the occasion of the movement.

**The Absinthe Bill in France and Switzerland.**—A bill prohibiting the manufacture and sale of absinthe recently came before the French senate, signed by 115 members, and it was referred to a committee of 18 members. The Swiss national vote of July 5 gave a majority of 100,000 in favor of the total prohibition of the manufacture, sale and storage of absinthe throughout the country.

**Centennial of the Erlangen Medical Society.**—At the festivities in commemoration of the centennial of the Physikalische-Medizinische Societät of Erlangen, Germany, the university conferred honorary degrees on Becquerel, Nernst, Horsley, Leube, Curtius and Kries, while 23 were appointed honorary members of the society, including J. J. Minot of Boston, Erb, Bier, Rutherford of Manchester, formerly of Canada, and Sherrington of Liverpool.

**Venereal Disease Among the Young.**—The *Allg. med. Ct.-Ztg.*, July 4, states that 8 per cent. of the 1,800 pupils of the gymnasia and technical high schools of Bohemia examined

were found to have venereal disease, and that the percentage was still higher in the schools in the small towns. These figures are published in the *Zeitschrift zur Bekämpfung der Geschlechtskrankheiten*, the official organ of the National Preventive Association, to confirm anew the necessity for instruction of the young in respect to the venereal peril.

**Plague in Venezuela.**—According to the government Public Health Reports, plague still continues in Caracas. The government ordered 1,000 tubes of Haffkine's lymph and 2,000 tubes of Yersin serum. Aside from this and the disinfection and temporary closing of the infected houses, no measures have been taken to prevent the spread of the disease. Ordinary vehicles are used to carry the infected to the hospital and immediately afterward employed in the transportation of merchandise from one part of the city to another, the hospital itself being situated in the midst of a congested district within a few hundred yards of the stations of the Caracas and La Guayra and Puerto Cabello railroads. It is impossible to obtain authentic information from the interior.

**First International First-Aid and Life-Saving Congress.**—The advantages of international discussion were brought out most decidedly at this congress, which convened at Frankfurt a. M., June 13. It was decided to make these congresses a permanent institution, to meet every five years in one of the countries represented, with a standing international committee on life-saving measures. The next congress will be held in Vienna in 1913. Among the ten sections for first-aid and life-saving in drownings and accidents on railroads, in the city, country, etc., was one devoted to accidents in sports, and a communication was read by a German army surgeon on airship accidents and their prevention. Hüppe's on education of the public in prophylaxis of infectious diseases was summarized in *THE JOURNAL*, July 25, page 356, and Meyer's address on resuscitation of the drowned, for which he advocates a combination of the Silvester and Brosch methods. Mareus of Frankfurt a. M., related encouraging experiences in training children of the upper grades of school in first-aid work.

**Robert Koch at the Antipodes.**—Koch spent some time studying conditions at the leper colony during his stay at the Hawaiian Islands, where he was cordially welcomed by the profession. He reached Japan early in June, and was tendered a great reception by the scientific societies of Japan on the 17th at Tokyo, with a gala entertainment at the theater in the evening. The address at the reception by the surgeon-general of the army gave concrete examples of ways in which the public health of Japan had profited by Koch's direct suggestions, besides his indirect influence. He was greeted as "the inspirer of the students who are now the leaders of science in Japan." Everywhere the monogram "R. K." was seen with the flags of Japan and Germany and a profusion of flowers. Each guest was presented with a large envelope containing a booklet with portrait, describing Koch's work, a small box with a silver pin with his portrait in a red chrysanthemum, also two souvenir post cards, one showing the Institute for Infectious Diseases at Berlin, with maps presenting Koch's world-wide activity, the other with his portrait surrounded by bacilli, cocci, trypanosomes, etc. Koch described his work on sleeping sickness, emphasizing in conclusion the importance of taking Nature's workshop as one's laboratory, and the comparative fruitlessness of confining one's research within four walls. At both meetings it was proposed that Japan, to commemorate Koch's visit, should found a society for the combating of tuberculosis, and steps were taken to raise a subscription for Japan for the "Robert Koch Fund." This fund is growing apace, as has been mentioned in these columns, scientific societies, towns, cities, communities and individuals contributing to this international endowment for investigation and experiments on a large scale to combat tuberculosis. Carnegie's contribution is the largest single one yet received; the fund at last reports was over a quarter of a million of dollars.

#### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, July 18, 1908.

#### A Year's Work of the Metropolitan Asylums Board.

The tenth annual report of the Metropolitan asylums board, which controls all the hospitals of the metropolis, has just been issued. The district served is 121 square miles and contains a population of 4,758,218. The board controls 51 institutions—16 hospitals for infectious diseases, 5 asylums for imbeciles, a land ambulance service of 8 stations, 167 ambulances and other vehicles, a river ambulance service with 3 wharves and 5 steamboats, a training ship with infirmary on



shore, and a shipping home, a school for children with ringworm, 2 schools for children with ophthalmia, 3 seaside homes for children, 6 homes for defective children, 3 homes for children remanded by magistrates, and a diphtheria antitoxin and bacteriologic establishment. The year 1907 will be memorable in the history of the board for the abnormal amount of infectious disease, particularly scarlet fever, which prevailed throughout the whole year. The total number of fever patients admitted into the hospitals of the board was no fewer than 32,169, or 6,165 in excess of the number of any previous year. The mortality of scarlet fever patients was but 2.8 per cent., having been as low only once previously. It is regretted that the number of cases of mistaken diagnosis is on the increase; no fewer than 3,111 such cases were admitted, as against 2,151 in the previous year. One of the most interesting tables in the report is that showing the probable causes of insanity in the patients admitted during the year. Nearly all the causes are physical—the two chief are congenital defects and old age. The former is given as the predisposing cause in 199 cases and as either predisposing or exciting in 115. Old age was responsible in 293 patients; intemperance was the cause in the cases of 7 men and 6 women; heredity in 29, and accident or injury in 3. Only 6 cases were due to moral causes.

#### A New Commission on Sleeping Sickness.

A new commission for the study of sleeping sickness is being organized to proceed to East Africa. It will continue the work carried on by the previous commission from 1902 until it was temporarily suspended in 1905 owing to the death of Lieutenant Tulloch, who contracted the disease during his researches in Uganda. Some time ago the secretary for the colonies, Lord Elgin, wrote to the Royal Society, asking if it would not be possible to continue scientific research on the spot, and it was decided to dispatch a new commission. This will be in charge of Col. David Bruce, F.R.S., whose researches on tropical medicine are so famous, and who will go to Africa for a second time in connection with this work. He will be accompanied by Captain Hamilton and Captain Bateman of the Army Medical Corps. The mission will proceed to Lake Victoria, on the northern shores of which the Uganda protectorate is preparing a laboratory within five or six miles of one of the concentration camps for the disease. The research will include the study of the natural history of the *Glossina morsitans* and of Koch's theory that crocodiles provide foodstuff for it. The commission will also investigate the question whether the lower animals harbor the parasites and the exact method by which the fly transfers the parasite. The latest returns show that there have been altogether 12 Europeans under treatment for sleeping sickness in England. Of these 4 died after suffering from the disease for periods ranging from twenty months to four years. Of the remainder, one, who was attacked seven years ago, is now well, while 5 others are officially described as "apparently well," the disease in these cases having lasted from fifteen months to three years. In a further case which has been under observation for six months the patient is said to have improved.

#### The Early Diagnosis of Cancer of the Uterus.

In order that sufferers from cancer of the uterus may receive the benefit of early treatment Dr. F. H. Champneys, at the request of the central midwives board, has drawn up a circular letter for the information of midwives. Stress is laid on the fact that no time should be lost. It is also pointed out that the menopause should not be accompanied by floodings or irregular hemorrhages of any kind. It is thus hoped that women generally will be educated as to the importance of seeking advice early, and the percentage of operable cases of cancer of the uterus increased. This result has been achieved by a similar campaign in Germany inaugurated by Professor Winter.

#### A Victim of the X-Rays.

The sad case of Dr. Hall Edwards, the pioneer worker in this country with the x-rays in their application to medicine, has been previously reported in THE JOURNAL. Some months ago his left arm was amputated for cancer following intractable ulceration of the hand. Now his right hand with the exception of the thumb has been removed. His sufferings have not quenched his enthusiasm for his work and he worked hard on the day preceding the operation. The operation was satisfactorily performed, but he is very weak, as his strength has been sapped and he has been able to obtain sleep only by the aid of narcotics. He has been granted by the government a "civil list" pension of \$600 a year "in recognition of his devotion to radiography in its application to medical and surgical science." The medical profession and some others have also subscribed a fund for his benefit.

#### Food Preservatives.

Dr. Macfadden, who has had charge of a government inquiry on the subject of food preservatives, has presented an important report. He finds that foods packed in tin or in glass and hermetically sealed often contain food preservatives in considerable quantity. Inasmuch as fresh meat when cooked in suitable vessels requires no other protection against decomposition than being hermetically sealed, the inference is that the manufacturers who use preservatives do so either because the meat which they use is not fresh before it becomes the subject of their operations or because these are unduly protracted or are conducted under unsuitable conditions. Dr. Macfadden finds that the use of so-called preservatives is much promoted by the representations made to the manufacturers of canned meat by travelers for boron and other compounds. These sell antiseptics under names which throw no light on their composition. Sulphurous acids and certain sulphites have a considerable power of restoring the appearance of meat which is no longer fresh, and various boron preparations retard the appearance of the usual signs of decomposition. But such preparations do not prevent dangerous consequences to consumers. Fatal illness due to the *Bacillus enteritidis* has been produced by consumption of canned meat which showed no sign of decomposition. Dr. Macfadden is of the opinion that the use of chemical preservatives in foods enclosed in hermetically sealed cans should be absolutely prohibited.

#### BERLIN LETTER.

(From Our Regular Correspondent.)

BERLIN, July 1, 1908.

#### Cancer Research and the Campaign Against Cancer.

A success equal to that which has been attained in the campaign against tuberculosis can not be recorded for the fight against a malady no less dreadful, cancer. In this, unfortunately, we are still at the beginning of our efforts, but happily in the past few years efforts to protect mankind against this horrible scourge have been undertaken to an increased extent. The organization of the campaign was undertaken in Germany by a man who has repeatedly shown himself an excellent organizer, namely, Ernst v. Leyden. Just as the foundation of the German committee for the campaign against tuberculosis and the institution of the popular sanatoria against tuberculosis are essentially to be referred to his initiative, so we have also to thank him for the attempt to obtain fuller data regarding the distribution and origin of cancer by securing the interest of all classes concerned and to learn the means and methods of fighting it. At von Leyden's instigation a committee on cancer research was established in Berlin in 1900, at the head of which he was placed, and it succeeded in arousing the interest of physicians, of the government, and of the laity in the matter. Under his initiative, which was seconded by the general secretary of the committee (Prof. G. Meyer, Berlin), similar organizations were formed also in the other German states, so that some time ago a German central committee for cancer research could be organized. Finally, as a further result of his efforts, a combination of the committees, which meanwhile had been founded in other civilized countries, was effected and an international association for the investigation of cancer was on May 23 of this year formed in Berlin. The association includes all the thirteen countries which for the most part were represented by delegates at the meeting here (the United States of America by G. H. A. Clowes of Buffalo); unfortunately, England has not yet joined this association. As in political and commercial fields so in the field of scientific investigation, apparently, petty jealousies are not entirely to be avoided, although the common aim of scientific investigation ought to prevent such discords.

The International Association for Cancer Research has, according to the sketch of the constitution, the following purposes: 1. The promotion of institutions for research, as well as for the care of cancer patients, and the campaign against cancer. 2. The collection of uniform international statistics regarding cancer. 3. The formation of an international intelligence bureau for all questions regarding cancer research. 4. The publication of an international journal for cancer research. 5. The preparation of international congresses on cancer. 6. The education of the public regarding the nature of cancer, in order that the laity may recognize it as early as possible.

Each country belonging to the association has the right to appoint ordinary members, the number of which is two for a population up to 10,000,000 and one for every additional million up to a maximum of five. To defray expenses each participating country must provide annually 100 marks (\$24) for each ordinary member. E. v. Leyden was elected permanent honorary president; Czerny (Heidelberg), acting presi-



dent, and G. Meyer (Berlin), general secretary. The above-mentioned tasks of the international association have already been partly taken in hand by the Prussian committee. A statistical investigation of cancer was undertaken in Germany in 1900 and it was to be determined, by sending question blanks to all the German physicians, how many cancer patients were under medical treatment in the German Empire on a given date (Oct. 15, 1900). The results of this general investigation were published in 1902. They can only be regarded as inadequate as naturally the diagnosis could not be confirmed. It is safe to say that the statements of the physicians would have been shown to be false in not a few cases, when tested by competent expert examination or by the results of an autopsy. From this point of view an accurate statistic of cancer can be obtained only by means of the material of hospitals in which reliable clinical or pathologic investigators assure the correctness of the diagnosis.

Keeping in mind this important limitation, some interesting results can be derived from the material obtained by the German collective investigation. Altogether 25,376 physicians and institutions were interrogated; 14,060 (55 per cent.) sent answers. A total of about 12,000 patients with cancer were under treatment in Germany on the designated day. In the various districts of the country, the figures varied remarkably; in the case of men, 47 per million inhabitants (Schaumburg-Lippe) and 270 (in the district of Aix-la-Chapelle); in women from 65 (district of Bromberg) to 551 (Lübeck). The question whether there was a hereditary taint was answered in 9,147 cases, being denied in 83 per cent. of the cases and regarded as existing or as suspected only in 17 per cent. In 435 cases the attending physician suspected a conveyance of the cancer by infection. We must repeat that no binding conclusions can be drawn from these statements, and in this respect it is our opinion that the results of such a collective investigation do not correspond to the trouble and cost which they involve. Scientific investigation in this field can show somewhat better results from the introduction of experiment.

Ehrlich (Frankfort-on-the-Main), one of our most gifted scientists, whose services in the introduction of diphtheria antitoxin are much greater than is generally known, has published a series of investigations by which great light has been thrown on the origin and transference of cancerous tumors. Bashford in England, Borrel in Paris, Jensen in Denmark, Podwysotski in Russia, Loeb and Flexner in America, have worked effectively along the same lines. To be sure almost all the results of the investigation refer to the experimental cancer of animals, and we know how careful one must be in transferring such results to human pathology. Meanwhile it has been shown that the view of most pathologists that a parasite is not involved in the origin of cancer is remarkably sustained by animal experimentation, and that the problem of the development of cancer is connected only with cancer cells.

It is a long way from investigations regarding the pathogenesis of cancer to a successful campaign against the disease, and all attempts which have hitherto been made have produced indifferent results. A serum against cancer has not yet been discovered. Experiments with the ferments, with arsenic preparations and the like are not yet completed, and for the present the knife still remains the most successful remedy. Whether treatment with high tension sparks, recently recommended by the Marseilles physician, Keating Hart, for inoperable carcinoma (or as a preliminary to operation), will furnish favorable results and fulfill the hopes which it has aroused, remains to be seen. Radiotherapy has shown positive results only in cancer of the skin. In consideration of the relatively slight prospect of curing patients with cancer, especially when the disease is already somewhat advanced, it must be regarded as an urgent duty to keep the lay public informed regarding the nature of the disease and to urge them to secure timely medical treatment. The physicians of Germany in late years have repeatedly sought to secure action in this direction, and the gynecologists particularly have been active in promulgating the facts about the earliest signs of cancer by the so-called warning circulars (Merkblätter), which have been distributed by many thousands.

In addition to the task of bringing patients with cancer as early as possible under medical treatment, a second object must be considered, which from a social and humanitarian standpoint deserves equally great consideration, namely, the sufficient care of incurable cancer patients and (considering the possibility that cancer is communicable) the prevention of the spread of the disease. For this purpose stations for the care of cancer patients, analogous to tuberculosis dispensaries, have been established in some parts of Germany, in which incurable cancer patients are given medical advice and are cared for by nurses so far as possible. These dispensaries are

attached to the institutions for cancer research where such have been established. At present this organization is not very extensive. In Germany there are three cancer institutes (in Berlin, Frankfort-on-the-Main and Heidelberg); the number of dispensaries for cancer patients also is still small.

### VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, July 14, 1908.

#### Governmental Precautions Against Pellagra.

In the eastern parts of the empire a disease has been very prevalent among the poorer classes for some years past, which has proved puzzling to the profession. The clinical symptoms somewhat resembled those of lepra, but differed in not having the anesthetic patches with consequent dystrophic destructive processes. Profound cachexia with gastrointestinal disturbances are generally observed after the disease has persisted for from 12 to 18 months. In many instances these were the only symptoms, while in other cases circulatory disturbances are a prominent feature. Similar cases were reported from neighboring districts of Russia and Roumania, and many scientists studied the disease. It was finally agreed by the majority of the investigators that the cause of the condition lay in the food. The peasants live largely on maize, making bread and other foods out of this material; a dish called "polenta," consisting of coarsely ground maize with lard, is partaken of heartily daily. In certain wet years the corn was affected by a sporidium and became still more unwholesome because of the presence of certain toxic substances which are held responsible for the disease just described—pellagra. In the province mentioned, inhabited by 1,500,000 people, there were over 38,000 cases reported (3 per cent.). The government then established in every community bakeries in which bread from fresh flour was baked and distributed; each patient received daily a loaf weighing two and one-half pounds. In addition, the sick were given salt and meat for a period of from 16 to 40 weeks. Pamphlets were distributed which described in a popular way the cause of, and remedy for, the disease. The results have been gratifying. The scheme, which has been in force for two years, has resulted in 86 per cent. of the patients being benefited to such a degree that they are able to do their ordinary work; even in cases of from four to eight years' standing. In some districts the administration of a mixture of iron, arsenic and quinin was added to the dietetic and hygienic measures, but no marked superiority in the effects of the treatment was observed. [The discovery of the presence of pellagra in some of our own southern states has been chronicled recently in these columns. For example, see page 397, this issue.—ED.]

#### Public Health Statistics in Austria.

The public health statistics of Austria recently published contain some figures of interest to physicians. Thus in 1906 there were in Austria (population 26,000,000) 242 public hospitals and 485 private hospitals, with 52,000 beds, which were used by 640,000 patients. There was on an average one hospital bed to every 500 inhabitants, but the ratio varies (with the density of the population and the intelligence of the districts) from 1 in 1,260 to 1 in 111. Of the patients in the hospitals, 30,500 (5 per cent.) suffered from tuberculosis, with a mortality of 30 per cent. There were 14,600 cases of cardiac affections, with 3,900 deaths. Pneumonia (10,220 cases) proved fatal in 24 per cent. of the cases; diphtheria (6,900 cases) in 11 per cent.; 2,800 cases of scarlatina resulted in 530 deaths (12 per cent.). These figures refer to the hospital cases only. With reference to the insane, 42 hospitals (public and private) cared for 30,000 patients, with 2,100 cures and 2,920 deaths. Apart from the patients cared for in institutions, there were 18,200 lunatics cared for privately and 17,320 cretins or idiots. In 20 maternity hospitals, 25,600 mothers, with 20,740 infants, were cared for. Regarding the medical profession, there were 11,200 doctors of medicine (M.D.), of whom 6,820 held public appointments; the majority of the latter (62 per cent.) had, besides, the right to practice privately; the remainder had to devote their whole time to their official appointments. There were, too, 720 doctors of surgery (Ch.B.), of whom 70 per cent. were appointed to public office. The latter degree has not been granted since 1880, so that all these men had been in practice at least 26 years. The ratio of physicians to population was one to 2,050, but these figures are naturally variable. In Vienna there is one physician for each 650 inhabitants, while in Prague there is one to 520. In the flat country there was one physician to from 1,800 to 2,600 inhabitants, and in one place with a population of 9,260, there was but one physician.



## Pharmacology

### THE BROADER AIMS OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

TORALD SOLLMANN, M.D.

Member of the Council, Professor of Pharmacology and Materia Medica at the Medical Department of Western Reserve University, CLEVELAND, OHIO.

(Continued from page 330.)

#### XIX. DRUG-STORE THERAPEUTICS.

There is an old and international proverb that the shoemaker should stay by his lasts. There is a science of political economy which shows that the highest efficiency can only be attained by intelligent specialization. There is, too, a popular impression that the doctor who does the work of a druggist does not belong to the elect. Nevertheless, physicians do dispense. I do not refer, of course, to the occasional administration of a morphin, strychnin or nitroglycerin tablet; but to the systematic practice of the dispensing physician. I can understand how a physician may be forced into this; if the nearest drug-store is far away, or if his practice is so small that he must add to it in some way.

But short of actual necessity, why does he do it? Not that there is anything dishonorable about the profession of pharmacy, if it is properly carried on. It becomes dishonorable only when it is followed improperly or inefficiently. The pharmaceutical training of the ordinary medical course does not fit the physician to prepare emulsions or pills, or tablets which would be acceptable to patients. Of course, any one can count out tablets, or even pour a mixture from a bottle. Indeed, when a physician has arrived at the point where he is content to confine himself to the ready-to-wear prescription of the manufacturing houses, to the practice of drug-store therapeutics, he may as well adopt the other practices of the low-grade drug-store. Only let such a one drop all cant about "counter prescribing" on the part of the druggist. In what essential respect does his practice differ from that of the druggist, when both dispense the identical "anticoxyza tablets," or "diarrhea mixture," or "anticonstipation pills," or "tonsillitis lozenges," or "antirheumatic improved?" In this respect only: The doctor knows better, if he would only stop to think; the druggist possibly does not. Who deserves the greater blame?

(To be continued.)

#### Dujardin-Beaumetz on the Problems of Therapeutics.—A Quarter Century Ago and To-day.

The following quotations from the introductory lecture on "Clinical Therapeutics" of the renowned French therapist are quite as apt to-day as they were when written, a quarter century ago. Evidently, therapeutics has not yet been purged of its unscientific features. Is it not time that it should be? The remedy exists—is there any good reason why it should not be applied?

"When occupied with therapeutics there are two dangerous rocks to shun: Skepticism on the one hand, exaggerated enthusiasm on the other. To believe too much, and not to believe at all are two opposite terms, but they are not so far apart as one might suppose. The one engenders the other, and extreme credulity gives rise to incredulity.

"Beware especially of skepticism. A physician who lacks faith in medicine has no more reason for existence than a priest who does not believe the religion he teaches, or a soldier who is destitute of love for his country and his flag. It is repugnant to reason and to conscience that he can be a good physician who judges of no utility all the remedial agents that have the sanction of tradition and custom. . . .

"Believe, then, in your art, but that this belief may be judicious, reasonable, let it not suffer you to be too easily carried away by what you may deem results of your medica-

tion; in therapeutics, illusions are indeed very frequent. This arises from numerous causes, especially from the propensity of the human mind to attribute all that eventuates favorably in the course of the disease to the medicine given, when very often it is only the natural evolution of the disease which the physician has observed.

"This explains to you why it has happened that certain remedies, exhibited with success in some epidemic and contagious diseases, in other seasons have failed to give as good results. This is an example of those therapeutic illusions which have enumbered the materia medica with so many drugs that have obtained a certain brief reputation in their day, soon to fall into forgetfulness and neglect, until another experimenter repeating the trials of a bygone time, restores them to passing notoriety.

"This celebrity, then; this decadence of remedial agents, are unfortunately facts of too great frequency in therapeutics. So after having pruned away all the useless and superfluous substances of the materia medica, if you retain only those which medical practice has consecrated by long usage, you will find that the really useful medicaments are much less numerous than one would suppose, and your daily practice will include but a few drugs. . . .

"Do not employ too many remedies at the same time; do not in your busy endeavors to serve your patient, inflict on him medicines and medications widely differing in their action. Study with care the disease which is before you; go back to the origin of the morbid affection; formulate the leading indications resulting therefrom; decide concerning the diatheses which have influenced the course of the malady, institute a plan of treatment and endeavor to carry it out with a very moderate exhibition of drugs. . . .

"This is not all: it is desirable that the physician should use the utmost care in prescribing his medicines. The hospital practice does not, unfortunately, favor this special study; we find ourselves in a particular situation which obliges us to formulate too rapidly and incompletely, so that after having followed for several years our hospital services, the most of you are entirely ignorant of the art of prescribing.

"This ignorance has more serious consequences than you think of, and if we see, in our day, the pharmaceutical specialties having a constantly increasing importance, it is in some measure due to the fact that physicians do not acquire that expertness in the preparation of their medicines which they ought to possess, and prefer lazily to rely on the combinations of the manufacturing chemist, trade-mark preparations, or even the nostrums of the charlatan.

"But, if by pursuing this course, the practitioner often promotes the fortune of the pharmacist, he despoils himself in the end, for the patron, beguiled by the advertisements which accompany his nostrum, is almost certain to apply in the future, not to his physician, but to the vender of the trumpeted drug.

"Learn, then, skilfully to prescribe, and not only to write in an orderly and judicious manner the substances which compose your prescription, but also to render the combination as pleasant to the taste as possible. Repudiate, therefore, in a general way, all the specialties which inundate the therapeutics of to-day. Exercise the greatest care in the directions which you give to the patient or his nurses; do not fear to enter into the minutest details; indicate how the external applications should be made, and the times for giving the internal remedies; regulate carefully the little incidents of the day, and be particular about the diet. For you must ever remember that pharmaceutical measures go but a little ways in the care of your patient, and that you can often accomplish more by hygiene than you can accomplish by medicine."

**Casts of Infants' Stools.**—R. Gaultier presented at the meeting of the Paris Pediatric Society, May 19, a collection of casts, reproductions of the stools of infants. Each was accompanied with a label describing the type: the meconium of the newborn; the normal stool of the breast-fed infant; of the child on sterilized milk; of the child with mucous enterocolitis; with acute bilious gastroenteritis, and the white stools of chronic gastrointestinal dyspepsia. The description noted also the number of stools in the twenty-four hours, the typical tint, quantity, aspect and consistency, odor, reaction, and microscopic, chemical and bacteriologic analysis, with the dietetic measures which each type should suggest. He thinks such casts would prove valuable for students, midwives, nurses and mothers, if such a collection were installed as an object lesson in children's hospitals, crèches, dispensaries, etc.



## Correspondence

### Hawaii as Seen by a Physician.

HONOLULU, T. H., June 10, 1908.

To the Editor:—Those of us who, by the influence of tradition, have believed the natives of the Hawaiian Islands to be cannibals, should be ashamed of ourselves. The records of the earliest missionaries show the Hawaiian a very decent fellow. The worst that may be said of the primitive Hawaiian is that he had implicit faith in the fish-luring properties of the hooks made from the bones of a deceased chief.

The *Kahuna* (native doctor) has passed into oblivion. Never again shall his Laau (primitive medicines) blister the smooth, tan skin or nauseate the stomach of a trusting patient. The *Kahuna*, with his charms and tricks, had to go; the *Kauka* (white doctor) has taken his place. To the wise, a word is sufficient, but a suggestion is all that is needed by the average native of these islands. As readily as he accepted Christianity, did he accept rational medicine. The *Kauka* is a great man.

With the exception of a few Chinese and Japanese, the medical profession of the islands is made up of white men, some of whom were educated in Europe. The majority, however, received their training in the United States. Many of them are members of the American Medical Association. This may be easily verified by a peep into the new directory of the Association.

Arriving here, I called on Dr. C. B. Cooper, ex-president of the Board of Health, and also the ex-president of the Board of Medical Registration. Told him I was going to the leper colony. "If you do," he said, "I hope you will not write it up." The territory recognizes no United States license or diploma. If you want to practice medicine within the islands of Hawaii you must pass the board.

The board is composed of three physicians appointed by the Board of Health. Calling at the office of Dr. Herbert, the president of the board, I introduced myself by explaining I was going to be on the islands for a time, and that while here would like the privileges of legal standing. He greeted me with that "Glad to meet you, old chap," cordiality, which characterizes the English gentleman. He was sorry the law required an examination regardless of credentials, but to save me the bother of waiting the next regular quarterly meeting, he would call a special gathering of the board. The examination was written. It covered the ground as thoroughly as any of the examinations within the United States, but with the fair-play exception that all "catch" or obscure questions were omitted. If successful, you must accept your license with the understanding that should you be guilty of unprofessional conduct, your license will be revoked. Surely, an ideal way of granting a license to practice medicine.

There is not an "irregular" in the territory. He who would dare to extol his ability *per vias* printer's ink, is a voluntary deserter from all that is true and good of medicine; and in consequence, pays the penalty of losing all right to his title of doctor. The newspapers of the islands have doubtless suffered on account of being deprived of publishing the advertisements and reproducing the picture of the fellow with the cure for leprosy. Really, in this respect I found the Hawaiian newspapers unique.

Including the bungalows of the various sugar plantations, there are many hospitals within the islands. Honolulu, with a population of 6,000 whites and Hawaiians, Chinese and Japanese enough to make an aggregate of 40,000, supports two hospitals, one maternity home and a sanatorium for the out-door treatment of tuberculosis. The principal hospital is situated in a grove of date and royal palms. It is a beautiful place. This institution was founded several years ago by Queen Emma. It still bears her name, although careless brevity has contracted it to "Queen's Hospital." Two resident physicians, Drs. Sexton and Hunt, assist during all operations, do the work of the chemical, microscopic and pathologic laboratories, and direct the nurses relative to the care of the patients. That this institution is well and scientifically managed I was afforded ample opportunity to observe.

In point of notoriety, leprosy undoubtedly heads the list. It is met in two varieties, i. e., tubercular and anesthetic. Each variety may be seen in different degrees of severity. So much has been written about the leper settlement at Kalawao, on the Island of Molokai, that word now might seem superfluous, yet in all that has been written, even to the article of our illustrious Senn, the writers seem to have been influenced by the literary possibilities more than the actual conditions as I have found them to exist.

The write-up which Jack London gave the place betrayed plot. No one but a novelist could have written such an article. But so much sensational "yellow" stuff had been written that one is willing to forgive London for turning the place into a House of Mirth. The conditions existing in any ward in Chicago or New York, in fact in any city, would be illustrative of the settlement at Kalawao. It is just a town of about 1,000 population. Instead of it being an Irish or German village, it is leper. Like the Irishman or German who never bothers himself about what he is, the average leper is equally as indifferent. Moreover, there are many things toward which he may "point with pride"; things achieved by fellow lepers. In the village are the well, the sick, the dying. A funeral is no more here than it is on State Street in Chicago. In that little house, back under the pali, a leper woman is being confined. One of the village doctors is with her. His obstetric technic is "aseptic." That his patient is a leper gives him no concern. He is not afraid to sit on the side of the bed and hold the hand extended to him during the pain. He may apply forceps, and at length, when the funis is cut and tied, in his own mind he may question the propriety of allowing this non-leprous infant to remain in the settlement. The children of leprous parents are almost invariably non-lepers. In the house just over the way, from the store, you hear music and a voice of natural sweetness from the throat of a leper Hawaiian girl, breaks into the hum of the settlement, while you stand mute listening to the familiar strains of "School Days," and when she sang "Let's Take a Trip on Memory's Ship," I wondered. Think of Molokai as you would of your own village; the good, the bad; the young, the old; the youth, the maid; the sick, the well; the strong, the weak; the rich, the poor; the workers, the drones; and you will have it right. It is not all mirth, as pictured by London, nor is it all gloom—just like the conditions at home, except that all are lepers.

My first trip to Kalihi, the detention hospital at Honolulu, was to examine, with Drs. Cooper and McDonald, two suspects who had just arrived. One of them was a young man, 18 years of age, who had the disease in one of its malignant forms. He was, notwithstanding his unsightliness, an intelligent boy and displayed wholesome modesty when asked to strip. Leprosy is not nearly so contagious as I was wont to believe before coming here, but many good reasons may be given for insisting on the segregation plan. The leper at large is thoroughly despised and shunned; he takes a new grip on life after having been admitted to the colony of his fellow lepers, for they are all glad to see him.

The islands are subject to outbreaks of plague, and the Board of Health is constantly waging war on the rats. Beriberi is quite common among the Orientals; I have seen a few cases, also one case of ankylostomiasis.

Like many of the diseases which erept from the internist to the surgeon before a cure was established, leprosy is looking toward the scalpel and sharp curette as instruments capable of checking its ravages. The good which follows the brisk scraping of a leprous ulcer is marvelous.

The Hawaiian race is rapidly becoming extinct. The statistics approximate one birth to every four women. At this rate the race will soon be gone unless it is that some occult necessity is demanding an installment of the law of natural selection. If so, the law has attacked the proliferating power alone, for ordinary infections, postoperative, are seldom seen. Union by first intention, even with a septic environment, is always expected. This immunity is believed by some due to the abundance of pure, ocean air. Others say it is seen only in the Hawaiian race.

J. C. O'DAY, M.D.

Of Marshfield, Ore., formerly of Oil City, Pa.



## Book Notices

**THE THEORY AND PRACTICE OF ANTIRABIC IMMUNISATION.** By Captain W. F. Harvey, M.B., I.M.S., and Captain Anderson McKendrick, M.B., I.M.S., No. 30 of the Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. Paper. Pp. 43. Price 1s. 2d. Calcutta: Superintendent of Government Printing, India.

The authors consider that the essential point for the prophylactic immunization against hydrophobia is the introduction of a certain quantity of virus (measured by some method of standardization) within a given period, and that probably the different methods of immunization which are practiced in various institutes are not so divergent as might seem from the schemes. They suggest an arbitrary "unit" of the fresh rabie virus, this unit being the quantity contained in 0.2 c.c. of a 1 per cent. emulsion of fresh rabies material. With this scheme, then, 0.2 c.c. of a 1 to 1,000 dilution would contain 100 units, and 0.2 c.c. of a 1 to 10,000 dilution would contain 10 units. They then proceed to reduce the Högyes scheme of immunization, in which only fresh virus is used, to terms of units.

In order to express in units those systems in which the dried cord is used, it is necessary to determine the virulence of cords dried for different periods, as compared with the virulence of the fresh cord. In investigating this point they find that "the degree of infectivity of rabies virus is a function of the loss of weight in water caused by drying." They find: (1) That emulsion of nine day cord is little if at all infective in a dose of 0.2 c.c. of a 1 to 5 emulsion. (2) That emulsion of a five day cord is infective in minimal time in a dose of 0.2 c.c. of 1 in 100 emulsion, but becomes less so or not at all in a dose of 1 in 200 emulsion. (3) That in the same way the M. I. D. (minimum infective dose) for an emulsion of three day cord is 0.2 c.c. of a 1 in 200 emulsion. (4) That the M. I. D. of two day cord is not less than 0.2 c.c. of a 1 in 1,000 emulsion and probably not so great as 0.2 c.c. of a 1 in 2,000 emulsion. (5) That the M. I. D. of one day cord is not less than 0.2 c.c. of 1 in 4,000 emulsion and almost certainly not greater than 0.2 c.c. of 1 in 8,000 emulsion. (6) That fresh material is infective in a dose of 0.2 c.c. of a 1 in 8,000 dilution, and may be so in considerably higher dilutions even up to 1 in 40,000, but that with such high dilutions the experimental errors become so great as to exclude any more exact fixation of the M. I. D. On the basis of these determinations they express the Pasteurian treatment (Kasauli scheme) in terms of units.

Other interesting points are brought out, such as the fact that cord dried for nine days probably has little immunizing power, whereas that of the five day cord has considerable. The five-day cord might indeed be used for the whole treatment, but even this they regard as only a compromise, believing that the tendency is toward the exclusive use of fresh rabie material for the treatment. The work of recent years seems to show that the fixed virus is not infective for man, in spite of its immunizing power.

They take the position, but it would seem without sufficient experimental basis, that there is no such thing as a "rabies toxin."

**DISEASES OF THE NOSE, THROAT AND EAR.** By William Lincoln Ballenger, M. D., Department of Medicine, University of Illinois, Fellow of the American Laryngological Association. Cloth. Pp. 905, with illustrations. Price \$5.50. Philadelphia and New York: Lea & Febiger, 1908.

A more thorough knowledge of the pathology of the diseases of the ear and the etiology of the same has closely united the specialty of otology with that of rhinology so that it is but natural that the text-books should follow the lead of the specialists themselves and embrace the nose, throat and ear. Ballenger's book is a valuable contribution to the literature on this subject. The book is divided into four sections. Part 1 being devoted to the nose and accessory sinuses. The first three chapters contain a general discussion of the subject and describe the office equipment. The deviation of the septum is then discussed in a very masterly manner. One especially good point the author brings out is the variety of operations for the correction of this deformity, stating that no one operation can be suited to all cases, and as the various operations are described in detail, the reader is in a position to select the

operation which is fitted for his individual case. He then devotes three chapters to the consideration of the nasal accessory sinuses. The only criticism that we could find with this section of the work is that the author presupposes a knowledge of anatomy on the part of the reader as the minute anatomy of the sinuses is not thoroughly brought out. However, a sufficient amount of anatomy is given to allow the reader to understand the points which the author desires to make.

Part 2 is devoted to the pharynx and fauces and deals with the various inflammations and functional neuroses of the pharynx. Four chapters are devoted to the consideration of the tonsil, the surgical one being especially complete. Part 3 covers the larynx and contains a chapter on the newer methods of bronchoscopy. Part 4 is devoted to the ear. It deals with the functional tests of hearing, the general etiology of defective hearing and the various inflammatory diseases.

The mastoid operations and various complications are described in detail and form a very valuable portion of the work. One excellent point in the work is the way in which the various operations are illustrated step by step, so that the reader may obtain a clear idea of the text and associated drawings. The book is well adapted to the practical wants of the physician wishing to make a specialty of this subject, but, as above mentioned, presupposes a thorough knowledge of the anatomy of the parts.

**PHARMACOLOGY.** By Maurice Vejux Tyrode, M.D., Instructor of Pharmacology in the Medical School of Harvard University. Cloth. Pp. 255. Price, \$1.50. Philadelphia: P. Blakiston's Son & Co., 1908.

By careful selection of the positively known facts and rejection of vague and contradictory statements of no importance, and by a systematic arrangement of his material the author has produced a text-book which should be welcomed by teachers of pharmacology. The remedies are arranged in groups and a careful summary of the group action of each group is given. The therapeutic applications are brief and easily remembered by the student. There is less detail in the matter of administration and use of remedies in external applications than is desirable, unless this lack is to be supplied from some other source. Unfortunately the nomenclature of the Pharmacopeia is only imperfectly followed. Thus while carbolic acid is given its proper name, Phenol, we have Unguentum Acidi Carbolici and Glyceritum Acidi Carbolici. Moreover, the unguentum is given as 5 per cent. instead of 3 per cent., which is official. The phenolsulphonates are listed as sulphocarbolates with no hint of their official names. Thymol is put down as Thymolum, U. S. P., from which the student would naturally learn to write Thymoli iodidum instead of Thymosis isodidum. These errors will undoubtedly be corrected in the second edition, to which we expect that this book will soon attain.

**THE HEALING OF THE NATIONS.** By J. Rutter Williamson, M.B., Edin. Cloth. Pp. 95. New York: Student Volunteer Movement for Foreign Missions, 1899.

An earnest and cogent presentation of the need for medical missionary work, its opportunities and possibilities. Statistics and a bibliography add to its value while illustrative stories and descriptions enhance the interest.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### TRANSMISSION OF BOVINE TUBERCULOSIS TO MAN.

*To the Editor:*—In reply to the inquiry of Dr. E. J. Brady, Kalamazoo, Mich., regarding the transmission of bovine tuberculosis to human beings (*The Journal*, May 9, 1908), you state that the question is not yet settled. I had supposed that the reports of the German commission and of the English royal commission had finally laid at rest any doubts which may have been held on this subject. Will you be good enough to give me references to articles by any one within the last five years who still believes that the bovine bacillus can not produce tuberculosis in the human being?

MAZYCK P. RAVENEL, Madison, Wis.



ANSWER.—We are grateful to Dr. Ravenel for calling attention to the fact that our answer, to which he refers, might possibly lead to misunderstanding in a question of such practical importance. Our answer, however, was not intended to deny the occurrence of infection of man with tubercle bacilli of the so-called bovine type. We were perfectly aware that such occurrence has been proved by ample experiments. Koch even, who by his speech in London (1901) started the discussion of this question, did not deny that the bovine bacillus can produce tuberculosis in man, neither does his school. But they do hold that this is a relatively rare event, so much so as to make it a negligible quantity in prophylaxis, the principal source of infection being the consumptive individual. Weber, on page 5 in the 1907 volume of the "Tuberkulose Arbeiten aus dem Kais. Gesundheitsamt" still insists on the rarity of bovine infection in man. Last year, in Section I of the Fourteenth International Congress of Hygiene and Demography, the subject was thoroughly discussed. Kisskalt (*Deutsch. Med. Wchnschr.*, 1907, xxxiii, 1719), in his report of the deliberation, insists that both the principal papers (Arloing, Flügge, Ravenel, Ribbert, von Schrötter) and the discussion "showed that in the course of the last years, in spite of the enormous amount of work done on the subject there has not taken place a clearing of opinion in one single point." The report of the English commission has also not been able to disprove the theory that "the great distribution of consumption is due in the preponderant majority to infection from human sources, it has on the contrary furnished new proofs for it." (Kossel, *Deutsche med. Wchnschr.*, 1908, xxxiv, 180.) Therefore, while the question of transmissibility of bovine tuberculosis to man is absolutely settled from a scientific standpoint, there is still some question as to its practical importance. But the warfare against bovine tuberculosis, in which Dr. Ravenel is so prominently engaged, is based on sufficient theoretic and practical evidence. It would be a great calamity if less vigorous measures, especially as regards the meat and milk supplies, were to be enforced on account of certain unsettled points.

#### AN EFFICACIOUS TOOTHACHE REMEDY.

DR. T. W. WILLIAMS, Milwaukee, writes that he has discovered a quick, safe and reliable remedy for toothache in the following combination: "Make a mixture of 55 parts of alcohol and 45 parts of oil of cloves. To seven parts of this mixture add one part of chloroform. To one ounce of this compound add 4 grains morphin and 4 grains cocain. Apply with a small pledget of cotton. If the ache returns, repeat. Two or three applications will usually permanently relieve the trouble."

This would be approximately represented by the following prescription:

	gm. or c.c.	
R.		
Alcoholis .....	15 4	or f3ss
Olei caryophylli .....	12 6	f3liiss
Chloroformi .....	4 0	f3i
Morphinae .....		
Cocaina .....	0 26	ãã gr. iv
M. et Sig.: Apply on small pledget of cotton.		

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending July 25, 1908:

Mason, C. F., maj., M. C., detailed to represent the Medical Department of the army at the meeting of the American Public Health Association, Winnipeg, Manitoba, Canada, Aug. 25 to 28, 1908.

Harris, H. S. T., maj. M. C., granted an extension of ten days to his leave of absence.

Johnson, R. W., maj., M. C., left Havana, Cuba, on leave of absence for one month in the United States.

King, Edgar, first lieutenant, M. C., relieved from further duty in the Philippines Division and assigned to duty in the Army Transport Service, with station at San Francisco.

Bayly, R. C., first lieutenant, M. R. C., ordered to Ft. D. A. Russell, Wyo., for duty.

Dear, W. R., first lieutenant, M. R. C., ordered to A. G. H., Washington, D. C., for duty.

Woodbury, F. T., capt., M. C., ordered, at the expiration of his present leave of absence, to Ft. Assiniboine, Mont., for duty.

Hammond, W. G., dent. surg., left Whipple Barracks, Ariz., for duty at Fort Huachuca, Ariz.

Tignor, E. P., dent. surg., left Pine Camp, N. Y., for duty at Ft. Jay, N. Y.

Waddell, R. W., dent. surg., arrived at Ft. Slocum, N. Y., for duty.

The following named first lieuts. M. R. C., recently appointed from contract surgeons, U. S. A., with rank from July 7, 1908, are ordered to active duty July 22, 1908, in the service of the United States, and are assigned to duty at their present stations: Adair, G. F., Barney, F. M., Bell, L. P., Brewer, F. W., Card, D. P.,

Chase, A. M., Chase, C. L., Conzelmann, F. J., Drake, P. G., Dunbar, L. R., Enders, W. J., Freeland, H. L., Gracia, L. C., George, W. R. S., Graves, L. K., Griffiths, F. C., Griswold, W. C., Halliday, F. A., Harmon, D. W., Harris, H. I., Hart, J. W., Hart, W. L., Hasseltine, H. E., Henning, O. F., Jarrett, A. R., Johnson, C. W., Kennedy, J. S., Love, J. W., McCallum, F. M., MacDonald, C. E., Magee, J. C., Marvin, M. F., Miller, A. L., O'Day, S. F., Peck, L. B., Pinquard, Jos., Reagles, Jas., Roberts, E. E., Sanford, J. L., Slater, E. F., Stearns, C. H., Stockard, J. K., Suggs, Frank, Tenney, E. S., Trotter-Tyler, Geo., Tuttle, A. D., Wall, F. M., Watkins, V. E., Wertenbaker, C. L., Weston, H. R., Whitney, Walter, Wiggins, D. C., Woollev, H. C., Wren, R. J., Yemans, H. W.

### Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending July 25, 1908:

Hoen, W. S., P. A. surgeon, ordered to Washington, D. C., and report to the Bureau of Medicine and Surgery, Navy Department, for further orders, when discharged from treatment, at the Naval Hospital, Mare Island, Cal.

Strite, C. E., asst.-surgeon, detached from the *Franklin* and ordered to the Naval Hospital, Norfolk, Va.

Cole, H. W. Jr., asst.-surgeon, ordered to the Navy Yard, Charleston, S. C.

Stalnaker, P. R., asst.-surgeon, ordered to the Naval Hospital, Annapolis, Md.

McGuire, L. W., asst.-surgeon, detached from the Navy Yard, Charleston, S. C., and ordered to the *Montana* when commissioned.

Bishop, L. W., passed asst.-surgeon, detached from the naval recruiting station, Indianapolis, and ordered to the Naval Hospital, New York, for treatment and observation.

Crow, G. B., Clifton, A. L., Phelps, J. R., asst.-surgeons, commissioned assistant surgeons from July 15, 1908.

Biddle, C., medical inspector, detached from the marine recruiting station, Philadelphia, ordered home and granted leave for two months.

Sutton, D. G., asst.-surgeon, detached from the naval hospital, Newport, R. I., and ordered to the *Franklin*.

Rhoades, G. C., detached from the *Franklin* and ordered to the *Scorpion*.

### Public Health and Marine-Hospital Service.

List of changes of station and Duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended July 22, 1908:

Mead, F. W., surgeon, directed to proceed to Tuckerton and Atlantic City, N. J., for the purpose of examining keepers and surfmen of the Life-Saving Service, on completion of which to rejoin his station at Savannah, Ga.

Wasdin, Eugene, surgeon, granted leave of absence for one month, from Aug. 1, 1908.

Clark, Taliaferro, P. A. surgeon, directed to proceed to Lebanon, Pa., for special temporary duty, on completion of which to rejoin his station at Philadelphia.

Schereschewsky, J. W., P. A. surgeon, directed to proceed to Ocean City, Md., and Chincoteague, Wachapreague and Cape Charles City, Va., for the purpose of examining keepers and surfmen of the Life-Saving Service, on completion of which to rejoin his station at Baltimore.

Bahrenburg, L. P. H., P. A. surgeon, directed to proceed to Point Pleasant, N. J., for the purpose of examining keepers and surfmen of the Life-Saving Service, on completion of which to rejoin his station at Ellis Island, N. Y.

Ebert, H. G., asst.-surgeon, relieved from special temporary duty at San Francisco and directed to report to medical officer in command, San Francisco Quarantine Station, Angel Island, Cal., for duty and assignment to quarters.

Mullen, E. H., asst.-surgeon, granted leave of absence for 2 days, from July 15, 1908, on account of sickness.

Clark, E. S., acting asst.-surgeon, leave of absence granted Acting Assistant Surgeon Clark for ten days, from June 11, 1908, amended to read for six days, from June 15, 1908.

McGinnis, R. H., acting asst.-surgeon, granted leave of absence for 15 days, from Aug. 17, 1908.

Safford, M. V., acting asst.-surgeon, granted leave of absence for 5 days, from July 14, 1908, under Paragraph 210, Service Regulations.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended July 24, 1908:

#### SMALLPOX—UNITED STATES.

Alabama: Mobile, June 27-July 4, 1 case, imported.  
California: Los Angeles, June 27-July 4, 1 case.  
Illinois: Chicago, July 4-11, 1 case.  
Indiana: Indianapolis, July 5-12, 2 cases.  
Kansas: Topeka, June 27-July 4, 7 cases.  
Kentucky: Covington, July 4-11, 1 case.  
Louisiana: New Orleans, July 4-11, 2 cases.  
Maryland: Baltimore, July 4-11, 1 case.  
Michigan: Detroit, July 4-11, 1 case.  
Missouri: Kansas City, July 4-11, 1 case; St. Joseph, June 27-July 11, 2 cases.  
Ohio: Cincinnati, July 4-11, 1 case.  
Texas: San Antonio, July 4-11, 1 case.  
Washington: Spokane, June 27-July 4, 8 cases.  
Wisconsin: La Crosse, July 4-11, 7 cases.

#### SMALLPOX—INSULAR.

Philippine Islands: Manila, May 23-June 6, 15 cases, 9 deaths.  
Porto Rico: Mayaguez, June 20-27, 2 cases.

#### SMALLPOX—FOREIGN.

Canada: Halifax, June 25-July 4, 6 cases.  
China: Hongkong, May 23-June 6, 7 cases, 4 deaths.  
Ecuador: Guayaquil, June 13-20, 6 deaths.



France: Paris, June 20-27, 2 cases.  
India: Calcutta, May 23-30, 20 deaths.  
Italy: General, June 21-28, 49 cases; Palermo, June 6-20, 6 cases, 2 deaths; Turin, June 7-14, 1 case.  
Mexico: Mexico City, May 16-30, 47 deaths.  
Russia: Moscow, June 13-20, 32 cases, 5 deaths; Odessa, May 23-June 20, 23 cases, 2 deaths; Warsaw, May 16-23, 4 deaths.  
Spain: Barcelona, June 1-30, 3 deaths; Valencia, June 20-27, 0 cases, 1 death.  
Turkey: Constantinople, May 22-29, 6 deaths.

#### YELLOW FEVER.

Cuba: Dalquirl, June 18-20, 3 cases.  
Curaçao: June 26-July 3, 1 case, 1 death.  
Ecuador: Guayaquil, June 13-20, 1 death.

#### CHOLERA

India: Calcutta, May 23-30, 81 deaths.

#### PLAGUE.

British Gold Coast: Akkra, May 26, 3 cases, 3 deaths.  
Chile: Antofagasta, May 30, 18 cases, 2 deaths; Arica, June 2, present.  
China: Hongkong, May 23-June 6, 271 cases, 221 deaths.  
Ecuador: Guayaquil, June 13-20, 1 death.  
India: General, May 9-June 6, 1,409 cases, 1,196 deaths; Calcutta, May 23-30, 60 deaths; Madras, May 3-June 5, 4 deaths.  
Japan: Nara, June 24, 14 cases.  
Peru: General, June 13-20, 18 cases 10 deaths.  
Straits Settlements: Singapore, May 23-30, 1 death.  
Trinidad: June 22-July 1, 4 cases.  
Venezuela: La Guaira, June 30, 1 death.

## Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

### Providence Court of Foresters Abolishes Contract System.

Elmwood Court No. 30, Foresters of America, of Providence (R. I.), has decided to cancel its contract with a local physician for lodge practice, and hereafter to allow each member of the lodge to employ his own physician and to send the bill for medical services to the lodge. Elmwood Court has employed a lodge physician for eighteen years, paying \$1.50 per member per year, making a yearly average of \$180 to the physician. According to the Woonsocket (R. I.) *Evening Call*, in which the announcement of the action of the lodge appears, there is no criticism whatever of the work done in the past by the lodge physician. The lodge has decided, however, that the contract system is not the best way of securing proper services for its members.

This action is most interesting as evidence of the realization on the part of fraternal organizations that the contract plan is pernicious and harmful, to physician, individual member and lodge, and that it inevitably tends to cheap work and poor results. If the fraternal organizations once thoroughly realize that the existing plan of contract practice is poor economy, they will speedily abolish it themselves and will substitute therefor a fair and equitable means of compensating physicians employed by them to attend their members. So long as the physician is paid a proper price for his services, such as will enable him to give his patients the care and attention to which they are entitled, there is no reason, either ethically or legally, why an agreement should not be made with an organization the same as with an individual. The pernicious features of lodge practice, as has been emphasized repeatedly in *THE JOURNAL*, are that the physician is required to give an unlimited amount of services for a limited compensation; that the compensation is, in the great majority of cases, ridiculously inadequate and that a ruinous and pernicious element of professional competition is introduced between physicians.

If fraternal organizations will select physicians by competitive examination or on account of demonstrated ability instead of through political or personal influence; if they will so arrange their plan of compensation that the physician is paid in proportion to the amount and value of services rendered and if they will fix this compensation at an adequate and proper figure, then a fraternal organization will have as much right to employ a physician to attend its members as a corporation has to employ a surgeon to examine its employes. The fact should be clearly kept in mind that the pernicious feature of lodge and contract practice is not in the

fact that a contract exists with the lodge, but that the contract with the lodge is unfair to all parties concerned, and that under it it is impossible for the patient to secure the kind of professional services to which he is entitled.

### Dr. Reed Announces His Views on Public Health.

Dr. Charles A. L. Reed of Cincinnati, in response to a petition from Republican electors of Ohio, has consented to become a candidate for United States Senator from Ohio. At a dinner tendered him at Cincinnati, July 15, Dr. Reed announced his views on various questions of public interest, among them being the following statement regarding pure food and drugs:

My long years of identification with the agitation that preceded the passage of the national law to insure pure food and drugs to the American people must be accepted as an earnest of my intention to continue my support of the measure, whether I am in or out of Congress. It must not be forgotten that the opposition to this beneficent legislation came from powerfully capitalized interests engaged, as many of them are yet engaged, in the manufacture of fraudulent products now hardly less fraudulent because they carry labels that are meaningless to all but a few. In this and many other particulars the law should be strengthened, while it should at all times be protected from that specious form of amendment which while assuming to strengthen is really intended to weaken if not destroy its force—a form of amendment with which we became all too familiar during the efforts to secure the enactment of the legislation.

On the organization of a national department of public health, Dr. Reed was equally emphatic. He said:

The greatest asset of the people is their productive energy. Its general conservation can be effected only by the general conservation of the public health. The importance of this fact can be imagined when it is remembered that the loss to the American people from preventable diseases—entirely preventable diseases such, for instance, as consumption and typhoid fever, amounts to billions of dollars annually. The existing national agencies for the correction of this condition are to-day insufficient in numbers, inadequate in powers, and scattered over the various department of the government, they lack organization and effectiveness. In view of this fact I have for years advocated and now advocate the line of action expressed in the present Ohio Republican platform and submitted with Secretary Taft's approval to the Chicago convention, by which it was reaffirmed in general terms to the effect that all existing national public health agencies ought to be organized into a single national public health department.

### Tennessee Democratic Convention Adopts Health Planks.

The Tennessee State Democratic Convention, which recently met in Nashville, adopted as one of its planks the following:

We favor the consideration and strict enforcement of the pure food and drug law of 1907, and to properly protect the people from misbranded food produce and the deleterious effects thereof, we favor any additional legislation and sufficient appropriation to equip properly and scientifically a state pure food and drug laboratory.

The following plank regarding the work of the State Board of Health and the prevention of tuberculosis was also adopted:

We heartily approve and commend the efforts of the municipal and county officials and physicians of the state to prevent the spread of tuberculosis and pledge ourselves to cooperate in this important and necessary work. We further favor the building of a hospital for consumptives at the main prison which will separate them from healthy convicts so as to prevent the spread of consumption among the inmates of our state prison. We endorse the efforts of the State Board of Health to prevent epidemics and the spread of communicable diseases, and favor all necessary appropriations to do the work.

### POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.  
BOWLING GREEN, KENTUCKY.

The second year of the course of postgraduate study begins the first week in September. In order that the course may be as uniform as possible, all societies expecting to hold weekly meetings should plan to begin the work at this time. Notify



the director at once how many outlines will be required, and whether they are desired in blank form or printed for the individual society. In this way the topics may be assigned, and the society in working order at the beginning of the study year.

Only ten months are included in the outline for the second year, so that each society may provide for a two months' vacation during the year.

The remaining portion of the program for the first year will appear in THE JOURNAL during the next three weeks in order that its publication may be completed before the second year's course begins. During the coming year the weekly programs will be published two weeks in advance in order to allow more time for preparation.

#### Eleventh Month.

#### THIRD WEEKLY MEETING.

##### Movable Kidney.

Etiology: Sex, age, right side. Emaciation, multiple pregnancies, lacing, traumatism, renal tumors. Enteroptosis.

Diagnosis: General symptoms. Dietl's crisis. Physical examination. Movable kidney, floating kidney. Differentiate from tumor of gall bladder, from wandering spleen, from ovarian or intestinal tumors. Differentiate Dietl's crisis from renal, hepatic or intestinal colic, appendicitis, acute obstruction of bowel.

##### Acute Nephritis.

Pathology: Gross changes slight or extreme. Microscopic changes (a) in glomerulus, (b) in tubular epithelium, (c) interstitial changes.

Symptoms: Onset, chill, fever, pain, gastric disturbance, dropsy and puffiness, convulsions. Urine: quantity, specific gravity, color, reaction, albumin, microscopic examination. General symptoms: Edema, ascites, hydrothorax, hydropericardium; pulse and heart, blood; uremic manifestations. Variations in clinical course. Duration, terminations.

##### Chronic Parenchymatous Nephritis.

Definition and Synonyms.

Etiology: Age and sex. Secondary to acute nephritis; alcoholic and malt liquors; association with amyloid disease in syphilis, tuberculosis and chronic suppurations.

Pathology: Gross and microscopic changes in (a) large white kidney, (b) small white kidney, (c) kidney of chronic hemorrhagic nephritis.

Treatment: Dietetic, eliminative. Anemia, heart and pulse. Dropsy. Diuretics.

#### FOURTH WEEKLY MEETING.

##### Albuminuria.

Etiology.

1. Lesions of urinary organs, acute and chronic nephritis, renal degenerations and tumors, suppuration in pelvis, ureter and bladder, toxemias, scarlet fever and gout.
2. Slight or undemonstrable lesions. (a) Functional, physiological, after eating, exertion, violent emotions, bath. (b) Cyclic, age, associated conditions. (c) Febrile. (d) Hemic changes, purpura, syphilis, leukemia, etc. (e) Neurotic. (f) Orthostatic.

Prognosis: Bearing of cause, age, arterial tension, casts, general condition, influence of digestion.

##### Chronic Interstitial Nephritis.

Pathology: Gross changes, size, weight, capsule, surface, color, section. Microscopic changes: (a) increase in fibrous elements, (b) glomerular atrophy, (c) changes in tubules. Associated pathology, arterial, cardiac. Discuss fully.

Symptoms: Gradual insidious onset. Development of uremic symptoms, dyspnea, loss of flesh.

Urinary System: Urine, quantity, specific gravity, albumin, casts, blood cells.

Circulatory System: Physical examination, cardiac hypertrophy, high tension pulse. Freezing point of blood. Symptoms of broken compensation later.

Respiratory System: Epistaxis, edema of larynx, hydrothorax. Dyspnea, cardiac or uremic, nocturnal. Bronchitis and edema of lungs.

Gastrointestinal disorders.

Nervous System: Headache, drowsiness, stupor, convulsions. Meningitis and apoplexy, "shifting paralyses," "dead finger."

Special Senses: Retinitis, amblyopia, amaurosis. Tinnitus, deafness, vertigo.

##### Nephritic Colic.

Diagnosis: Onset of pain, character, radiation, tenderness. General symptoms. Duration and terminations. Differentiate from biliary colic, intestinal colic, appendicitis.

Treatment: Heat, locally, internally, baths. Posture. Physiologic and therapeutic effects of morphia, chloroform.

## Medical Education and State Boards of Registration

#### COMING EXAMINATIONS.

CALIFORNIA State Board of Medical Examiners, Cooper Medical College, San Francisco, August 4-6. Secretary, Dr. Charles L. Tisdale, Butler Bldg., San Francisco.

NEBRASKA State Board of Health, State Capitol Building, Lincoln, August 5-6. Secretary, Dr. E. J. C. Sward, Oakland.

#### Nebraska May Report.

Dr. E. J. C. Sward, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, May 27-28, 1908. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 71, of whom 63 passed and 8 failed. Twenty-eight reciprocal licenses were issued at this examination. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
College of P. and S., Chicago.....	(1900)		78.1
Northwestern Univ. Med. School.....	(1908)		85.8
Ensworth Med. Coll.....	(1908)		81.7
Nebraska School of Med.....	(1908)		76.6
Creighton Med. Coll. (1908)	76.3, 79.1, 79.7, 79.6, 80.2, 80.2, 80.6, 81, 81.2, 82.6, 83.1, 83.1, 83.5, 83.6, 85.2, 85.3, 86.2, 86.2, 86.7, 86.8, 87.1, 87.3, 87.6, 88.3, 89.6		
University of Nebraska (1908)	79.1, 79.6, 80.2, 81.7, 82.1, 82.1, 82.2, 82.2, 83.2, 83.2, 83.7, 83.7, 84.1, 84.1, 85.8, 85, 86.6, 86.6, 87.8, 89.3, 91.3, 91.7		
Lincoln Med. Coll. (1908)	78.8, 79.7, 81.7, 83.1, 83.2, 83.5, 83.6, 84.5, 84.6, 85.2, 86		
FAILED.			
Creighton Medical College....	(1907) 59.2; (1908) 63.5, 67.7*		71.2
Nebraska School of Med.....	(1907) 58; (1908)		68.2
Meharry Med. Coll.....	(1908)		72.1
Western Med. Coll., London, Ontario.....	(1906)		69.3

#### LICENSED THROUGH RECIPROCITY.

College.	Year grad.	Reciprocity with.
University of California.....	(1865)	Missouri
Howard University, Washington.....	(1895)	Iowa
Northwestern Univ. Med. School, (1894) Iowa; (1907)		Illinois
Hahnemann Med. Coll. and Hosp., Chicago.....	(1904)	Illinois
Rush Med. Coll.....	(1906)	Illinois
Central Med. Coll., St. Joseph, (1900) Missouri; (1902)		(1904) Kansas
Keokuk Med. Coll.....	(1891)	Iowa
Keokuk Med. Coll., Coll. of P. & S.....	(1900) (1904)	Iowa
University of Iowa.....	(1895) (1906) (1907)	Iowa
Sioux City Med. Coll.....	(1907)	Iowa
Kentucky School of Med.....	(1904)	Iowa
Johns Hopkins Med. School.....	(1905)	Maryland
Coll. of P. & S., Baltimore.....	(1880)	Kansas
University of Minnesota.....	(1906)	Minnesota
Marion Sims Coll. of Med.....	(1897)	Iowa
Ensworth Central Med. Coll.....	(1907)	Kansas
Kansas City Med. Coll.....	(1904)	Kansas
Kansas City Hahnemann Med. Coll.....	(1903)	Kansas
St. Louis University.....	(1906)	Illinois
Creighton Med. Coll.....	(1907)	Iowa
University of Nebraska.....	(1903)	Iowa
University of Pennsylvania.....	(1870)	Missouri

\* Second examination.

#### Delaware June Report.

Dr. H. W. Briggs, secretary of the Medical Council of Delaware, reports the written examination held at Dover, June 16-18, 1908. The number of subjects examined in was 10; total questions asked, 100; percentage required, 75. The total



number of candidates examined was 7, all of whom passed. Two reciprocal licenses were issued at this examination. The following colleges were represented:

College.	PASSED.	Year.	Per	
		Grad.	Cent.	
University of Maryland.....	(1888)	80.4;	(1905)	84.7
University of Pennsylvania.....			(1908)	91.6
Jefferson Med. Coll.....			(1906)	81.2
Hahnemann Med. Coll., Philadelphia.....			(1904)	89.
University Coll. of Med., Richmond.....		(1908)	86.7,	90.7

## LICENSED THROUGH RECIPROCITY.

College.	Year.	Reciprocity
	grad.	with.
University of Naples.....	(1899)	Maine
Jefferson Med. Coll.....	(1907)	Maryland

## Minnesota June Report.

Dr. W. S. Fullerton, secretary of the Minnesota State Board of Medical Examiners, reports the written examination held at St. Paul, June 10-12, 1908. The number of subjects examined in was 17; total number of questions asked, 195; percentage required to pass, 75. The total number of candidates examined was 61, of whom 49 passed and 12 failed. Fifteen reciprocal licenses were issued at this examination. The following colleges were represented:

College.	PASSED.	Year.	Per
		Grad.	Cent.
Northwestern Univ. Med. School.....	(1908)	80.7,	87.9
Hamline University (1906)	76.2; (1908)	75.2, 77.4,	78.7, 79.2,
	79.3, 80, 81.5, 81.8, 82, 82.2,	82.3, 82.7, 83.1,	85.2, 85.4, 86.1,
University of Minnesota (1907)	78.6; (1908)	75.5, 76,	76.9, 78.1,
	78.3, 78.8, 78.8, 79.4, 79.4,	79.8, 80.5, 81, 81, 81,	81.2, 82,
	82.1, 82.1, 82.3, 84, 84.1,	84.1, 84.4, 84.7, 85.4,	85.7,
University of Pennsylvania.....	(1908)	80.8,	84.5
University of Catania, Italy.....	(1904)		78.

## FAILED.

Chicago Coll. of Med. and Surg.....	(1905)	67.6
Hamline University (1907) 65.7; (1908) 63, 60.7, 74.1, 73.5, 73.9,		74.3.
University of Minnesota.....	(1908)	67.6, 70.1, 71.4, 72.9

## LICENSED THROUGH RECIPROCITY.

College.	Year.	Reciprocity
	grad.	with.
College of P. and S., Chicago.....	(1893) (1904)	Wisconsin
Rush Med. Coll.....	(1906) (1906)	Illinois
Northwestern Univ. Med. School.....	(1904) (1907)	Illinois
American Coll. of Med. and Surg.....	(1905)	Illinois
University of Iowa.....	(1888)	Iowa
College of P. and S., Baltimore.....	(1885)	New Jersey
University of Michigan.....	(1895)	Wisconsin
Barnes Med. Coll.....	(1904)	Illinois
University Med. Coll., New York City.....	(1892)	New Jersey
Eclectic Med. Inst., Cincinnati.....	(1903)	Illinois
University of Pennsylvania.....	(1904)	Wisconsin

## Marriages

LEON GOTTSCHALK, M.D., to Miss Mary Glenney, both of Chester, Pa., July 14.

JOHN D. BEAR, M.D., Elkton, Va., to Miss Lillian Orear, at Clearbrook, Va., July 15.

WILLIAM H. MOTT, M.D., to Miss Mela Reekmeyer, both of Farmington, Iowa, July 9.

CECIL M. JACK, M.D., Decatur, Ill., to Miss Charlotte Nelson of Bloomington, Ill., June 18.

MILFORD W. ROZZELL, M.D., Mayfield, Ky., to Mrs. Kerr-McCord of Womae, Ill., July 16.

JAMES T. BLACK, M.D., Elroy, Texas, to Miss Allie May Wideman of Austin, Texas, July 8.

ELMER BAKER, M.D., Humboldt, Iowa, to Miss Virginia Bell York of Cedar Rapids, Iowa, June 16.

ROBERT G. REYNOLDS, M.D., Palo Alto, Cal., to Miss Valley Perrine, at Vienna, Austria, July 17.

BENTON NOBLE COLVER, M.D., to Miss Agnes Grace Kellogg, both of Battle Creek, Mich., July 14.

SAMUEL JAMES CROWE, M.D., Baltimore, to Miss Susie Childs Barrow of Athens, Ga., June 29.

BERT ALFRED BOWERS, M.D., Granville, Iowa, to Miss Abrahama Vanden Burg of Alton, Iowa, July 22.

MELVILLE C. K. LITTLE, M.D., East Carroll, Ill., to Miss Lucille Harrer of Niles Center, Ill., June 27.

HERMANN CHARLES GRAMAX, M.D., Hammond, Ind., to Miss Eunice Kellogg Costello of Chicago, June 24.

CHARLES ABEL HOWLAND, M.D., Fall River, Mass., to Miss Elsa Lindenkohl of Washington, D. C., July 8.

CHARLES S. GRAYSON, M.D., High Point, N. C., to Miss Bertha Crawford of McDowell County, June 25.

EDWARD SYLVESTER NORTON, M.D., Brooklyn, N. Y., to Miss Mary Winters Golden of West Long Branch, N. J., July 1.

## Deaths

Nathan Monroe Dodson, M.D. Rock Island (Ill.) Medical College (now Keokuk, Iowa, Medical College), 1850; M.D. ad eundem, Rush Medical College, Chicago, 1896; a member of the State Medical Society of Wisconsin and its president from 1883 to 1884; for many years a member of the American Medical Association and of the Daniel Brainerd Medical Society; for nearly thirty years superintendent of the public schools of Berlin, Wis.; and actively interested in the educational affairs of the state; a practitioner of Berlin for nearly fifty-seven years; died at his home, July 19, from cerebral thrombosis, aged 81.

DeWitt Clinton Beebe, M.D. Albany (N. Y.) Medical College, 1863; a member of the State Medical Society of Wisconsin; one of the most prominent citizens and physicians of western Wisconsin; surgeon of the Fourth New York Volunteer Cavalry during the Civil War; mayor of Sparta in 1904 and 1905; and postmaster from 1906 to the time of his death; died at his home July 4, from myocarditis, complicated with acute nephritis, after an illness of one month, aged 70.

William Elmer, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1864; a member of the American Medical Association; once president of the Medical Society of New Jersey; a member of the American Academy of Medicine; president of the staff and medical director of Mercer Hospital, Trenton, N. J.; one of the leading practitioners of that city; died in Atlantic City, N. J., July 18, after an illness of ten months, aged 67.

Charles Edward Swan, M.D. Medical School of Maine, Medical Department of Bowdoin College, Brunswick, 1847; said to have been the oldest practitioner of Maine; a member of the board of overseers of Bowdoin College from 1870 to 1874, and a trustee of the college for a year thereafter; mayor of Calais in 1897 and 1898; a member of the American Academy of Medicine; and of the Council of Physicians and Surgeons of New Brunswick; died at his home in Calais, July 13, aged 86.

Washington Hodges Timmerman, M.D. Medical College of the State of South Carolina, Charleston, 1854; a Confederate veteran; member of the state legislature in 1882 and 1890; state senator in 1891 and 1892; a year later lieutenant-governor of the state; and from 1896 to 1900 state treasurer; prominent as a financier and a citizen; died at his home in Batesburg, July 14, from pneumonia, after a brief illness, aged 76.

Frank D. Kraft, M.D. Homeopathic Medical College, St. Louis, 1886 of Cleveland, Ohio; for twenty years editor of the *American Physician*; and for three years secretary of the American Institute of Homeopathy; professor of materia medica in the Cleveland Homeopathic Medical School; died at the home of his brother in St. Louis, July 19, from heart disease, after an illness of a few days, aged 57.

Allan Clarke Hutton, M.D. College of Physicians and Surgeons in the City of New York, 1872; an invalid from Pott's disease nearly all his life; for many years treasurer of the New Jersey Microscopic Society, and a resident of Brunswick, N. J.; died at the home of his brother in Twilight Park, Haines Falls, N. Y., July 7, from myocarditis, after a prolonged illness, aged 66.

William Walter Fletcher, M.D. New York University Medical College, New York City, 1883; a member of the American Medical Association; and a specialist on diseases of the eye, ear, nose and throat; of Williamsport, Pa.; councilman and chairman of the common council for four years; died at his home in that city, July 12, from diabetes, after a prolonged illness, aged 53.

Simeon Belknap, M.D. Vermont Academy of Medicine, Castleton, 1860; United States pension examining surgeon at Niles, Mich.; a member of the Kalamazoo Academy of Medicine and American Association of Railway Surgeons; and local surgeon for the railways centering in Niles, died suddenly at his home July 14, from angina pectoris, aged 70.



**Edward B. McGraw, M.D.** Western Pennsylvania Medical College, Pittsburg, 1894; of Pittsburg; a member of the American Medical Association; surgeon to the Passavant Hospital, Pittsburg, and obstetrician to the Roselia Foundling Asylum and Maternity Hospital; was instantly killed in an automobile accident, in Pittsburg, July 21, aged 37.

**William G. Winner, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1884; a member of the American Medical Association; surgeon to the Delaware Hospital, Throat, Nose and Ear Dispensary; and a well-known specialist of Wilmington, Del.; died at his home, July 10, from heart disease, aged 51.

**Frederick Fliedner, M.D.** University of Wooster, Medical Department, Cleveland, Ohio, 1872; coroner of Cuyahoga County, Ohio, from 1876 to 1878; and a member of the board of health of Cleveland from 1883 to 1886; died at his home in that city, July 12, from tuberculosis, after an illness of four months, aged 64.

**George Ewing Stuart, M.D.** Medico-Chirurgical College of Philadelphia, 1898; a specialist on diseases of the eye; of Harrisburg, Pa.; for several years a member of the staff of the Pittsburg Eye and Ear Hospital; died in Harrisburg, June 17, from cerebral hemorrhage, after an illness of fifteen hours, aged 52.

**John Francis Hincks, M.D.** University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1906; afterward an interne in the State Hospital for the Insane, Jackson; of Manistee, Mich.; died in Long Beach, Cal., June 21, from tuberculosis of the lungs, after an illness of a year and a half, aged 25.

**Calvin Carter, M.D.** Medical College of Ohio, Medical Department University of Cincinnati, 1891; gold medalist of his class; a member of the American Medical Association, and secretary of the Franklin County (Ind.) Medical Association in 1906; died at his home in Brookville, from nephritis, aged 51.

**Frank Catlin Greene, M.D.** Jefferson Medical College, 1880; University of Heidelberg, Germany, 1883; a member of the American Medical Association; president and later treasurer of Truax, Greene and Company, Chicago; died at his home in Chicago, July 27, after an illness of one year, aged 51.

**Benjamin Letcher, M.D.** College of Physicians and Surgeons in the City of New York, 1856; at one time superintendent of the Western Kentucky Asylum for the Insane, Hopkinsville; died at his home in Henderson, Ky., July 13, from cerebral hemorrhage, after an illness of six months, aged 76.

**Alpheus Baker Morrill, M.D.** Hahnemann Medical College and Hospital, Philadelphia, 1894; of Concord, N. H.; died in the Margaret Pillsbury Hospital in that city, July 13, from the result of injuries received in altercation in a saloon in Hooksett, N. H., a fortnight before, aged 41.

**Levi M. Hanna, M.D.** Miami Medical College, Cincinnati, 1871; a member of the Indiana State Medical Association; a veteran of the Civil War; for more than twenty-five years a member of the U. S. pension examining board at Greencastle; died at his home in that city, July 16.

**Bernhard Hesse, M.D.** University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1860; a member of the school board of Saginaw, Mich., for many years; one of the oldest practitioners of the city; died suddenly at his home, July 14, from heart disease, aged 73.

**George W. Alexander, M.D.** Louisville (Ky.) Medical College, 1881; a member of the American Medical Association; died recently at his home in Chula, Mo., from cerebral hemorrhage, after an illness of six hours, aged 52, and was buried at Chillicothe, Mo., June 23.

**John William Thatcher, M.D.** Kentucky School of Medicine, Louisville, 1869; of Marion, Ohio; for several years editor of the Marion Mirror; died in the Central Emergency Hospital in Marion, July 16, from paralysis, after an invalidism of seven years, aged 78.

**James M. O'Neill, M.D.** College of Physicians and Surgeons, Dublin, Ireland, 1874; of Buffalo, N. Y.; a member of the American Medical Association; died at his home, July 15, from disease of the stomach, five days after a surgical operation, aged 56.

**Daniel Newcomb, M.D.** Berkshire Medical College, Pittsfield, Mass., 1852; Chicago Medical College, 1870; first "Free State" registrar of deeds of Atchinson County, Kan., in 1858 and 1859; died at his home near Ocean Springs, Miss., July 12, aged 79.

**John D. Mulhane, M.D.** College of Physicians and Surgeons, Baltimore, 1883; for many years local surgeon of the Penn-

sylvania System, at Steubenville, Ohio; died in the State Hospital, Athens, Ohio, July 15, from pulmonary tuberculosis, aged 50.

**William F. Wiard, M.D.** Chicago Medical College, 1873; sometime president of the Sacramento (Cal.) Society for Medical Improvement, died at his home in that city, July 9, from paralysis, after a prolonged period of invalidism, aged 65.

**Anthony R. Boykin, M.D.** New York University Medical College, New York City, 1860; a Confederate veteran; formerly a practitioner of Smithfield, Va.; died in the Confederate Soldiers' Home, Richmond, Va., July 14, aged 69.

**Philip Aylett Fitzhugh, M.D.** Medical Department of Hampden Sidney College, Richmond, Va., 1849; died at the home of his daughter near Machipongo, Va., July 7, from dysentery, after an illness of two weeks, aged 84.

**L. F. Hyder** (License Tennessee, 1889), chairman of the Carter County Court; and at one time a member of the state legislature; died at his home in Elizabethton, Tenn., July 8, from nephritis, after a long illness.

**George W. Drury, M.D.** Missouri Medical College, St. Louis, 1882; for twenty-five years a practitioner of Decatur, Ill.; died at his home in that city, July 10, from nephritis, after an illness of two years, aged 54.

**Wesley Robbins, M.D.** Indiana Eclectic College, Indianapolis, 1884; a colored practitioner of Detroit; died at his home in that city, July 13, from cerebral hemorrhage, after an illness of two weeks, aged 52.

**Rody Elton Warner, M.D.** Eclectic Medical Institute, Cincinnati, 1875; Western Pennsylvania Medical College, Pittsburg, 1887; died at his home in Pittsburg, July 15, after an illness of several months, aged 57.

**Bryant James Smith, M.D.** University of Georgia Medical Department, Augusta, 1889; fell into a well at his home, Sunnyside, near Waycross, Ga., June 24, and broke his neck, dying instantly, aged 45.

**Elijah A. Lyon, M.D.** Hahnemann Medical College and Hospital of Chicago, 1880; College of Physicians and Surgeons, Chicago, 1898; of Chicago; died in Ottawa, Ill., July 14, after a short illness, aged 53.

**Myles J. Gahan, M.D.** Texas Medical College and Hospital, Galveston, 1867; formerly of Grand Island, Neb., but for five years a resident of Omaha; died in the Omaha General Hospital, July 18, aged 65.

**Alfred David Becket** (Years of Practice, Ohio, 1896), of Limaville, Ohio; died at the Alliance Hospital, June 28, from septicemia, following the bite of a rat, after an illness of two weeks, aged 53.

**Alvin G. Fritsche, M.D.** Rush Medical College, Chicago, 1901; of Black Hawk, Wis.; died at the Augustana Hospital, Chicago, July 13, five weeks after an operation for appendicitis, aged 30.

**Bela St. John, M.D.** Eclectic Medical College of the City of New York, 1882; died at his home in Torrington, Conn., July 16, from cerebral hemorrhage, after an illness of one year, aged 80.

**John B. Hughes** (Examination, Maine, 1895), an eclectic practitioner of Portland, Maine; died suddenly July 12, at his summer home on Peak's Island, Maine.

**Joseph B. Randleson, M.D.** St. Louis Medical College, 1878; died at his home in East Galesburg, Ill., from paresis, after an illness of six years, July 18, aged 73.

**John Hamilton, M.D.** Detroit (Mich.) College of Medicine, 1876; died at his home in Pompeii, Mich., July 14, after an illness of ten days, aged 77.

**George A. Cook** (License, Rhode Island, 1895), died at his home in South Providence, R. I., July 8, after a brief illness, aged 79.

**Frederick Habermehl** (Years of Practice, Ohio, 1896), died at his home in Clarrington, Ohio, July 8, after a prolonged illness, from paralysis, aged 73.

**John S. Thomason, M.D.** Atlanta (Ga.) Medical College, 1870; of Paeolet, S. C.; died in the Columbia (S. C.) Hospital, July 6, aged 58.

**Grosvenor B. Cady, M.D.** Physio-Medical College, Cincinnati, 1864; of Chicago; died in the Home for Incurables in that city, July 18.

**Truman Nichols, M.D.** New York Medical College, New York City, 1852; died at his home in Brooklyn, July 13, aged 81.

**Samuel F. Teed, M.D.** Physio-Medical Institute, Cincinnati, 1859; died at his home in New York City, July 6.



## Society Proceedings

### COMING MEETINGS.

American Public Health Association, Winnipeg, Can., Aug. 25-28.  
American Acad. of Ophthal. and Oto-Laryng., Cleveland, Aug. 27-29.  
Wyoming State Medical Society, Sheridan, Aug. 28.  
New Mexico Medical Society, Albuquerque, Sept. 2-3.  
Washington State Medical Association, Walla Walla, Sept. 2-4.  
Medical Society of the Missouri Valley, Council Bluffs, Sept. 3-4.  
Colorado State Medical Society, Denver, Sept. 8-10.  
Med. Soc. of the State of Pennsylvania, Cambridge Spgs., Sept. 14-17.

### AMERICAN ACADEMY OF MEDICINE.

*Thirty-third Annual Meeting, held at Chicago, May 30 and June 1, 1908.*

(Continued from page 340.)

#### The Place of Woman in the Modern Business World as Affecting Home Life and Marriage.

DR. ANDREW STEWART LOBINGIER, Los Angeles, believed that discussion of this subject must be governed by the facts obtaining to-day and not by preconceived notions of personal preference in an ideal state of society. He admitted that there were vital reasons why women were now impelled to earn a living outside the home; but how far the public employment to women interfered with their marrying, or if married, with the fulfillment of their obligations as wives and mothers, there were no reliable data to prove. There were certain definite views held by some women who choose employment outside the home, among which were mentioned a deep aversion to the sacrifices entailed by early married life and maternity. Another class disliked the pinching economy so often necessary. Still others had determined that the life of a bachelor maid was less hazardous than life with a husband, children, and four-room flat on a seventy-five dollar salary. To a still greater class a desirable offer of marriage never comes. He was convinced that the solution of the problem would come from the women with their subtlety and keen perceptions, and that in another quarter of a century women would be adjusting themselves to the changed conditions with the result of a nobler, more secure and broader home life.

#### Place of Women in the Modern Business World as Affecting the Health of the Race.

DR. L. DUNCAN BULKLEY, New York, said that with the incessant desire for excitement, pleasure and dress, thousands worked, often to the detriment of health, for the means of gratifying tastes and desires not laudable. While many women were obliged to care for themselves, the desire to be independent urged others into business, when a little more exhibition of the qualities special to the gentler sex would tend to make home life sweeter and more attractive, and the saloons relatively less alluring to men. He advocated earlier bed hours, and rest during menstruation, the last of which was impracticable under the imperative call of duty and work equally at all times in the business world. It was not so much the load but the pace that killed. The greatest field of philanthropy in this connection lay in education regarding true hygiene and proper mode of life.

#### Woman in the Business World, as Affecting Health and Morals.

DR. NORMAN BRIDGE, Los Angeles, contributed this paper (read by Dr. McBride, of California) in which he called attention to the change in social and economic equations the result of the entrance of women into business pursuits. While it was easy to urge that every woman should marry and make a home Dr. Bridge asserted first, that this was manifestly impossible, and secondly, it was the woman's own affair. While the single business woman always, and the pampered rich woman often, failed to perpetuate the race, the business woman was much the less to be blamed. He did not believe that a business woman's experience unfitted her for a domestic life, but rather that it enhanced her power and efficiency as a useful social unit. The health of the woman in his opinion was not generally impaired by a business

life, unless she worked for very low wages and under depressing conditions. He denied that a business occupation led to boldness, which was a temperamental quality, or that it impaired either charm and innocency, unless by these words was meant ignorance and uselessness, which was often the real meaning carried by them. Neither did he believe that a business life tended generally to immorality. A few, mainly in consequence of starvation wages, might go wrong; and many girls in grinding clerkships would act wisely in entering domestic service, thereby having easy and reputable lives and being able to save money. He criticized the prevalent fad, that "business" life, even at starvation wages, was better than a "work" life, with less physical and mental fatigue, and more comforts and money.

#### Female Labor as a Factor in Social Life.

DR. A. L. BENEDICT, Buffalo, believed that many men and women were unfitted for marriage, that each individual should have perfect freedom of choice, and that only considerations of propriety should be a limitation to women in selecting occupations. The economic success of marriage as a vocation for women would be enlarged if, without in any way departing from the sentimental and ethical factors involved, it were generally recognized as a business, to be carefully learned and to be carried on with punctuality, intelligence and devotion. While the competition by women in business lines involved less than one man in ten, yet it lowered the standard of wages for the male. On the other hand, wages generally were at a point incommensurate with the wealth of the country. Far more important than the ordinary conception of the social influence of female labor, especially in the higher grades, was the diversion of female labor from domestic to commercial channels. Domestic servants now cost about double what they did twenty years ago, so that the ideal home of the average professional and small business man could no longer exist under ordinary conditions, thus driving thousands of families into boarding houses, etc. Dr. Benedict concluded that the thousand female lawyers and seven thousand women physicians in the United States were only a drop in the bucket and that it was the lack of domestic servants and of domestic training that was disrupting the national home life and thereby causing a "woman's problem."

#### Modern Methods of Education and Their Effects on the Health of the Race.

DR. GEORGE HOWARD HONIE, Kansas City, Mo., asserted that the effect of the educational methods on the home life and welfare of the American people had been that of stimulating to an abnormal degree the intellectual and nervous natures of women. He did not necessarily advocate the reducing of the intellectual training but its support by adequate physical and moral development. One-sided development, he observed, affected girls rather than boys because the stern demands of life compelled young men of the working classes to leave school earlier than the young women. A superintendent of a large city system had said: "My observation enables me to state positively that not one pupil in ten is injured by over study, compared with those who are up late hours receiving company, attending parties, and going to theaters, when they should be in bed. It is not school work that hurts, but it is social dissipation that undermines the health of boys and girls. When a child is going to school, his business is to be at school, to take necessary exercise, eat plain wholesome food, and sleep from eight to ten hours out of every twenty-four, and to be a child as long as possible without trying to ape society men and women."

Another viewpoint was the influence of educational methods on the woman teacher. Unless the woman was endowed by nature with a body stronger than the average of her sex and unless her education had been more symmetrical than the average, she could stand only a few years of school teaching without breaking down. Another point for consideration was the effect of nervous teachers on the health of the pupils. In Germany more men and fewer women were desired as teachers, to reduce to a minimum this tendency to hysteria.



Others had stated that the primary grades should be supplied with quiet and womanly women as teachers, while the upper grades should have the more virile and balanced influence of men as teachers. Further since teachers did not have a living wage they could not have the vacations and recreations necessary for the complete restoration of nervous energy used up by their school room activities. Then, there were not teachers enough to meet the needs of a more healthful method of education. There should be schools good enough for the best and wealthiest and still adapted to and utilized by the worst and poorest, if there was to be a preservation from classes, castes, and aristocracy with its concomitant degradation and pauperism.

#### DISCUSSION.

DR. HELEN C. PUTNAM, Providence, believed that all human beings had the right to develop their best abilities in all directions for the service of society. The development of women to a higher plane of education and morals than men would not solve sociologic problems. There must be exactly the same training of men in order that women might select good fathers for their children. She called attention to the work of the National Society for the Prevention of Social Disease which had been aided by the influence of women added to the stronger influence of men. She believed that women should have a voice in the selection of the right men to hold office and of proper teachers for children in the schools. She suggested the creation in the public schools of a department of hygiene in which in addition to looking after the hygiene of the school children, there should be taught home-making and the elements of biology.

DR. EMMA B. CULBERTSON, Boston, believed that the question of the influence of women on the future of the race was to be solved only by the impartial cooperation of both sexes, and that every man, woman, boy, or girl, was entitled to the best development of their individual capabilities. Admitting the presence of a certain amount of race degeneracy in America, she felt that this was not most marked among the women, but that there would be plenty of boys and girls of the best type if they were given the right kind of fathers. A great deal of the overwork of women teachers was absolutely unnecessary and was imposed on them by the men who are head masters. She believed there should be more careful selection of work for the normal school and that school matters should be kept out of politics.

DR. JOHN H. TRESSEL, Alliance, Ohio, said that the present mode of sanitation and physical culture, according to his observation, had developed the girls to a greater extent than the boys. This he attributed to a greater tendency to dissipation on the part of the boys, who should receive more attention to prevent this deterioration.

DR. DONLEY C. HAWLEY, Burlington, Vt., said that the trend of thought and effort should be to fit woman for the function of wife and mother and induce her to choose the fulfillment of that function; though there were times when it was necessary for her to compete with men in many walks of life. He believed that both the school system and business vocation should be so regulated that every girl might lose two, three or four days in the course of the month without any detriment to herself so far as her class standing or her standing with her employer was concerned.

DR. FLORUS F. LAWRENCE, Columbus, Ohio, believed the principal factor in the invasion of men's careers by women to be that business men found that women rendered more faithful service at a less price. Girls should be taught that a home was something that a woman ought to desire and live for, and without which she could not live happily. Without this ideal the woman could not be expected to want to make a home.

DR. WARD, California, speaking from the standpoint of a teacher, did not hesitate to say that in law and medicine women generally could be relied on to stand absolutely for the highest standards in professional work, without variation or compromise, while the persons who could be counted on to aid some indirect, underhand and political movement to debase the profession or to get some personal advantage at

the expense of the community were the men. While there were men in the professions working for the loftiest ends, this could not be said of all. He believed that college women would be the leaders in women's work in the next generation as college men have been, and were to-day, the leaders among work of men.

#### AMERICAN ORTHOPEDIC ASSOCIATION.

*Twenty-second Annual Meeting, held in Chicago, June 4-6, 1908.*

*(Continued from page 344.)*

#### Fibrous Ankylosis of the Knee.

MR. E. MUIRHEAD LITTLE, England, said that in the majority of cases of stiff knee the ankylosis is fibrous. He considered the causes and the symptoms of the condition. The treatment differs in its objects in the upper and lower limbs. In the former, free mobility is the greatest consideration, while in the latter, a firm support to the weight of the body is the thing wanted. The worst cases of fibrous ankylosis must be treated the same as bony ankylosis. Excision of the joint should not be done before the age of fourteen, and even then, the epiphyseal lines should be respected. Mr. Little has not found pins, nails, screws, or wires necessary in the knee. He quoted some illustrative cases.

#### When Is Bony Union Complete After Excision of the Knee?

DR. J. T. RUGER, Philadelphia, after a review of the literature and an exhaustive consideration of all the facts, reached the following conclusions: 1. Writers and operators differ as to the length of time fixation or retention apparatus should be worn after excision. 2. Flexion deformity is much more likely to occur before twelve years of age, when union is fibrous or cartilaginous. 3. Bony union is more probable after this period, by reason of the increased activity on the part of osteogenic tissues in the part. 4. Deposit of bone normally takes place more slowly in the epiphysis, because of the histologic structure of the parts. 5. Intrinsic influences may and do retard the process of healing after excision. 6. Extrinsic factors also delay the ultimate bony union. 7. As bony union after fracture of the shaft of a long bone is not complete for from nine months to a year, it will require nearly as much more time for completion in the epiphysis; because of structure and of intrinsic and extrinsic factors. 8. During operation sufficient periosteum should be preserved to entirely cover over the line of contact of the excised parts, and accurate coaptation and as nearly absolute fixation of the bone ends as possible should be secured. 9. Fixation should be maintained for a period of at least a year, and probably nearly two years, after excision, to avoid the danger of flexion or other deformity.

#### Discussion on Knee Lesions.

DR. WALTER G. STERN, Cleveland, asked what had been the experience of the two readers of papers in resection for flail knee joint after infantile paralysis and for a bad position after rheumatoid arthritis. He has had humiliating experiences in both classes of cases.

DR. YOUNG said that when his attention was first attracted to osteotomy above the knee for ankylosis above the knee with deformity, he did not think a great deal of it, but after having performed it on children from 12 to 14 years of age with satisfactory results, he is in favor of the Ollier operation. He believes that in future the opening of the knee joint will be a frequent procedure.

DR. ROBERT B. OSGOOD said that he had excised the knee in a case of what was supposed to be rheumatoid arthritis, and in which the microscopic examination had seemed to make this diagnosis certain. The patient has now a stiff, solid knee.

MR. LITTLE said that when the case is fairly put to them, patients do not like the idea of an operation that will cause a stiff knee. He has found that in infantile paralysis the bones unite well, although he had one bad experience after an arthrodesis of the ankle, and a subsequent arthrodesis of the knee. The extra strain on the popliteal muscles produced a gangrene of the front of the foot. He does not consider



Ollier's an ideal operation, because, instead of correcting a deformity, another deformity is added to that already existing.

Dr. RUGH said that he has excised the knee for infantile paralysis in a woman of 48 years. He has had no experience with excision after arthritis deformans. He believes in promising the patient bony union after a period of about two years, although fibrous union may occur in from four to six weeks.

#### Preliminary Report of New Operation for Arthritis Deformans of the Hip.

Dr. FRED H. ALBEE described this operation, and said that firm ankylosis was produced with the leg in a corrected position. He reported five successful cases. All the patients had been incapacitated for work for some months or years. One does not require any elevation, while others are wearing up to half an inch on the heel of the affected leg. In every case the pain has been entirely relieved.

#### DISCUSSION.

Dr. ARNOLD said that he had seen one of the patients previously and operated. In the x-ray taken at the time, he could not distinguish any osteophytes. The operation was at first successful, but later, walking upstairs made him tip forward. He then drifted away from Dr. Arnold.

Dr. YOUNG said that after excision the joint is not so stable as after Dr. Albee's operation, although the motion is good.

Dr. TURNER thinks that it would be of great value to the association if Dr. Albee would report on the condition of these patients at the next annual meeting.

Dr. PAINTER said that the Murphy operation does not give enough motion to be of much value, excision is fruitless, and osteotomy unsatisfactory when much deformity was present.

#### The Question of Balance and a New Form of Shoemakers' Last.

Dr. ANSEL G. COOK, Hartford, Conn., first reported an elementary study of the balance of the human body and its relation to the balance of shoes, including rules for designing or for judging of the efficiency of shoes. His second paper dealt with extension of the usefulness of plaster-of-Paris in enabling the orthopedic surgeon in a measure to escape from the thralldom of the shoemaker.

#### DISCUSSION.

Dr. J. RIDLON, Chicago, said that instead of using a board to step the foot on when making the cast, he uses a piece of sheet steel, bent according to the height of the heel needed for each particular foot.

Dr. RIELY said that he uses aluminum for the same purpose. He has found that the use of a bandage around the plate and the foot has tended to flatten the arch and spread the heel.

#### The Operative Treatment of Bony Ankylosis of the Knee, Hip, and Elbow Joints.

Dr. J. B. MURPHY, Chicago, described his well-known method of preventing bony union after operations for ankylosis and described a process of injection by which he renders joints immune to infection. The solution injected consists of formalin and glycerin. In every case prepared in this way there was an entire absence of inflammatory reaction.

#### DISCUSSION.

Dr. YOUNG asked why Dr. Murphy removes the lateral ligaments entirely. He thinks that if they could be saved, it would be an advance in the treatment of the condition.

Dr. DE FORREST WILLARD, Philadelphia, also thinks that if both these ligaments were removed the joint would not be strong enough to support the body satisfactorily.

Dr. J. RIDLON, Chicago, asked whether or not Dr. Murphy's results are usually good in cases of gonorrheal inflammation of the joint.

Dr. DAVIS said that the crucial test of the operation is in the knee joint, and he desired to see a perfectly good result in this joint. He operated on a patient according to Dr. Murphy's procedure; but instead of transverse division of the patella he used lateral incisions, turning in lateral flaps.

He got too much motion; so he excised less in the next case, getting a better result. In his next cases he excised still less, and did not get enough motion. He said that he could not succeed in striking the happy medium. He does not see the necessity for removing the lateral ligaments.

Dr. V. P. GIBNEY, New York, asked about the use of formalin in complete ankylosis of the joints with bony union. He thinks Dr. Murphy right in taking out all that can be taken and covering the bone completely with the flaps.

Dr. MURPHY said that he is convinced that he can produce a practically perfect, freely movable joint, because he has done so. He does not care to leave the lateral ligaments, and he feels that what he did leave was enough to insure good motion. In cases of gonorrheal infection, he does not follow out a different procedure from that employed in other cases of bony ankylosis. It is only necessary to avoid getting the joint infected.

(To be continued.)

#### MASSACHUSETTS MEDICAL SOCIETY.

*One Hundred and Twenty-seventh Annual Meeting, held in Boston, June 9-10, 1908.*

The President, Dr. GEORGE W. GAY, Newton, in the Chair.

#### Visits to Hospitals.

The morning of the first day was devoted to visits to the Boston hospitals and clinical laboratories.

#### Value of Health Inspection.

Dr. LYMAN A. JONES, North Adams, declared that local health boards throughout the state are, almost without exception, inconsistent and inefficient, maintained that not more than half the men composing health boards were physicians, but were men with political influence who sought rather private interests than the public good, and recommended that more power be given to the state sanitary committee.

#### Treatment of Fractures as Affected by the X-Ray.

Dr. FREDERICK J. COTTON, Boston, stated that the greatest value of the x-ray was in the open treatment of fractures, particularly old cases due to imperfect original results, with deformity and disability. He called attention to the fact that the younger generation of physicians was liable to depend too much on the ray, and that consequently the results in large hospitals in routine cases are not so good as they were ten years ago. Roughly speaking, by the use of the x-ray, fractures had resolved themselves into as common types as luxations. Fracture of the elbow was less common now than formerly, while fractures of the head of the radius and scaphoid had become common. The x-ray had not only taught us what to look for, but how to look. The idea that it was not safe to set a fracture without a skiagraph, Dr. Cotton said, was nonsense, and was often impracticable. In certain fractures of the foot, of the hip within the capsule, and of crushed fractures of the hand, a skiagraph was necessary. In dislocations with fractures, Cotton advised reduction of the dislocation and then the application of the ray. A man who was unable to set a fracture without the x-ray probably could not set it at all. He commended the open treatment of certain kinds of fractures.

#### DISCUSSION.

Dr. FRED B. LUND, Boston, spoke favorably of the open method of reduction, and mentioned a case of ununited fracture of the femur treated by this method, with excellent results. He said that these cases should only be treated by the experienced surgeon.

Dr. HOMER GAGE, Worcester, considered that treatment of fractures at present was not so satisfactory as formerly, and agreed that too great dependence was placed on the x-ray and too little on manipulation.

#### Fracture of the Lower Epiphysis of the Tibia.

Dr. FREDERICK S. COOLIDGE, Pittsfield, reported the case of a patient 41 years old, who was 6 years old at the time of the fracture. The result was perfect for a year, then a lump developed in the region of the external malleolus. A brace



was worn for four years, but the leg continued to shorten proportionately until the patient was 16, the total shortening being  $1\frac{1}{2}$  inches. The fibula continued to grow normally. X-ray examination showed that the tibia had not grown since the accident, and that the lump was the lower end of the growing fibula.

## DISCUSSION.

DR. CHARLES L. SCUDDER, Boston, said that cases of injury to the lower epiphysis of the tibia were few, but that the x-ray was disclosing more. The importance of the accident was due to the deformity and shortening; the contiguity of the joint and the fact that the line of weight-bearing was affected. The causes were displacement of the epiphysis or crushing or injury to the part. In the Massachusetts General Hospital fifteen cases were found by means of skiagraphs. In fourteen of these the ages of the patients ranged from 9 to 17 years. Dr. Scudder said that cessation of growth was generally believed to be due to disturbance of circulation. Shortening was greatest when the accident occurred at about 6 or 7 years of age than at 16, the former age being the period of more active growth. He emphasized the importance of accuracy of diagnosis.

## Stiff and Painful Shoulders; Subdeltoid or Subacromial Bursitis.

DR. ERNEST A. CODMAN, Boston, said that outside of definite fractures at the shoulder, 90 per cent. of the disabilities come under the title of the paper. Cases were divided into three classes: The acute type, with inflammation and tenderness; the adhesive type, with adhesion of the surfaces of the bursa, and the chronic type, presenting some interference with motion of bursa and difficulty in elevating the arm. They might be infectious, tuberculous, gonorrheic or idiopathic, following influenza or injury. The so-called "glass arm" of the baseball pitcher was an example. The bursa was about the size of the palm of the hand. Subacromial is the better name, as it is nearer that situation. Differential diagnosis must be made from muscular rheumatism and neuritis. The pain in this bursitis was either at the insertion of the deltoid or at the point of the shoulder. Prognosis was good, as almost all patients recover. Treatment might be necessary for from two to six months, and might be either exercise, massage and Zanden apparatus, or by breaking adhesions under anesthesia. The elevated arm splint was useful, but was hard on the surgeon and looked uncomfortable to patient's friends. The best treatment was to open bursa and break up the adhesions. This usually resulted favorably in from four to six weeks. This disease was the periarticular arthritis of twenty-five years ago.

## DISCUSSION.

DR. DOUGLAS GRAHAM, Boston, treated these cases with massage for one-half hour every other day, which in the acute cases was better than longer and more frequent sittings. He required patients to lift weights and to suspend themselves by the hands. His use of strong faradic current at the point of pain for short periods had relieved that symptom in some of his cases.

## Radium Bromid, Rather than Operation or X-Rays in Early Treatment of Superficial Cancers.

DR. FRANCIS H. WILLIAMS, Boston, asserted that Dr. Rolins of Boston was the first to suggest that emanations from radium might have therapeutic value. Dr. Williams used from 0.050 to 0.100 of pure radium bromid in a capsule covered by rubber tissue. He described his technic, which consisted of permitting the capsule to rest against the diseased area for from half a minute to three minutes from one to three times a week. He used a fresh rubber capsule at each application. The treatments were harmless. Dr. Williams had used the method in both hospital and private work. It was more valuable on small surfaces, but would not entirely exclude other methods of treatment. Improvement was noticed in two or three weeks. Among the conditions benefited he enumerated lupus erythematosus, lupus vulgaris, keloid, chronic ulcer, epithelioma, rodent ulcer, acne, adenoids and inflammation of small glands. He reported one case of Paget's

disease not helped by this form of treatment and some cases of epithelioma and rodent ulcer. He advised caution in the use of this treatment in old and feeble persons.

## DISCUSSION.

DR. HERBERT L. BURRELL, Boston, said that he had come prepared to offer a protest as a surgeon to the dictum of non-surgical intervention, but was now a convert, though he believed that radium could replace the knife in certain selected cases only.

DR. GEORGE W. GAY, Boston, spoke of a case of his treated by Dr. Williams. The lesion was a small epithelioma of the nose. A three-minute sitting once a week\* for five weeks entirely removed the growth and left the skin clear. There was no pain and only slight itching.

DR. ERNEST CODMAN, Boston, cautioned against too great enthusiasm in the use of this agent, and reminded the society that the same apparently excellent results were announced at the initial use of the x-ray. He felt on the whole that the use of the x-ray had done more harm than good, though it was undoubtedly of value in cases of skin cancer. He had seen two cases of epithelioma of tongue, in both of which valuable time had been lost by the use of the x-ray, and one patient was beyond all hope of aid from operative intervention. Growths such as mentioned by Dr. Williams were probably helped by radium, but in growths below the skin Dr. Codman considered the method unsafe.

DR. WILLIAMS said that reason must dictate the treatment. His experience was based on treatment for four and a half years with radium.

## X-Ray Plates of Fractures from the Massachusetts General Hospital.

DR. CHANNING C. SIMMONS, Boston, introduced the exhibit and spoke of the necessity of employing two views in all fractures, an anteroposterior and a lateral view. Attention was called to the following unusual cases: Fracture of the head of the radius, fracture of the scaphoid bone of the wrist, and dislocation of the semilunar bone of the wrist.

## Use of Fresh Animal Sera in Hemorrhagic Conditions.

DR. TIMOTHY LEARY, Boston, cited cases of the successful clinical use of animal sera, and showed that aside from the constitutional hemic effect, they acted as direct cardiac stimulants. Cases were yet too few to draw conclusions as to the value of sera.

## DISCUSSION.

DR. SAMUEL W. GODDARD, Brockton, mentioned eight cases occurring during the last four months in which sera had been used at Carney Hospital in patients with various degrees of jaundice, and there had been no hemorrhage following operation in such cases since. All patients with jaundice received it at above hospital previous to operation.

DR. ERNEST W. CUSHING, Boston, reported one case of extrauterine pregnancy with severe hemorrhage, in which administration of serum was apparently followed by great benefit.

## Some Aspects of Gonorrhea.

DR. FREDERICK FORCHHEIMER, Cincinnati, in the Shattuck lecture, dealt mostly with statistics of the prevalence of this disease. The Prussian army was least affected, with a rate of 1.23 per cent.; the United States Army was most seriously affected, its ratio being 8.95 per cent.; the British army stood next to the United States, with a ratio of 5.94 per cent.; the United States Navy's ratio was 3.88 per cent. In civil life its frequency was least among laborers, next among the highest class, and highest among the middle classes. In the armies of Europe it was gradually diminishing, as shown by figures from 1879 to 1903. In the United States Army, in ten years from 1897 to 1906, there were 70,000 cases. Figures showed that the effect of a canteen or no canteen were not responsible for an increase found in the United States Army of late years. He felt that the European figures of its prevalence in civil life were overestimated, the ratio being given from 48 to 80 per cent. of all men. In one service of the Massachusetts General Hospital but 20 per cent. of the his-



stories showed its presence. He agreed with Erb that the morbidity of the disease was diminishing. The United States Army and Navy were exceptions to this rule. About one-half of all adult males contract gonorrhea. The cause of "one child matrimony" he believed to be prevention of conception rather than gonorrhea. Much could be done to stamp out the disease. Many lurid statements as to its grave dangers were overdrawn and due to overenthusiasm of gynecologic and other specialists. The laity could aid in its extinction, and the physician could disseminate valuable information.

#### Growth and Development of Major Surgery in the Smaller Cities.

DR. CHARLES H. RICHARDSON, Pittsfield, said that during the last ten years major surgery had been done outside of the large cities with much success. The advent of the modern hospital in these smaller cities had induced men to operate, and the results equaled those anywhere. He advised no man to attempt such work without due preparation. He would approve of a law which prohibited operating by all who have not had from three to five years of postgraduate training. The private hospitals had come to stay, but he believed it was the men who made the hospitals and not the hospitals which made the men. St. Mary's Hospital, Rochester, Minn., was an example. He advised that the surgical staff of hospitals be given opportunity to advance, and spoke a word for unanimity of action by hospital staffs in the interest of the hospitals and deplored the existence of jealousies.

#### DISCUSSION.

DR. HALBERT G. STETSON, Greenfield, urged that a greater freedom be allowed the surgeon by the general practitioner and a further attempt be made to educate the latter to the value of early operative intervention. In this particular only is the surgeon handicapped in the smaller towns and this is the principal reason for the less favorable results there.

#### Necessity for Immediate Treatment in Serious Ocular Conditions Frequently First Seen by the General Practitioner.

DR. FREDERICK CHENEY, Boston, spoke of acute glaucoma and ophthalmia neonatorum only. Severe cases of glaucoma were not usually overlooked by the practitioner and the use of a strong myotic until the effect was produced was advised until the oculist was called, when, as a rule, operation was the treatment. The question of ophthalmia neonatorum was a very important one. New cases usually ended in recovery if seen early and treated properly. In Massachusetts the results were better than in other states, due to the lesser prevalence of the midwife. Last year 171 cases were treated at Massachusetts Charitable Eye and Ear Infirmary. The importance of early treatment was great. He recommended the instillation of 4 or 5 drops of 25 per cent. argyrol, every four hours, and states that the newer silver salts were less irritating than silver nitrate. Often a 3 per cent. boracic acid solution used every twenty minutes prevented an attack by simple cleanliness. A simple ointment on the lids prevented adhesion and soothed the irritation due to frequent irrigation. The usual etiologic factor was the gonococcus. One value of hospital treatment was the isolation of the patient from other members of the family.

#### DISCUSSION.

DR. DAVID HARROWER, JR., Worcester, mentioned the value of asepsis in fresh perforating wounds of the eye. One large firm has provided a special room where, after such an accident, an attendant washed out the eye with a solution, applied a sterile pad, and then sent the patient to an oculist. This prevented many complications. He mentioned as an effective emergency treatment for a burn of the eye the application of an oily solution to the affected part and the use of a sterile covering bandage.

#### The Country Doctor's Relations with the Metropolitan Institutions and Specialists.

DR. GILMAN OSGOOD, Rockland, mentioned the unpleasant features which may arise through the untactful words of hospital internes in the presence of referred patients, and also

suggested that medical men in large centers should distinguish between patients referred for diagnosis and those sent for treatment. One source of misunderstanding might arise in operative cases in which the home physician felt competent to operate, but, wishing the consultant's opinion as to the advisability of such procedure, sent the patient for that information, but thereby lost control of patient. The country doctor wished skillful aid and courteous treatment from his city brethren.

#### DISCUSSION.

DR. MAURICE H. RICHARDSON, Boston, said that he realized the opportunities for misunderstanding under the circumstances described. The three graces, Faith, Hope and Charity, are of much interest in this matter, but the practice of the latter led to most pleasant results. The consulting physician has his own matters to disturb. He felt that in operation the surgeon was responsible for all things, from an accident to the anesthetic, or a burn to the patient by the nurse, to the occurrence of a hernia in the scar. Caution was advised on part of family physician in accepting information sifted through the mind and word of patient returning home after a visit to the metropolitan physician. He felt that no patient was worth the loss of self-respect, as was often said by Dr. John Homans. The consultant was in a hard position when he discovered a real cause for censure in the home physician's care of a case, yet the tactful man might even overcome that condition. He considered institutional work more difficult and trying than private work, and advised charitable criticisms of all apparent lapses in etiquette.

DR. THOMAS F. HARRINGTON, Boston, in the annual discourse on "The Sanctity of Medicine," reviewed the early history of medicine coming through the Greeks and Hebrews, and now reaching us as the era of scientific medicine. The faith of the laity was with us, as always. He advised the return of the family physician of the old school with the advances of scientific medicine added. Physicians should lead in questions of physical health and morals. Quackery and charlatanism should not continue to be mixed with the ideas of the people on medical propositions.

#### Council on Medical Education.

DR. HAROLD C. ERNEST, Boston, chairman of the Committee on Medical Education, reported the result of the conference of the Council on Medical Education of the American Medical Association in Chicago this spring. He reported the particulars in which Massachusetts was below the standard on matters of medical education and registration, namely, lack of required preliminary education, the undesirable condition which exists that does not require graduation from a reputable medical college as a prerequisite for registration; and the fact that Massachusetts has no reciprocity with the other states. He reported that of the 398 applicants in Massachusetts during last year, 40 per cent. were rejected; also, that of 66 candidates who applied for registration and who had no degree, 89 per cent. were rejected. In relation to the matter of employing a portion of the time of examination in practical tests, he reported that the board of registration would make a beginning along this line in the examination of July, 1908.

#### State and Medical Legislation.

DR. GEORGE G. SEARS, Boston, chairman of the Committee on State and National Legislation, reported that the committee had worked in unison with the Council on Medical Legislation of the American Medical Association. In state affairs it has opposed the bill for the registration of osteopaths, which bill has been defeated; also the bill to license so-called optometrists, which the presenter was given permission to withdraw; also a bill to prohibit compulsory vaccination, which amended present law so that it was not obligatory to vaccinate a child before the age of 2 years. It favored the bill to regulate expert testimony, which was under discussion; and also the bill to establish an observation hospital for insane persons in Boston, which bill has passed.

#### Grant for Tuberculosis Committee.

The associated committee on tuberculosis asked for an appropriation of \$500, which was granted.



**Contract and Lodge Practice.**

The petition of the Essex North District Medical Society that the council consider the matter of contract and lodge practice and report means for its abolition, was granted, and Drs. William A. Dolan of Fall River, J. Arthur Gage of Lowell and Charles E. Durant of Haverhill were appointed a committee to consider the matter.

**Ophthalmia Neonatorum.**

It was voted that in view of the work that the American Medical Association was doing in the matter of ophthalmia neonatorum, and the gravity of the disease, that a committee of five be appointed to consider the treatment of the disease and measures looking to its prevention. The committee was appointed as follows: Drs. Oliver F. Wadsworth, Boston; Francis P. Emerson, Boston; Frederick E. Cheney, Boston; David Harrower, Jr., Worcester, and John W. Bartol, Boston.

**Treasurer's Report.**

The treasurer reported a balance of \$13,390.16 in treasury; that 135 new members had been admitted during the year, and that 50 had died.

**Defense of Malpractice Suits.**

An act for the defense of suits for malpractice against members of the society was approved as follows, except for slight changes in phraseology:

Active members of the Massachusetts Medical Society shall be entitled, on conditions hereinafter specified, to receive, without personal expense therefor, legal advice and court service of an attorney or attorneys-at-law in the employ of the society, for the purpose of conducting their defense in any court in this commonwealth, when they are accused of malpractice, or of illegal transactions in connection with the commitment of persons to institutions for the insane. The legal services herein provided for shall be granted only on the following conditions:

*First.* Active members of the society desiring to avail themselves of the privileges of this act, shall make application therefor in writing to the secretary of the society, and shall show to his satisfaction that they are members in good standing in the society, and that all of their pecuniary obligations to the society by way of dues and assessments have been duly discharged. They shall also furnish the secretary at his request with a complete and accurate statement of their connection with and treatment of persons on which complaints against them are based, giving dates of attendance, names of and residences of nurses and of other persons cognizant of facts and circumstances necessary to a clear and definite understanding of all matters in question, and shall furnish such other relevant information, if possible, as may be required of them by the secretary or the attorney of the society.

*Second.* They shall agree not to compromise the complaints against them nor to make settlement of them in any manner without the advice or consent of the society given through its attorney, nor shall they employ other counsel in aid of their defense without the consent of the society.

*Third.* In the event that they shall, without the advice or consent of the society, determine to settle or compromise complaints against them, they shall reimburse the society for the expenses incurred in undertaking their defense, and in default thereof, they shall be deprived of further privileges under this act.

*Fourth.* In the event that members of the society shall make requests under the provisions herof, the president and secretary acting together shall have the power to grant the same, or for cause to reject them, as the case may be, and to make such further provisions or requirements as may be deemed necessary for carrying out the purpose and intent of this act.

*Fifth.* It is to be distinctly understood by each and every member of this society that under no conditions or contingency will the Massachusetts Medical Society pay any sums awarded in settlement or compromise, or by verdict or otherwise against any member sued for alleged malpractice, and each member in applying for the services of the attorney of the society in any malpractice case shall agree not to obligate in any manner the Massachusetts Medical Society, or any persons connected therewith, to the payment of any sums whatsoever for any purpose, except as may be specified in this act.

*Sixth.* This act shall take effect on its passage by the council and approval by the society, and shall apply only in cases arising subsequent to its enactment, and during the applicant's membership in the society.

**Protection of Milk Supply.**

Resolutions introduced by DR. ARTHUR T. CABOT, Boston, were passed calling for increased protection to the milk supply and suggesting that proper legislation be urged. The recent epidemic in Jamaica Plain, Boston, was cited in which 400 cases of typhoid with 30 deaths followed the distribution of a contaminated milk supply.

**Election of Officers.**

The following officers were elected: President, Dr. Silas D. Presbrey, Taunton; vice-president, Dr. Daniel E. Keefe, Springfield; secretary, Dr. Francis W. Goss, Roxbury (re-

-elected); treasurer, Dr. Edward M. Buckingham, Boston (re-elected); librarian, Dr. Edwin H. Brigham, Brookline (re-elected); and the following standing committees:

*Arrangements.*—Drs. Lincoln Davis, Boston; Louis W. Gilbert, Brookline; Channing C. Simmons, George H. Francis, Brookline, and Arthur N. Broughton, Boston.

*Publications.*—Drs. Oliver F. Wadsworth, George B. Shattuck, and Herbert L. Burrell, all of Boston.

*Membership and Finance.*—Drs. Francis W. Goss, Boston; Walter Ela, Cambridge; Charles M. Green, Boston; Algernon Coolidge, Jr., Boston, and Samuel Crowell, Boston.

*To Procure Scientific Papers.*—Drs. Ralph C. Larrabee, Charles Harrington, Fred. B. Lane, Robert B. Greenough, all of Boston; Christopher Seymour, Northampton, and Edward W. Taylor, Boston.

*Ethics and Discipline.*—Drs. Leonard A. Wheeler, Worcester; J. Arthur Gage, Lowell; Henry Jackson, Boston, and John W. Bartol, Boston.

*Medical Diplomas.*—Drs. H. E. Marian, Orville F. Rogers, Boston, and Herbert W. Newhall, Lynn.

*Medical Education.*—Drs. Harold C. Ernst, Horace D. Arnold, and Charles H. Williams, all of Boston.

*State and National Legislation.*—Drs. George W. Gay, Newton; George G. Scars, Boston; Daniel D. Gilbert, Boston; Charles H. Cook, Natick, and C. F. Wehington.

**Annual Dinner.**

Following the annual dinner, in which 1,200 participated, the president gave the opening address.

DR. GEORGE W. GAY, Newton, outlined the process of medical legislation during the past year and spoke of the splendid work of Drs. Frank G. Wheatley of North Abington and Dr. Faxon in the State Senate, and of Dr. Oliver in the House, in presenting rational views to their colleagues on matters of public health.

ACTING GOVERNOR EBEN DRAPER was introduced and said that if any improper medical legislation occurred in the legislature it was the fault of the profession. If the medical profession will explain matters to the law-makers they are only too willing to act and to vote sanely. He had only words of praise for the skilful medical attendants of Governor Guild who brought about such a happy result. He spoke highly of Drs. Copp, Fernald and Drew (fellows of the society), whose efforts at the head of the state's institutions for the insane, degenerate and misbehaved individuals, have redounded to the great credit of the state.

REV. EDWARD CUMMINGS, Boston, spoke of the new "medicated theology." He felt that in all diseased states of mind no one was quite so well fitted to effect good results as the intelligent and competent physician, but suggested that perhaps medical men might go a little farther than is their wont in complaints mental and psychologic, and fill in any gap that may formerly have been left in such cases, and by so doing he thought the best solution of the treatment of such cases would be attained. In addition he considered the duty of the physician was very plain and lay in enlightening the patients and public on the elements of cure of the so-called social evil.

REPRESENTATIVE LUCE, Somerville, mentioned the great decrease in the death rate in preventable diseases due to the intelligent enforcement of judicious public health laws. He pleaded for more information on such proposed laws and said that just laws would then be passed. He said that the problems of degeneracy and alcoholism would best be solved by increased medical knowledge properly disseminated.

DR. HERBERT L. BURRELL, Boston, was introduced as representing the American Medical Association and as its president. He extended the cordial greetings of the national body to the state body on the occasion of its one-hundred and twenty-seventh annual assembly. He gave a glowing account of the Chicago meeting, and said that the association had now 31,000 members, and was affiliated through the county societies with 88,000 physicians. The great society is proud of Massachusetts for giving to the world Boylston on vaccination; the Warrens on surgery; Morton on anesthesia; Bigelow on the hip; and Bowditch on state medicine. The association looked back on its successful Boston session of 1906 with the greatest pride. He mentioned the large registration at the recent Chicago session, of 6,400 physicians. Chicago was for a time a medical city. The social side was not the least helpful of the functions. The scientific work was truly wonderful and Dr. Harrington's oration on state medicine created a profound impression. The American Medical Association desires the valued conservative assistance which Massachusetts can so well give. He quoted the opinion of a large



medical gathering in Edinburgh in which it was stated that "The Dorchester (Boston) Medical Club had the highest code of ethics in the world." He highly praised Dr. Gorgas in his great Panama undertaking.

DR. GAY then introduced Dr. Robert W. Johnson, president of the Baltimore Medical College and Dr. Silas B. Presbrey, newly-elected president of the Massachusetts Medical Society, to the members of the society.

### MEDICAL LIBRARY ASSOCIATION.

*Eleventh Annual Meeting, held at Chicago, June 1-2, 1908.*

The President, DR. GEORGE DOCK, Ann Arbor, in the Chair.

#### The Membership.

The secretary reported that the membership list as corrected contains 65 library members, 42 paying individual members, 2 honorary members, making a total of 109. To this has been added a list of 9 non-paying representatives of library members.

The following applicants were admitted to membership in the association: Library members, Vancouver Medical Library, Vancouver, Canada; John Crerar Library, Chicago. Individual members, Dr. Carl E. Black, Jacksonville, Ill.; Miss Helen Hutchinson, Michael Reese Hospital, Chicago; Gen. A. C. Girard, Chicago.

The executive committee, at its February meeting, advised the dropping from membership of 18 libraries and 27 individuals for non-payment of dues.

The amount of money received by the treasurer had fallen to such an extent that the funds available for the management of the exchange and the *Medical Library and Historical Journal* were entirely inadequate to maintain the exchange in a satisfactory condition. The committee advises, therefore, that the exchange be discontinued, unless a much more satisfactory financial arrangement can be advised.

#### Discussion of the Bureau of Exchange.

The manager of the exchange stated that 1,717 bound volumes and 4,285 numbers of journals had been sent to 30 libraries. Nominally the exchange was supposed to receive \$30 monthly from the treasurer of the association and this amount, if received regularly, would cover all costs; as a matter of fact, however, not a penny was received by the exchange from the association since the last annual meeting till May 28, 1908. On that date \$60 was received in payment of the appropriation for July and August, 1906. The same condition obtained in reference to the payment of the association's subscription to the *Medical Library and Historical Journal* for its members. The December and March numbers of the *Journal* were in press and would be issued during June, 1908. It was planned to issue the June, 1908, number during July. Unless funds are provided for the uninterrupted activity of the exchange, he recommended that the lists of material for disposal be prepared and sent out with the provision that each member, after designating "wants," shall agree to pay a certain sum (say 5 cents for each bound volume and 2 cents for each number of a journal) for such wants as may be supplied, provided shipment of the indicated wants is made within one month of the date of receipt of such lists.

MR. CHARLES PERRY FISHER then read a paper on "The Association of Medical Libraries, 1898-1907. Principally in Regard to the Exchange." He stated that the exchange was opened in Baltimore in 1899, the necessary funds being raised by subscription. In 1904 the annual dues were raised to \$10 for each library membership and \$5 for each individual membership and the exchange was moved to Brooklyn. From 1905 on, the main incentive to membership in the association was the exchange and the expected benefits to be derived from it. For this reason and on account of the numerous complaints that have been received, Mr. Fisher prepared tables showing the receipts and expenditures of the treasurer and the receipts and distributions of the exchange. From these tables it would appear at a glance that the treasurer "has lived within his income." But on analysis it will be seen that the full amount of the appropriation to the exchange has not been paid for the past three years. If all the members met their obligations,

the income from dues at \$10 per annum would cover all expenses. In 1907 there were 65 library and 44 individual members. The dues, if paid, would amount to \$870. As some action is imperative in consideration of the complaints made to the officers of the association, and from the fact that the membership has been greatly reduced by the number of libraries that have deliberately defaulted in payment of their annual dues and thereby forfeited their membership in the association, Mr. Fisher suggested the following points for discussion:

1. Shall the finance committee make an effort with the assistance of individual members to raise an "endowment fund" of, say, \$10,000, the income to be used in furthering the purposes of the exchange?

2. Shall we discontinue publishing our transactions and devote our entire income to the exchange?

3. Is it possible to have the exchange represented by some officer of the association whose duty it shall be to arrange exchanges between libraries direct?

4. Shall the Medical Library Association continue its work on lines similar to those of the American Library Association without attempting to support a bureau of exchange?

DR. GEORGE DOCK, Ann Arbor, thought the existence of the exchange a purely business matter. Without it the future of the society did not seem very important. It has been said that the exchange is of no value to the large libraries. This, he thought, was a mistake. Small interior libraries are often in a position to furnish material difficult to obtain, even if of no great pecuniary value. Moreover, all the large libraries have been generous in sending material to smaller libraries, and they will no doubt continue to do so. There is no great gain from sending duplicates to the auction room. The old book business in America is so poorly organized that it is difficult or impossible to depend on that either for selling or buying. Dr. Dock quoted figures prepared by Mr. Koch, librarian of the University of Michigan, showing that duplicates could be handled at a cost of about 4 cents a volume by using printed lists of wants and duplicates. Of course, the cost would vary in different places, but it seemed to him possible to continue the exchange with great profit to all concerned.

On motion of Mr. Fisher it was voted that the bureau of exchange be continued.

An offer from the Library of the Medical and Chirurgical Faculty of Maryland to take back the exchange, provided necessary arrangements were made for the payment of incidental expenses, was read by the president. General Girard thought Chicago would be a suitable place for the exchange, because of its central location and the large number of physicians there. He spoke of the possibility of the John Crerar Library providing room for it.

Mr. John S. Brownne of the Academy of Medicine, New York, and Dr. William Browning of Brooklyn were appointed by the president to confer with Mr. Huntington and arrange a settlement of the accounts of the association and propose a method for the future management of the exchange, with power to act.

It was voted that the office of manager of the exchange be declared vacant pending the action of the committee. Mr. Huntington's report as manager of the exchange, on motion of Mr. Andrews, was referred to the same committee.

#### Election of Officers.

The following officers were elected: President, Dr. George Dock, Ann Arbor, Mich; vice-president, Dr. John H. Musser, Philadelphia; secretary, Miss Ada Bunnell, State Library, Albany, N. Y.; treasurer, Dr. George D. Hersey, 148 Broad Street, Providence, R. I.; executive committee, Clement W. Andrews, John Crerar Library, Chicago; Dr. L. H. Taylor, Wilkesbarre, Pa.; Dr. H. Winnett Orr, Lincoln, Neb; the president, secretary and treasurer, ex officio, with Dr. Dock as chairman; finance committee, Charles Perry Fisher, Philadelphia; Dr. G. N. J. Sommer, Trenton, N. J.; Dr. J. George Adams, Montreal, Canada; Dr. George D. Hersey, Providence, R. I.; Miss Metta M. Loomis, Chicago.

At half past 6 o'clock the members were entertained at dinner at the Union League Club as guests of Dr. Bayard Holmes.

The following were among the papers read: "The History of the Terminology of the Disease Known as Graves', Base



dow's, etc: A Contribution to the Study of Medical Nomenclature," Dr. George Dock, Ann Arbor, Mich. (This paper will appear in full in THE JOURNAL.) "The Department of Medical Sciences of the John Crerar Library," Gen. A. B. Girard, Chicago; "The Function of the Library in the Curriculum of the Medical School," Dr. Bayard Holmes, Chicago; "The Use of Current Medical Literature by the Small Medical Library," Dr. Carl E. Black, Jacksonville, Ill. Miss Charlton's paper on "The Early Medical Profession in Canada" was read by Dr. Dock. "The Development of Orthopedics as a Special Branch of Medical Literature," Dr. H. Winnett Orr, Lincoln, Neb.

## *Medicolegal*

### Liability of Corporation for Employment of Physician by President—Cross-Examination and Form of Charge for Services.

The Supreme Court of Washington says that the case of *Russell vs. B. Schade Brewing Company* was brought against B. Schade and B. Schade Brewing Company, a corporation, as defendants, to recover for services rendered to an injured employé of the company by the plaintiff as a physician and surgeon. The defendants admitted the injuries to the employé, but denied that they employed the plaintiff to treat him. The trial resulted in a judgment against the brewing company for \$1,186, which is affirmed.

The evidence being deemed sufficient to show that Schade intended in behalf of the corporation to employ the plaintiff, and that he intended that the latter should so understand it, the question was presented as to whether he had the authority to bind the corporation. It was admitted in the pleadings that he was at the time the president of the corporation. But, under many authorities, the mere fact that he was the president did not of itself empower him to make the contract.

The rule followed in Illinois, as stated by the Supreme Court of that state in *Bank of Minneapolis vs. Giffin*, 168 Ill. 314, is to the effect that, as a general rule, a corporation acts through its president and through him executes its contracts, and that an act pertaining to the business of the corporation not clearly foreign to the general power of the president, done through him, will, in the absence of proof to the contrary, be presumed to have been authorized by the corporate body. The court recognized that an exception to the general rule may be created by the provisions of the by-laws of a corporation limiting the powers of the president, but held that, in the absence of proof that such by-laws existed, the presumption of authority prevailed.

If the above rule should be applied here, then Schade, being the president and head of the corporation, would be presumed to have been authorized, since there was no proof to the contrary. There was no proof that the by-laws of the corporation, or any other act of the corporate body, had placed any limitations on his power in the premises. The Illinois rule was, however, criticized by the defendant company as not being in harmony with the weight of authority.

It was true that the testimony in the case at bar did not comprehensively cover the subject of the conduct of Schade in his relations with the corporation in general. It did show, however, that at the time the employé in question was injured Schade was at the brewery, that he immediately assumed to give directions as one apparently in charge, and that employés present appeared to expect him to do so. His consent to the calling of the plaintiff was sought and obtained. The plaintiff was called under his directions, and, when he arrived at the brewery, he mentioned to Schade the necessity of taking the patient to the hospital at once. Schade thereupon gave directions to the employés of the company to order an ambulance for that purpose, which was done. He afterwards talked with the plaintiff, also with the injured man, and with a nurse who served the latter as one having general powers of management. The confinement of the injured employé covered a period of several months, during which time the plain-

tiff performed two amputations on one of the patient's legs, and otherwise treated him almost from day to day. These facts were well known to Schade, and he was bound to know that the services were being rendered in reliance on his authority to make the employment. Having this knowledge as the president and head of the corporation, it should not be said that the corporation itself was under such circumstances wholly without knowledge of the situation. Schade was not only known to the plaintiff as the president of the corporation, but there was sufficient evidence to make a *prima facie* showing that he assumed to direct its affairs, and that he was permitted by the corporation to hold himself out and to act as one exercising apparent general authority.

After such a *prima facie* showing, it devolved on the corporation to show that Schade did not have the authority, if such was the fact. This was not done, and the court thinks, in view of all the evidence, there was no error in entering judgment against the corporation. In so holding, however, the court does not wish to be understood as at this time giving its full allegiance to the Illinois doctrine as heretofore stated, that the presumption of authority arises from the mere fact that the employment is made by the president of a corporation. As has been seen, the facts of this case were such as placed it in another and larger class of cases, which require some appearance of active direction of corporate affairs in order to raise the implication of authority.

The court does not consider that error was committed in refusing to permit the cross-examination of the plaintiff with reference to what he would have done if Schade had not made the alleged promise to pay him for the services. The court says that cross-examination for the purpose of ascertaining all the facts and circumstances that actually existed was proper; but it was wholly immaterial what the plaintiff might or would have done under merely supposed circumstances which he asserted did not exist, and it was not error to exclude cross-examination on such a purely speculative subject.

Nor does the court agree with the contention that the entry in the plaintiff's book: "Account of John Blickensdorfer, residence care of the Schade Brewing Company," was an admission that the charge was not at the time made against the company, but against the injured man. The court says that the plaintiff testified that it was not so intended, but that the entry was simply his method of identifying the account as that of the company for services rendered Blickensdorfer. The account book was one with certain printed headings, and blanks left for entries. The word "residence" was printed, and was not erased. The actual entry the plaintiff testified was made without any reference to the matter of residence. The oral evidence was explicit as to the employment, and it was not to be excluded from consideration by the introduction of a mere loose memorandum not intended to be a permanent memorial of the agreement, to which class of writings entries made in books of account belong.

### Proper Construction of Statute Making Communication to Physicians Privileged—Admissible Evidence.

The Supreme Court of Missouri, Division No. 1, says, in the personal injury case of *Green vs. Terminal Railroad Association of St. Louis*, that Section 4659 of the Revised Statutes of Missouri of 1899 provides that: "The following persons shall be incompetent to testify: . . . Fifth. A physician or surgeon, concerning information which he may have acquired from any patient while attending him in a professional character, and which information was necessary to enable him to prescribe for such patient as a physician, or doing any act for him as a surgeon." This statute creates a privilege unknown to the common law. In that particular it stands on a different foot than a similar privilege relating to an attorney and client. As shown by a table prepared by Judge Jacob Klein and inserted as a note to *Gartside vs. Insurance Company*, 76 Mo. 452, such statute was first enacted in New York in 1828 and next in Missouri in 1835;



the Missouri statute being substantially a copy of that of New York. A similar statute was adopted in Michigan in 1846, and it is not without significance that this court has levied tribute time and again on adjudications of the higher courts of those two states in interpreting its own statute.

Though in derogation of the common law, courts have not applied the rule of strict construction sometimes applied to statutes of that character. To the contrary, the right doctrine seems to be that the policy of the statute is an elevated one. It was intended to invite confidence between patient and physician and to prevent a breach of such confidence, and should be so construed as to further its life and purpose.

The ultimate object of every judicial inquiry is to get at the truth. Therefore no rule of law standing in the way of getting at the truth should be loosely or mechanically applied. The application of such law must be with discrimination, so that it may have the legislative effect intended for it, and yet the investigation of truth be not unnecessarily thwarted.

Evidently the legislature had these considerations in mind; for the language used in Section 4659 plainly restricts the privilege created. The statute does not say, in effect, that the door of the sick room shall be locked once for all. It does not say, in effect, the mouth of the physician or surgeon shall be closed once for all. The wise general rule being that the admissions of a party to a suit made outside the courtroom are inadmissible in evidence against him, the statute does not say that all such admissions made to a physician or surgeon are privileged. It stands precisely the other way. The information under its ban is not all information acquired from a patient, but is such only as was "necessary to enable him to prescribe for such patient as a physician, or doing any act for him as surgeon." These are clear words in the law, and under no canon of construction should they be interpreted out of the law by refinement, or because of fanciful ill. In other words, the danger of frittering away this statute is not to operate as a scarecrow frightening courts from their duty to give to every word of it a due office and meaning, being zealous and astute at all times to see to it that the statute be so construed as not to strike down its obvious purpose. To this delicate and discriminating task courts have addressed themselves.

The New York court in some cases in one particular went further possibly than this court has gone in regard to the burden of proof. It held that the burden was on the plaintiff to show that the testimony was privileged and came within the provisions of the statute. This court has indicated that there was a presumption the other way. But this court is in accord with the New York court in holding that the law must be applied with discrimination, and that all information given by the patient to the physician is not privileged, but that the privilege extends only to information of the character mentioned in the statute. The rule in Michigan is the same way.

In this case the testimony of certain surgeons at a hospital used by the defendant company for the benefit of its employes needing medical or surgical aid was admitted to prove that the plaintiff was not in the open where he could be seen, but was between the cars when a backing train collided with standing cars—that is, he was concealed—when injured, precisely as his statement made to the claim agent showed and precisely as the defendant's other evidence tended to show, and contrary to his evidence at the trial. The court is of the opinion that the testimony of the surgeons was competent. It says that a case might be imagined where the method by which a man lost his arm was an element essential to correct surgical or medical treatment, but no case can be imagined within the realm of sense where surgical or medical treatment in any wise depended on whether a man was squatted in an open place or squatted in a concealed place when hurt. The surgeons testified they did not need and did not acquire the information for surgical purposes. It stood then nakedly as an admission and without privilege under the Missouri rule. Hence the testimony was admissible, and the court was not justified in disturbing the verdict because the testimony was let in.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Boston Medical and Surgical Journal.

July 16.

- 1 \*Endocarditis. A. K. Stone, Boston.
- 2 \*Fresh Animal Sera in Hemorrhagic Conditions. T. Leary, Boston.
- 3 \*A Typhoid Carrier Fifty-two Years After Recovery. D. Gregg, Boston.
- 4 Obliterating Endarteritis: Types and Their Surgical Importance. C. F. Painter, Boston.
- 5 Traumatic Focal Telangiectasis of a Tendon. A. T. Legg, Boston.

1. **Endocarditis.**—Stone prefers a division of endocarditis into an infective and an arteriosclerotic type rather than into a simple, or benign, form and an ulcerative, or malignant, type. The causal element of these lesions is not yet known. Arteriosclerosis is not infrequent in children, and persons who have had typhoid are more likely to have the lesions in later life than those who have not. The *Spirochæta pallida* may be the active cause in syphilitic cases. In some cases the active infective process may do its work on the blood vessels rather than on the heart muscle. The disease is important according to the situation of the lesion. The amount of the disease and its conditions may vary as much as do similar infective conditions in the knee or other joints. There may be an infection with so virulent an organism that productive inflammatory processes may be accompanied by destructive ones, or the newly formed tissue may be unable to maintain its nutrition and break down from sheer rapidity of its production. When there has been old inflammatory disease of the valves there is a tendency for a new and acute process to develop. As to the bacteriology of acute ulcerative and malignant endocarditis, there is nothing to add to what is generally known about septicæmia. The point of entrance of the infective organisms may be very small, indeed; general infection may follow after mild sore throats, exacerbations of urethritis, or small pustular eruptions. In all conditions in which a general infection may develop the heart must be watched with the greatest care and the symptoms which might arise from the pressure of ulcerative surfaces must be interpreted in terms of emboli and infarcts. A great difficulty in the way of a just diagnosis of ulcerative endocarditis is that these well-marked pathologic conditions often give rise to practically no symptoms associated in our minds with valvular disease of the heart. Stone reports a series of illustrative cases.

2. **Fresh Sera in Hemorrhages.**—Leary discusses the practical value of fresh animal sera in the treatment of hemorrhagic conditions. He has made use of rabbit serum entirely in his observations, rabbits being easily kept and subject to fewer diseases than horses are. It is possible to obtain large quantities of serum aseptically by cardiac puncture without seriously disturbing the animal. He describes the technic and says that by this method serum can be introduced into the patient within two hours after its removal. He mentions the use of diphtheria antitoxin for this purpose, and discusses the choice of methods—intravenous or subcutaneous. He would limit the intravenous use to extreme cases in which immediate results are important. He discusses serum sickness and reports 20 cases, in 15 of which hemorrhage had already appeared, and in the remaining five it was used prophylactically. The cases comprise jaundice, hemorrhage of the newborn, hemophilia, purpura, postoperative cases, uterine and typhoid hemorrhage.

3. **An Extraordinary Typhoid Carrier.**—Gregg reports a case in which 7 cases of typhoid occurred among the inmates of a small boarding house in a farming town, between August, 1905, and March, 1908. The mistress, who prepared all the food herself, had had typhoid in 1856. No other cases occurred in the neighborhood at the times the respective patients were seized. An examination of the blood and urine proved negative, but examination of the feces gave pure cultures of a bacillus in every way similar to the typhoid bacillus. The same results followed examination two weeks later. There was no other discoverable source of infection. The woman herself was in excellent health.



## New York Medical Journal.

July 18.

- 6 \*Cesarean Operation: Indications and Technic. J. O. Polak, Brooklyn, N. Y.
- 7 Dies Caniculares. J. Knott, Dublin, Ireland.
- 8 \*Syphilis Extragenitally Acquired in Early Childhood. F. C. Knowles, Philadelphia.
- 9 \*General Anesthesia in Mouth, Nose and Pharynx Surgery. D. Stetten, New York.
- 10 Neuroglioma Gangliocellulare of Brain; Operation; Recovery. T. M. T. McKennan, Pittsburg and F. R. Proescher, Pittsburg.
- 11 A New Corset for Gastropexia. A. Bassler, New York.
- 12 Dermoid Tumor of Conjunctiva. M. J. Levitt, Brooklyn, N. Y.
- 13 Renal Pyuria without Apparent Kidney Lesion. I. Levin, New York.

6. Cesarean Operation.—Polak discusses the absolute and relative indications for Cesarean section. In the former he includes a conjugata vera less than 6.7 cm. (2 $\frac{5}{8}$  inches), high degrees of kyphosis, osteomalacia, spondylolisthesis and Naegeli pelvis, new growths in pelvis or at pelvic brim, or fibroma or other growths that have become incarcerated in the bony pelvis. Also dense rigid cicatrization of the vagina or from cervical or rectal cancer. In relative indications he thinks the upper limit of pelvic contraction should be put at 8.5 cm. in flat pelvis and 9 cm. in the generally contracted pelvis, thus placing the operation in competition with symphyseotomy or pubiotomy, induction of premature labor and high forceps in those cases where the head does not tend to engage the brim. Procrastination for "the test of labor," Polak considers detrimental to the mother. He is rather against eclampsia *per se* as a relative indication, as such patients stand shock and sepsis badly, and are, therefore, not good operative risks. The small number of viable children met with in central implantation of the placenta, coupled with our increased facilities for checking hemorrhage and dilating the cervix since the introduction of the Pomeroy bag, lead Polak to prefer intrapelvic operation in these cases also. He includes as relative indications the class of physically unfit women in whom the expulsive powers are too weak to overcome normal resistance (Reynolds), and women with endocardial lesions who have shown signs of broken compensation prior to pregnancy. Where the pelvic outlet is so contracted as to make forceps delivery impossible, Cesarean section comes into competition with embryotomy, as is also the case in incarcerated tumor and displacement of cervix owing to previous ventrofixation. But he insists emphatically on the fact that when section is likely to be necessary it should be determined on if possible in advance and be performed as a primary, not a secondary, operation. He limits the vaginal operation to primiparous eclamptics with long rigid cervixes, and before viability, or before term. Describing the technic in detail, he concludes: "The Cesarean operation, properly chosen, gives the woman and child equal chances, and deserves a more extended use in the hands of the abdominal surgeon."

8. Syphilis in Childhood.—Knowles enumerates the various methods whereby syphilis may be innocently acquired in childhood, as follows: Parturition, circumcision, vaccination, breast feeding, hand feeding, fondling, household utensils, toilet articles, unsterilized surgical, dental and electrical appliances, careless and unclean methods in caring for wounds and removal of foreign bodies, and miscellaneous sources. He discusses each of these heads in detail. Among the miscellaneous sources he instances a chancre on the buttock from contact with the mother's vulva (Trousseau); inoculation of a scratch on the forearm of a 9-year-old girl from mucous patches on the anus of an infant she carried (Dowse), a case of fatal ulcerative syphilis; using a conductor's whistle (Taylor); a boy smoking his uncle's discarded cigar stump (Englested); an infant poking its fingers into other people's mouths and then into its own (Pontet); inoculation by the mother's finger (Sigmund). He records a case of his own in which the primary sore appeared on the left cheek and escaped recognition until after the appearance of secondaries. The source of infection was found in the mother, though the primary infection was not obvious and the father was clear. He says: "The mother evidently contracted the disease from some outside, unknown, possibly innocent source."

9. Anesthesia in Oronasal Surgery.—Stetten deals with the class of prolonged operations, short ones, such as tonsil or

adenoid operations, rarely causing concern to either operator or anesthetist. He discusses the various measures that have been tried to overcome the difficulties—inspiration of blood and mucus, mutual interference of operator and anesthetist, etc.—and points out the disadvantages respectively of tracheotomy anesthesia, inhalers (Junker, Braun, Gwathmey), rectal etherization, various postures and intubation. He has adopted with certain modifications the method proposed by Crile in 1903. Briefly the plan as originally suggested for mouth cases is a double tube of the nares into the pharynx, and a packing of the oropharynx with gauze. In nose operations the two tubes are passed through the mouth and the oropharynx and nasopharynx are packed. As the success of the method depends mainly on carefully carried out technical details and the failures one meets with are usually due to lack of attention to these, he gives an exact description of the plan he follows. The method has been extended in its scope to include other head and neck operations, e. g., mastoid, goiter, gland and brain operations. He suggests the use of the double tubes employed in this method of anesthesia, with an artificial respiration bellows, in cases where artificial respiration is necessary.

## Medical Record, New York.

July 18.

- 14 The Standard of Medical Education. H. B. Ward, Lincoln, Neb.
- 15 \*Etiology of Paralysis of the Recurrent Laryngeal Nerves of Peripheral Origin. D. B. Delavan, New York.
- 16 \*Ocular Reaction to Tuberculin. Capt. C. N. Barney and Capt. R. Brooke, Jr., U. S. Army.
- 17 \*Deutschmann's Serum Against Infectious Diseases. E. Caravia, New York.
- 18 \*A New and Efficient Method of Room Disinfection. W. B. McLaughlin, New York.

15. Peripheral Recurrent Laryngeal Paralysis.—Delavan discusses this subject under the headings of paralysis due to: 1. Traumatism or laceration of nerves; 2. mechanical pressure on nerve; 3. toxic influences. Injury may occur in accident, or be self-inflicted or be caused during operation. Pressure may occur from new growth, aneurisms, heart disease, diseases of pleura and scoliosis. Toxic causes are less frequent than those due to injury or pressure. They may be due to drugs, especially lead, arsenic, antimony, copper, potassium iodid, iodoform, and perhaps potassium cyanid and phosphorus; also alcohol, opium, belladonna, cannabis indica and cocaine. Acute infections also may be responsible—typhoid, acute rheumatism, influenza, diphtheria, typhus, pneumonia, puerperal fever, erysipelas, measles, scarlet fever, gonorrhea, serum therapy. It is impossible to escape the conviction that some of the cases of recurrent paralysis found accompanying violent inflammations of the throat have been due to the effects of superficial irritation.

16. Ocular Tuberculin Reaction.—As a result of tests in 321 cases, including 250 tuberculous, Barney and Brooke consider that the diagnostic value of the ocular reaction is as great as that of the Widal test for typhoid fever. The greatest practical value of the test is in assisting in the diagnosis of the tuberculous basis of slight signs at one apex when bacilli are not present in the sputum, and in the diagnosis of tuberculosis localized outside of the lungs. If no reaction is obtained to a properly given dose of one-fourth of a milligram in an individual, the chances are ninety-seven out of a hundred that he has no active tuberculosis. If reaction to this dose occurs in an apparently healthy person the probabilities are that he has a small focus of tuberculosis, either active or clinically inactive, together with strong resistance; but as this has not been unequivocally demonstrated, and as the lesion, even if it does exist, may never give symptoms, it is not wise in practice to assume that the occurrence of reaction invariably denotes the existence of tuberculosis. The occurrence of reaction in an apparently healthy person should, however, put the physician on the watch to detect the earliest symptoms of tuberculosis, in case any should appear. The test would be of value as a rough test in large numbers of people, as in recruits, but the presence of reaction should only lead to more careful examination and not in itself be taken as certainly indicating clinically active tuberculosis.

17. Deutschmann's Serum.—Caravia discusses and reports observations on the use of Deutschmann's serum for use



against infectious diseases. This serum is not a bactericid or an antitoxin; it is a polyvalent serum neutralizing germs of all kinds, not of one kind only. He refers to Deutschmann's article in the *Beiträge zur Augenheilkunde*, August, 1907. Caravia has found it serviceable in acute and chronic purulent microbial inflammations of the eye. He reports five cases. It has also been effectively used in tonsillitis, measles, scarlet fever, gluteal swelling and peritonitis.

**18. Room Disinfection.**—McLaughlin discusses the Maine method, the Walker method and the Stewart method, which he considers lacking in penetrative power. McLaughlin finds that by mixing formalin and phenol (carbolic acid) great penetrating power is obtained. He uses a mixture of 75 per cent. of a 40 per cent. formaldehyd solution and 25 per cent. of phenol, allowing 8 ounces of this mixture to 1,000 cubic feet, and keeping the room closed for twelve hours. A sheet is saturated with the solution and hung in the room. A resistant strain of the *Bacillus pyocyaneus* was killed under the carpet, in the pocket of a tightly rolled coat and in many other searching tests.

#### Medical Fortnightly, St. Louis.

July 10.

- 19 Plain Labels on Germ Friends. A. Abrams, San Francisco.
- 20 The Bacillus of Mind and Its Decrees. A. S. Ashmead, New York.
- 21 \*Clinical Study of a Case of Adiposis Dolorosa. W. W. Graves and W. H. Cook, St. Louis.

**21. Adiposis Dolorosa.**—Graves and Cook report a case of this disease in a negress, aged 62, and comment exhaustively on the differential diagnosis of the disease.

#### Lancet-Clinic, Cincinnati.

July 11.

- 22 Colorado and the Eastern Pulmonary Case. W. A. Campbell, Colorado Springs, Colo.
- 23 Pregnancy When Complicated by Tuberculosis. H. A. Miller, Pittsburg.
- 24 Tracheo-Bronchoscopy, Esophagoscopy and Gastrosocopy. J. W. Murphy, Cincinnati.
- 25 Some Features of Femoral Hernia. W. D. Haines, Cincinnati.
- 26 Obscure Fractures Discovered by Roentgen Examination. S. Lange, Cincinnati.

#### American Journal of Medical Sciences, Philadelphia.

June.

- 27 \*Use and Abuse of Digitalis. T. C. Janeway, New York.
- 28 Clinical Study of Heart Cases. L. A. Conner, New York.
- 29 \*Irregularities of Heart Resulting from Disturbed Conductivity. J. Erlanger, Madison, Wis.
- 30 \*Jugular Pulse of Man. G. M. Piersol, Philadelphia.
- 31 Primary Carcinoma of the Appendix. C. A. McWilliams, New York.
- 32 Primary Carcinoma and Endothelioma of the Appendix. A. O. J. Kelly, Philadelphia.
- 33 Surgical Aspects of Dupuytren's Contraction. R. Russ, San Francisco.
- 34 \*Torsion of Appendices Epiploicæ and Its Consequences. W. A. Briggs, Sacramento, Cal.
- 35 Primary Tumors of Adrenal Gland in Children. W. Tileston and S. B. Wolbach, Boston.
- 36 Congenital Absence of Gall Bladder. I. S. Stone, Washington, D. C.

**27. Digitalis.**—Janeway enumerates as follows the causes for failure in the employment of digitalis, in the order of their frequency and importance. 1. The use of inefficient preparations. 2. Use in unsuitable cases. 3. Improper dosage. 4. Improper methods of administration. 5. Neglect of other necessary therapeutic measures. 1. Inefficient Preparations. In order that we may be sure of giving efficient digitalis, and not inactive or irritating digitalis decomposition products, the following conditions must be fulfilled: (a) The leaves must be from plants of the second year's growth, picked at the beginning of efflorescence, freed from stalks, and carefully dried. (b) The dried leaves must be kept absolutely dark and free from moisture in sealed tin or glass containers, and for not more than one year. (c) The preparation dispensed must be freshly made from these leaves in exact accordance with the method prescribed by the Dispensatory. The worst digitalis preparation is an infusion made by diluting the fluid extract, thus precipitating all its active ingredients. Other inefficient forms are the many tablets or pills containing digitalis or digitalin. The only solid form in which digitalis should be given is the freshly powdered leaf in capsule or pill.

2. Use in Unsuitable Cases. The physician who gives digitalis to slow the heart in a paroxysm of tachycardia or in fever, to produce diuresis in acute nephritis, or to remove an inflammatory pleural effusion, is foredoomed to failure; yet all these are attempted, and faith in digitalis for its rightful uses is lost in consequence. He describes the newer heart physiology, which we owe largely to Gaskell and to Engelmann, and which has illuminated many dark corners of the subject. For rapid heart action one should use digitalis only when there is also some insufficiency of the ventricles. It is the ideal drug to combat general venous stasis. Controversy has also centered around the use of digitalis in aortic insufficiency. To the author's mind the indications here are quite the same. We aim to correct function, not structural defects. Is there loss of tone and diminishing systolic output, with scanty urine, congested liver and dropsy? Then give digitalis. When these phenomena appear in aortic disease, relative mitral incompetency frequently shows itself, and therapeutically and physiologically the problem differs little from primary mitral regurgitation. On the other hand, if the symptoms are merely orthopnea or paroxysmal dyspnea, or anginoid pain, then digitalis has no place. We should get away from anatomic categories in our medical treatment. In all the surgeon's statistics, inoperable cases are carefully eliminated from the calculation of results. Medical men have inoperable cases, too; more of them than the surgeon. We must endeavor to restore function, even when anatomic change has progressed to a degree incompatible with life. But, when we come to query the value of this or that method of treatment, we are justified in attempting to separate such cases as well as may be. 3. Improper Dosage. The only guide to dosage is therapeutic result. This means a clear-cut picture of the indications for the drug in the particular case, close observation of its effects, and knowledge of its earliest toxic manifestations. 4. Improper Methods of Administration. Physicians often persist in administering the drug by the mouth, when frequent vomiting shows how little hope there is for absorption from the stomach. Two other paths of absorption are readily available: the rectum and the subcutaneous tissues. Half an ounce of infusion, per rectum, three times a day, will give about as prompt results as by mouth. 5. Neglect of Other Necessary Therapeutic Measures. A few nights robbed of their sufferings by morphin, may turn the scale in many heart cases. As an adjuvant treatment the dry diet stands high. Free purgation will help to relieve the secondary portal congestion. When anemia is marked, iron is essential. In a different category come the vasodilating drugs, which must be given with digitalis to counteract its arterial constriction in certain cases of hypertension.

**29. Irregularities of the Heart.**—Erlanger studies the differences in structure and function between the mammalian and the cold-blooded heart. By gradually compressing the normally beating mammalian heart in a specially devised clamp, all the grades of impaired activity observed in the cold-blooded heart may be obtained. These, in order of their appearance, consist of: 1. An increase in the A-S-Vs (pause between the contraction of auricles and ventricles) interval; 2. the occasional failure of the ventricles to respond to the regularly contracting auricles—these "ventricular silences" may recur with great regularity, for example, after every tenth, ninth or eighth, etc., auricular contraction; 3. the failure of the ventricles to respond to every other auricular contraction—a 2 to 1 auriculoventricular rhythm; 4. 3 to 1 rhythm; 5. relatively complete auriculoventricular heart block; 6. absolutely complete auriculoventricular heart block. He gives a diagram making clear the several disturbances in conductivity. The variations in the irritability of heart muscle are explained by the fact that the resting heart tissue stores within itself an unstable, energy-yielding material, the instability of which increases as it accumulates. A stimulus strong enough to elicit a contraction does so by decomposing all this material. The irritability of the heart tissue, it may be assumed, depends on the amount of the unstable substance present in it at any one time. Immediately after the heart has contracted, therefore, it contains none of the unstable substance; consequently it is non-irritable. But after the heart



has completed its contraction the material begins to accumulate rapidly at first and then more and more slowly; the irritability when it returns, therefore, increases rapidly at first, but finally becomes more or less constant. He describes sino-auricular heart block and auriculo-auricular heart block, and concludes that these are the principal ones that concern the clinician, though partial and complete block may be established experimentally between any two parts of the heart, provided one of the parts be spontaneously rhythmical, by functional connection between them; and pathologic processes might effect the same result. He concludes his article as follows: While it may be possible in particularly clear cases of auriculoventricular heart block to make a correct diagnosis without the aid of the more exact methods of investigating the organs of the circulation, the more obscure cases of this form of heart block, but especially the other forms of heart block, can be recognized only with the aid of the graphic method.

**30. Jugular Pulse.**—Piersol concludes as follows: 1. There are not sufficient grounds to doubt that the *c* wave in the jugular pulse of man is, as Mackenzie said, anything but a carotid product. 2. The jugular pulse of dogs, even when all carotid influence is eliminated, shows a small wave at the beginning of ventricular systole. 3. In man a double *a* wave is sometimes found, the second rise of which can not be identical with the wave described in dogs, since its occurrence is too early. 4. In addition to any double *a* wave in man, another wave, appropriately called wave *b*, often shows between *a* and *c* begins just after, or in the last part of, the ventricular presphygmic period. 5. Since the wave found in the jugular pulse of dogs at the beginning of ventricular systole has its counterpart in the *b* wave of man's jugular pulse, the assumption that the wave found in dogs is identical with Mackenzie's *c* wave is unjustifiable.

**34. Torsion of Appendices Epiploicæ.**—Briggs gives a synopsis of previously reported cases and adds one of his own. He summarizes his conclusions as follows: 1. Torsion of appendices epiploicæ is more frequent than the paucity of references in medical literature would imply. 2. Torsion of appendices epiploicæ usually occurs in persons more or less obese, during middle life and later. 3. Intra-abdominal torsion of appendices epiploicæ may simulate appendicitis, hepatic colic, cholecystitis, and various other intra-abdominal diseases. Torsion of appendices epiploicæ in the hernial sac may cause all the local symptoms of an acute omental or intestinal femoral or inguinal hernia. 4. Torsion of appendices epiploicæ may result in corpora aliena adiposa, in adhesions and bands, and their consequences. 5. Corpora aliena adiposa may become infected and cause general peritonitis. 6. In the present state of our knowledge anything more than a tentative diagnosis of torsion of appendices epiploicæ would be rarely possible. 7. Early operation is indicated in all cases.

#### Interstate Medical Journal, St. Louis.

June.

- 37 Practical Aspects of the Physiology of the Circulation. C. C. Guthrie, St. Louis.
- 38 \*Vaginal Fixation of Uterus. F. A. Glasgow, St. Louis.
- 39 Fibroma of Trachea. W. E. Sauer, St. Louis.
- 40 Flannel Roller-Bandage in Umbilical Hernia in Infant. A. S. Bleyer, St. Louis.

**38. Vaginal Fixation of Uterus.**—Glasgow criticizes the various measures advocated for procidentia uteri and particularly the various methods of abdominal suspension. He considers the operation of Dudley, who utilizes the base of the broad ligaments as a point of suspension, the best, and uses it "with some additional procedures which make it still more certain of success." He emphasizes the following points: First, do not operate too soon. Hold up the uterus with tampon or pessaries until the parts are in good, healthy condition and have undergone as much involution as you may expect. It is marvelous to what extent and how soon involution takes place. Second, get the bases of the broad ligament together. Third, get the fascia on either side of the vagina together. Fourth, draw uteri down toward this thickened fascia, but not far. Fifth, leave all mucous membrane intact, both on anterior and posterior wall. Sixth, get the fibers of the levators together.

#### Archives of Pediatrics.

June, 1908.

- 41 Intestinal Intoxication in Infants. R. B. Kimball, New York.
- 42 \*Advances in Infant Feeding. F. H. Lamb, Cincinnati.
- 43 Sanitary Milk. P. G. Heinemann, Chicago.
- 44 Bell's Palsy in an Infant. J. C. Gittings, Philadelphia.

**42. Infant Feeding.**—Lamb emphasizes the following points: 1. The most important thing in infant feeding is to know the exact amount of food the child receives in twenty-four hours. The only way to do this is to calculate energy quotients. 2. The percentage method is uncertain, complicated and unscientific. 3. Feed amounts, not percentages. 4. Overfeeding is one of the most common causes of nutritional disturbances in children and is a distinct clinical entity. 5. Fat is the element in cow's milk to be feared. 6. Fat produces constipation, proteids never do. 7. The curds in the stools are not proteid, but calcium soaps, fatty acids or fats. 8. Casein is not difficult to digest, does not produce digestive disturbances, and does not undergo putrefaction in the intestinal canal. 9. The newborn infant can digest starch. 10. Dextrins and starches are the most valuable adjuncts to milk feeding. 11. The volume of the food should depend on the weight of the child and never exceed 36 or 38 ounces. 12. The interval between feedings should never be less than three hours and after three months four hours.

#### Memphis Medical Monthly.

June.

- 45 \*Achyilia Gastrica. H. B. Kincaid, Memphis.
- 46 Surgical Side of the "Floating Kidney" Problem. J. A. Crisler, Memphis.
- 47 Treatment of Rectal Cancer. A. B. Cooke, Nashville.
- 48 Pregnancy at Nine Years of Age. V. I. Pittman, Cadaretta, Miss.
- 49 One Hundred Obstetric Cases. D. M. Hall, Memphis.
- 50 Gunshot Wounds of the Abdomen. A. B. Oliver, Memphis.

**45. Achyilia Gastrica.**—Kincaid says that symptomatic or primary achyilia is not so serious a disease as the secondary form. The symptoms of achyilia are not characteristic, and in the neurotic it sometimes exists without symptoms. Intestinal symptoms appear sooner or later in half the cases. He divides cases into four classes, those: 1, Without gastric or intestinal symptoms; 2, with stomach symptoms, but without bowel disturbance; 3, with intestinal symptoms only; 4, with both stomach and intestinal symptoms. But the diagnosis can not be made from symptoms alone, but only by careful examination of stomach contents. In regard to treatment he emphasizes the importance of thorough disintegration of food. Vegetable foods are well borne, meats are only to be allowed in small quantities. Hydrochloric acid, pepsin and pancreatin are of value; the former especially in cases complicated with diarrhea and also in cases with nervous symptoms. He administers 30 to 70 drops of dilute HCl. Tincture of nuxvomica before meals may be beneficial. Undigested food in the colon calls for colonic flushing and excessive mucus for gastric lavage.

#### Virginia Medical Semi-Monthly, Richmond.

June 12.

- 51 Treatment of Ante-Partum Eclampsia. J. F. Winn, Richmond.
- 52 Puerperal Eclampsia. M. L. Rea, Charlottesville.
- 53 The Eye in Diagnosis of Systemic Diseases. L. O. Mauldin, Greenville, S. C.
- 54 The Rheumatic Cycle in Childhood. St. G. T. Grinnan, Richmond.
- 55 Injection Treatment of Hemorrhoids. L. Elliot, Washington, D. C.
- 56 Scientific Mechanotherapy and So-Called Osteopathy. V. Ulrich, Richmond.
- 57 \*Pathogenesis of Tabes Dorsalis. T. A. Williams, Washington, D. C.

**57. Tabes Dorsalis.**—Williams discusses the pathogenesis of tabes dorsalis and adduces considerations that compel him to accept the contention of Babinski and Nageotte, that a chronic syphilitic meningitis is responsible for what has been called tabes dorsalis, and that it was formerly disregarded on account of the tendency to the occurrence of resolution and fibrosis of the lesions. From this he concludes that cases taken early may be completely arrested, and in all cases the active manifestations may be resolved if adequately treated before the destruction of the elements has occurred, though naturally the residues of former exacerbations can not be removed.



## American Journal of Surgery, New York.

June.

- 58 Operative Indications in Dislocation of the Humerus with Fracture. C. P. Flint, New York.  
 59 \*Nephropexy, with Reference to an Improved Technic. F. G. Du Bose, Selma, Ala.  
 60 \*Ischochymia Simulating Gallstone Disease. M. Elmhorn, New York.  
 61 Non-Penetrating Abdominal Wounds. J. L. Wiggins, East St. Louis, Ill.  
 62 \*Lymphatic and Portal Infections Following Appendicitis. R. Hill, St. Louis.  
 63 Diagnostic Value of Tenderness in the Ciliary Region. E. S. Thompson, New York.  
 64 Surgical Treatment of Trachoma. W. M. Carhart, New York.  
 65 Tuberculosis of the Testicle. H. Wilkinson, Kansas City, Kan.  
 66 Artificial Synovial Fluid. R. T. Morris, New York.  
 67 Fracture of the Tibial Spine. S. Epstein, New York.

59. **Nephropexy.**—Du Bose summarizes his procedure as follows: Usual position and incision. Obliteration of retroperitoneal or renal pouch by button-holing the kidney through its fatty capsule (Shoemaker). The anchoring of the nephrocolic ligament (Longyear). The insertion of sutures under the fibrous capsule of kidney in such a manner that they will not tear out (Broedel), and on the posterior surface of the kidney, bringing it in the planes of the normal position and relations and retaining it in such position, avoiding in this way kinking or torsion of the ureter (Goelet). There is no stripping of the capsule, no decapsulation and no suture within the substance of the kidney; no drainage is required.

60. **Ischochymia Simulating Gallstone Disease.**—Elmhorn reports three cases and presents a table of differential diagnosis between benign ischochymia and gallstone diseases. He insists on the importance of examining the stomach contents in all cases of apparent cholelithiasis, especially when the diagnosis is not absolutely positive. It may happen that both diseases are present; such cases are not frequent, but they do occur. In these instances it is important to find out which process causes the main symptoms at the moment, so that the treatment may be directed against it. The prompt recognition of the presence of ischochymia—even if it be associated with gallstones—will always be of benefit in the correct management of the case.

62. **Lymphatic and Portal Infections Following Appendicitis.**—Hill reports an unusual case of lymphatic and portal infections following appendicitis in which apparently the primary invasion took place directly through the veins and led to a very rapid general infection. He calls attention to the need of guarded prognosis in such cases, owing to the insidious development and the obscurity of the symptoms. We are almost absolutely helpless in the presence of some severe forms of infection when the infecting organism has once passed into the general circulation. Early removal of the appendix is the lesson.

## New Orleans Medical and Surgical Journal.

June.

- 68 \*Treatment of Inoperable Cancer. H. R. Slack, La Grange, Ga.  
 69 Relation of Adenoids and Enlarged Tonsils to the Mental and Physical Development of Children. H. G. Savage, Warsaw, Mo.  
 70 Pott's Disease; Its Early Diagnosis and Treatment. G. K. Logan, New Orleans, La.  
 71 Tuberculosis in Infancy and Childhood. W. W. Butterworth, New Orleans.  
 72 Tuberculosis of the Skin. H. E. Menage, New Orleans.  
 73 Possibilities of Medical Organization. O. Dowling, Shreveport, La.

68. **Inoperable Cancer.**—Slack refers to a former paper (THE JOURNAL, June 27, 1897), entitled "Blue Pyoktanin in the Treatment of Inoperable Malignant Growths," and says that, though he has abandoned the hope then expressed of effecting a cure by its use alone, he has cured a number of cases by using it in connection with the x-rays. In surface growths he gives a tablet of methylene blue, 2 grains (.13), and extract of belladonna, ¼ grain (.016), after each meal; any ulcerating surface is dusted with 4 per cent. or 5 per cent. powder or injected with 2 or 4 per cent. solution daily. Pain and foul odor disappear, the general health is improved, and years are added to life. The patient must be cautioned that everything touched by the drug and also the urine will be stained blue.

## Chicago Medical Recorder.

June.

- 74 \*Conditions That Require the Removal of the Child from the Breast. C. B. Reed, Chicago.  
 75 Etiology of Acute Articular Rheumatism. G. W. Webster, Chicago.  
 76 Treatment of Gallstone Diseases. T. C. Kennedy, Shelbyville, Ind.  
 77 \*Treatment of Pulmonary Tuberculosis in Illinois. J. W. Pettit, Ottawa, Ill.  
 78 Indication for Eye Enucleation and Its Substitutes. G. Fiske, Chicago.  
 79 Foreign Bodies in the Eye. G. G. Burdick, Chicago.  
 80 \*Inflammatory Conditions within the Abdomen and Thorax Differentiated from Appendicitis. C. J. Whalen, Chicago.

74.—Published in *Surgery, Gynecology and Obstetrics*, May, 1908, and abstracted in THE JOURNAL, July 11, p. 167.

77.—Published in *Illinois Medical Journal*, June, 1908.

80. **Abdominal Inflammatory Conditions.**—Whalen says that the lesions most apt to simulate, and hence to be confounded, with appendicitis are: Salpingitis, ruptured pyosalpinx, ovarian cyst, strangulated by twisted pedicle, ovaritis and abscess of ovary, hematoma of broad ligament, cholecystitis, gallstone colic, perforated gastric ulcer, perforated intestinal ulcer due to typhoid fever, pneumonia and pleurisy, extrauterine pregnancy, intestinal obstruction, intussusception, volvulus, renal colic, retroperitoneal abscess, strangulated hernia, acute pancreatitis, enteritis, inflammatory conditions of the ileum or caecum in the immediate vicinity of the appendix, psoriasis. Pott's disease, acute indigestion, cholera morbus, iliocecal cancer, undescended testicle, twist and strangulation of omentum, diaphragmatic pleurisy, hypochondria, hysteria, neuralgia. He describes cases illustrating various difficulties and discusses the differential diagnosis between the conditions referred to above and appendicitis.

## Cleveland Medical Journal.

June.

- 81 \*Essential Hemorrhage of the Kidney. F. E. Bunts, Cleveland.  
 82 Points in the Treatment of Diseases of the Ear. J. M. Ingersoll, Cleveland.  
 83 Osteitis Deformans. O. A. Weber, Cleveland.  
 84 Permanent Closure of Large Perforations in the Tympanic Membrane with Increase in Hearing. W. B. Chamberlin, Cleveland.

81. **Essential Hemorrhage of Kidney.**—Bunts describes a case in which operation, falsifying the interpretation of a radiograph, showed nothing in the kidney, although subjective and objective symptoms disappeared thereafter. He summarizes the literature of 70 cases and draws attention to the following facts: 1. The cause of hemorrhage from the kidney can not be diagnosed, by present methods, in a large number of cases. 2. It is probable that there is in most cases a distinct lesion, though the absence of sufficient microscopic examinations of the exposed kidney leaves this undetermined. 3. Nephritis is the most frequently demonstrated cause of unilateral hemorrhage in this class of cases. 4. Operation promises a cure in most cases. The chief object of his paper is to emphasize the importance of removing at operation at least a sufficient amount of the kidney to permit of careful microscopic examination. In this way only can we probably eliminate the large number of kidneys which have heretofore been reported as normal and at the same time relegate to its proper oblivion the misleading name of essential hemorrhage of the kidney.

## The Laryngoscope, St. Louis.

May.

- 85 Vaccine Therapy in Some Suppurations of the Nose and Ear; Also Technic for Determining Opsonic Indices. J. C. Beck, Chicago.  
 86 Labyrinthine Deafness with "Tone Island." G. E. Shambaugh, Chicago.  
 87 The Temporal Bone. R. J. Held, New York.  
 88 Primary Epithelioma of the Maxillary Antrum. S. J. Koperzky, New York.  
 89 Carcinoma of the Naso-Pharynx and Sphenoid Region Which Responded to the Employment of Radium. S. Yankauer, New York.  
 90 Unrecognized Foreign Body in the Larynx. E. Martinez, Havana.  
 91 Laryngeal Neoplasms in America. J. L. Davis, Philadelphia.  
 92 Method of Preventing Hemorrhage During Adenectomy. S. Iglauer, Cincinnati.  
 93 Hemorrhage Following Tonsillotomy with Cold Wire Snare. C. R. Dufour, Washington, D. C.  
 94 Severe Primary Hemorrhage Following the Removal of the Facial Tonsil. O. J. Stein, Chicago.



- 95 Boy's Voice in a Man Which Was Made Normal by Singing Exercises. W. L. Holt, Philadelphia.  
96 Nasal Septal Forceps. S. Goldstein, New York.  
97 New Procedure for the Correction of the Saddle Nose. F. E. Waxham, Denver.

## Ophthalmic Record, Chicago.

June.

- 98 Bullet Wounds of the Orbit and Its Surrounding Parts. E. R. Williams, Boston.  
99 Two Cases of Palsy of Extraocular Muscles in Graves' Disease. W. C. Posey, Philadelphia.  
100 Toxic Symptoms Following the Instillation of Homatropin Hydrobromate. C. LeFevre, Philadelphia.  
101 Blindness Following the Injection of Protargol in Lachrymal Sac. F. P. Lewis, Buffalo, N. Y.  
102 Improved Instrument to Shorten the Subjective Branch of Refraction. J. N. Rhoads, Philadelphia.

## Dominion Medical Monthly and Ontario Medical Journal, Toronto.

June.

- 103 Master-Minds in Medicine—John Hunter (1728-93), Great Man of Science and Surgeon. W. J. Fischer.

## Journal of the Michigan State Medical Society, Detroit.

June.

- 104 Opsonic Theory and Technic. J. Sill, Detroit.  
105 Psychic Treatment of Nervous Disorders. C. A. Stimson, Eaton Rapids.  
106 Curative versus Palliative Treatment of Hernia. F. B. Walker, Detroit.  
107 Historical Sketch of the Deceased Founders of the Detroit Academy of Medicine. L. Connor, Detroit.  
108 Bath Treatment at Mt. Clemens for Nervous Patients. R. Leuschner, Mt. Clemens.

## Journal of the Medical Society of New Jersey, Orange, N. J.

June.

- 109 Modern Life and Its Effects on Types of Disease. J. T. Rugh, Philadelphia.  
110 The Treatment of Gallstone Disease. W. H. Lawrence, Jr., Summit, N. J.  
111 "Dyspepsia," What Does It Signify? E. Marvel, Atlantic City.

## Iowa Medical Journal, Des Moines.

June 15.

- 112 Cooperation of Public and Profession. E. E. Munger, Spencer.  
113 Possibilities of Organization. C. A. Boice, Washington, D. C.  
114 Iowa Medical Laws and Their Enforcement. L. A. Thomas, Des Moines.  
115 Operative Points. F. E. Walker, Hot Springs, S. D.  
116 Medical Publicity. F. G. Murray, Cedar Rapids.  
117 Submucous Resection of the Nasal Septum for the Correction of Septal Irregularities. W. R. Murray, Minneapolis.

## International Clinics, Philadelphia.

Vol. II. Eighteenth Series.

- 118 Treatment of Scarlet Fever, Including Prophylactic Measures Necessary to Prevent Complications. L. Fischer, New York.  
119 Treatment of Syphilis by Atoxyl. H. Hallopeau, Paris.  
120 Treatment by Inoculation of Bacterial Vaccines. E. Turton, Hull, Eng.  
121 Serum Treatment of Bacillary Dysentery. Vaillard and Dopter, Paris.  
122 Treatment of Hemoglobinuric Fever. W. H. Deaderick, Marianna, Ark.  
123 Changes in Outlines of Heart, Diaphragm and Stomach During Phases of Respiration as Illustrated by X-Ray. R. J. Behan, Pittsburg.  
124 Valvular Heart Disease. J. G. Cecil, Louisville, Ky.  
125 Pain as Chief or Sole Expression of a Psychic State. T. Diller, Pittsburg.  
126 Curiosities of Lead Poisoning. J. J. Walsh, New York.  
127 Recurrent Temporary Amblyopia of Angiospastic Origin and Association of Retinal Angiospasm with Other Vasomotor Neuroses. F. P. Weber, London, and R. Gruber, London.  
128 Reconstructive Surgery of Face. J. B. Roberts, Philadelphia.  
129 Perinephritic Abscess in Children. C. G. Cumston, Boston.  
130 Symptoms and Diagnosis of Cancer of Large Intestine. P. L. Mummery, London.  
131 Treatment of Varicose Ulcer and Varicose Veins of Leg. A. D. Willmoth, Louisville, Ky.  
132 Clinical Manifestations of Uterine Cancer. J. A. Sampson, Albany, N. Y.  
133 Gonorrhea and Pregnancy. E. B. Young, Boston.  
134 Pregnancy Complicated by Uterine Fibromata in a Hemiplegic. L. Frank, Louisville, Ky.  
135 After-Treatment of Cataract Extraction. W. O. Moore, New York.  
136 Vision in Some Eye Diseases. L. Buchanan, Glasgow.  
137 Rhinoscleroma. W. S. Gottheil, New York.  
138 Congenital Scoliosis. H. Hudson, Philadelphia.  
139 Marasms; Inherited Syphilis; Subacute Bronchitis. R. B. Gilbert, Louisville, Ky.  
140 Atypical Forms of Malignant Renal Hypernephromata and Their Chemical Characteristics. H. G. Wells, Chicago.  
141 Recent Research into the Pathology of Malignant Disease. C. E. Simon, Baltimore.

## Vermont Medical Monthly, Burlington.

June 15.

- 142 Anemias. J. McCrae, Montreal.  
143 Paralysis: Its Mechanical and Operative Treatment. J. C. Wilson, Hartford, Conn.  
144 Acute Epigastric Pain. W. J. Aldrich, H. Johnsbury.

## Long Island Medical Journal, Brooklyn, N. Y.

June.

- 145 Prognosis in Chronic Valvular Disease. E. E. Cornwall, Brooklyn, N. Y.  
146 Korsakoff's Psychosis. O. M. Dewing, Brooklyn, N. Y.  
147 Corpus Luteum of Gestation. W. L. Chapman, Brooklyn, N. Y.  
148 Relationship Between Rheumatism and Chorea. R. S. Cone, Brooklyn, N. Y.  
149 Calculus Lodged in Ureter. R. Hazen, Brentwood, L. I.

## FOREIGN.

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

## The Lancet, London.

July 4.

- 1 \*Inborn Errors of Metabolism. A. E. Garrod.  
2 \*Thoracostomy in Heart Disease. A. Morison.  
3 Rare but Important Surgical Injuries Brought on by Violent Exercise. P. Haglund.  
4 \*\*"Endemic Funiculitis." A. Castellani.  
5 Abundance of Parasites in Fatal Pernicious Malaria. J. Cropper.  
6 The Autonomic Nervous System in Acute Surgical Conditions. A. J. Walton.  
7 Extirpation of the Lacrymal Sac. O. J. Currie.  
8 Extraction of Foreign bodies. H. Chitty.

1. **Inborn Errors of Metabolism.**—Garrod, in the first Croonian lecture, emphasizes the distinction between the terms "congenital" and "inborn." The former implies simply present at birth, while the latter implies hereditary transmission. The only known anomalies which can at present be included in his subject are albinism, alkaptonuria, cystinuria and pentosuria. Theoretically, any anomaly that claims a place in the group should be present from birth and should persist throughout life, though this can not as yet be asserted of all the four named above. The evidence of congenital cystinuria is very difficult to obtain, but there is reason to believe that it is occasionally temporary or intermittent. The youngest pentosurie yet observed was a boy of 15. Albinism is probably no more common than the other inborn metabolic errors; Garrod believes cystinuria to be the least rare of the four. It stands to reason that an error of metabolism which persists from birth into adult life must be relatively innocuous. Albinism is certainly harmless. The most serious direct result of alkaptonuria is the peculiar pigmentation. Evidence is accumulating of the harmlessness of pentosuria; so that only cystinuria can be classed as actually injurious, and even its ill-effects are secondary, due, not to the metabolic error, but to the unsuitability of cystin for excretion by a mammalian genitourinary apparatus. Garrod notes the proneness of each of these errors to occur in several members of a family, most often in collaterals of the same generation. To students of heredity these errors offer a promising though difficult field for investigation. He discusses their relation to Mendel's law. The Mendelian recessive character of albinism has been well observed. The resemblance of alkaptonuria thereto, in its mode of incidence in man, favors a similar conclusion in its case. Evidence is accumulating of the occurrence of pentosuria in brothers and sisters, and no instance of its transmission from parent to child has yet been recorded. The frequency of direct inheritance and the large proportion of the offspring affected suggest that if cystinuria be transmitted on Mendelian lines, it is probably a dominant, rather than a recessive, characteristic. Garrod then discusses albinism at length.

2. **Thoracostomy in Heart Disease.**—Morison describes the case of a youth of 19 who had exaggerated aortic valvular disease, severe attacks of retrosternal pain, accompanied by quickening of pulse and heart beat and rise of systolic blood pressure, these phenomena subsiding with the pain. The cardiac action was heaving and concussive, the heart enlarged, and thrusting, not simply against a soft interspace, but against an unyielding rib. A condition of crethism was thus induced, leading to the attacks. Four and a half inches of the fifth rib and five and a half of the sixth were removed. The effect of the operation objectively and subjectively has been very satisfactory. The carotid and suprasternal pulsation is less marked, the chest capacity is increased, the painful attacks have almost disappeared, and when present are much less severe. The patient, in answer to a question, considered



son further concludes from a review of this case that one cause, at least contributory, to attacks of angina in aortic valvular disease with hypertrophied heart, is direct stimulation of the organ by systolic impact against aortic resistance, and this may also be regarded as a cause of the premature failure of the hypertrophied heart so frequently observed in practice. He discusses the objections, and the relations of this view to the accepted notions of peripheral vasomotor constriction. He holds that the alleviative effects of the nitrites support his suggested explanation, in that they lead to an acceleration of the heart, with reduction of the cardiac output for each systole; so that a succession of small systoles has not the same concussion influence on the thorax as that induced by the slower and more powerful stroke of the enlarged heart in an erethetic condition.

4. "Endemic Funiculitis."—Under this term Castellani describes an affection of the spermatic cord, endemic in Ceylon, and perhaps elsewhere, which seems to him to have sufficiently characteristic symptoms to be ranked as a separate disease. A diplococcus is constantly found in the pus, but Castellani regards it from his experience as nothing more than a secondary agent only.

British Medical Journal, London.

July 4.

- 9 \*Clinical Aspects of Pain. W. Bennett.
- 10 \*So-Called Family Diseases: Premature Physiologic Senescence Localized to Certain Organic Systems. F. Raymond.
- 11 Abdominal Hysterectomy for Fibroids in London. J. Bland-Sutton.
- 12 \*Etiology of Rickets. L. Findlay.
- 13 Causes of Peritonitis During Pregnancy. A. Cuff.
- 14 Mental Nerve Area and Greyness of Hair. G. L. Cheate.
- 15 Streptococcus Infection of Eyelids Treated by Antistreptococcus Serum. S. Snell.
- 16 \*Value of Bilateral Ureterostomy (Short Circuiting of the Urine) in Advanced Cancer of Bladder or Prostate. E. H. Fenwick.

9. Pain.—Bennett discusses the relation of pain to tenderness—pointing out that the absence of tenderness over the painful area does not exclude the possibility of its being present elsewhere, as, for instance, when acute pain about the pit of the stomach in some diseases of the spinal column is associated with tenderness over the primary lesion; pain in relation to temperature and pulse; the effect of pain on the general condition of the individual; the spontaneous disappearance of pain, acute or chronic; and shifting pain. He emphasizes the three following cardinal points: 1. No accurate estimate of the behavior of pain is possible in the absence of a careful study of the temperament of the patient. 2. Sudden or rapid disappearance of pain should never be accepted without reserve on its own account as a sign of improvement. 3. Sudden disappearance or rapid diminution of pain, unless it be coincident with proportionate improvement in the associated symptoms, is often a sign of impending disaster, and not an indication of recovery.

10. Family Diseases.—Raymond discusses the so-called "family diseases" of the nervous system and the part played by heredity in these diseases. He says that they can hardly be rightly described as diseases, for they are really "organic types abnormal from their very origin," exclusively created by the parents, by the ancestors, and developing quite apart from any external influence; for we see several brothers and sisters who have lived in widely different conditions developing at the same age the same disease. These diseases are not, however, always repeated in several members of the same family. The different clinical types which constitute them are not found to be identically the same in all cases. It seems as if each family had its own way of working out the family disease. Raymond discusses progressive muscular atrophy in its various types, which after differentiation are now proclaimed again as essentially one, due to the degeneration of certain organic segments of the neuromuscular system. The same demonstration can be made in regard to other family diseases, notably the hereditary ataxias. Raymond classifies these as follows: 1. A spinal form, with loss of reflexes, scoliosis, and club-foot added to the common syndrome. This would be the Friedreich type. 2. A cerebellar form, with atrophy of the optic nerves, vertigo, mental disturbances, added to the common syndrome, forming the Marie type. 3.

A bulbar form, with vomiting, dyspnea and cardiac arrhythmia. 4. A bulbo-pontine form, characterized by auditory disturbances. 5. A generalized form, as in Menzel's case. These are all different types, but they are all linked together by the common cerebellar syndrome. It is most important to recognize accurately the family character of a disease, whatever be the disease and its localization. The morbid anatomy is characterized by the absence of any inflammatory reaction. The lesion consists simply in the disappearance of a system of cells or fibers which dissolve, as it were, without leaving a trace. Connective tissue growth then occurs and fills the void by taking the place of the cellular system that has disappeared. The process is very different from the conception of real battle between invaders and defenders, which modern conceptions ascribe to diseases; also from the less boisterous, but equally earnest, attack of poisons or toxins causing our cells to decay and modifying our body fluids, and from the traumatic changes about a tumor or a hemorrhagic area, or the massive necrosis of ischemia. The symptoms depend entirely on the physiologic functions of the tracts or cells that are doomed and gradually disappearing. The course of the disease Raymond describes as follows: The onset is slow and insidious, so that it is impossible to state accurately at what moment the trouble began. The course is always progressive. There is never any retrocession; never does a symptom fade or disappear when once it has appeared. Sometimes the course is hastened under the influence of certain causes (nearly always toxic or infectious). The patient is doomed from the very instant of his conception, as soon as spermatozoön and ovum have united. Now, this we can prevent by forbidding marriage to those individuals who bear a hereditary stigma. We must never forget that a physician must try to prevent at least as much as cure. Prevention, moreover, is easier than cure. From the standpoint of prevention it may be, therefore, of the highest practical importance to know the circumstances which give rise to family diseases. In the first place, we must inquire into the etiologic factors, such as we find them in the detailed reports on which has been built the history of these diseases. Unfortunately, at the present time we can trace but their outline. The problem may, however, be somewhat simplified by the following considerations, which, it seems, have not sufficiently engaged the attention of observers hitherto. The perfect development of a germ supposes in the first place the existence in that germ of its own attributes. In the human species the germ arises from the union of the spermatozoön with the ovum, and these must necessarily possess certain qualities for the germ to be able to develop. A favorable medium is particularly indispensable. The nerve cell naturally takes its share of the qualities of the primary germ cell born of the union of the spermatozoön with the ovum. Raymond insists on the fact that up to the very time of conception the modifications of the parent cells may have a very decided influence on the daughter cell, the germ. Among causes modifying the spermatozoön or ovum he mentions inebriety in the parents, poisons—such as cantharides—suggestion, great mental shock, or even the memory of such. He points, in illustration, to the case of a syphilitic man, who either begets no children or his wife aborts. Yet by the use of mercury by the syphilitic parent his inner medium is restored to normal and he begets a healthy child. An inquiry into the causes of family diseases is a most difficult enterprise, for it must go carefully into the circumstances that have modified the health of the parents before they conceived; it must include the question of opposition or synergy of hereditary taints; it must find out the possible disturbances of the maternal medium during pregnancy; it must examine the hygiene of the children, etc. All those points must be minutely investigated if we are to get at the truth. He thinks that for the purposes of a general classification these diseases should be grouped under the heading, "Premature Physiologic Senescence of Certain Organic Systems."

12. Rickets.—Findlay discusses the various etiologic theories, and reports a series of experiments of his own which lead him to the following conclusions. 1. Not one of the many theories which have been elaborated to explain the cause of



rickets has been universally accepted, and they all lack, not only from the clinical, but also from the experimental aspect, unequivocal proof. 2. It is some error in feeding which, in this country and America, is commonly believed to bring about the disease, but it is doubtful, however, if feeding plays any important part in the etiology of rickets. Experimentally, he, like several other observers, has been unable to cause the condition by improper feeding. 3. By confining young dogs and depriving them of exercise, rickets has been invariably induced, as in the experiments detailed, and that although their diet was a normal one, the air which they breathe pure, and their kennels were kept scrupulously clean, whereas control animals allowed exercise, but otherwise similarly treated, did not become affected. 4. Examination of the conditions under which rachitic children are reared, reveals one constant and invariable factor in their lives, namely, confinement. Alike, then, on clinical and experimental grounds, he accordingly concludes that confinement, with consequent lack of exercise, is the main factor in causing the disease.

**16. Bilateral Ureterostomy.**—Fenwick advances the following propositions: 1. What can be done for uncontrollable and luxuriant benign villous growth of the bladder, in which the patient suffers from exhausting hemorrhage or uncontrollable pain, or is commencing to suffer from ascending septic changes along the ureters? In such a case he agrees that bilateral nephrostomy, or better still, ureterostomy, should be performed, and a fortnight later the bladder should be removed—if the patient's physical condition and future seem to permit of this mutilation. 2. If the bladder is affected by interstitial cancer, which has so invaded the surrounding areas that no chance remains of removing the organ, he submits that bilateral ureterostomy is wiser, for this will relieve the patient of the agony of urination. 3. If malignant disease is detected in its early stages, as it can be by the cystoscope, it is wiser to perform double ureterostomy; and if the physical and renal condition of the patient permits, let the bladder, with or without the prostate and seminal vesicles, be entirely ablated.

#### Clinical Journal, London.

July 1.

- 17 Vermiform Appendix as a Pelvic Organ. J. Bland-Sutton.
- 18 \*Interrelations of Abdominal and Thoracic Diseases. W. H. Allchin. (Concluded.)
- 19 Rheumatoid Arthritis. H. E. Symes-Thompson.

**18. Abdominal and Thoracic Diseases.**—Allchin, in this paper which was begun in the issue of June 24, discusses some inter-relationships, both structural and functional, between maladies as they affect the chest and abdomen. The problems presented by the heart and lungs, in their abnormal, as in their normal, working are predominantly physical, while the organs subserving digestion and excretion are much less susceptible of physical investigation, since their workings are so largely chemical in character. In the abdomen the sense of touch—the *tactus expertus*, and still more the *tactus eruditus*—is far more important and helpful than percussion, while auscultation is scarcely applicable at all. Allchin discusses the structural mechanism on which this mutual involvement depends—the parietal components, the vascular connections, the lymphatic connection, the innervation, and the diaphragm, round the respiratory movements of which the clinically most important functional relation between chest and belly centers. Contrary to what might be expected, inflammatory conditions do not readily spread from one cavity to the other, just as pleurisy of one side rarely involves the other side or the pericardium. While pneumonia may lead to pleurisy, the spread in the reverse direction is unknown. Pleurisy may be only complication of an acute peritonitis, but it is very uncommon. Acute suppurative peritonitis, however, is a common terminal affection in Bright's disease. Allchin discusses the condition variously known as "multiple progressive hyaloseritis," or "polyserositis," which he calls "a chronic morbid state that progressively involves the serous surfaces on both sides of the diaphragm, contrasting therein with the acute inflammatory changes in these regions." A right-sided pleurisy is occasionally met with in

association with gallstones. He emphasizes the very distinctly protective power exerted by the serous membranes. A very numerous and important group of cases in which the thoracic and abdominal cavities are mutually implicated, is characterized by purulent collections on one or other side of the diaphragm, constituting empyema or pyopericarditis, in the chest, and those conditions included within the comprehensive term "subdiaphragmatic abscess," in the abdomen. Turning now to the spread of new growths from the one cavity to the other, it is at least singular that in the case of malignant growths there should be such a preponderance from the chest toward the abdomen, rather than in the reverse direction, as obtains in the other morbid states considered. He next describes the ways in which vascular disturbance in one region may affect that in the other: cases in which, with structural disease in one region there is a purely symptomatic involvement of the other without any gross anatomic change, especially the simulation on the one hand, of abdominal disease (irritant poisoning, appendicitis, acute peritonitis, perforation of gastric or duodenal ulcer, gallstone) by basic pneumonia, pleuropneumonia, empyema and pyopneumothorax; and, on the other, the cardiac and respiratory disturbances of abdominal origin.

#### Medical Press and Circular, London.

July 1.

- 20 Physical Examination of the Stomach. T. P. C. Kirkpatrick.
- 21 \*Syphilis. H. Waldo.
- 22 Austrian Tyrol as a Health Resort. D. Walsh.
- 23 \*Treatment of Corneal Ulcerations. C. G. Lee.

21. **Waldo.**—Published in *Bristol Medico-Chirurgical Journal*, December, 1907.

23. **Corneal Ulcers.**—Lee describes two types of ulcer: 1. That in which a slow and insidious destruction of tissue takes place; and 2, that which spreads more rapidly, less deeply, and with pus formation. In either type he has found the following instillation, ascribed by him to Richard Williams, useful.

R. Quininae bisulphatis, ..... 13 or 15 gr. ii  
 Atropinae sulphatis, 5ā ..... 15  
 Aqua destillata ..... 15iv  
 M. et. Sig.: Three or more drops to be placed inside the eyelid every four hours.

Should the ulceration be situated at the periphery of the cornea, eserine sulphate grain i (0.065), should be substituted for the atropin. These drops, with a 1 to 5,000 mercury bichlorid lotion, may suffice for mild cases. With severe primary infection or in persistent cases, the scalpel and cauterization (the actual cautery at a dull red heat is preferable) must be used. A few drops of a solution of fluorescein inside the eyelid will define the diseased area by tinting it green. If this fails, Darier's method, subconjunctival injections of mercury oxycyanid, 1 to 1,000 of water, must be tried. About 30 minims are injected.

#### Practitioner, London.

July—†Health Resorts and Climatic Treatment Number.

- 24 Climates for the Aged. H. Weber.
- 25 Health Resorts and Climates for Children. J. W. Carr.
- 26 \*Change of Air in Young Adult Life and Early Middle Age. F. P. Weber.
- 27 Treatment of Pulmonary Tuberculosis. A. Latham.
- 28 \*Evolution of the Preventorium. W. Ewart.
- 29 Saline Treatment of Scrofulous Lesions. F. Engelmann.
- 30 Climate and the Nose. G. Macdonald.
- 31 Ems Treatment of Respiratory Catarrhs. A. Vogler.
- 32 Spa Treatment of Heart Affections. J. Mackenzie.
- 33 Treatment of Gout. W. Weintraud.
- 34 Zander Method of Treatment. G. Hamel.
- 35 Configuration, Meteorology, and General Health of Midland Counties of England. P. Horton-Smith-Hartley.

†Besides the articles enumerated above, this issue of the *Practitioner* contains articles on the Climatic and Health Resorts of England, Scotland and Ireland, by A. G. R. Foulerton, J. T. C. Nash, A. P. Enff, G. A. Bannatyne, W. Edgecombe, H. N. Forbes, W. Williams, F. J. Charteris and J. A. Lindsay; on The Influence of High Altitudes, W. R. Huggard; The Three Estorils (Portugal), G. H. Brandt; Gibraltar, Algeciras, Ronda, W. Turner; Italian and Swiss Lakes, E. C. Hort; Italian Mediterranean Sea Coast, M. Foster; Health with that the results obtained fully justified the operation. Mori-



Pleasure in Norway, P. H. Hadfield; Some Renal Spas, L. Williams; The Spas of France, Belgium, Germany, and the Austrian Empire, by various authors; Health Resorts in Canada, A. Macphail; The West Indies, J. A. Coutts; The Canaries, F. Lishman; Voyages to the East, A. Chaplin; Egypt and North Africa, H. E. Leigh Canney, and Health and Travel in South Africa, C. M. Murray and W. A. Hayes.

26. "Change of Air."—Weber says that many complaints are cured by "change of air," "change of place," or "going for a holiday," undertaken either with or without the physician's advice. The factors that produce the beneficial effect, he believes to be: 1, A more open air life; 2, more muscular exercise (walking, etc.); 3, mental factors. The preliminary symptoms complained of include headaches, loss of appetite, disorders of sleep, lassitude, relative inability to do mental work, neuralgic pains in various parts, constipation, and (above all others) dyspeptic troubles. Among the most striking and uniform results of "change of air" in such cases are the removal of the dyspeptic troubles and "clearance of cobwebs" from the brain. Foremost among other disorders favored by a sedentary life in town, Weber places various gastrointestinal troubles. In cases of various kinds in which the treatment advised, or part of the treatment advised, consists in a holiday with change of air or a visit to some particular health resort, it is not unusual, especially after everything has been seemingly arranged, to hear: "Is it absolutely necessary to take a holiday? For it is most inconvenient to have to leave my work now!"—or "What will happen if I can not leave London now?" What really happens in many cases when the advice is not carried out is that the patient soon begins to feel better. The reason for this, Weber believes, is not far to seek. Everybody has his "ups and downs" or longer "waves" of vital activity (evidenced by capacity for work, etc.), which may to some extent be compared to the shorter rhythmical daily waves of body temperature and waves of sleep; but, in many conditions of chronic ill health, these (longer) waves of alternating vital depression and buoyancy, which normally should be scarcely noticeable, become exaggerated. Probably what usually occurs is that medical advice is sought during the period of greatest vital depression. Hence, even if the treatment recommended be not carried out, the patient is often likely to begin to feel better soon after the consultation, when the commencement of the period of relative buoyancy is due. Yet if this view be correct, the disadvantage of putting off the treatment is obvious, even should there be no actual danger to life in doing so, for, the cause of ill health (e. g., too continuous sedentary brainwork in town) not being got rid of, the mean level of vital power and health tends to sink, or else the waves of depression tend to become still further exaggerated.

28. Preventoria.—Commented on editorially in this issue.

#### Indian Medical Gazette, Calcutta.

June.

- 36 Typhus in Northern India. J. Husband and R. C. MacWatters.
- 37 Outbreak of Typhus in Peshawar. E. C. Hepper.
- 38 Dementia Praecox in India. G. F. W. Ewens.
- 39 \*Cataract Extraction. R. H. Elliot.
- 40 \*Uses of Appendicostomy. C. C. Barry.
- 41 Kala-Azar in Patna. B. B. Bosu.
- 42 Multifollicular Cyst of the Neck in an Infant. C. F. Schaffter.

39. Cataract Extraction.—Elliott describes the routine at the Government Ophthalmic Hospital, Madras, including the Herbert technic for antiseptic treatment of the conjunctiva before operation. He cites the hospital records to show the vast decrease in all complications that has ensued in the five years subsequent to its introduction. He adds 22 short rules for the guidance of beginners, intended to obviate those mistakes that he has found to be made by nearly every one who has not had a large experience in the operation.

40. Appendicostomy.—Barry urges that this operation provides the most efficient means for thoroughly washing out the large bowel without undue distention or discomfort; that when once the operation has been performed, the further treatment of the case can be left with fair confidence to less skilled assistants; that in practically all cases great relief

is afforded to the patient, and in many, actual cure is either brought about or greatly accelerated; that the dangers and difficulties of the operation are not such as can counterbalance the advantages that may be reasonably expected in suitable cases. But he also insists that the procedure is no panacea for all ills of the large bowel, and should be adopted only after careful judgment and after a fair and proper trial of the other more usual, and perhaps less attractive, medicinal measures.

#### Glasgow Medical Journal.

July.

- 43 Course of Cerebello-Olivary Fibers in a Case of Tuberculosis of Spinal Cord and Medulla. T. K. Munro and L. Findlay.
- 44 Hypertrophic Stenosis of Pylorus in an Infant. W. K. Hunter.
- 45 Unusual Mediastinal Tumor. W. MacLennan.
- 46 Intracystic Papilloma of an Accessory Thyroid. A. MacLennan and J. S. Dunn.

#### Annales de l'Institut Pasteur, Paris.

May 25, XXII, No. 5, pp. 370-464.

- 48 Efforts to Eradicate Malaria in Algiers. (Etudes épidémiologiques et prophylactiques du paludisme.) E. Sergent.
- 49 Action of Tyrosinase on Tyrosine. (Recherches sur la mélanogénèse.) G. Bertrand. Id. (Sur la façon dont la tyrosinase agit sur la tyrosine racémique.) G. Bertrand and M. Rosenblatt.
- 50 Leucocidins and Hemolysins in Anaerobic Cultures. P. Eisenberg.
- 51. Preservation of Plague Bacillus in Body of Bedbug. (Conservation du bacille pesteux dans le corps des punaises.) V. Jordansky and N. Kladnitsky.
- 52 \*Causes of Failures in Treatment of Hydrophobia. (Causes d'insuccès du traitement antirabique.) Pampoukis.

52. Causes of Failure in Treatment of Hydrophobia.—THE JOURNAL has previously called attention to Pampoukis' warning, which he here reiterates, that severe chilling of the body or abuse of alcohol is liable to bring on hydrophobia after a course of Pasteur treatment which otherwise would have averted the disease. In the eleven failures among 4,524 patients given a course of treatment at the Athens Pasteur Institute five were in individuals thus exposed. One swam a river, another resumed cold douches, another was soaked in a rain storm, and another slept out of doors one night. The symptoms of hydrophobia developed in each case the day after the exposure. In 2 other cases, they appeared a day or so after the men had had a drinking bout. He warns therefore that extreme hygienic precautions are necessary for at least three months after the inoculations.

#### Annales de Médecine et Chirurgie Infantiles, Paris.

June 15, XII, No. 12, pp. 397-432.

- 53 Osteitis of Lower Jaw Simulating Sarcoma. Anaerobic Microbes. Broca, J. Hallé and Guillemot.
- 54 The Seashore and Brine Baths in Tuberculous Glandular Disease. (Action combinée du traitement marin et de la cure chlorurée-sodique dans la tuberculose ganglionnaire.) H. Richardière.

#### Bulletin de l'Académie de Médecine, Paris.

June 23, LXXII, No. 25, pp. 715-743.

- 55 \*Semiologic Importance of Leukoplakia of Cheeks and Commissures, the So-called Smokers' Patches. (Valeur sémiologique des leucoplasies des joues et des commissures, dites "Plaques des fumeurs.") L. Landouzy.

55. Differential Importance of Leukoplakia of the Mouth.—Landouzy is convinced that buccal leukoplakia is much more common than generally realized. The use of tobacco is by no means indispensable for its production, the principal factor being syphilis. The latter can be discovered in nearly every case of leukoplakia, and on the other hand this lesion is extremely frequent in acknowledged syphilitics. The determining part played by syphilis should be recognized, he declares, even in the most attenuated forms of these whitish opaline, onion skin or dull mother-of-pearl patches on the inner surface of the cheeks and commissures. He gives an illustrated description of a few cases in which the discovery of the whitish patch cleared up the diagnosis and allowed effectual treatment when there was nothing else to suggest syphilitic infection. Some of the patients were women who had never smoked; the leukoplakia is thus not necessarily the work of tobacco, although the latter is probably a powerful contributing factor. One of his female patients showed merely a slight whitish line at one commissure, but mercurial treatment tentatively administered relieved the headache and



other symptoms of which she had been complaining, the benefit confirming the assumed syphilitic origin.

#### Obstétrique, Paris.

June, N. S. I, No. 3, pp. 289-352.

- 56 \*Suppurative Meningitis in the Puerperium. F. Commandeur.  
57 Breast Nursing from the Quantitative Point of View. (La sécrétion lactée considérée au point de vue quantitatif.) Planchu and Gardère.

56. **Suppurative Meningitis in Puerperæ.**—Commandeur has been able to collect fifteen cases of suppurative cerebral and cerebrospinal meningitis toward the close of pregnancy, omitting all of tuberculous origin. The emptying of the uterine, spontaneous or artificially induced, has no influence on the course of the disease. On the other hand, the child does not seem to be affected by the mother's meningitis, and does not die until after her death, as a rule. This imposes the necessity for saving the child by artificial extraction in every case of acute meningitis with a living child after the seventh month. He summarizes the cases on record. The meningeal suppuration was primary in 10 cases, in 4 it complicated pneumonia, puerperal staphylococcus septicemia or otitis. The primary cases showed the unmistakable influence of influenza infection. The meningitis occurred nearly at term or in the first three days after delivery in almost all the cases. None was correctly diagnosed during life, eclampsia being generally suspected. The headache in meningitis is peculiarly intense, without remissions, constantly progressing, while the headache in eclampsia is often irregular in its course and intensity, and is sometimes accompanied by subjective disturbances in vision. The convulsions in eclampsia are not localized in certain groups of muscles of the head and members, like the convulsions of meningitic origin. There is a difference also in the continuity of the coma. The delirium in meningitis is frequently violent, sometimes furious, a condition which is not observed in eclampsia. Albuminuria may be present in both, but in meningitis the amount of urine is generally normal and there is no concomitant edema. Pupil anomalies, especially inequality of the pupils, speak in favor of meningitis, as also a turbid cerebrospinal fluid. Lumbar puncture in eclampsia generally brings a limpid fluid. In the ten cases in which the duration of the disease is mentioned, it proved fatal in one or two days in several, and never lasted for more than five days. Two living children were saved by an obstetric operation *in extremis*.

#### Presse Médicale, Paris.

June 24, XVI, No. 51, pp. 401-408.

- 58 Epidemiology and Bacteriology in Fight against Typhoid Fever. L. Tanon.  
59 Inconveniences of Ethyl Chlorid in General Anesthesia. L. Camus.  
June 27, No. 52, pp. 409-416.  
60 \*Differential Value of Leukoplakia. L. Landouzy.  
61 \*Infectious Ulcerations of the Fingers. L. Queyrat.  
62 Tuberculosis of Pharynx. M. Letulle.

60. See abstract No. 55 above.

61. **Infectious Ulcerations of the Fingers.**—Queyrat has encountered eight cases of syphilitic chancre on the finger simulating paronychia, most of which had been erroneously diagnosed and treated. In one case the chancre simulated a felon. In another case a young dentist accidentally drove into his finger the point of a probe which he had just been using on the tooth of a casual patient and had not had time to clean. Five weeks later the typical chancre developed at the spot, although the wound had been supposedly disinfected at once with mercury bichlorid and had healed. The case shows the necessity for introducing the point of the actual cautery into the depths of such a wound, repeating the cauterization several times. This would certainly have destroyed the specific spirochetes, which have little resisting power. Superficial disinfection is of no use. He illustrates further some cases of soft chancre, dwelling on the differentiating points. The ulceration is painful and bleeds on pressure; the skin around is blue and swollen and the glands may be inflamed. These soft chancres on the fingers last from one to three months. When other means of differentiation fail, autoinoculation with scrapings from the sore induces in forty-eight hours the formation of another pustule, with ulceration about the

fifth day. Another illustration shows an ulceration which followed a cut in the thumb from a knife just picked up in the street. The ulceration was diagnosed and treated as a syphilitic chancre for more than a month, with no improvement. Queyrat then differentiated the case as one of acute tuberculous ulceration, on account of the raising up of the edges, their sharp contour and bluish red tint. The bottom of the ulceration was irregular and knobby, with yellowish pus in the depressions. When a sheet of glass was pressed on the surface, several yellow spots could be seen through it. There was also some osteitis, and the tubercle bacillus could be cultivated from the lesion. He tried to save the thumb with general antituberculosis treatment and local thermocauterization, followed by application of 30 per cent. creosoted glycerin and hour baths of the arm in oxygenated water morning and evening. After two months and a half of this unremitting treatment, the lesion is now almost entirely healed.

#### Semaine Médicale, Paris.

June 24, XXVIII, No. 26, pp. 301-312.

- 63 Modifications in Blood Serum from Heating it. (Modifications du serum sanguin par le chauffage.) H. Sachs.  
64 Appliance for Reducing Hump in Pott's Disease. (Traitement de la gibbosité du mal de Pott.) E. Eston.  
65 Present Status of Notification of Transmissible Disease. (Où en est, en France, la question de la déclaration obligatoire des maladies épidémiques?) F. Vidal.

July 1, No. 27, pp. 313-324.

- 66 \*Development of Cirrhosis of the Liver. (La lésion parenchymateuse et les processus de cirrhose du foie.) N. Fiessinger.

66. **Cirrhosis of Liver.**—Fiessinger reports extensive experimental research which reconciles the interstitial and the parenchymatous theories of the development of cirrhosis of the liver. The anatomic evolution is complex. The cicatricial, biliary, vascular and pericellular processes are combined in various proportions, and both the interstitial and the parenchymatous tissues are involved. He thinks that previous contradictory findings are due to pre-existing lesions in the liver in the animals. A scrap should be taken from the liver through a minute incision in the epigastrium beforehand, to eliminate error from this source.

#### Deutsches Archiv für klinische Medizin, Leipsic.

June, XCIII, No. 4, pp. 331-457. Last Indexed, July 4 and 11, pp. 83 and 174.

- 67 Action of Chinoline Carbonates and their Derivatives on Elimination of Uric Acid. (Wirkung von Chinolincarbonsäuren und ihrer Derivate auf die Ausscheidung der Harnsäure.) A. Nicolai and M. Dohrn.  
68. \*Experimental Research on Amount of Blood in Human Beings. (Quantitative Blutuntersuchungen.) H. P. T. Oerum.  
69. Pathologic Physiology of Human Muscles. (Zur pathologischen Physiologie menschlicher Skelettmuskeln und über gewisse Beziehungen zur Funktion des Herzmuskels.) E. Rautenberg.  
70. \*Metabolism of Salt in Pneumonia. (Kochsalzstoffwechsel bei Pneumonie.) H. v. Hösslin.  
71 Experimentally Induced Cirrhosis of Liver. (Experimentell erzeugte Lebercirrhose.) Fischler.  
72 Pepsin Digestion. (Zur Kenntnis der Pepsinverdauung.) H. Fischer.

68. **Quantitative Research on the Blood.**—Oerum's extensive study of the amount of blood in human beings commends the carbon monoxid method for research on the blood, with an illustrated description of the apparatus used. He says in regard to chlorosis that it is a specific disease of females, which appears during the periods when the genital apparatus is undergoing transformation. Its essence is an increased amount of blood. The amount of hemoglobin is materially reduced, and it is this proportional reduction of the hemoglobin which occasions the morbid phenomena. The number of corpuscles may be normal. It is seen on reflection that all the measures which prove effectual in chlorosis act by reducing the amount of blood. He describes experimental researches which show that the blood pressure is the determining factor for the changes in the amount of blood. He also discusses the various types of anemia and the effect of light on the blood.

70. **Salt Metabolism in Pneumonia.**—Hösslin tabulates the findings in ten cases of pneumonia. They all show great retention of salt. The salt is not accumulated at any one point, but is diffusely distributed. The assumption of a relative insufficiency on the part of the kidneys has much in its favor, he thinks.



## Deutsche medizinische Wochenschrift, Berlin.

June 25, XXXIV, No. 26, pp. 1129-1168.

- 73 \*Resection of Joints. (Knochengelenkresektionen.) W. Müller.
- 74 \*Arsenic Treatment of Experimental Nagana. Weber and Fuerstenberg.
- 75 \*Etiology and Treatment of Chronic Conjunctivitis. Elschmig.
- 76 \*To Clear the Cornea of Opacity from Metallic Caustics. (Aufhellung der durch metallische Aetzgifte verursachten Hornhauttrübung.) A. Guillery.
- 77 \*Treatment of Puerperal Bacteremia. (Bewertung gewisser Behandlungsmethoden der Bakteriämien des Kindbettes.) O. v. Herff. Commenced in No. 24.
- 78 Comparison of Techniques for Measurement of Blood Pressure. (Die auskultatorische Blutdruckmessung im Vergleich mit der oscillatorischen von H. v. Recklinghausen und ihr durch die Phasenbestimmung bedingter klinischer Wert.) J. Fischer.
- 79 Degrees of Ataxia in Right Hemiplegia. (Relative Eupraxie bei Rechtsgelähmten.) S. Meyer.
- 80 Local Tetanus and its Origin. (Der lokale Tetanus und seine Entstehung.) L. Zupnik.
- 81 Speculum for Vagina with Intact Hymen. M. Wassermann.

73. **Resection of Joints.**—Müller remarks that the necessity for after-treatment to restore function by exercises, massage, electricity, etc., is universally recognized now, but the principle is not applied in practice to an ideal extent by any means. Local disinfection, even in suppurative cases, has been much promoted by the application of concentrated carbolic acid, rinsed off with alcohol, followed with a salicylic dusting powder. He prefers to pack the wound loosely with gauze, regarding tamponing as harmful for suppurating wounds. In all primary aseptic cases he seals up the wound, ready to open it at the first sign of trouble. He does not agree with those who shrink from resection if the patient is over 50; spinal anesthesia has enlarged the field for these operations, especially on the legs.

74. **Arsenic Treatment of Trypanosoma Affections.**—Weber found that nagana in small animals could be cured by a combination of two preparations of arsenic, when one alone proved ineffectual.

75. **Etiology and Treatment of Chronic Conjunctivitis.**—Elschnig calls attention to the chronic conjunctivitis due solely to excessive secretion of the Meibomian glands or to relative insufficiency of the eyelids, with defective closure during sleep. The chronic inflammation resulting from these causes can be readily cured; in the first case by squeezing out of the glands the excess of secretion, and in the second case by having the patients wear a linen band over the eyes, fastened to the ears, while they are in bed. The tarsal glands must be thoroughly evacuated every day by massage, pressing both lids together, the tarsal surfaces against each other, and the contents of the glands milked out with the fingers. This should be done every day at first and later as needed. In case of defective closure of the eyelids, the patient should push up the under lid occasionally during the day, and in severe cases a 3 per cent. boriceized lanolin salve should be applied to the conjunctiva. Astringents are scarcely necessary, but compresses may prove useful.

76. **To Clear the Cornea of Opacity.**—Guillery states that primary opacity of the cornea, from the action of lime or other metallic caustics can be cleared up by chemically dissolving the opaque tissue. The best measure for the purpose is a mixture of ammonium chlorid and tartaric acid. This is applied to the cocaineized eye, beginning with a 4 per cent. solution of ammonium chlorid, to which from 0.02 to 0.1 per cent. tartaric acid is added. The ammonium chlorid can be increased to 10 per cent. and more, but no more tartaric acid should be added.

77. **Treatment of Puerperal Septicemia.**—Herff has removed the uterus in 16 cases of puerperal septicemia and 8 of the women recovered. The fatalities were mainly due, he thinks, to his delay in deciding on operative measures or from the objections of the family. His experience has convinced him that supravaginal amputation with thorough cauterization of the stump may save many otherwise doomed patients, even in the most serious forms of puerperal fever. Many patients owe their recovery to careful diet. It is harder than it seems, he says, to help Nature in this respect, aiding without doing injury. He describes his experience in detail.

## Medizinische Klinik, Berlin.

June 21, IV, No. 25, pp. 933-972.

- 82 \*Physiology and Pathologic Physiology of Arrest of Postpartum Hemorrhage. (Postpartale Blutstillung.) M. Neu.
- 83 Severe Myelitis with Gangrenous Decubitus. (Schwere Myelitis mit gangrenösem Dekubitus—Permanentes Wasserbad—Heilung.) E. Hoke.
- 84 \*Importance of Motor Disturbances in External Ocular Muscles for Localization of Focal Brain Affections. (Bedeutung von Bewegungsstörungen der äusseren Augenmuskeln für die Lokalisation zerebraler Herderkrankungen.) H. Steinert.
- 85 \*Treatment of Tuberculosis According to Brehmer's Principles. A. Moeller.
- 86 \*Superheated Air in Treatment of Gonorrheal Joint Affections. (Heissluftbehandlung gonorrhöischer Gelenkentzündungen.) W. Wagner.
- 87 Liver Affections after Intravenous Injections of Adrenalin in Rabbits. (Lebererkrankungen nach intravenösen Adrenalininjektionen beim Kaninchen.) J. W. Miller.
- June 28, No. 26, pp. 973-1010.
- 88 Pathogenesis of Cretinism. (Kretinische Degeneration.) R. Bircher.
- 89\* Clinical notes on Cancer. J. Schnitzler.
- 90 Alleged Dangers of Ocular Tuberculin Reaction. (Angebliche Gefahren der Konjunktivalreaktion.) F. Teichmann.
- 91 Localized Emaciation of Face. (Umschriebene Fettgewebsschwund des Gesichtes.) J. Strasburger.
- 92 \*Pathogenesis and Treatment of Arteriosclerosis. L. Braun.
- 93 Prophylaxis of Transverse Presentation. (Wiederholte Querlage infolge von Uterus arcuatus; zugleich ein Beitrag zur Prophylaxe der Querlage.) A. Bucheler.
- 94 Courses of Mineral Waters in Heart Disease. (Trinkkur der Herzkranken.) L. Nenadovics.
- 95 Bacteriologic Diagnosis of Typhoid with Bile-Agar Cultures. (Typhusdiagnose mit Hilfe von Blutaussaat auf Gallenagar.) W. K. Stefansky.

82. **Physiology of Postpartum Arrest of Hemorrhage.**—Neu analyzes the physiology and pathologic physiology of the third stage of labor, emphasizing the fact that any healthy uterus may present atony from exhaustion after expulsion. The power of responding to stimuli is thus reduced to the minimum. Stimuli applied during this stage of exhaustion may even exhaust the uterus still further, showing the importance of allowing it time to recuperate unmolested. The main factors of the physiologic process of arrest of postpartum hemorrhage are the degree of excitability, the energy and the course of the contractions, and the kind of tonic retraction of the just-delivered uterus. If the hemorrhage continues, the best treatment is that which acts most quickly, most safely and most reliably by stimulation of the local nerve center for the uterus, and by rousing the excitability of its unstriated muscle tissue. This is realized by mechanical, thermic and chemical means adapted to individual cases.

84. **Oculomotor Disturbances in Localization of Focal Affections in the Brain.**—Steinert reviews the results of recent research in this line, calling special attention to certain points. He remarks that the kind and the grouping of the peripheral oculomotor symptoms are less instructive than the other signs of defective functioning for deciding as to whether the affection is intracerebral or basal. But if the accompanying symptoms are pronounced, the oculomotor disturbances may have decisive importance for the exact localization. Conjugated deviation is always regular and the head turns with it toward the side of the focus, except under a few exceptional conditions, which he enumerates. The phenomenon is transient, and both eyes are symmetrically affected. The symptoms of an affection of the pons do not include necessarily any pronounced deviation of the eyes. As a rule, there is only slight deviation, in consequence of the characteristic pontine disturbances. There is no actual deviation of the head, although it is usually slightly turned to one side as a half voluntary attitude assumed to compensate the paralysis. The head and the eyes are thus slightly deviated from the normal position, but toward opposite sides. In old cases even an expert may find it difficult to differentiate paralysis from a concomitant strabismus. Ordinary strabismus and even purely mechanical hindrance of function of single muscles of the eye may interfere with the movements so as to simulate paralysis.

85. **Brehmer's Pioneer Work in Treatment of Tuberculosis.**—Moeller was an assistant to Brehmer, the pioneer in the modern treatment of tuberculosis. The latter based his system of treatment on the assumed immunity of mountaineers to tuberculosis. He regarded the disease as the result of a certain inanition of the whole body, the consequence of weak heart action, which he sought to compensate. His premises



have been shown to be partly erroneous, but the structure he built on them has lasted. Moeller calls attention to a number of minor, but important points, such as that the grounds of his sanatorium were so arranged that the patients in taking exercise had to climb in starting out, while still fresh; the return was down a gentle incline. Seats for resting were provided at every turn throughout the grounds, to encourage the patients to rest often. He laid great stress on the injurious influence of worry and annoyances, and shielded his patients from them, instructing the families in this respect, and making every effort to promote cheeriness in his institution.

**86. Superheated Air in Treatment of Gonorrheal Joint Affections.**—Wagner tabulates the results of this treatment in 38 cases, stating that it is a decided advance over purely surgical measures. None of the 74 joints treated developed ankylosis, which can not be said, he declares, of any similar series under surgical measures.

**89. Clinical Notes on Cancer.**—Schnitzler would like to have cachexia stricken from the list of cardinal symptoms of carcinoma, as he knows of many instances in which physicians refused to diagnose cancer on account of the absence of cachexia. He gives examples to show the necessity of suspecting an epithelioma in the throat when indurated lymph glands are discovered in the side of the neck in an elderly person. A primary cancer in the stomach should also be suspected when the lymph glands in the axilla or the supra-clavicular region become enlarged and hard but not tender. Still more suspicious of cancer in the stomach is an infiltration in the pouch of Douglas, such as he has observed in about a dozen cases. The infiltration in the anterior wall of the rectum sends out a process inward toward the lumen of the rectum and downward, shaped like the face of a seal ring. This infiltration may simulate a primary cancer in the rectum. In one such case of carcinoma at the pylorus with this metastasis in the pouch of Douglas, causing stenosis in the rectum, he performed gastroenterostomy and colostomy at one sitting, prolonging the patient's life for a year. He mentions parenthetically that he has observed this metastasis in the pouch of Douglas only with cancer of the stomach, with the exception of one case of cancer of the pancreas, and almost exclusively in men. Possibly this metastasis in men takes the place of the frequent metastasis in the ovaries in women. He also calls attention to the frequency of metastasis in hernias, especially when the omentum is involved. Cancerous glands may soften into actual cysts, and these cystic tumors may occur even in the liver. In one case he saw metastatic phlegmons develop on arm and leg as metastases of carcinoma in the esophagus. They were distinguished by the lack of severe inflammatory phenomena, and the pus was remarkably thin. He discusses the differentiation of genuine phlegmons from suppuration in and around a carcinoma, also the variations in the development of cancer, citing examples of unusually rapid and protracted growth. In one case the breast was hard and the lymph glands widely involved, the cancer being inoperable. It was found that the woman had been dismissed with this inoperable cancer five years before from another clinic. He thinks that carcinoma is of a relatively benign or malignant character from the first. His experience confirms the parallel relation between the duration of the symptoms before operation and the length of survival afterward. It seems evident that the improved technic of radical operations has merely improved conditions in regard to the prevention of local recurrence, the remote metastases are probably already existent at the time of operation, although they do not become evident until later. A significant fact is that a mouse cancer can be kept on ice for two years, and yet induce positive results when finally inoculated. He is convinced that emotional stress has a powerful influence on the development of cancer, and especially on the development of hitherto latent metastases. He relates several instructive instances—two in young men. Grief and worry may arouse a slumbering tendency to cancer, as they can turn the hair gray.

**92. Arteriosclerosis.**—Braun argues that the prevention of arteriosclerosis is included in the prophylaxis of the acute infectious diseases, for which he urges that greater attention should be paid to the care of the mouth. Calcification of the

vessels is a secondary, not the primary, process in arteriosclerosis. The iodine preparations reduce the viscosity of the blood, and large doses should be given and kept up for months.

*Mitteilungen aus den Grenzgebieten der Med. and Chir., Jena. XIX, No. 1, pp. 1-186. Last indexed, June 6, p. 1950.*

- 96 \*Inflammation of Gall Bladder and Bile Channels without Gallstones. (Ueber Cholecystitis und Cholangitis sine concremento.) Riedel.
- 97 \*Pathology of Fistula between Stomach and Colon, (Magen-Colonfistel.) O. Thorspecken.
- 98 \*Alcaptonuria and Ochronosis. E. Allard and O. Gross.
- 99 \*Physiologic Importance of Various Segments of Large Intestine. (Physiologische Bedeutung der einzelnen Dickdarmschnitte.) O. Roith.
- 100 \*Polyps in Stomach. (Polyposis ventriculi.) C. Wegele.
- 101 \*Hyperalgetic Zones after Injuries of Skull. (Hyperalgetische Zone nach Schädelverletzungen.) P. Clairmont.
- 102 \*Connection between Influenza and Appendicitis. E. Hönck.
- 103 \*Transverse Severing of Spinal Cord at Third Dorsal Vertebra. (Transversaler Schnitt des Rückenmarkes.) S. Soleri.
- 104 \*Castor Oil in Acute Appendicitis. (Ricinusbehandlung der akuten Appendicitis.) E. Sonnenburg and R. Kothe.
- 105 \*Behavior of Roentgenized Animals to Bacterial Infection, especially in regard to Formation of Specific Antibodies. A. Löwen.

**96. Inflammation of the Gall Bladder and Bile Channels Without Concrements.**—Riedel says that among the 300 patients who applied to him for relief from supposed gallstones during the last three years, four had no indications of concrements. He had previously encountered two similar cases, and he relates the details of the total six cases. The pain in all commenced in the gall bladder, suggesting that the infection had arrived by way of the blood and not by extension from the intestine. Jaundice developed later. Removal of the gall bladder seems safest in severe acute cases, but in milder forms conservative measures are preferable if gallstones can be excluded. Prolonged drainage answers every purpose. Even if cholangitis has developed, it is comparatively useless to remove the gall bladder, and drainage offers the best prospects.

**97. Gastrocolic Fistula.**—Thorspecken's patient was a girl of 18 with tuberculosis of the skin and lungs. After a period of abdominal pains and feculent eructations, fecal vomiting was observed daily for three weeks, with regular stools, completely clay-colored. The principal symptoms of gastrocolic fistula are fecal vomiting, diarrhetic stools and henty, the stools containing an excess of mucus and partially digested food. In the present case only the first of these symptoms was present. Autopsy revealed tuberculous ulcerations throughout the splenic flexure, with a fistulous perforation into the stomach. A little dried bile was found in the gall bladder, but not a trace of bile in the entire system of bile ducts, and the contents of stomach and intestines were completely acholic.

**98. Alkaptonuria and Ochronosis.**—Allard and Gross report a case which confirms the connection between alkaptonuria and ochronosis. It also shows that severe joint changes are the direct result of the accumulation of the pigment in the cartilage tissue. Both the ochronosis and the alkaptonuria are evidently, they think, manifestations of one and the same anomaly in the metabolism.

**99. Physiologic Importance of Different Segments of the Large Intestine.**—The clinical and experimental researches related by Roith confirm the views in favor of an antiperistalsis. The latter occurs principally in the cecum, ascending colon and the first part of the transverse colon. The rest of the intestine seems to be free from antiperistaltic movements, except possibly the sigmoid colon. These facts should be borne in mind in making an artificial anus.

**100. Polyposis of the Stomach.**—Wegele reports the case of a woman of 59 who had suffered from supposed gallstone colics for many years; during the last few years diarrhea had alternated with constipation, and there was pain in the left hypochondrium with increasing weakness, emaciation and achylia. The motor function of the stomach seemed unimpaired, and there was no palpable tumor. The stomach tube always brought away a scrap of tissue covered with fresh blood. An exploratory incision in the stomach showed that the entire surface of the gastric mucosa was studded with soft polyps. Gastroenterostomy relieved the symptoms, but the patient continued to lose weight. Examination eighteen months later gave the same findings. The stomach was not removed, owing to the age and weakness of the patient, and



the fact that cancerous degeneration of gastric polyps has been observed only in very rare instances.

**101. Zones of Hyperalgesia After Injuries of the Skull.**—Clairmont reports a case of bullet wound of the right temple, the bullet passing outside the skull into the rear of the right orbit. Besides the transient visual disturbances and paralysis of the oculomotor, trochlear and abducent nerves, a symmetrical zone of hyperalgesia was observed on the neck and breast, such as Wilms has described. It is probably due to injury of the sympathetic root of the ciliary ganglion. In another case after slight concussion of the brain a zone of paresthesia and hyperesthesia was observed on one side of the vertex. He tabulates the details, with illustrations, of these zones in 11 cases of bullet wounds of the head, in 6 cases of fracture of the base of the skull and concussion of the brain, and in 7 with concussion of the brain alone.

**102. Relations Between Influenza and Appendicitis.**—Hönck asserts that the infection which we call influenza is not always located primarily in the throat, but the intestines, and especially the cecum and appendix may be the nidus of infection. Cases of appendicitis developing after an epidemic of influenza should be regarded as a relapse of an appendicitis which was either falsely diagnosed as influenza, or in which an influenzal sore throat coincided with an infectious process in the appendix. He has often observed an angioneurotic edema in the throat following immediately after the decline of the fever in appendicitis. He has also observed that inflammation in the throat and in the appendix may occur without symptoms. Another fact to which he calls attention is the occurrence of pains in the rear of the abdominal cavity, during appendicitis. These pains are in the root of the mesentery, so that the pain in appendicitis may be felt in the back rather than in the abdomen. He believes that appendicitis occurs as frequently as tonsillitis, only that we are unable to recognize its milder forms. Many cases classed as influenza are in reality appendicitis, and he is confident that appendicitis may be contagious in some cases.

**103. Transverse Section of Spinal Cord.**—Solieri reports a case in which a man of 36 had the spinal cord completely severed with a long knife at the level of the third dorsal vertebra. There was at once lax motor and sensory paralysis of all kinds, and two hours later the tendon reflexes were found permanently abolished. By the sixteenth hour decubitus began to develop, which continued a constantly progressive course, on the sacrum, heels and base of the thorax. During the three months before death the symptoms changed during the various phases. At first the general condition was good and the superficial reflexes could be elicited. But gradually they waned. There were also observed clonic, spontaneous or reflex contractions of the legs; and clonic and tonic contractions of the arms (period of ascending and descending processes of degeneration in the spinal cord). At first there were priapism and increased dermatography, followed later by normal conditions in this respect, evidently from vicarious functioning of the sympathetic. The paralysis of the rectum and bladder noted at first gradually subsided to normal or intermittent functioning; and this stage was succeeded by incontinence as the distal segment of the spinal cord became degenerated. The muscles gave a positive or negative reaction according to the period of observation. He also discusses the sensory disturbances and describes his suture of the spinal cord 16 hours after the trauma. The condition seemed to be unusually favorable for suture of the cleanly severed cord. The stumps were an inch apart, but were regularly coaptated by two stitches through dura and cord, with four stitches in the dura alone. The results of the operation were negative.

**104. Castor Oil Treatment of Appendicitis.**—Sonnenburg has for some time been proclaiming the superior advantages of systematic administration of castor oil in the milder cases of appendicitis. If the condition begins immediately to improve there is then no need for an operation, but if no improvement is apparent he operates at once. He emphasizes that this castor oil test is not adapted for private practice, but is only for the surgeon. The most solicitous supervision is necessary, with everything prepared for an operation at any moment. Unless temperature, pulse and leucocytosis are ap-

proximately 37.5, 92, 15,000, he does not attempt the castor oil treatment. Even when destructive appendicitis is diagnosed, if the general condition is good and the disease process strictly localized, he gives the castor oil to improve conditions for the further course of the affection. In 150 cases last year rapid improvement followed in 144 cases; six patients required operation, as no improvement was observed; all recovered. He reiterates in conclusion that this castor oil treatment without supervision of the leucocytosis is entirely worthless.

**105. Behavior of Animals in Response to Bacterial Infection After Exposure to the Roentgen Rays.**—The extensive experiments related by Læwen confirm the assumption that the blood-producing organs, and especially the groups of cells connected with the production of leucocytes, are the sites of production of the specific antibodies.

#### Münchener medizinische Wochenschrift.

June 23, LV, No. 25, pp. 1321-1368.

- 106 \*Freund's Operation—Chondrotomy of First Rib in Incipient Apical Tuberculosis. (Chondrotomie der 1. Rippe bei beginnender Spitzentuberkulose.) H. Seidel.
- 107 Diagnostic Inoculation with a Fat-Free Tuberculin. (Diagnostische Impfungsversuche mit einem fettfreien Tuberkulin.) A. Leber and S. Steinharter.
- 108 \*Ovarian Antibodies and Osteomalacia. (Ovarialantikörper und Osteomalacie.) L. Fraenkel.
- 109 Acute Dilatation of Heart from Overexertion. F. Moritz.
- 110 Affections of Lachrymal Glands and their Treatment. (Tränenkanalleiden.) E. Enslin.
- 111 Feeding Infants with Artificially Drawn Breast Milk. (Ernährung mit abgesogener Muttermilch.) W. v. Starck.
- 112 \*Improved Technic for Examination of Urine. (Erleichterung bei der Urinuntersuchung.) F. A. Hoffmann.
- 113 Operative Treatment of Cavity in Lung. E. Hoke.
- 114 Static Electricity in Dermatology. (Dermatotherapeutische Verwertung der statischen Elektrizität nach Suchier.) Jesionek. Commenced in No. 24.

**106. Chondrotomy for Incipient Apical Tuberculosis.**—Seidel corroborates the assertions of Freund in regard to the advantages of restoring flexibility to the upper part of the chest when it has become rigid, thus inducing a predisposition to apical lesions. He has operated thus in two cases with fine results, mobilizing the rigid first rib. He illustrates his technic, cutting the cartilage of the first rib slanting from the axilla toward the throat. If the lesion has spread beyond the apex this chondrotomy is useless, as it modifies merely the conditions in the apex.

**108. Ovarian Antibodies and Osteomalacia.**—Fraenkel discusses the questions whether antibodies for the ovarian substance or secretion are found in the blood; whether such antibodies occur in increased amounts after loss of ovarian functioning; whether they are the cause of the symptoms of the premature menopause, and whether the antibodies pass into the milk and the other secretions and excretions. He is inclined to think that osteomalacia and the symptoms of the premature menopause are opposite extremes, like myxedema and exophthalmic goiter from insufficient or excessive thyroid functioning. The good results obtained in the former with serum of thyroidectomized goats encouraged him to treat osteomalacia with the milk from a goat whose ovaries had been removed. An xi-para with osteomalacia, recurring more and more severe at each pregnancy during the last seven years, was fed on the milk of the castrated goat. The case was one of typical, far-advanced osteomalacia: the pulse rate ranged from 120 to 140; the heart was bad; the weight had dropped to 61 pounds, and the patient was bedridden. Within a month after commencing to take the milk of the castrated goat the patient was able to walk, the pulse rate was 96, and she had increased ten pounds in weight. For various reasons Fraenkel thinks that intravenous injection of blood serum from women presenting the symptoms of premature menopause would be more effectual than the milk of castrated goats, as more concentrated. There is still another way for this antibody treatment of osteomalacia, by immunization with ovarian substance to obtain an immune serum for the purpose. If it is found that ovarian antibodies do actually paralyze the functioning of the ovaries, they may be found effectual not only in osteomalacia, but whenever it is desired to restrict the action of the ovaries, as for instance, in menstrual disturbances and in case of myoma, etc.

**112. Examination of Urine.**—Hoffmann illustrates a little contrivance with which it is possible to collect on a flat plate



the sediment of centrifugized urine. The plate is then transferred to the microscope as the object glass. Another arrangement is a spherical prolongation of the sedimentation tube, with a stopcock below. With these it is possible to reveal the presence of formed elements in urine which would otherwise escape detection.

#### Wiener klinische Wochenschrift.

June 25, XXI, No. 26, pp. 931-968.

- 115 Relations between Endotoxins and Toxins. R. Kraus.
- 116 Positive Response to "Specific" Test for Syphilis in Non-syphilitic Affections. (Positive Wassermann-Neisser A.-Brucksche Reaktion bei nichtluetischen Erkrankung.) E. Weil and H. Braun.
- 117 Clinical Experiences with Precipitation with Distilled Water in Serum of Syphilitics. E. Klausner.
- 118. Anastomosis between Portal Vein and Inferior Vena Cava in Collateral Circulation in Cirrhosis of Liver. (Das Retziussche System als Kollateralkreislauf bei Leberzirrhose.) R. Franz.
- 119 \*Etiology of Portal Thrombosis. (Pfortaderthrombose.) V. Hecht.
- 120 Operation for Phimosis. O. Förderl.
- 121 Backward Dislocation of Foot and Extension Dressing with Flexed Knee. (Verrenkung des Fusses nach hinten und den Extensionsverband bei gebeugtem Knie.) K. Ewald.
- 122 \*Conservative Treatment in Gynecologic Affections. P. Profanter.

119. Etiology of Portal Thrombosis.—Hecht reports a case distinguished by displacement of the trunk of the portal vein. The patient was a girl of 15 who had been subject for years to recurring vomiting of blood. The malformation was evidently responsible for the portal thrombosis and the varicose veins in the esophagus and stomach.

122. Conservative Treatment of Gynecologic Affections.—Profanter practices at Franzensbad, and for more than twenty years he has been much impressed with the therapeutic efficacy of prolonged irrigation of the vagina with hot mineral water, especially when combined with mud baths and gynecologic massage. Sear tissue softens, its absorption is promoted and various gynecologic affections are promptly cured. He heats the water with a jet of steam so as not to modify its chemical or radioactive properties. The fresh mineral water has a specific healing influence, he asserts, on catarrhal affections of the mucosæ. He uses a pear-shaped, two-way glass cannula, the outflow smaller than the inflow, to allow distention of the vagina. He does not recommend a course longer than six or eight weeks of daily irrigations, commencing with a three to ten minutes' flushing, the water at a temperature of 37 C. and never higher than 50 C. (123 F.). He has never had any mishaps from gynecologic massage, although he has applied it 30,000 times.

#### Gazzetta degli Ospedali e delle Cliniche, Milan.

June 21, XXIX, No. 74, pp. 777-792.

- 123 \*Prognosis of Injury of the Cornea. (Prognosi delle bruciature della cornea.) T. Di Giuseppe.
- 124 \*Albuminuria in Parathyroid Insufficiency. A. Massaglia.
- 125 \*Slow Pulse Rate in Acute Parotitis. G. Ghedini.
- 126 Four Cases of Chronic Laryngotracheal Stenosis cured by Laryngotracheostomy. U. Melzi and A. Cagnola.

June 28, No. 77, pp. 809-822.

- 127 \*Suprarenal Extract in Aortic Insufficiency. (Opoterapia surrenale sulla insufficienza aortica.) G. Melchiorri.
- 128 \*Spinal Anesthesia. (Analgesia midollare.) D. Maragliano.
- 129 \*Thymus Treatment of Disturbances in Growth of Children. (Sindrome da accrescimento e distiroidismo—Saggio d'interpretazione patogenetica e tentativo opoterapico.) P. Galli.

123. Prognosis of Injury of the Cornea.—Di Giuseppe describes a little instrument for testing the sensibility of the cornea after injury from a caustic. So long as sensibility is retained the prognosis is not absolutely bad.

124. Albuminuria in Parathyroid Insufficiency.—Massaglia noted albuminuria in nearly all the animals whose parathyroids he removed. The albuminuria was intermittent, but it showed that the parathyroid insufficiency had evidently affected the kidneys injuriously so that any slight increase in the autogenerated toxins was sufficient to induce albuminuria under these conditions. On the other hand, partial thyroidectomy, leaving one-fifth of the thyroid gland with all the parathyroids intact, was not followed by albuminuria. These experimental findings confirm what is observed in the clinic.

125. Slow Pulse in Mumps. Ghedini noticed bradycardia in 17 cases of epidemic parotitis, and here describes 10 of the

most typical examples. The pulse ranged from 40 to 56 beats a minute with normal temperature, increasing to 70 and 90 with fever. The patients were all men between 18 and 36, and orchitis was a frequent complication.

127. Suprarenal Extract in Aortic Insufficiency.—A number of pulse tracings are given to show the benefit that followed suprarenal treatment in a woman of 50 with aortic insufficiency and tachycardia. Small doses were given daily for three months, and they seemed to strengthen the tone of the walls of the blood vessels, thus regulating the blood wave and improving conditions in the left ventricle by reducing the work of the heart and the sudden distention of the arteries. Melchiorri thinks that suprarenal treatment has a promising future in these "hydraulic disturbances" from aortic insufficiency.

128. Spinal Anesthesia.—Maragliano calls attention to the fact that the alkaline reaction of the cerebrospinal fluid is liable to cause precipitation in the anesthetic solution, which thus loses its analgesic properties in large measure. He has found that 0.5 per cent. of glucose added to the anesthetic solution seems to prevent this precipitation. It is thus possible to induce the anesthesia with a smaller amount of the anesthetic. Cocain has the property of preventing the precipitation of the anesthetic, as also certain other anesthetic drugs tested.

129. Thymus Treatment of Disturbances in Growth.—Galli theorizes to explain the disturbances in growth of children and youths as an expression of perverted thyroid functioning, pointing out the analogy between certain symptoms observed in rapidly growing children and those of exophthalmic goiter. For these reasons he has given thymus opotherapy a thorough trial in three typical cases in children between 11 and 14. Heart disturbances predominated. The fresh thymus gland was given for five or six weeks and improvement was marked.

#### Policlinico, Rome.

June 21, XV, Practical Section, No. 25, pp. 773-804.

- 130 \*Adenoid Vegetations and Inability to Concentrate the Attention. (Vegetazioni adenoidi ed aprossexia nei bambini.) A. F. Bonazzola.

130. Adenoid Vegetations and Inability to Concentrate the Attention.—Bonazzola found among 400 school children at Bologna that 141 displayed a want of power to concentrate the attention. Examination of this group revealed adenoid growths in all but 24. In the 24 with aprossexia without adenoid vegetations there invariably was nasal obstruction from some other cause, and the children were neurasthenic and presented signs of inherited physical degeneracy. He suggests the term "primary aprossexia" for these cases of pseudo-adenoid syndrome. Adenoid vegetations were discovered also in 59 children free from the "nasal aprossexia." In the total 176 with these growths 66 per cent. were pointed out by the teachers as lacking power to concentrate their attention.

### Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

FRIEDBERGER AND FRÖHNER'S VETERINARY PATHOLOGY. Vols. I and II. Translated by M. H. Hayes, F.R.C.V.S., Author of "Points of the Horse," etc. With Notes on Bacteriology by Professor R. Tanner Hewlett, M.D., F.R.C.P., M.R.C.S., D.P.H. Sixth Edition. Cloth. Price, \$8.00 per set. Chicago: W. T. Keener & Co., 1908.

A SHORT PRACTICE OF AURAL SURGERY. By J. Arnold Jones, M.B., Ch.B. (Viet.), F.R.C.S. (Ed.). Hon. Assistant Aural Surgeon to the Manchester Eye and Ear Hospital. Cloth. Pp. 260, with illustrations. Price, \$1.75. New York: John Lane, 1908.

HANDBUCH DER BIOCHEMIE DES MENSCHEN UND DER TIERE. Herausgegeben von Dr. Phil. et Med. Carl Oppenheimer, Berlin. Vol. II. Paper. Pp. 320, with illustrations. Price, \$1.25. Jena: Gustav Fischer, 1908.

MEDICAL GYNECOLOGY. By Samuel Wyllis Bandler, M.D., Fellow of the American Association of Obstetricians and Gynecologists. Cloth. Pp. 676, with illustrations. Price, \$5.00. Philadelphia: W. B. Saunders Co., 1908.

CONSUMPTION. By C. H. Stanley Davis, M.D., Ph.D., Member of the New Haven County Medical Society. Cloth. Second Edition. Pp. 218. Price, \$1.00. New York: E. B. Treat & Co., 1908.

FLORENCE NIGHTINGALE'S INFLUENCE ON MODERN NURSING. By Dr. M. H. Bochrach, Philadelphia. Paper.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOLUME LI

CHICAGO, ILLINOIS, AUGUST 8, 1908

NUMBER 6

## Original Articles

### A NEW METHOD OF EXTERNAL FRONTAL SINUS OPERATION WITHOUT DEFORMITY.\*

JOSEPH C. BECK, M.D.  
CHICAGO.

The tendency of the present day is to operate on the accessory sinuses of the nose by the intranasal method because of the avoidance of a deformity and scars. It is possible to do this in all the sinuses except the frontals and some of the most anterior group of ethmoidal cells. Successful operations have been made by the intranasal method on these latter cavities by the methods advocated by E. Fletcher Ingals, Halle, and Good, and were it not for exceptions in the anatomy and

establishing good drainage into the nose, he replaces the aforesaid skin-bone flap and closes for primary intention. Results from this procedure were not absolutely satisfactory owing to the fact that the free border of the flap would fall into the cavity and cause a deformity. Again, he had no knowledge of the size of the frontal sinus in order to make the proper size flap. Winkler, Jansen, Gussenbauer, Brieger, Czerny, Schoenborn and Hoffmann have all described osteoplastic methods and modifications, and with the exception of Winkler, who refers to the value of *x*-ray plates in facilitating the technic of his operation, these authors have the principle of retaining the bone as their feature.

In the past two years I have been much interested in the skiagraphs of frontal sinuses, and while working along this line the idea suggested itself to me that if one could determine before operation the size of the



Fig. 1.—Showing incision through skin and subcutaneous tissue through the upper margins of the eyebrows.

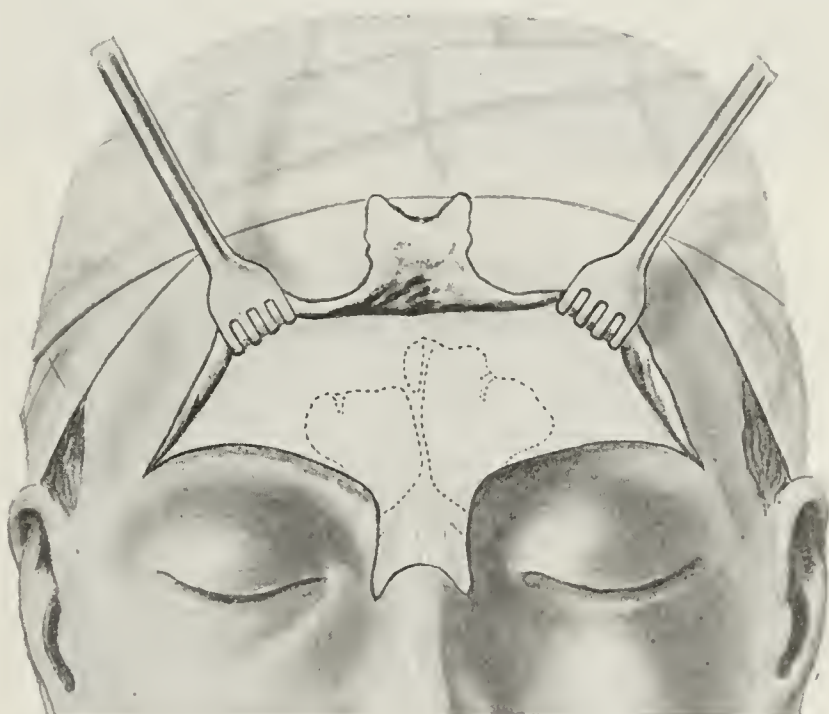


Fig. 2.—Dissection of the flap, skin and subcutaneous.

pathology of some cases, there would be no need of external operations. Besides, there is considerable danger to the brain in this blind way of operating. The success of the radical procedure of Killian on the frontal sinus, etc., is due to the fact that one can see clearly the anatomico-pathologic conditions, and were it not for the marked deformity that results at times one could not wish for a better method of procedure. To overcome this difficulty several methods have been devised. Küster advises making the osteoplastic flap by raising the skin, subcutaneous tissue, periosteum and external table of the frontal sinus in one piece. After thoroughly eradicating the diseased mucous membrane, etc., and

frontal sinus, that is, its marginal limits, one could make just the right size osteoplastic flap. It then became necessary to develop a method to overcome the falling in of the flap.

#### DESCRIPTION OF TECHNIC.

The method of procedure is as follows:

1. An incision is made through the skin and subcutaneous connective tissue through the upper margins of the eyebrows, then downward and inward as far as is usually done in the Killian operation. These two incisions are then joined by means of a transverse incision across the bridge of the nose (Fig. 1).

2. This skin and subcutaneous flap is then dissected upward until the upper limits of the frontal sinuses are exposed (Fig. 2). This is determined by having a

\* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



celluloid tracing of the radiogram (Figs. 3 and 4; natural and retouched, Fig. 5).

#### PREPARATION OF THE CELLULOID TRACING.

The tracing is made as follows:

Take a piece of ground celluloid film about three inches square, place over the radiogram (glass plate) negative, which is either in the transilluminating box or against the daylight. Trace the outlines with ink of the supraorbital margins from without inward until the margin of the frontal sinus is reached; this latter is now followed about its two lateral

pendicular incisions at the extreme limits of the flap (external canti).

3. Place the celluloid tracing of the radiogram over the frontal sinus regions and incise the periosteum all around the upper and lateral margins of the same, but not over the supraorbital borders or at the root of the nose (Fig. 5).

4. With a flat chisel the external table of the frontal sinus is then penetrated along the whole course of the



Fig. 3.—Radiograph of the sinuses.

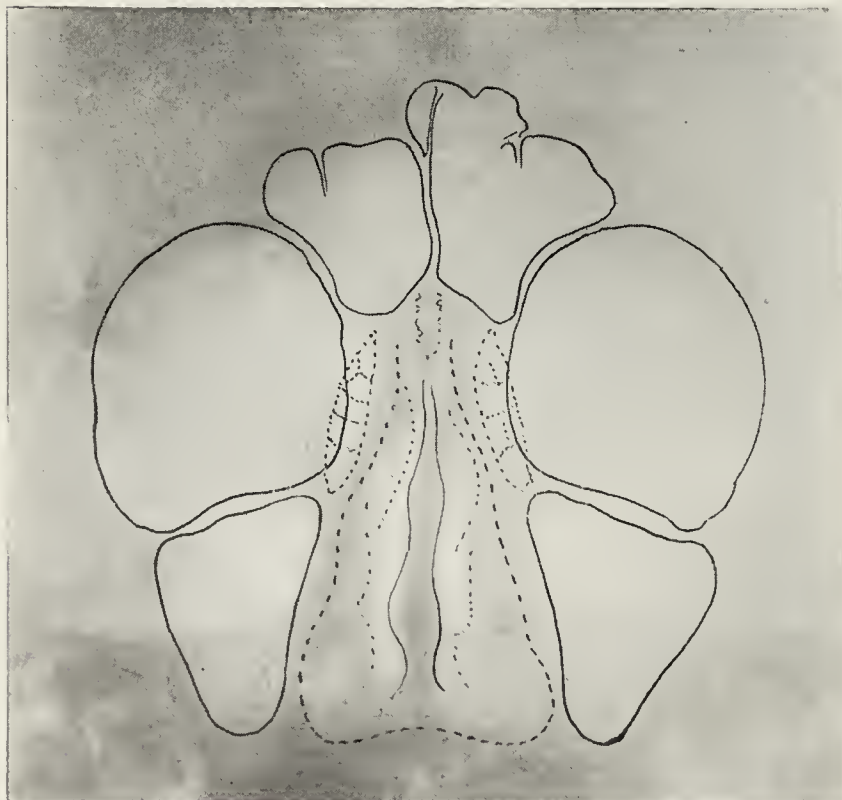


Fig. 4.—Figure 3 retouched to allow of making celluloid tracing.

and upper margins, so obtaining upper and lateral limits and outline of the frontal sinuses. The outline of the supraorbital margins is for the purpose of getting a fixed point. This celluloid model can be sterilized in bichlorid of mercury and alcohol in order to be used during operation.

If the sinuses extend very high up on the forehead, then it may become necessary to make two small per-

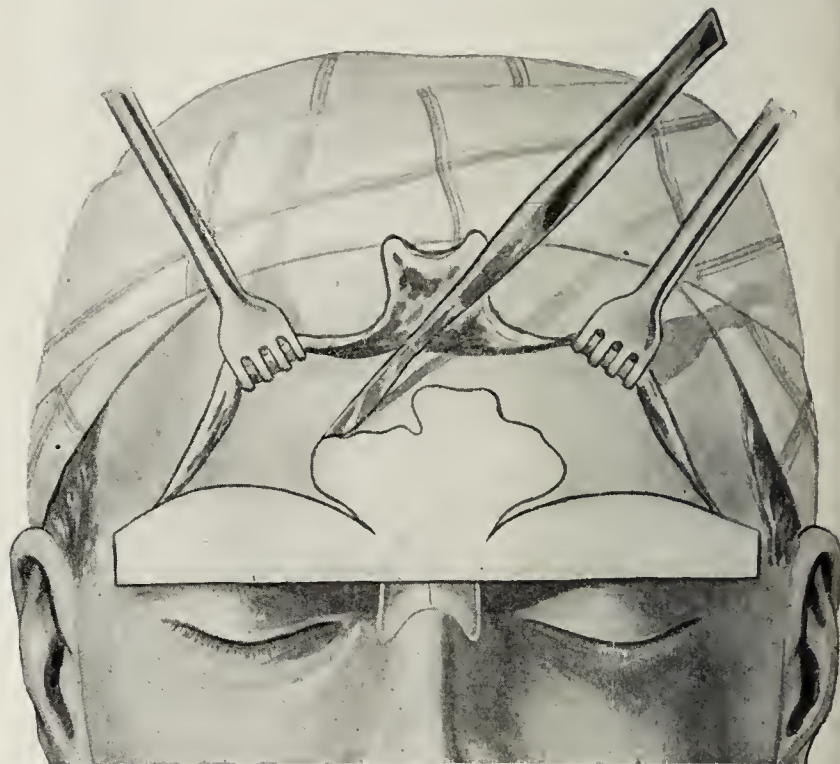


Fig. 5.—Method of placing the celluloid tracing over the frontal sinus region before making the bone flap.

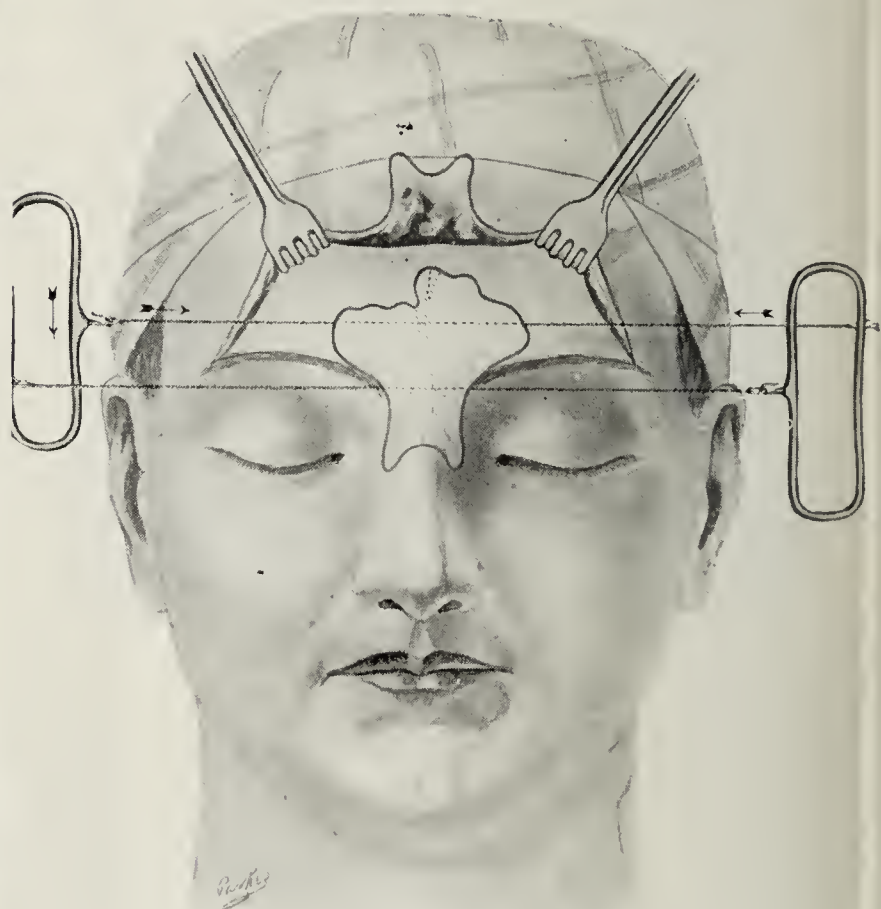


Fig. 6.—Method of using the Gigli saw to cut the bone flap.

above described incision through the periosteum, also severing the attachment of the septum of the frontal sinus from the posterior surface of the external table.

5. This osteoperiosteal flap is then slightly pried open by means of a chisel, and a Gigli saw is brought down to the base of the frontal sinus, in other words, across the supraorbital margins.



6. Carefully drawing the saw from within outward a few strokes will sever the bone but not the periosteum. Great care must be taken not to cut through this structure—rather not saw through the entire thickness of bone, as it will readily break when it is everted downward over the nose (Fig. 6). The skin flap is now reflected upward and the periosteal bone flap downward, thus exposing both frontal sinuses (Fig. 7). Right side shows the granulations removed and drill in operation enlarging the natural nasofrontal opening. Left side demonstrates the cavity filled with granulations and pus.

7. If only one sinus is to be exposed, then the technic

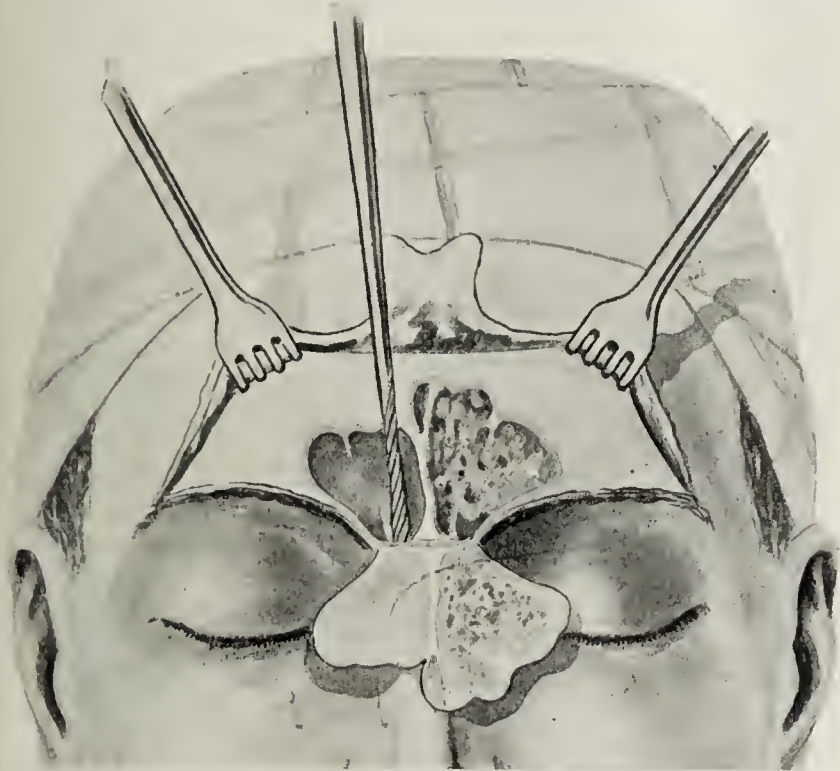


Fig. 7.—The right side shows the granulations removed and drill in operation enlarging the natural nasofrontal opening. The left side shows the cavity filled with granulations and pus.

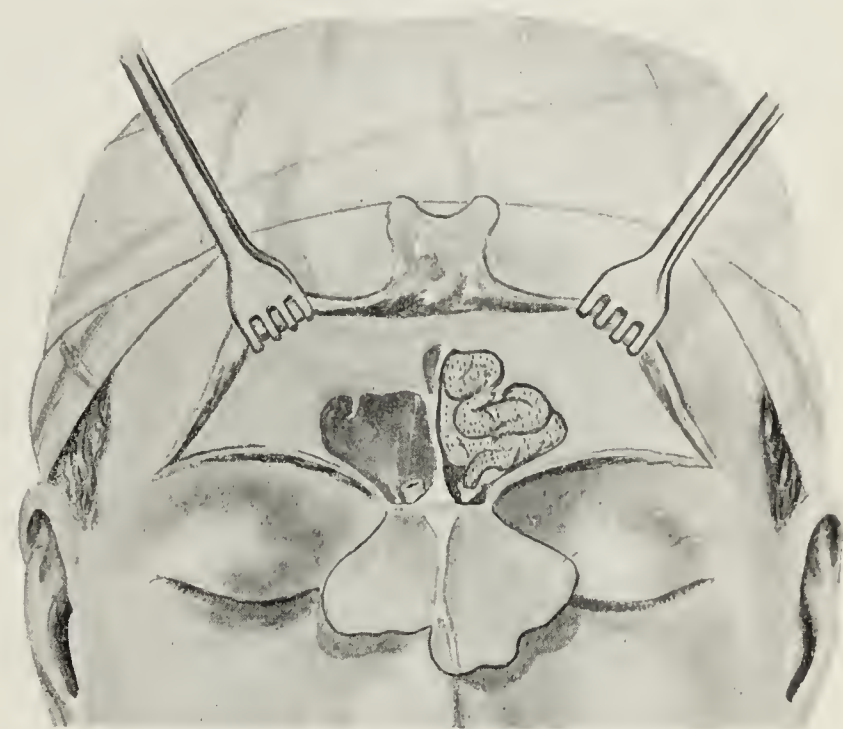


Fig. 9.—The most anterior ethmoidal cells.

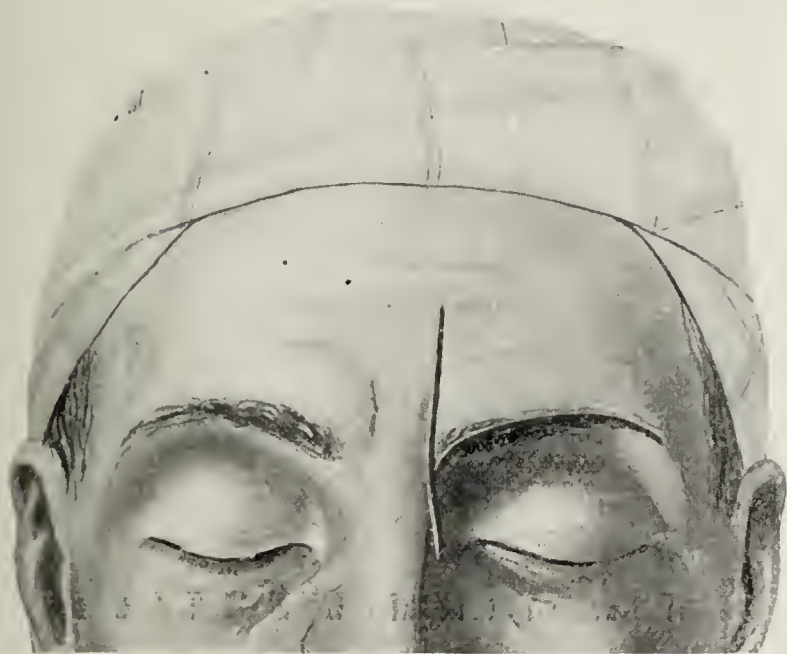


Fig. 8.—Another method of making the skin flap.

varies only in the osteoperiosteal flap, making the incision within the limits of the frontal sinus septum. The skin flap may be made by making a perpendicular incision from the internal angle of the orbit as high as the radiogram indicates the height of the frontal sinus, within the natural intersuperciliary furrow (wrinkle) (Fig. 8).

8. Thoroughly eradicate the diseased mucous membrane, but do not curette, and enlarge the natural opening into the nose, using the Halle trephine or Good

rasp. Also thoroughly remove the most anterior ethmoidal cells.

9. Introduce a large rubber tube through which is passed a wick. This wicking is loosely folded within the cavity of the frontal sinus. The other end of the tube is passed down into the nose close to the floor, with a small portion of the wicking protruding (Fig. 9).

10. Replace the osteoplastic flap with its firm hinge to prevent falling in, and its natural upper marginal bevel where the anterior and posterior tables join (Fig. 10). Bring down the skin flap and suture with silkworm gut, using the Halstead subdermal suture and a few horsehairs right over the bridge of the nose.

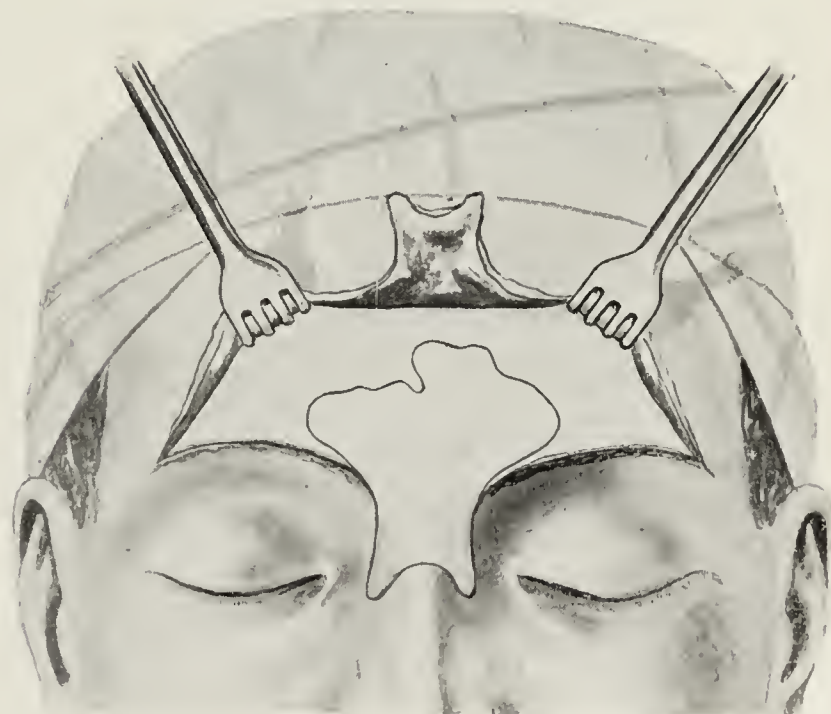


Fig. 10.—The osteoplastic flaps replaced.

#### THE AFTER-TREATMENT.

The after-treatment is to remove the gauze the next day, and on the third to the fifth day the rubber tube is replaced by a silver filigree or gold tube. In one case I used no tube, and now, four months since operation, the opening is sufficiently large to permit ventilation and drainage and the patient is well. One should avoid the use of douches or the strong blowing of the nose immediately after operation.



In conclusion I wish to say that this is not a radical, but a conservative method, and if it fails the radical operation of taking away the bony flap can be done with local anesthesia.

I desire to report the case of one of the five patients operated on, since he is the longest under observation and has been well long enough to at least warrant me in venturing to present this operative procedure.

*Patient.*—John B., aged 21, was referred to me by Dr. John J. Kyle, Indianapolis, with a history of chronic suppuration from the accessory sinuses on both sides and a double chronic purulent otitis media. There were general symptoms of anemia and malnutrition.

*Examination.*—Both sides of the nose were discharging pus anteriorly as well as posteriorly, above as well as below the middle turbinated bodies. The mucous membrane was chronically inflamed and degenerated. Puneture and washing of antra revealed no pus. Both ears were discharging a foul-



Fig. 11.—Cosmetic result. The scar across the nose is concealed by the bow of the patient's spectacles.

smelling pus, and there was granulation tissue at the inner wall of the middle ear. Practically all the tympanic membrane was destroyed.

*Treatment.*—The treatment began April, 1905, with removal of middle turbinates and ethmoidal curettement, also enlargement of the sphenoidal openings. A partial operation had been done before on both middle turbinates and one sphenoidal sinus was entered by Dr. Kyle. Several small after operations were necessary to keep the upper regions clear. He then had a double radical mastoid operation for the cure of the chronic suppuration. His ears were cured, but the nasal trouble continued in a measure. There was always a discharge of pus, especially in front, and frequently a complaint of frontal headaches. These aches increased in frequency and severity so that about every two weeks he would have a bad attack. Attempts to pass a canula for irrigation of the frontal sinns were not successful.

*Vaccine Therapy:* On Sept. 10, 1907, I began opsonic work on him and found that his nasal secretions contained three different micro-organisms, for two a different opsonic index, namely:

*Bacillus pseudodiphtheria:* Opsonic index, 0.54.

*Staphylococcus:* Opsonic index, 0.63.

*Bacillus X* (believed to be the *Bacillus foetidus ozena*): No opsonic index was made.

Autogenous vaccines were made from the above cultures, and the patient was systematically treated and observed ac-

cording to the methods laid down by Wright and others, with the result that he improved very much locally and generally.

I was now, after about four months of the above-named treatment, beginning to hope for a cure. However, he complained of his frontal pains more and more until I finally decided to operate by the external method as described. He has made a perfect recovery. He is free from pain, and there is no deformity so far as the bony structures are concerned, and the scars are practically invisible. The scar across the nose is so placed as to be hidden by the bow of the spectacles (Fig. 11).

Of the other cases two were unilateral and two bilateral. In one of the unilateral cases the incision is like that shown in Figure 8, and there is a good cosmetic as well as clinical result. After this, however, I should always use the incision outlined in Figure 1, because it is easier, and after opening up one may find reason for going into the second sinus. The remaining three cases are all satisfactory.

#### DISCUSSION.

DR. A. JANSEN, Berlin: Is the suppuration cured?

DR. JOSEPH C. BECK, Chicago: Not entirely. There is no suppuration, but a mild discharge of seromucus.

DR. A. JANSEN: This is a very ingenious method of procedure; the improvement resulted quickly, and there is complete restoration without any deformity. When there is any disease of the ethmoid bone, as is generally the case in chronic suppuration of the frontal sinus, the frontal sinus will probably be reinfectd from the ethmoid cells with a return of the pains, and perhaps with this makeup of the sinus may be combined a more radical operation on the ethmoid sinus, and then it is to be hoped that the results may be better. It seems to me not to be very difficult to combine with this method a larger opening and to remove all the ethmoid cells, if the condition in the ethmoid is not too marked. In this the frontal opening is small. In many cases the frontal sinuses are larger, and, therefore, it is to be feared that there is not enough drainage from the frontal cavity, and in some months, or some time later, there may be an increase of the trouble. I suppose that the method is good for some cases, but I believe that it is not adapted or acceptable as a general method for a large number of cases.

DR. J. HOLINGER, Chicago: In which pathologic condition does Dr. Beck employ this operation? Is it for the acute cases? The great number of these will get well under simple local treatment, especially syringing out the cavity itself. If it is for the chronic suppurations, which forms? Does he expect any lasting results when there are distinct pathologic changes of the mucous membrane—chronic thickening—often found, amounting to ten times its normal condition? Does he expect any distinct results in cases where there are polypoid degenerations of the membrane? There is a condition that I met in one case which would respond very promptly to this operation. It was a case of so-called caseous rhinitis; in both frontal sinuses were large masses of dried pus and epithelium, which could not be removed through the nasal route. At the same time the mucous membrane was not sufficiently changed to justify the radical Killian operation. The patient I speak of was operated on six years ago and had very little resulting deformity. The sinns was simply opened from the outside, and several years later closed by a plastic operation. That would be a distinct indication for this operation.

DR. W. W. CARTER, New York: It seems to me that this ingenious operation would be found to have a very limited field of usefulness, because, as Dr. Beck states, he only removes the inflammatory products. The membrane is not removed, and it seems difficult to know how a case could be sufficiently serious to require operation and yet be cured by the simple removal of the inflammatory products, leaving a diseased membrane *in situ*. It will find its field of usefulness in a certain number of cases; not very severe ones, however, and I think that intranasal irrigation and probably the removal of a small portion of the anterior tip of the middle turbinate would probably do about as well.

DR. B. R. SHURLY, Detroit: I call attention to the great



value of *x*-ray examination in cases of frontal sinus infection. For some years past it has been a routine procedure with me to examine every case of suspected sinus trouble by means of the *x*-ray. It is particularly valuable in the diagnosis and outlining of the frontal sinus. Dr. Beck's method of making a diagram of this *x*-ray picture is a contribution to this subject and should certainly be a part of our definite routine procedure. The question of the relief of frontal sinus trouble seems to me to be thoroughly and definitely outlined under our modern surgery. A number of these cases which apparently would require operation are readily relieved with irrigation. If that procedure does not readily afford relief, it seems to me we should follow next the intranasal route. When that is not successful we can then resort to our more simple or more radical surgical methods.

DR. J. A. STUCKY, Lexington, Ky.: It seems to me that the very unique operation described by Dr. Beck increases the danger of marked deformity. If we do get a secondary infection and an involvement of that osteoplastic flap and have to do a second operation, the deformity will be greater than if we had done the radical Killian operation. It seems to me in the class of cases referred to by Dr. Beck the intranasal operation relieving the blocked infundibulum might have given relief. We must not forget the fact that in the average case, frontal sinus infection does not begin in the sinus at first, but probably in the ethmoid cells and the middle meatus, and in many of these cases the removal of the anterior half or anterior one-third of the middle turbinate and curetting of the anterior ethmoidal cells will give the frontal sinus the drainage that is needed. In nineteen cases I have done the modified Killian operation in which I opened the sinuses, preserving the periosteum, enlarged the frontal duct, removed part of the turbinate and curetted the anterior ethmoid cells, placed a drainage tube in, and then closed the wound up externally, and after four or five years there is almost no deformity—a little dimple in some instances—and the relief has been marked.

DR. OTTO T. FREER, Chicago: I think that it would be difficult to cut out Dr. Beck's bone flap as accurately in the bone of the skull as it appears in his diagram. Dr. Beck would have been more convincing as to the feasibility of its creation if he had brought wet specimens showing the making of his flaps on the skull instead of on paper merely. My experience in making osteoplastic flaps of the anterior wall of the frontal sinus has been limited to cadaver operations only, but I have not found the neat excision of the bone covering the front wall of the sinus, so that it may be replaced as a cover, an easy matter. In smaller sinuses with thick frontal walls I could not make a flap at all and found that unequal thickness of the bone and the difficulty in making it break where I wanted it to in order to form the hinged attachment for the flap, were the chief hindrances to accurate surgical work in the procedure. For circumcising the bone flap I used the chisel and small dental circular saw driven by a dental engine, but there was much difficulty in telling when the bone was completely severed and the outlining was not accurate.

Dr. Beck's drawing shows that he used a chain-saw for making his bone flap. It is not clear to me how Dr. Beck introduces this implement underneath the bone, or how a chain-saw could be made to follow exactly the celluloid outline of the sinus. While it might do this if the frontal sinus bulged like a hemisphere, considering that it commonly lay in the level of the frontal bone or bulged but a little, it is not clear how a chain-saw could be made to cut out an irregular plate of bone of the form desired from such a flat surface. While it might be made to do so after a fashion if the intention is to cut away the front wall of both frontal sinuses, it seems incomprehensible how it could accurately follow the septum of the sinuses if only one is to be opened. The chain-saw is a jerky instrument which sticks at nearly every pull, is anything but an implement of precision, and would have a tendency to cut its way out of the sinus by bisecting the flap from underneath.

DR. A. JANSEN, Berlin: The best method for the radical cure is the Killian method, but I have performed in later years a modified operation. I conserve the anterior wall and

make the reposition and in the natural situation, but on the other side of the frontal sinus. In the majority of cases after healing there is very little deformity. In many cases there is nothing to be seen, and I can advise this operation especially because with the *x*-ray examination for each operation the depth of the frontal sinus and the thickness of the anterior wall are known. When the anterior wall is thick one can always be sure after the radical operation in forming this flap that the deformity is nearly or quite *nil*.

DR. E. FLETCHER INGALLS, Chicago: I commend Dr. Beck for placing emphasis on the fact that he did not scrape out the mucous membrane from the frontal sinus and thus leave a cavity that must be filled with scar tissue. Why should we want to scrape it out? Why should it be necessary to destroy a great deal of tissue when we know that at least 90 per cent. of the cases will get well if simply given free drainage? General surgeons have been doing some very radical work for many years, but the pendulum is swinging back to a better conservatism. We must speedily learn what general surgeons are beginning to understand, that conservative surgery is better than extremely radical surgery. Do not misunderstand me. Radical surgery is necessary sometimes, but in the accessory sinuses it is not necessary in more than 10 per cent. of the cases where it is commonly practiced.

DR. JOSEPH C. BECK, Chicago: In answer to Dr. Freer, the saw will not slip if made short enough. When it reaches the base it should be drawn upward. In the unilateral affection it is useless. A chisel must be used or a circular saw. I do not advise this as a radical operation, and it is indicated after all the intranasal methods have been used. This patient has had a double mastoid operation; he has had every sinus in his head except the frontal opened because of the condition. I was forced to do something to relieve the symptoms, and that is the reason I did this more conservative operation. In making the *x*-ray photographs I follow the method of Caldwell of New York and Hickey of Detroit.

## FACIO-HYPOGLOSSAL ANASTOMOSIS.\*

GEORGE F. COTT, M.D.

BUFFALO, N. Y.

Deformity caused by injury to the facial nerve is extremely unpleasant, not only to the patient, but also an ugly advertisement for the physician. How many cases of this accident have occurred will probably never be told.

Every operator has had one or more patients with facial paralysis, but how many such patients recover is a difficult question to solve. Ordinarily the injured nerve recovers within a year, but shows signs of beginning functioning much earlier. Of the nine or ten cases which occurred in my own practice the longest time without sign of function was four months. The length of time of cessation of function depends, I believe, on the extent of the injury or shock produced by trauma. If through infection, neuritis occurs, there may be partial permanent paralysis even though the nerve recovers from the injury.

The facial nerve in its canal courses in a practically never-varying channel (Figs. 1 and 2); the point at which it is usually injured is at its second bend toward the vertical direction. All about its canal we may find necrotic bone which needs attention. If not injured here the nerve may be exposed by necrosis of its canal and have become affected by disease from the bone or by instruments. Nevertheless one can never tell whether paralysis will follow an operation or not; therefore, great caution is necessary while doing a radical, or even the

\* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



Schwartz operation. In operating on the mastoid cells one can safely work downward toward the tip of the mastoid and clean out all the cells without fear of injuring the facial nerve, for it seldom varies from its vertical course more than a few degrees forward; I have, however, found it deviate backward rather than forward.

It is an important question when to decide that the nerve is beyond spontaneous recovery. The deciding period is when atrophy of the facial muscles begins, which may be within a few months of the time of injury or even within a year. Atrophy may be warded off, however, for an indefinite period by faradization or massage and spontaneous recovery has taken place, it is said, a whole year after injury. I have observed total paralysis for four months at which time the masseter showed signs of returning function. In this case anastomosis would have been called for if atrophy had taken place. It is, therefore, necessary to be alert, but

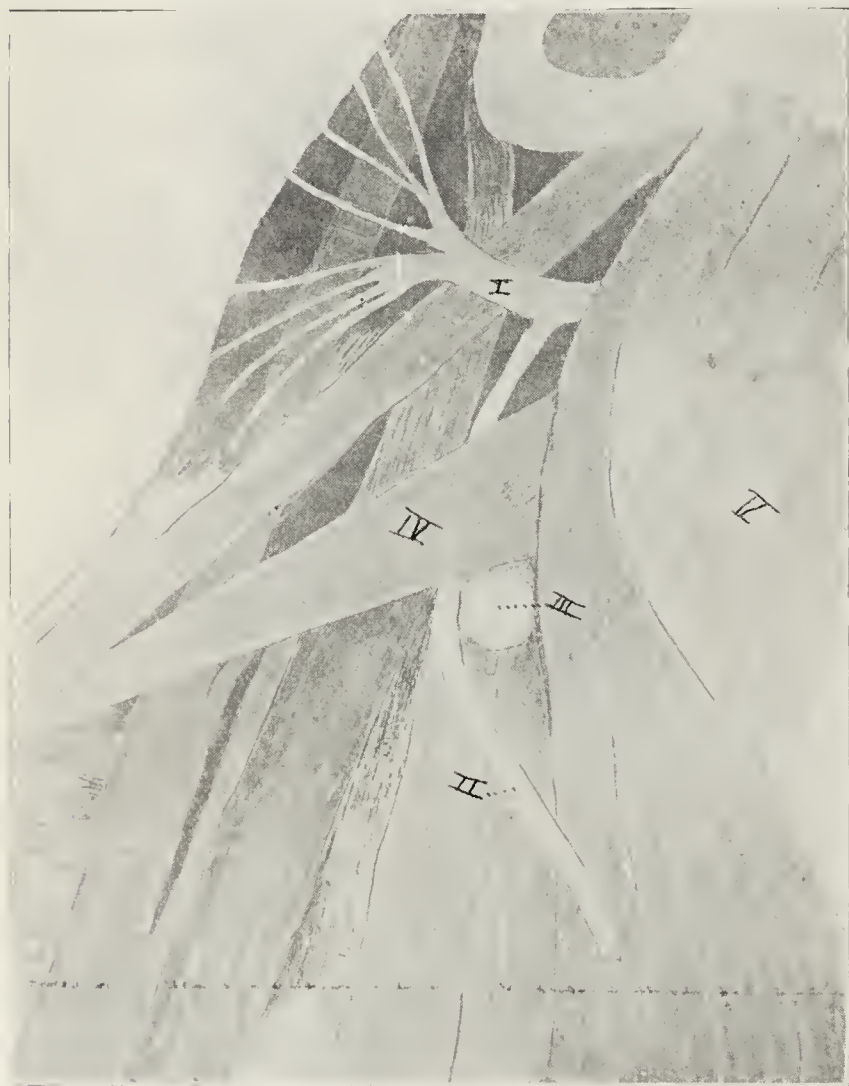


Fig. 1.—Facio-hypoglossal anastomosis; showing relations of nerves to muscles. I, facial nerve; II, spinal accessory nerve; III, transverse process of atlas; IV, posterior belly of digastric muscle; V, sternocleidomastoid muscle.

not to interfere when there is still a chance for spontaneous recovery. On the other hand, it is just as essential to operate in time to save muscular tone; for when the muscles have become too flabby, complete recovery is out of the question and, in fact, considerable lameness often is observed years after the operation. Perhaps complete restoration does not occur in any case; the defect, however, can hardly be noticed unless the muscles are brought into strenuous play. With partial anastomosis it is doubtful as to what the result will be, for regeneration is extremely slow in such cases. But no matter how little function is obtained, it is always an improvement on total paralysis; to operate, therefore, is commendable.

The particular nerves to be united is of some importance. Most anastomoses were done, with varying results, between the facial and spinal accessory, because of the close proximity of the two nerve trunks. Progress seems to have been slow and symmetrical twitching

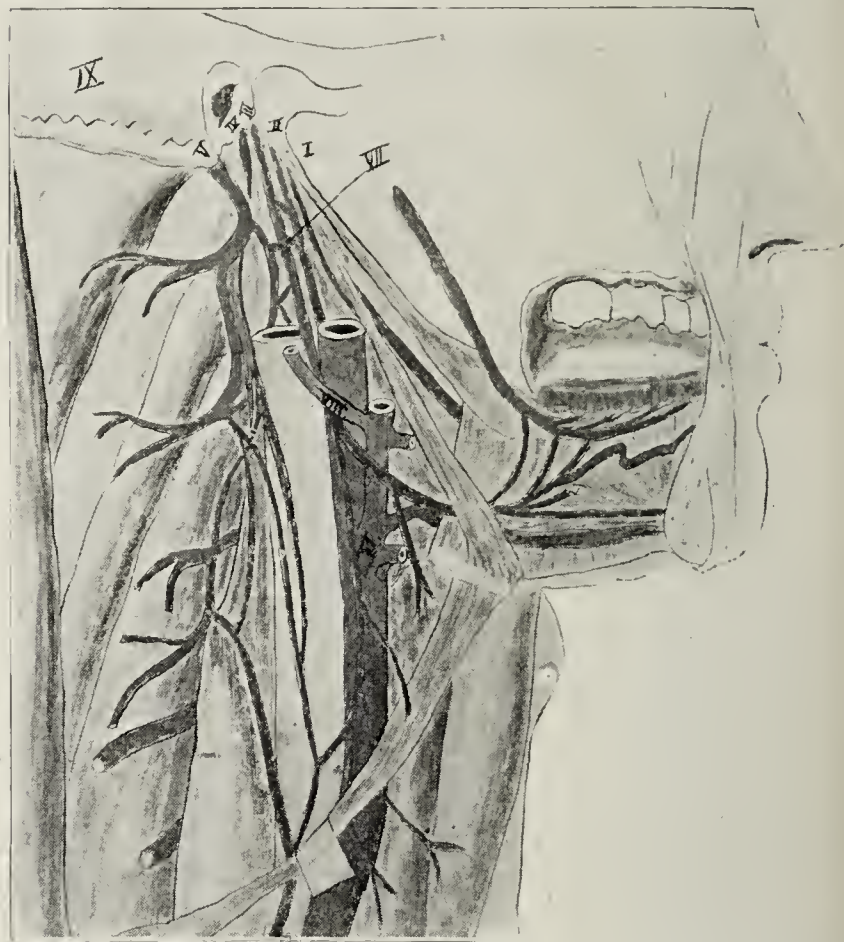


Fig. 2.—(After Gray) showing general relations of nerves and vessels. I, glossopharyngeal; II, pneumogastric; III, hypoglossal; IV, spinal accessory; V, cervical plexus; VI, descendens noni; VII, communicating branches between the hypoglossal and pneumogastric and between the latter and the brachial plexus; VIII, occipital artery; IX, sternocleidomastoid.

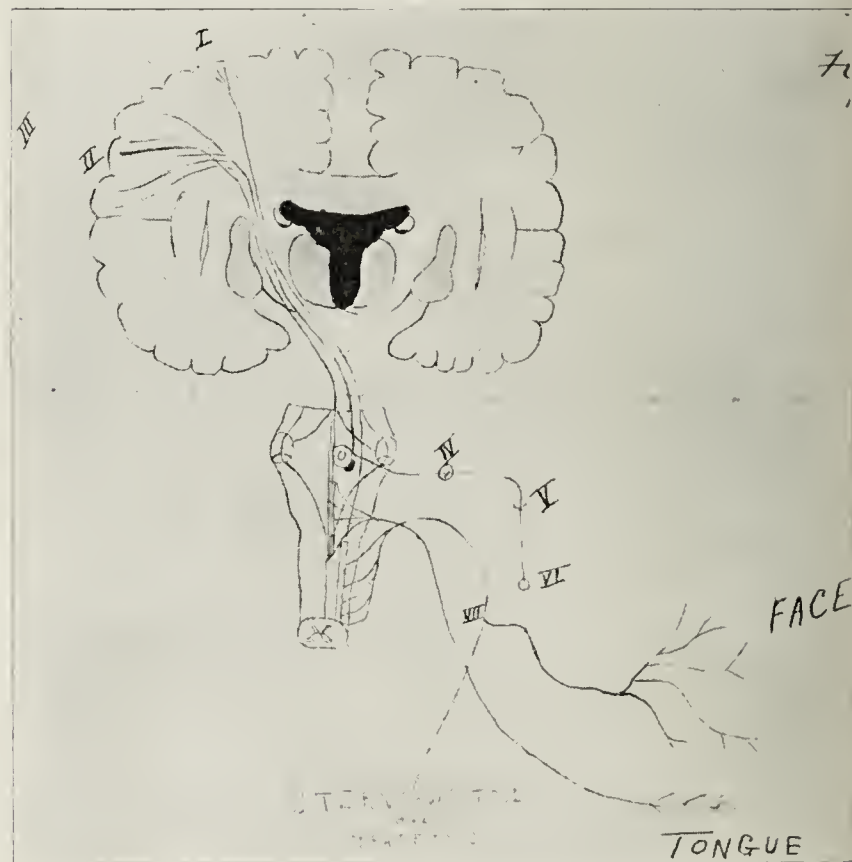


Fig. 3.—(After Murphy) showing cortical centers. I, shoulder center; II, tongue center; III, face center; IV, internal auditory meatus; V, seat of injury; VI, stylomastoid foramen; VII, facio-spinal accessory anastomosis.

of the shoulder with movements of the facial muscles is annoying. To obviate this, the hypoglossal was selected for the following reasons: The facial and hypoglossal centers in the cerebral cortex actually overlap



each other; some observers have even claimed that fibers have been traced from one to the other centers, thus acting, as it were, in conjunction, having something in common. Very close association is also found in the medullary centers (Fig. 3). The spinal accessory is quite removed from the cortical center of the facial and really has nothing in common with it. The muscles of the shoulder also are supplied by the branches of the cervical plexus and, therefore, do not remain entirely motionless when the spinal accessory is cut. The muscles of the tongue supplied by the hypoglossal always recover provided the nerve is not severed; the inconvenience of swallowing lasting a very few weeks. All things considered, the hypoglossal is the preferable nerve although the spinal accessory is easier to manipulate.

Having decided to operate, the field is prepared in the usual way. An incision is made along the anterior border of the mastoid process and the outer border of the

of an inch, then cut it off and turn the proximal end out of the way.

The transverse process of the atlas is then sought and can readily be felt. The spinal-accessory nerve runs over this transverse process. The deep fascia is incised anterior to the process. The jugular vein now comes into view and with a retractor is held forward; by trying to draw it backward, it is almost impossible to explore the underlying parts. Under the jugular vein are seen the pneumogastric and hypoglossal nerves. It is necessary to select the right one; some kind of stimulation will point to the right direction. If the pneumogastric is stimulated a sudden halt will be noticed in the heart's action while if it be the hypoglossal the muscles of the tongue, the sternothyroid, thyrohyoid, styloglossus, hyoglossus, geniohyoglossus and geniohyoid will be made to respond. If no battery is handy one may follow up the nerve to the forward bend where it gives off the descen-

dens noni. The nerve is then loosened from its bed without injuring its communicating branches with the pneumogastric. Under the deep fascia the sympathetic ganglia are felt; by cutting through



Fig. 4.—(After Taylor and Clark) laying bare the pneumogastric. I, facial nerve; II, styloid process; III, internal jugular vein; IV, hypoglossal nerve; V, pneumogastric nerve; VI, posterior belly of digastric; VII, transverse process of atlas; VIII, occipital artery.

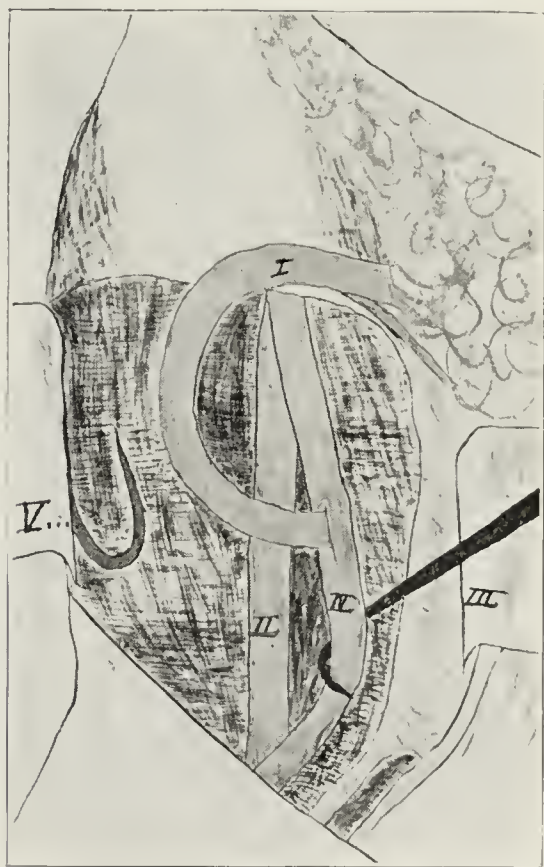
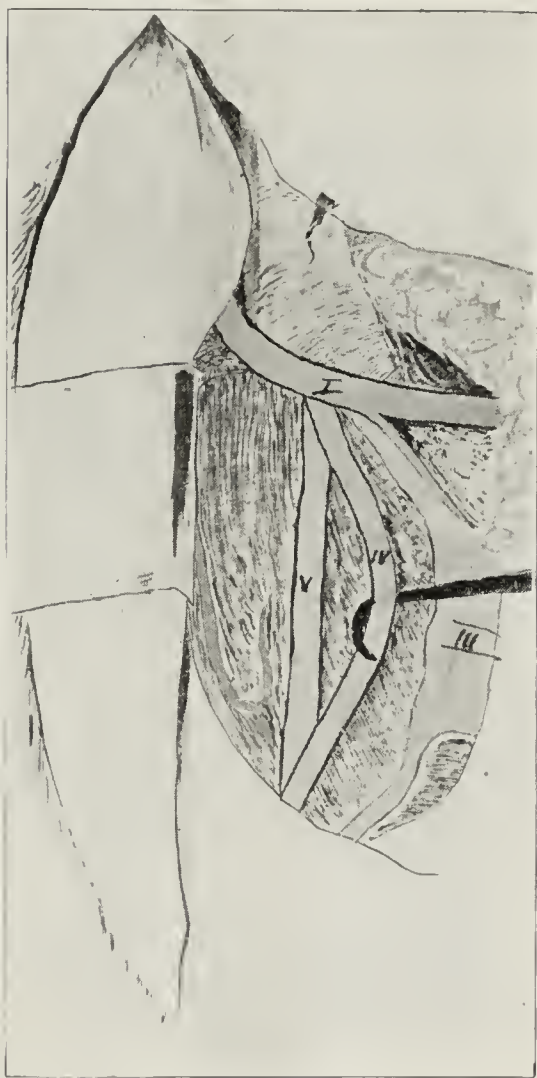


Fig. 5.—(After Taylor and Clark). Anastomosis I, facial nerve; II, pneumogastric nerve; III, internal jugular vein; IV, hypoglossal nerve; V, occipital artery.

sternocleidomastoid muscle on a level with the external auditory meatus through the skin, superficial fascia and platysma myoides. The parotid gland with its capsule, which is in the superficial layer of the deep fascia, is then drawn forward and the facial nerve sought for. After drawing the gland forward the posterior belly of the digastric muscle is exposed which may also be drawn forward, or, if too large, cut transversely (Fig. 4). By feeling for the styloid process the nerve can readily be felt as a round cord under the finger; it is then freed from its connective tissue and traced to its exit from the styloid foramen. It may now be severed by a thin knife or, to gain more of the nerve, it may be better to chisel through the mastoid process down to the facial canal and thus gain another eighth or quarter

this fascia the pharynx can easily be entered and the cervical ganglia also injured; careful dissection, therefore, is necessary.

Having selected the nerve it should gently be dissected out and raised on a blunt hook and incised through the sheath so as to admit the severed trunk of the facial (Fig. 5). A suture should now be passed through the sheath of the hypoglossal, making the needle emerge at the incision, and then passing it through the facial sheath and again through the severed sheath of the hypoglossal when it should be tied. This will insure positive coaptation without injury to the neurolemma, for it is important to retain the carrying power intact or the functioning result will be diminished according to the amount of neurons destroyed. If the facial nerve is too



short it may be necessary to split the hypoglossal nerve for from 13 mm. ( $1\frac{1}{2}$  in.) to 2 cm. ( $\frac{3}{4}$  in.) and bring the one end to meet that of the facial (Fig. 6). Of course the result here is much less favorable than when the entire nerve can be utilized. In one patient I have been able, so far, only to elicit movement of the lower lid after eight months.

When the suture is placed there must be no tension on either nerve. The hypoglossal is allowed to fall back into its bed; the point may be covered with Cargile membrane to prevent the connective tissue interfering with the new physiologic function or one may drop a little sterile vaselin over the joint which will effectively protect it. Paraffin also may be employed, but it is not so pliable as vaselin.

The result of this operation leaves much to be desired it is true, but even a change in expression from total paralysis is an improvement in the patient's appearance and for his mind. The operation should be performed in every case where paralysis is prolonged and bids fair to stay; atrophy of the muscles is a very safe indicator.

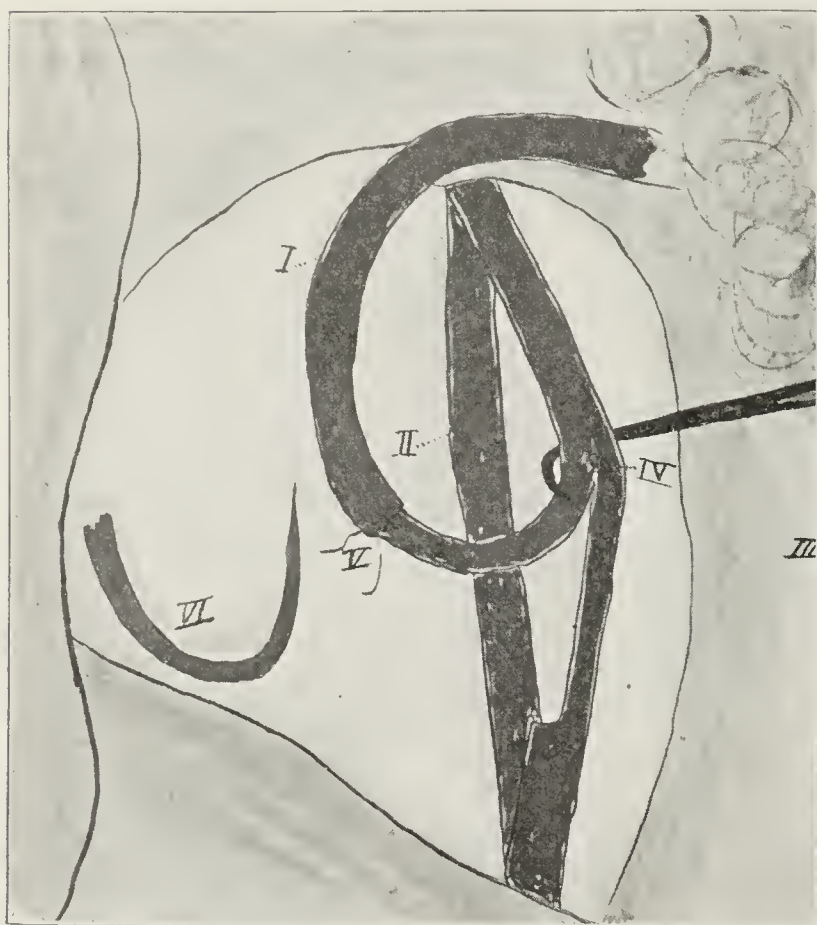


Fig. 6.—Anastomosis when facial nerve is too short and the hypoglossal has been split; I, facial nerve; II, pneumogastric nerve; III, internal jugular vein; IV, hypoglossal nerve split; V, facio-hypoglossal anastomosis; VI, occipital artery.

After operation many months may pass without any response, but finally after six, eight or ten months one will notice slight twitching of the angle of the mouth. When the orbicularis oris is supplied by both facial and hypoglossal nerves, as is claimed, or, when it is influenced by the hypoglossal through its cortical center, there is little significance to be attached to its movements, but when the zygomatic responds to the will it is a sure indication of returning motion, for the latter muscle is supplied solely by the facial nerve. Shortly after the operation it is quite necessary to stimulate the facial muscles by using massage or electricity or both, and continue until sufficient movement of the facial muscles is obtained, which may mean several years. One must not become discouraged too easily, for persistent effort often begets laudable results.

The suture material should be made of rat-tail tendon. Catgut may become absorbed too soon and silk may cause too much destruction of nerve tissue acting actually as a foreign body. Silkworm gut and kangaroo tendon are too unwieldy for work in this delicate structure. Long strands may be best obtained from the white rat, which yields thirty or forty strands of about five inches in length.

In 1905 a report by Kasper Pischel on the use of rat-tail tendon in surgery of the eye was seen by Dr. King, who thought that this material would be suitable as nerve suture and during that year experimented with it on cats. During the past year Dr. King and I have experimented further in the use of rat-tail tendon follow-

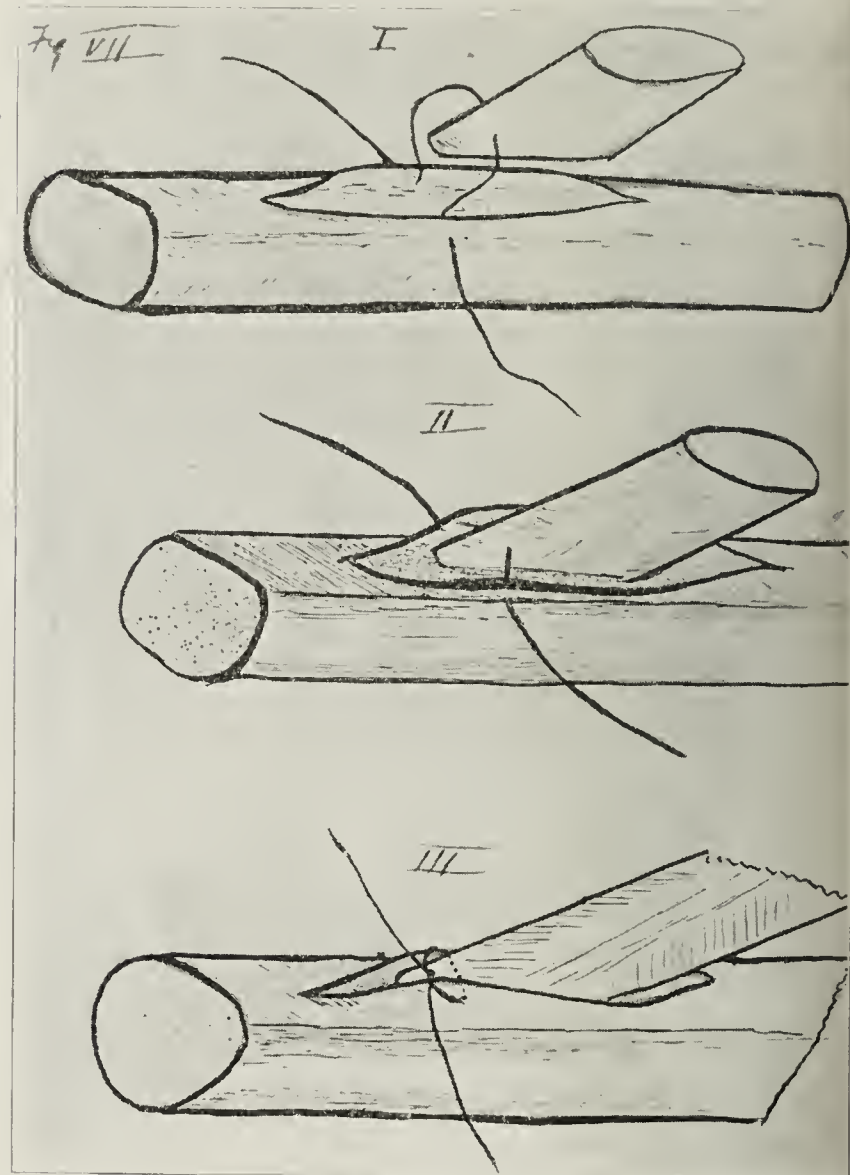


Fig. 7.—Illustrating King's method of lateral nerve anastomosis with use of rat-tail tendon.

ing the technic devised by Dr. King for implantation (Fig. 7). This method is equally suitable for a right-angle or oblique implantation and our experiments have demonstrated the practicability of both the suture material and the method.

For a classical dissertation on the subject of neurologic surgery I would refer to the articles by Dr. Murphy of Chicago and on special surgery of the facio-hypoglossal nerves to articles by Doctors Taylor and Clark of New York. I have culled liberally from both of these sources and have used them as a guide in my operation.

1248 Main Street.

#### DISCUSSION.

DR. JOSEPH C. BECK, Chicago: I have operated on seven living subjects and a number of cadavers by the method advocated by Dr. Cott. The operation on the living subject and the operation on the cadaver are absolutely different. Again, cases vary according to the condition about the mastoid proc-



ess and the neck, for, if there has previously been a pathologic condition, suppuration and drainage, there will be considerable scar formation, which will make dissection most difficult. Another point not dwelt on sufficiently was the use of the test of electricity, known as the reaction to degeneration, necessary in every case to determine whether an operation is to be performed or not. If one should obtain no contraction of the muscles of the face by the use of the galvanic current over the muscles there is no use in operating. The patient may have a facial paralysis, due to an involvement, or even complete severance of the nerve, and make a complete recovery without operation. If the severance is of any great extent, one-eighth or one-fourth of an inch, there will very likely not be any spontaneous recovery, because this gap will fill in with scar tissue, preventing union between the central and peripheral end. Complete recovery from this operation, that is, movement of the face, is the best result that one may hope to obtain. That result—voluntary movement of the afflicted side of the face—has been seen but rarely. I have one case in which this can be demonstrated. The patient can always move the side of the face in connection with the act of swallowing, but not independently. There are about two dozen cases on record which Dr. Cott has not cited, but most of these are reported in foreign literature and very poorly indexed.

Finding the facial nerve is one of the most difficult portions of the operation, especially when there are scars within the region of the mastoid process. I have not been able to locate it over the stylomastoid process, as he has, but I find it much easier to trace it to the capsule of the parotid gland and then follow it toward the stylomastoid process. Murphy has called attention to the danger of injuring the parotid gland. It has been my misfortune to have salivary fistulae in two cases as a result of such injury, and the closing of the same required a long time. This complication is to be avoided by carefully manipulating the structures, especially by not using sharp retractors. I have operated in seven cases, but was successful in only three. Sufficient time has not elapsed for one to say whether or not the other patients will recover. The shortest time of recovery on record is three months, which occurred in one of my cases. This, I believe, was due to the fact that I knew that the patient could not recover the function of her facial nerve without operation, and consequently I operated after the paralysis had existed only six months. Just as soon as one decides that spontaneous recovery is very likely not going to take place, one should operate without loss of time, and as a result the recovery will be that much more rapid.

There is not another structure in the human body that stands as much tension as nerve structure, and, if properly united, one need not fear bad results from a little tension. The tension that is thus put on the facial has no effect on it whatever.

DR. A. JANSEN, Berlin: I advise waiting a considerably longer time than has been indicated in paralysis following operation for pus, for I confidently expect that even as long as a year and a half after such a condition has existed spontaneous recovery will occur; and certainly one would rather have such a result than an unnatural anastomosis with any other nerve.

DR. GEORGE F. COTT, Buffalo: We all know how much tension a nerve will stand. This nerve will stand absolutely none. I want to emphasize it. That is the reason we use the rat-tail tendon for the suture; it tears out if there is any tension. The nerve must be perfectly flaccid. I do not want to imply that this is a simple operation, by any means. I think that every specialist in otology ought to know how to do it, and not send it to the surgeon. I have worked as long as three hours and ten minutes on my case. It is necessary to work extremely carefully. In regard to finding the facial nerve over the styloid process, when the nerve is large enough it can be felt, not especially when it is degenerated, but when it is there and is of any thickness at all.

Some positive results ought to be obtained within six months. I do not think that complete recovery ever results. It may take two years to obtain any marked improvement.

## A METHOD OF COMPLETE NEPHRO-URETERECTOMY FOR RENAL TUBERCULOSIS IN WOMEN.

E. ZEH HAWKES, M.D.

NEWARK, N. J.

The ureter is firmly attached at each end—to the kidney above, to the bladder below. Between these points it is loosely adherent to the peritoneum and embedded in lax areolar tissue. If separated from its bladder attachment the normal ureter can be pulled up out of the pelvis by traction on its kidney end. In ten consecutive experiments on cadavers—male and female—through a median abdominal incision I cut the ureter free from the bladder and then lifted out the kidney, its blood vessels being severed at the hilum. The ureter was pulled up with the kidney and removed unbroken.

Infections from without, especially pelvic cellulitis or carcinoma, may firmly fix the ureter, also perinephritic infections. Infections from within the ureter, however, seldom pass through the ureteral wall. The ureter may be ulcerated, strictured or dilated, yet will probably maintain its normal looseness of attachment. Howard Kelly, in his "Operative Gynecology," says: "A peri-ureteritis due to an inflammation extending from the interior of the ureter is rare; I have not yet encountered it in any case." We may, then, expect to find the normal looseness of attachment of the ureter in uncomplicated cases of tuberculosis of the kidney and ureter. The problem of complete nephro-ureterectomy for renal tuberculosis, therefore, is a question of separating the lower end of the ureter from the bladder. For this I have devised the following operation:

Put the patient in the knee-chest position and, after the Kelly technic, a searcher is introduced as far as it will go into the diseased ureter and left there. A Sims speculum, the largest possible, is now inserted into the vagina, the perineum retracted upward, and the light reflected into the vagina. Raising the searcher causes a ridge corresponding to the underlying searcher and cystoscope to appear in the vagina (Fig. 1). Along the summit of this ridge, beginning at the tip of the searcher, the vagina is split and the ureter exposed; beyond the tip of the searcher it is not safe to cut because of the uterine vessels.

By blunt dissection with a curved artery clamp the exposed portion of the ureter is isolated. The clamp is also thrust along the ureter into the cellular tissue of the broad ligament and the ureter loosened from its surroundings beyond the upper end of the incision. The bladder is now widely separated from the vagina on each side of the incision and forward of the end of the ureter, the purpose of which is to allow secure closing of the bladder, as will be explained later. Near its insertion into the bladder the ureter is now tightly tied with celoid thread so that when the bladder is opened urine can not come down the ureter and soil the wound.

Traction away from the bladder is made on the ureter, an infundibulum being thus produced, the base of which is the bladder wall (Fig. 2). The top of this infundibulum is cut across with scissors, thus freeing the end of the ureter and opening the bladder. The end of the ureter is sterilized by means of the actual cautery and pushed up into the vault of the vagina while the bladder is being closed. Avoiding its mucous membrane the bladder is closed with two rows, one on the other, of No. 2 plain catgut. A wide area of bladder wall is thus



infolded, giving a strong water-tight support during healing and a broad and strong cicatrix. If this be done, one need not fear leakage and need not use a self-retaining catheter. The vaginal mucous membrane, except at the upper end of the incision, is closed, either separately or included with the second row of bladder catgut.

Because of the position of the patient the opening and closing of the bladder has been accomplished without soiling of the wound by bladder contents. Of the left ureter a greater length can, for anatomic reasons, be freed. The operation is easier in the capacious vagina of parous women.

The position of the patient is now changed to that customary for oblique lumbar nephrectomy and the kidney freed from its vessels, the ureter, of course, not being cut. The lumbar incision need be no longer than would be necessary to isolate and remove the kidney alone. The hand is now passed postperitoneally along

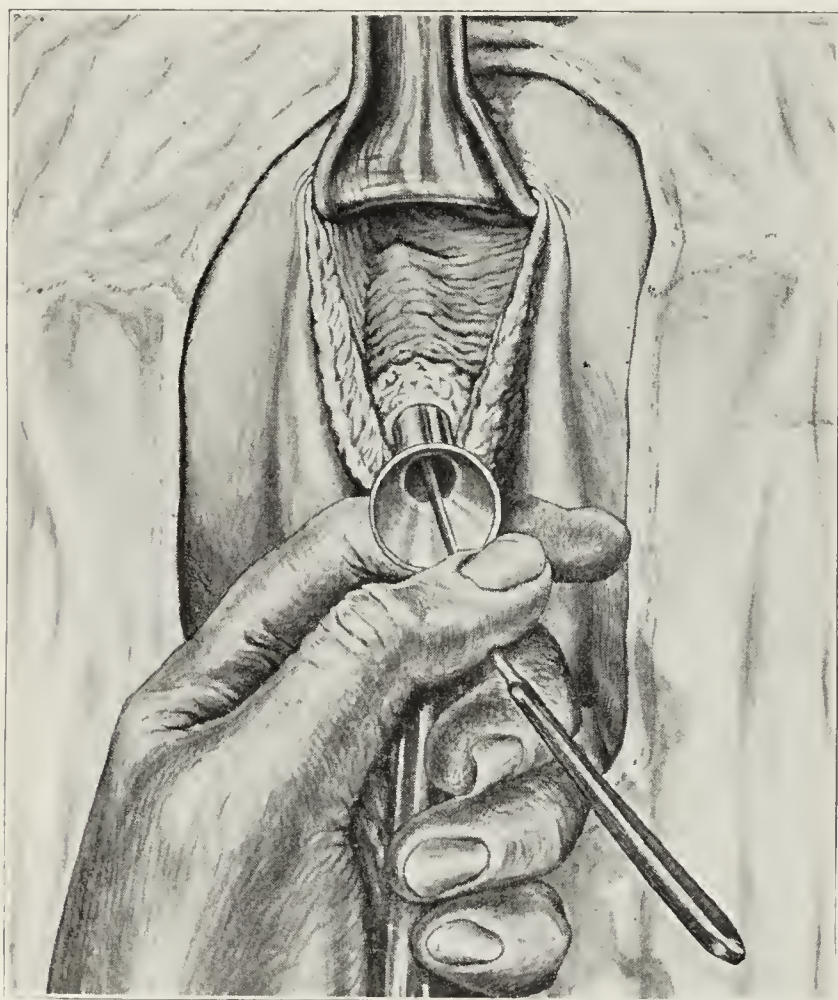


Fig. 1.—The patient is in the knee-chest position. The cystoscope has been introduced through the urethra into the bladder and the searcher through this into the ureter. A Sims speculum sharply retracts the perineum, disclosing the ridge caused by cystoscope and searcher. The incision is made along the summit of this ridge.

the ureter down into the pelvis, making what separation of the ureter may be necessary, and without difficulty the lower free end is grasped and brought up out of the lumbar wound. The wound is closed except for rubber tissue drainage.

**REPORT OF A CASE.—History.**—Mrs. C., aged 30, mother of two children, was always well until 1902 when she began to have pains in groins and in lower back. Consulted Dr. William M. Goodwin of Newark, N. J., February, 1903, who found the perineum lacerated and the uterus retroverted. In May 1903 complained of ilio-lumbar pain. Examination showed prolapse of left kidney. About this time the patient became pregnant. Repeated examinations during next few months showed neither albumin nor pus in the urine. In March, 1906, she had measles. During the next year the pain in left lumbar region increased and in the Spring of 1907 began to

radiate down in the direction of the ureter, and micturition became more frequent. About June 1 she had a chill and took to bed and had the additional symptom of painful micturition. During the next four weeks the temperature varied between normal and 102 F. Dr. Goodwin discovered, on vaginal examination, a tender ridge in the anterior vaginal wall, which he diagnosed as a thickened ureter. Examination of urine showed pus and tubercle bacilli. Patient entered my service at Newark City Hospital June 29, 1907.

**Examination.**—She was thin but not emaciated; pale, but in fair general condition. Heart, lungs, and abdomen negative. Left kidney palpable, freely movable, somewhat tender. By vagina, left ureter palpable, thickened and tender, uterus in retro-position. Mixed urine showed pus and tubercle bacilli. Urine from right kidney negative, from left kidney positive as to pus and tubercle bacilli.

**Operation.**—July 2, 1907, the ureter was isolated and separated from the bladder by the operation just described and the bladder closed. Through a lumbar incision the kidney and ureter were isolated and removed as above detailed. The kidney contained several tuberculous abscesses and the ureter was irregularly thickened and dilated. Patient made a good convalescence.

**Postoperative History.**—April 24, 1908, Dr. Goodwin stated

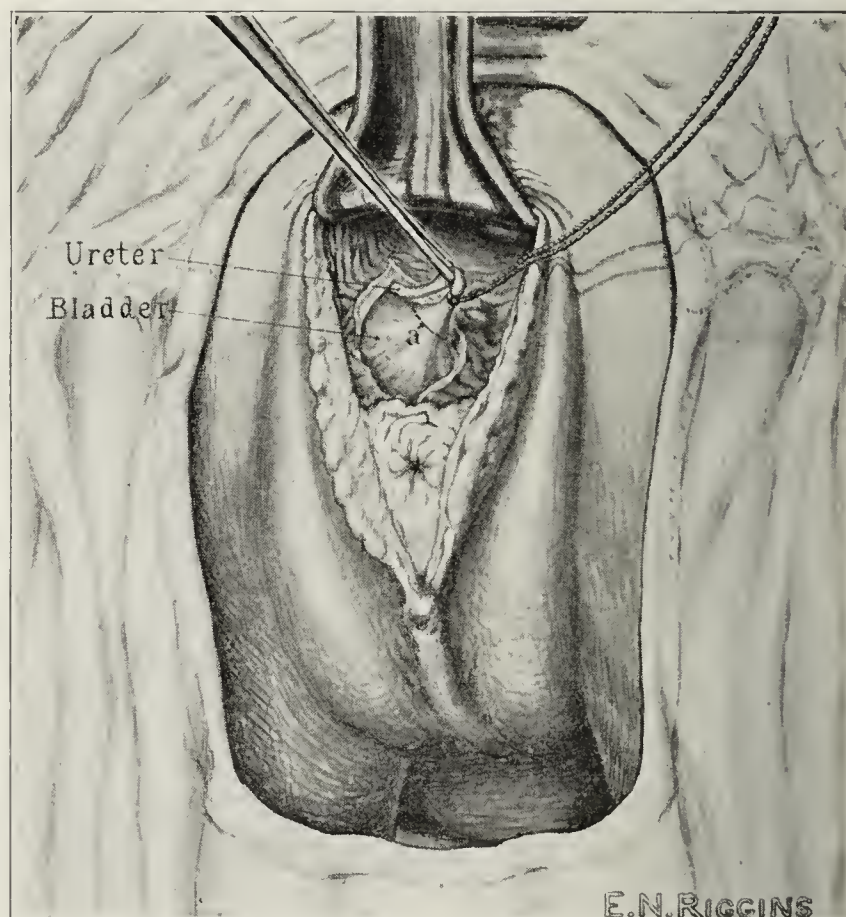


Fig. 2.—The vagina has been incised, the ureter freed and tied and the vagina widely separated from the bladder. Traction has been made on the ureter in the direction away from its attachment, an infundibulum of the bladder wall being thus produced. The ureter is to be cut free from the summit of this infundibulum, at dotted line a.

that for a considerable time after leaving the hospital the patient had an induration to the left of the cervix, which drew the cervix to the left and allowed the fundus to tilt to the right. She continued to have a pain in the back and right side, which pains were relieved by a pessary. She had gained twenty pounds and was in good general health. There were no urinary symptoms.

**Infantile Pseudo-leukemic Anemia.**—C. Cohen calls attention to the fact that each of the children presented evidences of rachitis in the six cases he describes in a communication in the *Rev. mens. d. Mal. de l'Enfance*, for July, 1907. In the cases on record, also, the presence of signs of rachitis is invariably mentioned. This suggests a possible connection between the rachitis and pseudo-leukemic anemia which further histologic study of the blood-forming organs may explain.



A SPECIAL DIAGNOSTIC PHENOMENON IN  
CEREBELLAR DISEASES.REPORT OF SIX CASES, FOUR OF WHICH CAME TO  
AUTOPSY.\*

ALFRED GORDON, M.D.

Associate in Nervous and Mental Diseases, Jefferson Medical College;  
Neurologist to the Douglass Memorial Hospital and Mount  
Sinai Hospital.  
PHILADELPHIA.

A localizing diagnosis of cerebellar diseases presents at times some difficulty. Among all the symptoms, palsies of cranial nerves are very important, but when they are absent the determination of the seat of the lesion becomes embarrassing. Certain attitudes of the body, and especially of the head, may be present in some cases, and when they do occur they are of considerable assistance in localizing the lesion.

The following six cases have been studied by me from the latter standpoint. The correct diagnosis of four cases was verified on postmortem examination. The other two presented the classical symptom-group of cerebellar tumors. The special phenomenon to which I wish to call special attention was present in each of the cases. The inference drawn as to the seat of the tumor was corroborated postmortem.

**CASE 1.—History.**—William R., aged 12; five years ago began to show symptoms of gastrointestinal disorder. There were occasional nausea, eructations, aversion for certain articles of food and also slight headache. For months he was considered a dyspeptic and treated accordingly. Then the headache gradually increased and vomiting made its appearance. Soon the child commenced to complain of dimness of vision. Dr. W. W. Keen was first consulted in 1904 and he referred the patient to me for an opinion. At that time I made the following observation: The headache was excruciating, vomiting was frequent, the gait distinctly cerebellar (titubation) with a tendency to walk towards the left. Blindness was partial. The knee-jerks were abolished on both sides. The Babinski sign was present on the right side and paradoxical reflex on both sides. The lower part of the face was deviated to the right. The pupils were unequal, the left the largest. Nystagmus was marked on lateral movements of the eyes especially when the latter were turned to the left. The eye-grounds showed choked disks on both sides, more on the left than on the right. Gradually the condition became worse. The patient's headache got unusually intense, he lost the power of locomotion, had frequent attacks of vomiting, became totally blind and the head was held inclined on the left side.

**Diagnosis.**—Cerebellar neoplasm, probably on the left side.

**Treatment.**—A course of treatment with iodids gradually improved the condition so that at the end of a few months he was free from headache and vomiting. The suffering disappeared, but the blindness remained. The little patient was able to walk, his sleep, appetite and digestion were excellent. The head remained inclined to the left side, the left facial palsy was unaltered.

**Subsequent History.**—After a period of two years the symptoms began to return. The following symptoms were then observed: Headache, but no vomiting, total blindness, deafness of the left ear, paralysis of the external recti, more in the left eye than in the right, nystagmus more on movement of the eye to the left than to the right, inability to walk or stand, but no paralysis of the limbs; the knee-jerk abolished, Babinski sign and paradoxical reflexes present on both sides. Sensations were normal. The striking symptom was the unavoidable necessity for the patient to hold his face turned to the right side, as whenever he or any one would turn it to the left, a most intense vertigo would appear. At this stage of the disease the position of the head changed, viz., from the

left to the right and remained in this position until the end, but the appearance of vertigo on turning the face to the left made the association very important. The change in the position of the head appeared six months before the patient died.

**Autopsy.**—The autopsy showed a soft tumor in the left cerebellar hemisphere pressing partly on the vermis and forward on the superior cerebellar peduncles. No permission was granted by the relatives to remove the specimen for microscopic examination.

**CASE 2.—History.**—S. M., girl, aged 9, with good family and personal histories, fell down a flight of thirteen steps, striking her head. She was not unconscious, but bled considerably from the nose, and vomited. Two days later she vomited again and kept on vomiting almost daily until death, viz., for a period of five months. During all that time she suffered from severe headache. Two weeks after the accident she began to hold her head forward and inclined to the right. An attempt to turn the head to the left produced an intense vertigo which was immediately relieved when the head was placed in the former position.

**Examination.**—On examination, I found the position of the head as described above, marked titubation with a slight tendency to fall towards the left, increased knee-jerks, and paradoxical reflex on the left. The eyes at that time, viz., two months after the accident were normal except for a dilatation of the pupils. In spite of the absence of characteristic eye-symptoms my diagnosis was that of a cerebellar tumor and probably on the left side. Subsequent events proved it to be correct. Two and a half months later the eye examination showed the pupils slightly responsive to light, but not to accommodation nor to convergence; right optic nerve hyperemia and retinal veins tortuous and overfilled; left optic neuritis low in grade, but acute, neighboring retina edematous. At the same time the headache increased and the vertigo on turning the head to the left was intense. The vomiting continued. The patient grew worse and one morning she was found dead. In this case the peculiar position of the head appeared immediately after the severe symptoms set in.

**Autopsy.**—The dura was tense over the entire brain especially on the left side posteriorly. There was an excess of fluid at the base. Projecting from the lower aspect of the left lobe of the cerebellum was a mass, grayish in color and very fragile, the outer portion being as soft as brain substance. The growth extended from slightly across the median line to the right outward at a distance of 6 cm. Antero-posteriorly it was 5 cm. in extent at the point of attachment. It attained an elevation of 4 cm. A portion of it was adherent to the dura and separated by its own weight from the underlying portion of the growth. The growth extended for some distance into the cerebellar lobe to which it was quite loosely attached. Microscopically the tumor proved to be tuberculous. (See illustration.)

**CASE 3.—History.**—S. L., man, aged, 35, presented the following symptoms: Vertigo, vomiting, occipital headache, and diplopia.

**Examination.**—There was marked titubation with a tendency to fall towards the right, nystagmus on lateral movements of the eyes, diminished knee-jerks, right hemi-asymmetry and inclination of the head toward the left. The fundi of the eyes showed choked disk on the right, congestion on the left. The headache was intense. An operation was declined by the patient and his relatives. He left the hospital. Two months later I saw him and found the condition unchanged. The position of the head toward the left was fixed and the slightest attempt to turn it to the right produced an intense vertigo. I have had no opportunity to see him since. In this case the special position of the head remained unchanged during the entire time of observation, viz., five months.

**CASE 4.—History.**—W. L., man, aged 49, was admitted to the Jefferson Hospital during summer 1906. He complained of severe frontal headache, vertigo and vomiting. Titubation, nystagmus, loss of knee-jerks with Babinski's sign and double optic neuritis were the other signs of presumable cerebellar disease. The head was drawn backward with a

\* Read before the American Neurological Association, May 20, 1908, in Philadelphia.



slight inclination towards the left, but when it was turned to the right, vertigo became intense. The patient died and no autopsy was allowed. The special attitude of the head remained unaltered during the six weeks of observation at the hospital and according to the patient's relatives, had been noticed from the beginning of the disease.

CASE 5.—*History*.—S. G., married woman, aged 29, was treated for two years for gastric trouble, accompanied by nausea and vomiting. She then sustained an accidental injury, falling off a car. Soon violent headache developed which was confined to the left side of the forehead. The vomiting became more frequent. I saw her six weeks after the injury and she presented in addition to the above symptoms distinct titubation with a tendency to fall toward the left, diminished reflexes, nystagmus on movements of the eyeballs to the left and partial blindness. The eye-grounds showed choked disk on the left and optic neuritis on the right. The head was inclined to the right and the least attempt to turn it to the opposite side caused an intense vertigo and nausea. The patient died and a soft tumor was found in the left cerebellar lobe directed downward and forward. The husband strongly objected to the removal of a smallest portion of the tumor. The nature of the neoplasm, therefore, could not be determined. According to the relatives' statement the head

it and turn it to the left, an intense vertigo would set in and she would fall.

*Examination*.—Examination of the eyes showed a choked disk in the left and slight optic neuritis in the right. Nystagmus was present on lateral movements of the eyes and equally on both sides. Blindness was rapidly increasing. The gait was somewhat ataxic, but presented no distinct titubation. Sensations were not impaired. Respiration and deglutition were normal. The headache remained severe and the intense vertigo on turning the head to the right remained until death. My diagnosis was a cerebellar tumor on the left. An operation was declined.

*Autopsy*.—At the autopsy a small soft mass was found on the upper surface of the left cerebellar hemisphere pressing on the vermis. No permission was given for removal of the specimen.

The four cases that came to autopsy are conclusive as to the relation of the attitude of the head to a cerebellar disease. In the two purely clinical cases the symptoms of the cerebellar tumors were so typical that there is no doubt as to the diagnosis. In all six of the cases the head assumed a certain persistent position.

In four cases it was turned to the side opposite the lesion during the entire course. In two of them it was inclined at first toward the seat of the lesion, but sometime before the patients died the head changed its position. All the six cases are a good illustration of the fact that in cerebellar diseases, generally speaking, a special attitude of the head is a pathognomonic sign. If I omit the purely clinical cases and confine myself exclusively to the four clinico-anatomic cases I am warranted to say that the field of surgical operations in cerebellar cases should be decided on from the position of the head when the latter is in an abnormal attitude.

Special emphasis is needed in regard to the increase of vertigo and headache when the inclined heads were turned forcibly toward the side of the lesion. This observation is quite novel. In the literature at my disposal I have been able to find one similar but not identical case published by Laruelle.<sup>1</sup> He localized the tumor in the left cerebellar hemisphere because the head was inclined toward the same side. The tumor, however, was found on the right. The record also shows that each attempt to turn the head to the opposite side provoked an unusual pain.

This case, taken in connection with mine (in which there was particularly vertigo instead of pain in similar manipulations of the head), appears to me quite significant from the standpoint of localization of cerebellar tumors. Its importance is obvious. The clinical observation of my six cases, or at least of the four that came to autopsy, is analogous to the experimental fact observed by Risien Russell. The latter showed that after ablation of one lobe of the cerebellum the trunk of the animal is curved with the concavity to the side of the cerebellar lesion, the side of the face is approximated to the shoulder on the same side.

This peculiar change of position of the head during the evolution of the cerebellar syndrome did not occur in each of my cases at the same period of the disease. In the first case it occurred six months before death; in the fifth only three weeks before the fatal issue. In the third, fourth and fifth cases the head assumed from the beginning the abnormal position with increase of vertigo and headache on turning it to the side of the lesion. In the second case the fixed position of the head on the side opposite to the lesion appeared after the severe symptoms set in.



Tuberculous tumor of the cerebellum. Brain of patient in Case 2, showing tumor mass on lower aspect of left lobe of cerebellum.

at first was inclined to the left, but three weeks before death turned to the right.

CASE 6.—*History*.—A. H., girl, aged 16, while playing two years previously, was struck on the head by a brick. The accident was followed by an attack of unconsciousness lasting fifteen minutes. Five hours later she had a severe vomiting spell. During the following three months she suffered from headache and insomnia. The symptoms gradually subsided and for a period of eighteen months she would only occasionally complain of headache in the occipital region. Three months before her death she fell, after which the headache became very severe and it was accompanied by vertigo. She complained of dimness of vision. The head soon assumed a certain position. It was drawn slightly backward and inclined to the left. As the headache kept on increasing in intensity the patient instinctively sought various positions in anxiety for relief. The head was then held by her, inclined to the right. She claimed that this was the only position which made the headache more tolerable and in which the vertigo was almost entirely absent. As soon as she would straighten

1. Rev. Neurolog., 1906, No. 4.



It is impossible to say why the change of position of the head occurs at various periods in various cases. It is also difficult to say why the change occurs at all and why when the head is turned toward the lesion the vertigo and headache become intolerable. At all events, it is useful in my opinion to retain this fact that in my cases at least the increase of vertigo caused by placing the head in an opposite position was an indication for the seat of the cerebellar tumor. The number of my cases is certainly too small to draw definite conclusions. Further observations are, of course, necessary. The phenomenon in question, however, is, I believe of a diagnostic value.

In the above-mentioned record of Laruelle the phenomenon escaped the author's notice, but, nevertheless, it was present and verified by the autopsy.

### PATHOLOGIC REPORT OF THE NERVOUS SYSTEM IN A CASE OF SPONDYLOSE RHIZOMELIQUE.\*

JOHN H. W. RHEIN, M.D.

Neurologist to the Howard Hospital, Physician to the Philadelphia Home for Incurables, etc.  
PHILADELPHIA.

A study of the nervous system in cases of spondylose rhizomelique and allied conditions has been made only in a few cases, those of von Bechterew,<sup>1</sup> Leri,<sup>2</sup> Reuter,<sup>3</sup> Fraenkel<sup>4</sup> and McCarthy,<sup>5</sup> to which reference will be made later.

In the case which forms the basis for this report the brain, spinal cord, peripheral nerves and muscles were examined, and pathologic changes, though slight, were distinctly observed. The addition of this case, therefore, to the meager literature of the subject, at least so far as a study of the nervous system is concerned, throws some light on a subject about which there exists much diversity of opinion.

*History.*—The patient, Z., was a man, aged 64, whose history, unfortunately, can not be given, except that he was admitted to the Philadelphia Home for Incurables, Sept. 29, 1903, and remained there, practically in the same condition as to the symptoms under discussion, until his death on June 18, 1907. I examined him a week before his death, although I had previously frequently observed him without careful examination.

*Examination.*—The entire spine, including the articulations with the cranium and pelvis, was ankylosed, presenting the characteristic appearance of so-called "poker-back." There was ankylosis in both hips, knees and shoulders, although this was not complete. The arms could be moved about 30 or 40 degrees at the shoulders. The elbows, hands, ankles and toes were not involved. There was general emaciation at the time of the examination, so that the presence of local atrophies could not be clearly determined. There was pain in both sciatic regions, extending from the knees to the hips, but no pain was complained of elsewhere about the body. The spinal column stood out prominently, and the muscles of the back were probably wasted. Tests for pain, touch and localization

gave negative results. Two months before death he developed tuberculosis, which became general, and from which he finally died.

*Autopsy.*—At the autopsy, when an effort was made to remove the cord, it was discovered that the entire spinal column presented the appearance of one bony mass. It was so hard that it was difficult to saw through into the spinal canal. On removing the spines and arches of the vertebrae a considerable amount of caseous material was found on the outer surface of the dura, extending from the lower thoracic, to the lower cervical region. There was no evidence of tuberculous bone disease, or tuberculous abscess, and macroscopically there were no tubercles.

The dura was adherent to the skull, and a few tubercles were found over the convexity of the brain. Both lungs were infiltrated by tubercles and were the seat of many cavities. The right kidney was also implicated.

The brain and spinal cord, the plantar nerves, sections of the sciatic and smaller sciatic nerves, and some of the muscles from the plantar surface of the foot were preserved for examination. The spinal cord was hardened in Müller's fluid, and stained by the Weigert method, and in hemalum, acid fuchsin, and thionin.

The white matter of the cord itself showed no abnormality. There was, however, a slight degeneration present in



Microscopic findings in a case of spondylose rhizomelique, showing degenerated spinal root at A (Weigert method).

several of the roots. In the lumbar region the right anterior, and left posterior roots were slightly degenerated. In the lower thoracic region there was slight degeneration of the anterior roots. Elsewhere the roots stained normally.

The cells of the spinal cord in the spinal and cervical regions showed the following changes: Some were rounded, had lost their prolongations, and contained an excessive amount of yellow pigment. Clumping of the chromatic substance was present in some, and in a number of them the nucleus was dislocated, and the yellow pigment excessive.

The small sciatic nerve was slightly degenerated in cross sections. An abundance of fatty tissue was seen, and there was increase in the connective tissue. The plantar nerves were also degenerated. The large sciatic nerve was normal.

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

\* From the Howard Hospital, and the Department of Neurology and Laboratory of Neuropathology of the University of Pennsylvania.

1. Deutsch. Ztschr. f. Nervenhe., xv, 45; Neurol. Centralbl., 1892, p. 426; Deutsch. Ztschr. f. Nervenhe., xv, 37; Ibid., 1897, No. 11, p. 327.

2. Rev. neurol. 1905, p. 1085, and Revue de méd., 1899, No. 19, p. 597.

3. Ztschr. f. Heilk., 1902, No. 23, p. 83.

4. Fortschr. a. d. Geb. d. Röntgenstrahlen, 1903-4, p. 62.

5. New York Med. Jour., 1905, June.



In the left paracentral region there was marked perivascular distention, and slight infiltration of the pia. The same condition was found on the right side, where there was also some change in the pyramidal cells. Some of the cells were swollen, and the nuclei eccentrically placed.

A study of the muscle tissue from the plantar surface showed an increase in the number of the intramuscular connective tissue cells; irregularity in the size of the muscle fibers; loss of the transverse striations in some of the fibers and lumpiness of the muscle substance of individual fibers. There was no vacuolization. The blood vessels showed no endarterial thickening, or sclerosis.

A portion of the spinous process of one of the vertebræ was studied microscopically. The bone trabecula was compact but not unduly so. There was no evidence of any abnormal condition whatever. In fact the specimen presented the normal appearance of bone.

*Summary.*—A man of 64 presented the characteristic clinical manifestations of spondylose rhizomelique, i. e., rigidity of the spine, and partial ankylosis of the shoulder, hip, and knee joints. Pathologically there was slight degeneration of some of the anterior and posterior spinal roots, slight peripheral neuritis, and muscle taken from the plantar portion of the foot was degenerated.

While Marie and Leri<sup>6</sup> still assume that spondylose rhizomelique is a disease entity differing from the other forms of ankylosing disease of the spinal column—and especially separated from von Bechterew's type—there are many who maintain that these two varieties are but manifestations of one and the same disease.

The differences between the von Bechterew and the Strümpell-Marie types may be stated, according to Zesas,<sup>7</sup> as follows:

In von Bechterew's type (1) the spinal column is rigid; (2) kyphosis is always observed; (3) irritation symptoms are always present; (4) the joints of the extremities are intact; (5) etiologically there is a history of inheritance, trauma and lues.

In the Strümpell-Marie type (1) the entire spinal column is rigid; (2) kyphosis is not always present; (3) symptoms of irritation of the roots are usually absent; (4) there is an ossifying process in the joints of the extremities; (5) etiologically a history of rheumatism and infectious diseases is obtained.

In von Bechterew's<sup>1</sup> original case, with autopsy, there was no primary lesion of the vertebræ, and the rigidity of the spinal column was attributed to a secondary parietic condition of the muscles, the result of a compression of the nerve roots from a pachymeningitis. von Bechterew also believed that his type of spinal rigidity differed from that described by Strümpell,<sup>8</sup> under the name of chronic ankylosing spondylitis, in whose cases the head, spinal column and hips were firmly united and completely stiffened. Cases similar to those described by Strümpell have been reported by Marie and Anstie.<sup>9</sup> While in Strümpell's cases there were no root symptoms, these were pronounced in von Bechterew's cases, and in the former there was involvement of the great joints, which were intact in von Bechterew's cases.

Reuter,<sup>3</sup> while admitting that, clinically, there was a difference between these two types, claimed that this difference was not proved pathologically. He believes that such cases are due to a bony process to which he applies the name "ascending ankylosis of the spinal column, with bow-shaped kyphosis."

Siben,<sup>10</sup> Fraenkel,<sup>4</sup> Elliott,<sup>11</sup> and Rumpel<sup>12</sup> did not believe that any difference could be made between these two types, while Schlesinger<sup>13</sup> not only did not recognize any difference between these two types, but did not differentiate between arthritis deformans of the spinal column and other cases of rigidity of the spinal vertebræ. Nor, in Oppenheim's<sup>14</sup> opinion, was it decided that a difference existed between the various types of spinal ankylosis, either clinically or anatomically.

Zesas,<sup>7</sup> after reviewing the subject very carefully, concluded that the observations, so far, do not permit the view that, etiologically or symptomatically, and much less pathologically, these two forms were independent affections, and, according to Niedner,<sup>15</sup> the pathologico-anatomic substratum of the von Bechterew type was similar to that of the Marie-Strümpell type, and consisted of an ossification process of the cartilages and ligaments.

On the other hand, Glaser<sup>16</sup> reported a case in which the findings coincided with those of Marie's case, and more recently Marie and Leri<sup>17</sup> have maintained that there is a distinct type which they call "spondylose rhizomelique."

The autopsies of ankylosing disease of the spinal column which have been reported can be more or less divided into (1) those in which the small joints of the vertebræ are mainly affected, leaving the cartilages intact, or only slightly involved; (2) those in which the cartilages are especially altered; (3) those in which the process involves equally the small joints and the cartilages.

In the first category belong the cases of Marsh,<sup>18</sup> Glaser,<sup>16</sup> Milian,<sup>19</sup> Fagge,<sup>20</sup> Simmonds,<sup>21</sup> and Fraenkel.<sup>4</sup> In Marsh's case there was ossification of the ligaments and complete ankylosis of the several joints. There was no atrophy of the body of the vertebræ, nor any change in the intervertebral discs.

Glaser cited a case of chronic ankylosing inflammation of the spinal column, in which there was ankylosis of the articulating process, and between the ribs and the vertebræ. There was no involvement of the intervertebral discs, or the body of the vertebræ. He cites the case of Howard Marsh, in which the findings were similar.

In Hilton Fagge's autopsy (cited by Leri) the intervertebral cartilages were of normal appearance; the arches of the spinal apophyses were united by bone, and there was an osseous process, with complete destruction of the articulations. In Milian's case the vertebral column was immovable and bow-shaped, and the hips and shoulders were involved. There was an osseous disease of the articulations of the ribs and the bodies of the vertebræ. Intervertebral cartilages were normal.

Simmonds reported 2 cases in which there was intense ossification of the ligaments and an ankylosis of the joints of the vertebræ. Fraenkel reported 4 autopsies of chronic ankylosing rigidity of the vertebræ, in which the intervertebral cartilages were only slightly involved. The vertebræ were connected by broad bony

6. *Nouv. iconog. de la Salpêtrière*, 1906, 19, p. 32.

7. *Deutsch. Ztschr. f. Chir.*, 1904, No. 74, p. 467.

8. *Lehrbuch der Speciellen Pathologie*, II, 534; and *Ztschr. f. Nervenhe.*, xi, 338.

9. *Presse méd.*, 1898; and Marie: *Revue de méd.*, 1898, p. 285.

10. *Ztschr. f. klin. Med.*, 1903, No. 49, p. 241.

11. *Am. Jour. Orthop. Surg.*, 1905-6, No. 3, p. 303.

12. *Deutsch. med. Wchnschr.*, 1905, p. 1130.

13. *Mitt. a. d. Grenzgeb. d. med. u. Chir.*, 1900, vi, 247.

14. *Lehrbuch der Nervenkrankheiten*, 1905, I, 309.

15. *Charité-Ann.*, 1903, No. 28, p. 45.

16. *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1901, No. 8, p. 282.

17. *Gaz. hebdom. de méd.*, 1899, p. 209.

18. *Brit. Med. Jour.*, 1895, II.

19. *Gaz. hebdom. de méd.*, 1899, p. 137.

20. In Ehrhardt.

21. *Fortschr. a. d. Geb. d. Röntgenstrahlen*, 1905, v, 51.



bands, and the costo-vertebral articulations were implicated. The articulating processes were fused together. The process seems to have involved principally the articulating processes, including the spinous process. Fraenkel looked on the process as being a primary affection of the joints, that is, the articulating processes, the remaining vertebrae being intact. In the later stages of the disease there is a bony formation, which in some cases is confined to the sides of the vertebra or it may extend around the whole body of the vertebra. Sometimes the arches of a single vertebra or many vertebrae, and also the spinous processes, are involved. He stated that the process is an ossification of the articulations of the joints, and the bony formations are probably secondary, the vertebrae becoming involved by mechanical action.

The cases in the second category are those of von Bechterew,<sup>1</sup> Ascoli,<sup>22</sup> Reuter,<sup>3</sup> Schlesinger,<sup>13</sup> Ehrhardt<sup>23</sup> and Elliott.<sup>11</sup> In von Bechterew's case, in which there was a study of the nervous system as well as of the bones, he believed that the disappearance of the cartilages was due secondarily to the fact that there was a compression of the cartilages, between the neighboring vertebrae, which was caused by the kyphosis. This kyphosis originally depended, according to von Bechterew, on the paralysis of the musculature of the thoracic spine. The compression of the cartilages, he states, naturally causes their gradual disappearance, and finally the surfaces of the vertebrae resting on each other fuse together.

The case of Ascoli<sup>22</sup> was cited by Leri. The articular cartilages were destroyed, and the articular head was the seat of multiple erosions and atrophy. The lesion was the same in the coxo-femoral, and in the knee, and vertebral articulations. There was no ankylosis.

Reuter reported a case from the pathologic museum, in which the articulating processes were united by bony substances, the heads of the ribs with the bodies of the vertebrae, and in which the intervertebral cartilages were for the most part destroyed, being replaced by a spongy, bony substance. The bodies of the vertebrae were markedly rarefied. The ligaments were also ossified. In a second case the entire vertebral column was fused together by means of bony masses, so that the borders of the intervertebral discs could not be seen. A further study revealed the fact that the intervertebral cartilages appeared to be ossified in part, and the new bone formation resembled the substance of the neighboring vertebral body.

In both of these cases Reuter believed that there was a chronic process causing a kyphosis of the vertebral column, bony ankylosis of the joints of the vertebrae and ribs, and the anterior part of the intervertebral cartilages. He assumed that it was a chronic inflammatory process of the joints of the vertebrae similar to that described by Ziegler as arthritis ankylo-poietica, a view held also by Elliott and Siben. In Reuter's cases there was a process in the cartilages analogous to normal bone formation. He acknowledges that this theory has been advanced by Leri, who found ossification of the ligaments, hypertrophy and destruction of the joints, and looked on the process as a healing one. Reuter's preparations did not support such a view, however.

In the eight preparations of spondylitis deformans from the Vienna Museum, Schlesinger distinguished

two forms. In one the process was confined to the intervertebral cartilages, which were destroyed, the edges of the neighboring vertebrae being united by supra-cartilaginous exostoses. The bodies of the vertebrae were atrophied, and the small joints and ligaments were involved or remained relatively free.

In the second group, the more frequent form, the transverse process and ligamentous apparatus were chiefly affected. The ligaments were calcified, and there was proliferation of the synovial membrane leading to an ankylosis of the small joints. Siben thinks it doubtful that both of these forms could be considered as types of the same disease.

Ehrhardt examined the skeleton of a case of chronic ankylosing inflammation of the vertebrae in which not only the vertebrae were ankylosed, but the sacroiliac and hip joints also. The intervertebral cartilages had disappeared, a spongy, bony substance having replaced them, and this continued into the substance of the neighboring vertebrae. There were some osteophytes present in the lower thoracic region, although nowhere united, as is seen in progressive cases of spondylitis deformans. Neither did these exostoses project into the vertebral canal. The vertebral joints were ankylosed throughout the entire spine, while the spinous processes in the cervical region were exempt. The intervertebral foramina were not narrowed, except at the tenth thoracic vertebra on the left side, and this by an irregular exostosis. This condition, he claims, explains the nervous symptoms better than the old conception of von Bechterew, that they were due to thickening of the meninges.

The ligaments between the ribs and the sternum were unchanged. The process was, according to Ehrhardt, a syndesmogenous synostosis of the entire vertebral joints, with ossification of the long ligaments, the ligamentum flava, and partial ossification of the intervertebral discs.

In Elliott's case the bodies of the vertebrae were normal, while the discs were atrophied and absent anteriorly. There were no bony bridges or exostoses, but there was ossification of the superior spinous ligaments, especially in the lumbar region. The spinous processes were, in places, ankylosed at their distal ends, and there was an ossification of the ligamentum flava. There was some evidence of exostosis in the lumbar region, where the articulating processes were completely ankylosed.

In the third category belong the cases of Forestier,<sup>24</sup> Leri,<sup>2</sup> Siben,<sup>10</sup> Marie and Leri.<sup>17</sup> Forestier examined 66 skeletons in which 17 presented the symptoms of arthritis deformans of the spine. Osteophytes were seen on the anterior and lateral surfaces of the bodies of the vertebrae. The vertebrae were involved, and the articulating processes were deformed. The intervertebral foramina were diminished in caliber. The exostoses of the bodies of the vertebrae were very large and increased in size downward.

Siben cited a case with autopsy, in which the shoulder and hip joints, as well as the vertebrae, were involved. The small joints of the vertebrae were ankylosed, and the intervertebral cartilages were also the seat of a secondary change. There was evidence of an inflammatory process, and Siben proposed the name "chronic ankylosing inflammation of the vertebrae" after Strümpell.

22. In Leri.

23. Mitt. a. d. Grenzgeb., d. Med. u. Chir., 1904-5, p. 226.

24. Arch. gén. de méd., 1901, No. 2, p. 158.



In Leri's case the principal lesion consisted of an ossification of the ligaments. There was also a hypertrophy of the articulating processes, which fused together after all traces of the cartilages had disappeared. The lesion was a double one, consisting first of an ossification of the ligaments, and second, hypertrophy and fusion of the articulating extremities.

In a more recent case, reported by Marie and Leri, the findings confirmed the original theories advanced by Leri, i. e., that spondylose rhizomelique consists chiefly of an ossification of the ligaments and intervertebral cartilages, which is accompanied, or preceded by an osseous rarification.

In the cases of Chiari, cited by Reuter, the disease appeared to be principally confined to the ligamentous apparatus in the cervical region and was supposed to be due to polyarthritis rheumatica.

The case of Pioget<sup>25</sup> was evidently one of arthritis deformans, involving the spinal cord, to which may be added the case of McCarthy.

This classification, though more or less artificial, shows that there are some cases in which the process attacks by preference certain parts of the vertebræ. For example, in some the small joints are chiefly, if not exclusively, involved; in others the intervertebral discs suffer the greatest change, while in still others there is involvement of all parts of the vertebræ.

The impression which I have about these cases is that they are all more or less allied so far as their pathologic basis is concerned, though differing perhaps etiologically; and I feel inclined to follow the teaching of those who look on the Marie and von Bechterew types as expressions of one and the same process.

Examination of the nervous system in these cases is quite rare. Von Bechterew claimed a nervous origin for his case. He described a chronic leptomeningitis of the cervical region which compressed the spinal roots, and as a result of which the motor roots were less intensely degenerated than the sensory roots. There was marked degeneration of the white matter in the cervical and upper dorsal regions, especially in the columns of Goll and Burdach. The gray matter was not involved. The change in the roots was found especially in the upper thoracic and lower cervical regions. It was not present in the upper cervical, and was less in the lower thoracic and lumbar regions. There was diffuse degeneration of the anterior pyramidal tracts in the upper thoracic and lower cervical cord. The cells of the spinal ganglion showed degeneration and simple atrophy. The peripheral nerves were slightly degenerated, which von Bechterew believed was due to the degenerated roots. There was some fatty change of the atrophied muscles and disappearance of the striations.

In Leri's case the spinal cord was absolutely normal, except for a slight diminution in the number of the cells of the anterior horns. Leri did not believe that in all cases there is an organic lesion of the nervous system. In one of Reuter's cases the spinal cord was examined, but showed no pathologic change.

In Chiari's case (quoted by Reuter) there was a pachymeningitis in the cervical region. The medulla oblongata showed a certain amount of ascending degeneration. In one of Fraenkel's cases the spinal cord and spinal ganglia were examined, but they appeared to be normal. The muscular bundles were atrophied, and the

muscle parenchyma was replaced by fatty tissue, and there was hypertrophy of the perimysium.

The cases of von Bechterew, Chiari and my own were the only instances showing changes in the nervous system, though in Leri's case the cells of the anterior horns were diminished in number. There is, therefore, very little evidence pointing to the nervous origin of these cases. The lesion in my case was slight and could, I believe, be due to pressure from the rigid bony canal, possibly by reason of the narrowed foramen, while the peripheral changes could result from the degeneration of the roots thus occasioned.

The lesions of the nervous system in the cases of Chiari and my own were so slight as hardly to suggest that the bone symptoms were an expression of this lesion. On the contrary, it would appear that the lesions of the nervous system were caused by the bone disease. The nervous symptoms and lesions are not prominent in these cases, and more likely of a secondary nature. A nervous disturbance which would call forth such marked and localized bone changes would be expressed in other marked nervous symptoms. It is improbable that the trophic bony changes would stand out so prominently to the exclusion of other symptoms. I believe, with Leri, that certainly not all these cases have a nervous origin.

The relationship of arthritis deformans to these cases is, I believe, remote. The difference is striking, if the results of the autopsy of the case reported by Pioget<sup>25</sup> are contrasted with the pathologic changes which have been described above. In Pioget's case of multiple articular deformity and general ankylosis the characteristic lesions of chronic arthritis deformans were described. The articulating processes had completely disappeared in places and the surfaces were connected by osteophytes and lamellæ. A similar lesion was found in the articulations of the vertebræ. While the metacarpal and scapulohumeral articulations were not ankylosed, there were changes in the cartilages, which were eroded. The recent conclusions of Rimann<sup>26</sup> are interesting in this connection. As a result of a pathologic study of arthritis deformans he claimed that:

1. Macroscopically there was hypertrophy and atrophic change, the former being characterized by proliferative changes in the joints and synovia, and the latter by complete failure of these. Regressive changes in the bones and cartilages were common to both.

2. This change is frequently associated with fibrous metaplasia of the medullary tissues of the bones and cartilages.

3. Metaplastic changes in the atrophic form are more frequent and more extensive and result from a local reaction of the pathologic irritant: the expressions of a general disease of the organism.

4. There are transitional changes between arthritis deformans hypertrophica and atrophica.

The changes in the synovial membranes and the production of osteophytes or exostoses, do not appear in the description of the anatomic specimens of the cases under discussion. Ehrhardt calls attention to the fact that the ossification causes changes in the shape of the joints which are dissimilar to those found in arthritis deformans, and Simmonds, Elliott and Siben hold that arthritis deformans of the spine is a different process entirely.

On the other hand, Senator,<sup>27</sup> Saenger,<sup>28</sup> and Auer-

25. Bull. Soc. anat. de Paris, 1898, p. 296.

26. Arb. a. d. path. Inst. zu Berlin, 1906, p. 139.

27. Berl. klin. Wehnschr., 1899, No. 47, p. 1025.

28. München. med. Wehnschr., 1899, No. 47, p. 1509.



bach<sup>29</sup> believed that the disease described by Strümpell is an expression of arthritis deformans, and Schlesinger and Oppenheim do not recognize any difference between arthritis deformans and the other forms of stiffening of the spinal column.

R. Llewellyn Jones<sup>30</sup> believed that no distinction can be made between cases of so-called "poker-back" and the polyarthritic type of arthritis deformans.

While everyone who has seen many cases of arthritis deformans recognizes that the spinal column may also become involved, the whole clinical picture, outside of the pathologic appearance, seems to be entirely different from that presented by cases of ankylosing rigidity of the spinal column.

## A CONSIDERATION OF THE COMPENSATORY DIARRHEAS.\*

HEINRICH STERN, M.D.

NEW YORK CITY.

The literature concerning compensatory diarrhea or, as it has been more often called, vicarious diarrhea, is, contrary to expectation, extremely meager. Reports and experiments pertaining to this subject, published during the last twenty years, with few exceptions deal with but one form of compensatory diarrhea, namely the diarrheal symptom of uremia, and have added very little to our understanding of the phenomenon. Likewise, not one of a goodly number of experienced clinicians with whom I conferred on the question of compensatory diarrhea, knew a particle more than the text-book fact of the possible assumption of vicarious work by the bowels in uremia.

Compensatory diarrhea, however, may supervene in manifold conditions and at various stages of a progressive affection. In exceptional instances only will compensatory diarrhea be encountered as a terminal symptom. It is always symptomatic of arrest or perversion of the function of the skin, lungs, kidneys or the organs of internal secretion. Its immediate effect tends to systemic correction or compensation in the majority of instances and is, therefore, of a salutary nature.

As a matter of fact, most functional diarrheas have a corrective tendency, so far as the bowels themselves are concerned, but they do not call forth a general compensatory effect. Such diarrheas may diminish the intra-abdominal tension and relieve certain phenomena in a mechanical way, or they may prevent further absorption of toxic material of ectogenous or enteric origin. However, it is no vicarious function which the intestines perform by the agency of such diarrheas, and, whether we characterize them as nervous, morning, refrigeratory, summer, winter, etc. diarrheas, they are nothing more than the unloading of more or less fluid intestinal contents of non-catabolic production.

Before entering on a consideration of the types of compensatory diarrhea it is necessary that the precise meaning of the term compensatory diarrhea be understood. I would define it as a phenomenon of varying degree and duration, apt to ensue and to return with more or less frequency in the course of systemic deterioration, and characterized by the diarrheal discharge of incompletely or perversely catabolized sub-

stances, or by that of catabolic products normally excreted by other emunctories.

This definition excludes, therefore, all the diarrheal eliminations of food residues and the elements elaborated from the ingesta which have not been absorbed, and includes the diarrheal excretion of normal and abnormal products of retrograde tissue metamorphosis. The evacuations in compensatory diarrhea, of course, consist, in addition to the catabolic material, of the accidental contents of the bowels. While by its nature a compensatory diarrhea is primarily always a functional occurrence, the catabolic substances excreted by it may give rise to intestinal lesions which in turn may prolong or intensify the diarrhea, or may occasion more or less severe attacks of watery evacuations of non-compensatory character. Thus, we frequently encounter in the intestines an apparent anatomic substratum of a compensatory diarrhea which, however, is but the immediate result of the perverse elimination of a number of excrementitious substances, and therefore not the cause but the consequence of the assumption of intestinal compensatory activity.

I recognize three general types of compensatory diarrheas, viz:

First, diarrheas which are concomitant with deficient or perverse catabolic processes.

Second, diarrheas which are the consequence of functional or structural disease of certain excretory organs.

Third, diarrheas occurring during the period of physiologic systemic decline.

The first category comprises the diarrheal phenomena which may accompany or are expressive of histolytic and histoenzymic autotoxicoses. To this belong, among others, the specific diarrheas of gout, exophthalmic goiter, Addison's disease and diabetes.

In gouty individuals, especially in those disposed to obesity, there exists as a rule a proclivity to constipation. In the so-called retrocedent and the irregular forms of the affection the paroxysms are often preceded by more or less fecal retention. Now, it is not uncommon that such a paroxysm be aborted, or that even serious interval complications be prevented, if rapid elimination of the offending material takes place by a succession of free bowel discharges. There is no doubt that the permeability of the kidneys is often interfered with in the chronic gouty state—be it on account of a cirrhotic condition of the renal structures or the clogging of the uriniferous tubules with deposits of urates or alloxur bases—and that the eliminative efforts on the part of the system may evince themselves by enforced intestinal activity. Although the urine contains at such times the usual or even an increased amount of alloxur bases, these, nevertheless, occur in the diarrheal feces in appreciably larger than normal quantities.

Since the nucleins, the mother substances of the alloxur bases, when exhibited in the fecal matters are to the greater part body-nucleins, as has been shown by Weintraud,<sup>1</sup> the connection between the abortive diarrhea and the suppressed gouty manifestations is fairly well established.<sup>2</sup>

Clinically, the compensatory activity of the bowels is usually demonstrable in these instances by the great pains and the tenesmus due to the chocolate-colored

29. München. med. Wchnschr., 1900, No. 24, p. 750.

30. Edinburgh Med. Jour., 1906, No. 61, p. 103.

\* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. This author (Verhandlungen d. XIV Congr. f. Inn. Medicin, Wiesbaden, 1896), obtained from 100 grams dried meconium, in addition to alloxur bases, from 0.3 to 1.0 gram uric acid. He also points out that alloxur bodies may be demonstrated in the feces after a nuclein-free diet (milk regimen).

2. Hayem found in the villi extensive uratic deposits.



fecal masses laden with nuclein substances, concurring with a diminished amount of urine and a marked decline of vesical irritation and tenesmus.

The peculiar diarrheal attacks of exophthalmic goiter, like the profuse sweatings, must be regarded in the light of efforts at compensation. Furthermore, the excessive secretory activity of the sweat glands and the increased intestinal function, seem not only to compensate for one and the same systemic deficiency, but also to exercise the specific compensatory work alternately during certain stages of the affection. In acute cases of exophthalmic goiter, for instance, the sweatings are particularly apt to be frequent and exuberant while the diarrheal seizures are rather uncommon and of a mild character. In other cases of the malady, periods of sweating alternate with periods of diarrhea, and it is seldom when protracted sweatings occur for a number of times in a day, that a diarrheal attack supervenes.

The compensatory diarrhea of exophthalmic goiter sets in and terminates abruptly, and as a rule is not accompanied by pain. The attack generally lasts from one to three days and there are normally not any more free alvine discharges on each day than there are individual sweating seizures on the diarrhea-free days. The evacuations are softer and decidedly lighter-colored than in gout. If the diarrheal period lasts for five consecutive days or longer structural changes in the intestines will be encountered in the majority of instances. Especially will this be the case when there occur diurnally as many as twelve or more movements. Such pathologic changes are not the cause but the consequence of the compensatory attempt—they are complications keeping up the diarrhea beyond the compensatory needs which means that the patient has entered a stage of active decline. The diarrhea when confined within compensatory limits is nearly always followed by a temporary general improvement.

In Addison's disease two distinct forms of diarrhea may occur; the one form ensuing toward the end of the affection, colliquative in character and accompanied by severe colicky pains and often by melena, may quickly lead to either collapse, or delirium, coma and convulsions. It is entirely dependent on typical anatomic changes in the intestinal solitary follicles and Peyer's patches.

The other form, which is exhibited in but a small proportion of cases, supervenes in the earlier stages of the malady, and appears to be of a compensatory nature. In two exceedingly mild cases of the affection of which the one was under my observation for almost three years, the other for more than five years, there prevailed a moderate diarrhea of mushy consistency at frequent intervals. These diarrheas were usually followed by periods of systemic improvement, viz. greater energy and muscular resistance, diminished languor and increased appetite. Both the patients drew my attention to their almost unfailing general improvement after these diarrheal attacks. In the one patient there occurred partial reduction of pigmentation and the affection assumed a latent character; the other patient, apparently none the worse for the Addison's disease, succumbed to an intercurrent acute infectious disease.

Diarrhea is a frequent phenomenon in diabetes. Its relation to the latter may be twofold—it may be a symptom of the pathologic state underlying the diabetes, or it may be a result or complication of this. Diarrhea as a symptom of the diabetic substratum does not interest

us in this consideration for it reflects only a more or less disturbed intestinal digestion. Diarrhea as a complication of diabetes may be due to a long-continued proteid-fat regimen in which case it is but an expression of an alimentary insufficiency, or it may be called forth by the rapid transmission of certain catabolic substances into the intestinal canal in which instance it may compensate for perverse plasmolytic or lipolytic processes. Be this as it may, there are a few indisputable facts in this connection, namely that a compensatory diabetic diarrhea takes its origin in the small intestines, that by its agency sugar may be excreted, and that during its presence and for some time afterward the intensity of the glycosuria becomes markedly diminished or the urine may even be rendered entirely free from sugar.<sup>3</sup>

It is, of course, impossible to explain how and why sugar has found its way into the intestinal tract of an individual just at the period when he is pursuing a rigid carbohydrate-free regimen. For granted that the proteid-fat diet is the cause of the diarrhea (as maintained by some observers), where are the sugar-forming elements coming from, and why is there a synchronous reduction or suspension of the glycosuria?

The occurrence of sugar in the feces, I dare say, should always be considered as of pathologic significance. On no occasion have I detected sugar in the feces of diabetics whose bowels functionated normally—I have never found it in other than diarrheal discharges.

The diarrheal stools in diabetes, however, do not always exhibit sugar, and I do not wish to be understood that the compensatory diarrheas in diabetes are characterized by their contents of sugar. Far from it, for I accept as efforts at compensation in the diabetic state all the diarrheas concurring with a reduction or suspension of the glycosuria, and which are being followed by marked, if but temporary systemic improvement including the dispersion of neuritic and endarteritic pains.

While it is true that diabetic coma is generally ushered in by an acute gastrointestinal disturbance, it is equally true that it may be averted by a diarrhea exerting compensatory function. There would be many more instances of diabetic coma, and it would often ensue much earlier in the course of diabetes, if a diarrhea rendering ineffectual the accumulated toxins did not supervene at the proper time. Of what nature these toxins are, we do not know. However, they do not belong to the acetone group, and the small amount of sugar which may be encountered in the diarrheal evacuations is not of toxic but of mere symptomatic significance. I have observed on more than one occasion that an attack of spontaneous diarrhea setting in during precomatose jactitation has prevented the further development of the coma.

Diarrhea occurring simultaneously with glycosuric augmentation and exacerbation of other diabetic phenomena—conditions not infrequently called forth by lesions in the descending and sigmoidal portions of the colon—of course exhibit no systemic compensatory qualities.

Of the second type of compensatory intestinal activity I will but mention the diarrheas following extensive

3. I have repeatedly observed in diabetics that the urines rendered sugar-free by an attack of diarrhea are apt to exhibit a distinct reaction for acetone and diacetic acid which, soon after cessation of the diarrhea, can no longer be obtained.



burns of the skin and those concomitant with impaired or suppressed renal function.

Injury of a considerable area of the cutaneous surface by burns or scalds always gives rise to autotoxic manifestations. There may be retention of urine and various nervous phenomena as delirium, coma or a maniacal condition. The respiratory gas interchanges by the medium of the skin, compared with those taking place in the lungs, it is true, are diminutive, but a portion of such catabolic products as urea, uric acid, fatty acids, leucine, tyrosine, etc. leaves the organism by way of the integument. This is not the place to discuss whether or not extremely poisonous substances like hydrocyanic acid are generated in grave cases of burning, but it must not be forgotten that tegumentary activity includes also absorption of atmospheric oxygen, and that factors affecting the eliminative qualities of the skin also affect its absorptive properties.

In my book on the autotoxicoes,<sup>4</sup> from which some of the foregoing is quoted, I stated that when the cutaneous structures fail to exhale and discharge effete substances normally eliminated by them, the insufficiency may be overcome by inducing the other excretories to vicarious activity, and that anything which in the face of diminished tegumentary function stimulates the general excretory work of the organism tends to prevent or to suppress autotoxic manifestations.

Now, inasmuch as renal activity is seriously interfered with in grave cases of burning of the skin, the diarrheas which then invariably supervene have to be looked on as compensatory in character. In many instances, the diarrheal compensation is effective either in averting autotoxic phenomena or, when these are already present, in holding them in check. This fact was brought home to me about eighteen years ago when I treated a two year old child who was terribly scalded over the entire abdomen. When I was summoned the little patient was unconscious, pulseless and the respirations were hardly noticeable. The rectal temperature was 103.5 F., and the bladder contained but a few cubic centimeters of urine. While preparing a hypodermic injection to stimulate cardiorespiratory activity there occurred a copious watery discharge from the bowels. This was soon followed by a second and a third evacuation and (the hypodermic medication having been applied meantime) by an improvement of pulse and respiration. Diarrheal discharges prevailed for the next three or four days after which the diurnal urine was excreted in nearly normal amounts. Every third or fourth day thereafter for a period of about two months there occurred watery evacuations of the bowels and synchronous diminution of the urine. With the proper care, the apparently moribund child fully recovered after some months.

In grave cases of burning there supervenes occasionally a colliquative diarrhea at the foundation of which stands an ulcerative process in some part of the intestines. Such pathologic evacuations, which still further exhaust the already enfeebled organism, of course, have nothing in common with compensatory diarrheas.

Uremic diarrhea, as previously remarked, is the best known of all compensatory diarrheas. It is probably not so frequent an occurrence as are other phenomena of uremic causation, uremic vomiting for instance, nor does

it seem to ensue any oftener than some of the compensatory intestinal evacuations of other systemic affections.

Uremic stools do not always present the same general characters; they may have a foul odor in which occasionally the scent of ammonium carbonate is recognizable, while at other times they are inodorous. The more repulsive the odor, the scantier, as a rule, is their amount, and the more frequent the evacuations the less dense is their consistency. They may be mushy, slimy or watery. When small in quantity the feces may be soft while the water together with which they are discharged from the bowels, appears to contain comparatively few fecal particles. The evacuations may exhibit light or dark coloration, not infrequently free mucus and but very rarely some blood.

Specific uremic diarrheas occur much more frequently in chronic than in acute states of uremia, and do not stand in any relationship to ulcerative processes in the intestines. Uremic ulcers of the bowels may occasion grave intestinal phenomena, which are, however, quite different from those of compensatory uremic diarrhea. The evacuations which are due to ulcerative intestinal states are often dysentery-like, very fetid and contain mostly blood and tissue shreds. There is sufficient pathologic evidence that compensatory uremic diarrheas, if continuing for protracted periods, may be accompanied by pronounced congestion and catarrhal exudation of the intestinal mucosa, but that they concur with ulcerative processes in the rarest of instances only. The cardinal etiologic difference between the two forms of uremic diarrhea is, that in the one the ulcerative process is the forerunner of the diarrheal condition<sup>5</sup> and that in the other the diarrhea stands either at the bottom of the morphologic changes of the intestinal mucous membrane, or that it is of synchronous or almost synchronous production with the latter, and the result of the self-same causes.

Compensatory uremic diarrhea is probably due to overstimulation of the intestinal nerves by the hyperosmotic blood carrying the products of normal and probably also of perverted catabolism. Whether this irritation is caused by the altered blood *in toto*, or by the transudation *per se* of one or more of its constituents, we have no means of ascertaining. We know with certainty, however, that the decomposition products of urea give rise to a local irritation of the intestinal mucosa which may be followed by increased peristalsis and diarrhea. The mucosal congestion is probably of simultaneous production with the diarrheal symptom in most instances; this, at least, is the case after infusions of urea and other urinary constituents into the circulation in dogs. It is possible that the hyperosmotic state of the blood causes irritation of the cerebral cortex and that this irritation, transmitted to the intestinal nerves, occasions excessive peristaltic activity. Again, according to Landois,<sup>6</sup> augmented peristalsis may be the re-

5. Fischer (Virchow's Arch. cxxxiv, 134) and Grawitz (Deutsche med. Wchnschr., 1898 No. 20) maintain that uremic ulcers of the intestines are the result of the irritating action of the urinary decomposition products on the mucosa. This may be the case in exceptional instances, ordinarily, however, the amount of ammonium carbonate produced during a given period and remaining in intimate contact with the intestinal mucosa, is too small to produce necrobiotic processes. Be this as it may, the ulceration must precede the discharge by the feces of the material resulting from molecular death. It may be possible that ulcerative conditions develop in the course of a compensatory diarrhea, it is more plausible, however, that in certain instances of uremia the given factors favor the production of intestinal ulcers, and that an ulcerative process antedates the colliquative diarrhea.

6. Die Uraemie, 1891, p. 130.

4. "The Autotoxicoes, Their Theory, Pathology and Treatment," by Heinrich Stern, Chicago: G. P. Engelhard & Co., 1906, pp. 64, 148 and 149.



sult of a strong irritation of the vasomotors by which the blood in the intestines is temporarily diminished.

Experiments pertaining to uremic diarrhea, conducted by Hirschler<sup>7</sup> have shown that among the urinary constituents which may call forth peristalsis, ammonium carbonate and creatin are not only very energetic peripheral but at the same time also central intestinal irritants, while urea, sodium chlorid and creatinin cause intestinal activity solely by means of peripheral stimulation. He further demonstrated that urea and ammonium carbonate may be looked on as etiologic factors of the uremic diarrhea.

That the uremic diarrhea arising in the absence of ulcerative changes is truly compensatory in character there can be little doubt. Uremic vomiting fulfils a similar compensatory mission which is plainly perceptible in certain advanced cases of chronic uremia when the ejected masses exhibit an urinous odor. This odor is due to ammonium carbonate and trimethylamin. Even the burning and dryness of the mouth and trachea of uremic patients Senator<sup>8</sup> ascribes to these irritating decomposition products of the nitrogenous urinary constituents.

The diarrheas with compensatory tendency occurring during the period of physiologic systemic decline form the third category of my classification. Strictly speaking, these diarrheas which comprise the diarrheal occurrences of normal old age, do not form a distinct group for themselves, but belong in part to the first, in part to the second category. Inasmuch, however, as it is not one specific function or organ but the more or less uniform decline of the entire physiologic activity and of the body structures in general which stands at the foundation of the compensatory diarrhea, we are well justified in considering the diarrheas of the aged in a class for themselves.

Old people are particularly prone to diarrheas, which are seemingly not dependent on atmospheric, alimentary, temperamental, occupational and localized enteric causes. These diarrheas become more frequent and pronounced the more the individual advances in age. In a certain proportion of instances free intestinal discharges have to be ascribed to structural and functional deterioration of the entire alimentary tract—these do not therefore concern us at this time—in other instances they are clearly of a compensatory nature, and this is a fact which has not received general recognition.

Women are oftener subject to the diarrheas of old age than men. The cessation of the menses seems to favor a disposition for diarrhea. There are many women who have never been affected with chronic diarrhea before the menopause. While most clinicians declare this diarrhea to be of the "nervous" type, I am forced to contend that a "nervous diarrhea" does not explain anything, and that there must be a retrogressive process at the bottom of these frequent watery evacuations, so long as the digestive and assimilative functions are performed in a normal manner and so long as there is no evidence of a structural alteration in the intestinal canal. What lies nearer then, than to assume that following the cessation of the catamenia there will ensue a hyperosmotic state of the blood and tissue fluids and that transudation therefrom will occur through those membranes which offer the most extended surface and least resistance, and these are the intestinal tissues.

It appears that the intestinal membranes retain a physiologic efficiency for a longer period than most other body structures. This, at least, is the case with their permeability which remains undisturbed, as a rule, long after the other excretories have lost a great part of their own. It stands to reason therefore, that the intestinal tract of the aged has to perform more or less compensatory service all the time. Thévenon,<sup>9</sup> more than forty years ago, maintained that in health, when the general equilibrium is preserved, the products of the intestinal secretions are always more plentiful in the old than in the adult, that the internal tegument which is less exposed to continual external forces than the skin is physiologically less deteriorated than this, and that it is the tegument of the alimentary tract which compensates for the inactivity of the skin by removing a certain quantity of liquid from the economy.

Although modern research has demonstrated that the external integument is not to any greater extent affected by ectogenous causes than the alimentary tegument, and although the intestines are not internal organs in the sense that they are intrabiontic, Thévenon's observations, which were mostly made at the Salpêtrière, are in the main correct, and may be corroborated by any physician whose practice brings him in contact with old people, especially with the inmates of homes for the aged.

Since there exists a functional connection between the external and internal tegument, it is not surprising that old people, who perspire rarely, are subject to chronic diarrheas. Again, pulmonary exhalation is greatly diminished in old age but the general systemic equilibrium is maintained by the compensatory action of the bowels.

The intestinal canal is beyond doubt the most efficient regulator of the shortcomings and disturbances constantly present or arising in the economy of the old. The compensatory action of the bowels tends to maintain the osmotic equilibrium, that is the interrelation of the physical conditions of the various body fluids, which is essential for the normal performance of the vital processes. This interrelation does not consist in the equality, but in the physiologic dissimilarity of the osmotic conditions in the different fluids of the organism, and it is often only by the increased function of the intestinal membranes that the osmotic equilibrium is preserved and the life of the individual prolonged.

The occurrence of an attack of compensatory diarrhea is nearly always a positive indication that there is no immediate danger for the life of the patient, and that terminal states like fatal dyspnea, convulsions and coma have been averted for the time being. Compensatory diarrhea is mostly a chronic condition, that is, wherever an attack has once ensued it is always apt to return. It is the frequent succession of the individual attacks which puts the stamp of chronicity on the compensatory diarrheas. The frequency of these attacks is rather a favorable omen, and the early establishment of compensatory diarrhea in the presence of perverted catabolism and insufficient excretion through the normal channels, let the prognosis of the case appear less gloomy. The elimination of all or nearly all the excrementitious substances by the intestines is liable to cause irritation and congestion of the mucosa—minor local disturbances which count little if the immediate salutary effect on the entire system be considered.

Of the compensatory diarrheas, not those supervening at a certain period and averting a fatal issue, but those

7. Jubilär-Arbeiten der Schüler Korányi's, Pester Med. Chir. Presse, 1891, No. 30.

8. Die Erkrankungen der Nieren, 1902.

9. De la Diarrhée chez les Vieillards, Thèse de Paris, 1865.



recurring at frequent intervals and constituting a *habitus diarrhoeicus* and permitting the patient to live in comparative ease, are really the more important. However, while the former are known to the clinician the true nature of the latter is but rarely recognized at the proper time, and a treatment of suppression is instituted in nearly every instance. This interference, of course, is unjustified and irrational as a general rule and may speedily call forth a lethal termination of the case. Naturally, the prognostic outlook of instances thus treated is bad. Here is an example of such a case.

*History.*—On March 13, 1908, I saw in consultation Mrs. Susan S., aged 47, the mother of three children. The patient had been affected for some years with chronic parenchymatous nephritis, cardiac insufficiency and renal asthma. For the last two or three weeks she had had frequent watery discharges from the bowels, causing her physicians a good deal of anxiety, and concurrent marked diminution of the urinary flow, a fact in which, strangely, they seem not to have been interested. The output of urine for the past forty-two hours amounted to 180 c.c. The patient had received preparations of bismuth, tannin and opium for the diarrheal phenomenon.

*Examination.*—When I first examined her she was in a precarious condition: delirious, extremely weak, but mentally agitated, very dyspneic, edematous, pulse 124, arterial pressure 70 mg. Hg (Potain).

*Treatment and Result.*—I recommended discontinuance of all medication and the administration of high rectal saline injection, 1,500 c.c. every three hours. The few drugs which were given to the patient on the following days were mild diuretics. Nothing whatsoever was prescribed for the intestines but the carbohydrate ingesta were considerably reduced. The patient was kept in bed for about one week. The watery evacuations declined in the ratio in which the amount of the urine increased. The moment the kidneys eliminated a normal amount of urine with a fair degree of density the diarrheal discharges ceased on their own account. The patient has had a number of mild diarrheal attacks since for which the same treatment was given. It proved successful on every occasion. At this writing the patient is enjoying comparative freedom from the chronic uremic symptoms at Atlantic City.

Compensatory diarrheas of the type occurring in Graves' disease permit of a fair prognosis, so far as the life of the patient is concerned. Their periodical occurrence may be ushered in by an attack of indigestion, but the benign character of the diarrhea soon evinces itself by the temporary diminution or abatement of a number of distressing phenomena. In my experience, colliquative diarrheas are the exception in exophthalmic goiter, and anatomic changes of a pronounced degree, as large desquamative areas, submucous hemorrhages and ulcerative processes, so frequent in athyroidism and thyroidectomized animals, are very rare in this affection.

This general prognostic axiom concerning the compensatory diarrheas may be put forth. So long as a diarrheal process continues to compensate efficiently for loss of function of the skin, lungs, kidneys and the organs of internal secretion, or, in other words, so long as most of the effete and injurious material is removed from the organism by the medium of the bowels, the patient is in a satisfactory osmotic equilibrium and there is little immediate danger so far as life itself is concerned. On the other hand, the pathologic or artificial suppression of the diarrheal discharges may give occasion to grave symptoms and even cause death, in case the functionally deficient organs have not regained their activity meanwhile.

A true compensatory diarrhea should not be interfered with unless there is sufficient evidence that the localized intestinal irritation and hyperemia unduly prolong the increased peristalsis. Local intestinal treatment

should be applied in preference to the ingestion of medicines which have to traverse from ten to twenty-five feet of gut before they reach the seat of the lesion. Rest in bed, application of heat to the abdomen, high rectal or colonic flushings with normal salt solution, and reduction of readily fermentable ingesta is all that is needed in ordinary cases of intestinal hyperirritation and congestion.

Inasmuch as a compensatory diarrhea is symptomatic of the insufficiency of excretory function in general, it indicates the points toward which treatment should be directed. Such treatment should tend to the stimulation of the catabolic processes and the regeneration of the eliminative qualities of the skin, lungs and kidneys.

#### DISCUSSION.

DR. GEORGE N. JACK, Buffalo: I have happened on a few physiologic respiratory laws not in accord with authoritatively established opinions. 1. Lung tissue has a glandular structure, and performs a glandular function, serving the mortar-like purpose of holding the air tubes, blood vessels and lymphatics in close or functioning approximation. The lungs actually constitute two large irregular lymphangio-pneumatic glands. 2. The elasticity of the lungs is not so pronounced as it has been believed to be, neither does it constitute the expiratory force given it by existing authorities. 3. Lung tissue of itself is a coarse, friable, granular non-elastic tissue of little resistance and easily torn. 4. The only elastic tissue that acts directly on the lung substance is that of the visceral pleura, and the numerous small blood vessels or capillaries that so abundantly ramify through the lung. 5. The lung tissue itself is practically passive during both inspiration and expiration. 6. Owing to the vacuum-like pull between the visceral and parietal pleurae, the lungs are, as it were, glued to the thoracic walls, from which they can not pull, and they are passively expanded and passively compressed by the action of these walls. 7. The existence of the pulmonary or lung blood pressure in the living subject tends to prevent the lungs from collapsing so readily and completely in the living subject as in the cadaver on admitting atmospheric air between the visceral and parietal pleurae. 8. The air cells, minus the numerous small blood vessels in their walls, are not elastic, but they are very collapsible. The air cells do not contract to force out the inspired air, but they are made to collapse partially and thus caused to shove the inspired air out.

The normal expiratory partial collapse of the air cells in normal expiration is due to the pressure of the thoracic wall on the air cell, the recoil of the elastic visceral pleura or lung capsule, and capillaries of the air-cell wall, and to the expiratory changes in the pulmonary blood pressure, this blood pressure exerting its influence through the dense capillary network of blood vessels on the walls of the air cells.

Thus a high blood pressure retards the collapsibility of the air cells and favors expiratory dyspnea. The immediate relief from the dyspnea of certain forms of asthma and emphysema following perforation and entrance of air through the thoracic wall is due largely to its anti-blood aspirating effect, and resulting pulmonary blood pressure change.

The apparent elasticity of lung tissue is due to a blood-pressure effect. The absence of blood pressure permits the lungs of the dead to collapse from the atmospheric pressure. The presence of blood pressure in the dense capillary network of blood vessels found on and practically constituting the thin walls of the air cells, is what gives to these cells of blood vessels or air cells an elastic effect in the living functioning lungs.

The general normal inspiratory rise of blood pressure produces an opening effect on the air cell which favors the entrance of air, while the normal expiratory reduction of blood pressure favors a softening of the tubular or vascular air-cell wall and thus favors the expiratory collapse of the blood vessel walled air cell. Lung tissue then performs a glandular function, while the air, air tubes and blood vessels do the respiration.



# INVAGINATION OF LIMITED ANNULAR GANGRENE OF THE SMALL BOWEL VERSUS RESECTION.\*

JOHN E. SUMMERS, JR., M.D.

OMAHA.

It is the accepted practice and teaching of surgeons the world over, in cases of gangrenous intestine, to proceed to one of two lines of action: (a) The formation of an artificial anus, and (b) resection. "Whenever possible, i. e., in cases in which the condition of the patient, and the experience and help ready to the surgeon's hand admit of his taking this step, the gangrenous intestine should always be resected" (Jacobson and Rowlands). When the opposite conditions prevail, an artificial anus should be formed with the hope that this will prove a life-saving measure and that at a later operation the continuity of the intestinal canal can be re-established. The increasing experience of late years is tending more and more toward the selection of resection of the gangrenous intestine as against the formation of an artificial anus. This teaching emanates from good authority; it should, however, be accepted with some caution, as it is based on an ability in the selection of cases by men who are also especially skilled in intestinal surgery.

Most of the failures that have fallen to my lot in the management of patients with gangrene of the intestine have followed attempts to carry out the ideal; too much has been done, and this has been my observation of the work of others. It takes good common sense to weigh the pros and cons regarding resection in a given case of gangrene of the intestine. The patient's condition must be fairly good to warrant resection.

The amount of gangrenous intestine a patient can carry and still be in a condition of resistance to admit of a successful resection has never been accurately determined. This amount may vary from one centimeter ( $\frac{3}{8}$  in.) to two meters ( $6\frac{1}{2}$  ft.) and possibly more, but it is not always the extent of the gangrene that determines the resistance of the patient. A limited gangrene of short duration, accompanied by marked constitutional symptoms, is of graver import than one of an opposite type, i. e., one more extensive in the length of bowel involved, and longer duration of strangulation, but with rather mild constitutional symptoms. A resection in the former case must be made relatively twice as extensive as in the latter, because the mesentery has been invaded by infective products beyond the parts that appear healthy, even if the blood vessels do bleed freely on division.

The object of this paper is to call attention to a simple and safe manner of handling limited annular gangrene of the small intestine without resection, by invagination of the gangrenous bowel. Especially can I commend the procedure in those dangerous cases in which the success of a resection may be in grave doubt and the formation of an artificial anus the only alternative. The technic is applicable to the treatment of traumatism to the small intestine from contusions and gunshot wounds, the repair of which, because of their peculiarly destructive, bursting character, if accomplished by suture, may so limit the lumen as to result in dangerous stricture or kinking of the bowel.

**CASE 1.—History.**—In September, 1900, a young man was brought to the Clarkson Hospital, Omaha, suffering with a

right inguinal hernia which had been strangulated for four days.

**Operation.**—He was in a condition of such marked collapse that I doubted the propriety of any surgical attempt. However the field of operation was prepared, cocaine injected (a general anesthetic was out of the question) and the hernial sac opened. It contained a loop of small intestine, a piece of which 4 cm. ( $1\frac{1}{2}$  in.) long, was gangrenous, and although soft, was not very friable. The lumen of the bowel above and below the gangrenous ring was about the same, due unquestionably to the two days of stercoraceous vomiting which had preceded the patient's entrance into the hospital. As the man's general condition did not warrant a resection it occurred to me to make an intussusception of the gangrenous intestine, invaginating by manipulation sufficiently far so as to have sound tissues to suture at the neck of the intussusception, using for the purpose a circular continuous, sero-muscular stitch of silk. No attempt was made towards a radical cure of the hernia.

**Postoperative History.**—The usual restorative measures were employed and the patient's condition gradually improved. His bowels moved at the end of twenty-four hours and he made a good recovery. Six months after the operation I received a letter from him saying that he was in excellent health, but that he still had his hernia.

**CASE 2.—History.**—In the autumn of 1907 an elderly man was sent to me by Dr. Hill of Lyons, Neb., suffering with a strangulated, right oblique inguinal hernia. When the man arrived at the Omaha General Hospital the strangulation had been in existence some fifteen hours, but he was in excellent condition.

**Operation.**—An immediate operation under ether, was done. The bowel was found to be in the same condition as in Case 1, with the exception that the gangrenous ring was not quite so extensive. An intussusception was formed after passing four equidistant sero-muscular, Halstead mattress silk stitches around the circumference of the bowel—i. e., parallel to its long axis. In making these stitches the needle was entered first 1.5 cm. ( $\frac{1}{2}$  in.) below the gangrenous ring and then at about the same distance above it, and then back again near the point of starting. As the ends of these stitches were pulled on by an assistant, the invagination was aided by grasping the bowel below the stitches, between the index and middle fingers, and pulling upward, while, with the thumb above, pressure was made downward—a method similar to that employed in reducing a paraphymosis. Great gentleness, was, of course, exercised in making this manipulation. After tying the Halstead stitches the line was reinforced by a circular sero-muscular silk stitch. A Ferguson operation for the radical cure of the hernia was then done. The man recovered without complications and has remained well since.

**CASE 3.—History.**—In December, 1907, a boy, aged 16, was accidentally shot in the abdomen with a 0.32 caliber pistol and was operated on by me nine hours later in the Omaha General Hospital.

**Operation.**—There were twelve perforations of the small bowel, all very easy of repair except one which was so destructive (explosive) in character that to suture it would practically have closed the lumen of the bowel. Neither was it possible to trim the edges of the wound so as to form a rhomboid that could be sutured advantageously. It was a resection and nothing less, unless the injured bowel could be treated as in Cases 1 and 2. The latter was done, about 3.5 cm. ( $1\frac{1}{4}$  in.) being invaginated. No complications ensued and the boy made a good recovery.

In a similar case it would be more surgical to destroy, by crushing with an angiotribe forceps, the ragged flaps of the wound before making the intussusception, thus assuring a smooth surface within the bowel at the line of suture. If the extent of gangrene involves more than 5 cm. (2 in.) of the intestine, it would certainly be necessary, before making the invagination, to deal with the mesentery by freeing it from the bowel and resecting it or not as the condition indicated.

\* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



There are possibilities of usefulness of the technic described in this paper by extending its employment to the treatment of annular strictures of the intestines, small and large. These strictures can be removed *per vias naturales* after devitalizing the bowel above and below with an angiotribe forceps and invaginating the devitalized diseased structures into the bowel to be passed off as an intussusceptum. There are also other possibilities along the same line, for example, in relation to resections.

There may be mechanical contraindications to the technic offered; (a) when a loop of gangrenous intestine longer than 10 to 12 cm. (4 or 4½ in.) would appear rather difficult to manipulate, or (b) when the bowel is thick and edematous immediately above the gangrene, or very much contracted below it, the difficulties of invagination may be insurmountable. However, the distended bowel above can be reduced by employing Monk's method of using a glass tube to relieve the distention.

I am sure that a dead piece of intestine may be invaginated upward, and if a properly reinforced through-and-through continuous silk suture is employed, making the neck of the intussusception broad and strong, there will be no giving way, but the current in the intestinal tube will pass naturally with the sloughing off of the intussusceptum. Senn's experimental work in this form of invagination carries no contradiction to the above statement.

I make no pretense to being the first surgeon to invaginate a gangrenous loop of bowel when otherwise a resection or the establishment of an artificial anus must have been done. It was original in so far as I, personally, was concerned, and I had been led to believe from the best obtainable sources that the procedure was new. Alas, there is little new under the sun. Professional medical bibliographers and others had failed to find references to the technic, but I discovered in my own library, after this paper was written, that Guinard reported, at the French Congress of Surgery in 1895, a case of gangrene of the small intestine in which he successfully invaginated 9 cm. (3½ in.)—and many practical surgeons may have done similar work.

My own experience with this technic is so limited that I do not feel warranted in saying very much for it, but I am convinced, nevertheless, that I could have applied it with advantage to my patients in many resections for gangrene and other lesions of the intestine which I have done since my first application of the principle in 1900.

#### DISCUSSION.

DR. ARCHIBALD MACLAREN, St. Paul, Minn.: It seems to me that Dr. Summers' suggestion is excellent and that it opens a field of great usefulness, especially the suggestion of the use of the angiotribe. Dr. Lund says that in Boston they have pursued this course in a number of instances, but never published the work.

DR. L. L. MCARTHUR, Chicago: Dr. Summers' paper describes an extension of a method which both Dr. Bevan and myself have been utilizing in cases of gangrene of the bowel when small in extent and involving only a section of about one-third of the circumference of the bowel, as may be found in the gangrene which accompanies Littré's hernia, simply invaginating that segment of the bowel. Dr. Summers has shown that it is possible to go further and introduce into the bowel a gangrenous mass 4 to 8 c.c. in length, but smaller than an intussusception, and get good results by the sloughing off of the mass. I believe that he has added to our armamentarium very decidedly.

## RECENT STUDIES ON THE CIRCULATION AND THEIR IMPORTANCE TO THE PRACTICE OF MEDICINE.\*

ARTHUR D. HIRSCHFELDER, M.D.

Associate in Medicine, Johns Hopkins Medical School.  
BALTIMORE.

The contributions to our study of the circulation during the past few years have been so numerous that I shall be able to deal only with a few of those aspects in which I have been most directly interested and which I feel are of practical importance; namely, the relation of arrhythmias and of the velocity coefficient to treatment and the studies on the volume and tonicity of the ventricles.

One of the most interesting and important results of physiologic study has been the physiologic analysis of the irregular pulses, which has led us to divide them into four groups:<sup>1</sup>

#### THE FOUR GROUPS OF IRREGULAR PULSES.

First, those which, either associated with certain phases of respiration or with meningitis, or in children, neurasthenics or convalescents from febrile diseases, are of neurogenic origin. (Fig. 1.) These are not associated with any cardiac disturbance, disappear temporarily under atropin, sometimes permanently disappear under general "tonic" treatment, hygienic measures and the administration of strychnin.

The second group, due to diminished contractility, is shown in the pulsus alternans in which, though the rate is regular, each alternate beat is small. This is most common in very rapid pulses, and as Mackenzie has shown, also in some cases of angina pectoris. It always shows that the heart is beating too fast and that its strength is insufficient, and hence if the condition continues more than a few hours it may be considered as a symptomatic indication for digitalis or strophanthin intravenously.

Thirdly, we have to deal with the three varieties of heart block (Fig. 2) at the various sites along that inverted Y-shaped path of Purkinje fibers—the sino-auricular blocks, the auriculo-ventricular blocks, and the blocks between the ventricles. Of the latter we know but little, and Doctor Hewlett<sup>2</sup> has told what we do know. The sino-auricular block (Fig. 2, 1) as we know it, especially in the cases described by Dr. Hewlett and myself, is always functional, and since it is often brought on by digitalis it need not be added that in this digitalis is absolutely contraindicated. The same applies in the auriculo-ventricular blocks (Fig. 2, 2 and 3), whether organic as in Adams-Stokes disease, or due to myocardial weakness and vagal stimulation as in the post-influenzal or post-diphtheric conditions or due to

\* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. For a more complete discussion of the cardiac arrhythmias consult:

Wenckebach, K. F.: *Die Arrhythmie als Ausdruck bestimmter Functionstörungen des Herzens*, Leipzig, 1903.

Mackenzie, James: *The Study of the Pulse and Movements of the Heart*, London, 1903; *New Methods of Studying Affections of the Heart*, Brit. Med. Jour., 1905, i, 519, 587, 702, 759, 812.

Hirschfelder, A. D.: *Graphic Methods in the Study of Cardiac Diseases*, Am. Jour. Med. Sc., 1906, cxxxii, 378.

Dock, G.: *Recent Advances in the Study of Heart Disease*, Wisconsin Med. Jour., August, 1907.

Hewlett, A. W.: *The Common Cardiac Arrhythmias and their Clinical Significance*, Internat. Clin., 1907, series 17, iv, 47.

2. Hewlett, A. W.: *Clinical Observations on Absolutely Irregular Hearts*, paper presented at this session of the Section on Practice of Medicine.



pressure of tumors on the vagus, as in one case which I recently examined.

Fourthly, we have the group of irregularities due to the abnormal impulses, extrasystoles, which may arise either in the auricles, the ventricles, or the bundle of His (Fig. 3). The latter group is diagnosed, I may add without absolute proof having been advanced, when the conduction time is shorter than normal. Ventricular extrasystoles are often brought about by inability of the heart to empty itself. Regularity is then restored by

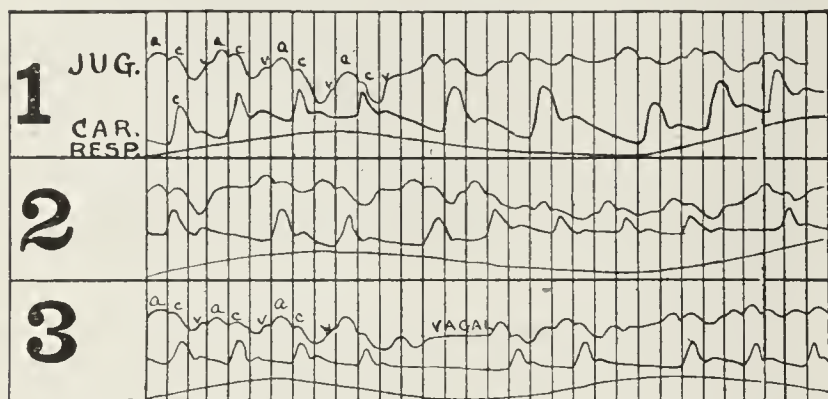


Fig. 1.—Diagrammatic. Showing the neurogenic forms of irregularity. 1. The exaggerated normal type. 2. The pulsus paradoxus. 3. Mackenzie's youthful type. Upper line, pulse in jugular vein. a = wave due to auricular systole; c = wave at the beginning of ventricular systole; v = wave at end of ventricular systole. Divisions represent 1/5 second.

digitalis. At other times there is too great irritability, and in this case digitalis would only serve to increase the arrhythmia. Auricular extrasystoles may be a result of disturbed origination of impulses, or of obstruction to the emptying of a vigorous auricle, as in mitral stenosis; as a rule they do not disappear under digitalis or atropin, but sometimes a certain amount of benefit may result from a simultaneous increase in the tone of the heart muscle.

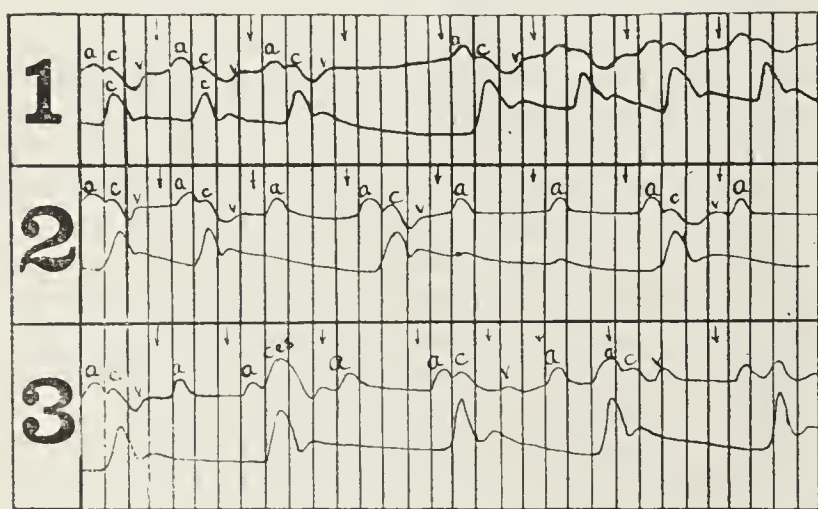


Fig. 2.—Partial and complete heart blocks. 1, sino-auricular; 2, partial auriculo-ventricular; 3, complete auriculo-ventricular block. Arrows indicated probable impulses arising at the sinus. Upper line, venous pulse in jugular vein. Lower line, carotid pulse.

#### PAROXYSMAL TACHYCARDIA.

In paroxysmal tachycardia we also have to deal with peculiar sudden changes in rate, almost doubling and almost halving, sometimes associated with irregularity in the transitional stages but usually perfectly regular. The doubling and halving is sometimes due to the passing on and off of an auriculo-ventricular block; in one of my cases it appeared to be a sino-auricular block. I have also been able to produce it experimentally by faradizing the auricles into a state of fibrillation (Fig. 4).

Under these conditions the ventricles would suddenly pass into a paroxysm of rapid rhythms, sometimes regular, sometimes slightly irregular.<sup>3</sup> The rhythm was then just less than double the original rate, but would rise suddenly from 120 to 213 a minute or thereabouts and drop at once to the regular rate either on vagus stimulation just as a paroxysm of tachycardia may stop; or the rapid rhythm might be resumed after the vagus stimulation had ceased and later fall spontaneously. As irritability increases, as by successive stimulation, the ease with which these paroxysms are brought on increases, as does also their duration. But even granting that this phenomenon resembles paroxysmal tachycardia, the treatment remains to be worked out further. For in that disease digitalis, strophanthus, intravenous strophanthin, strychnin, atropin, ice-bags, pressure on the vagus, and all the well-known cardiac stimulants have been known to fail, though sometimes useful.

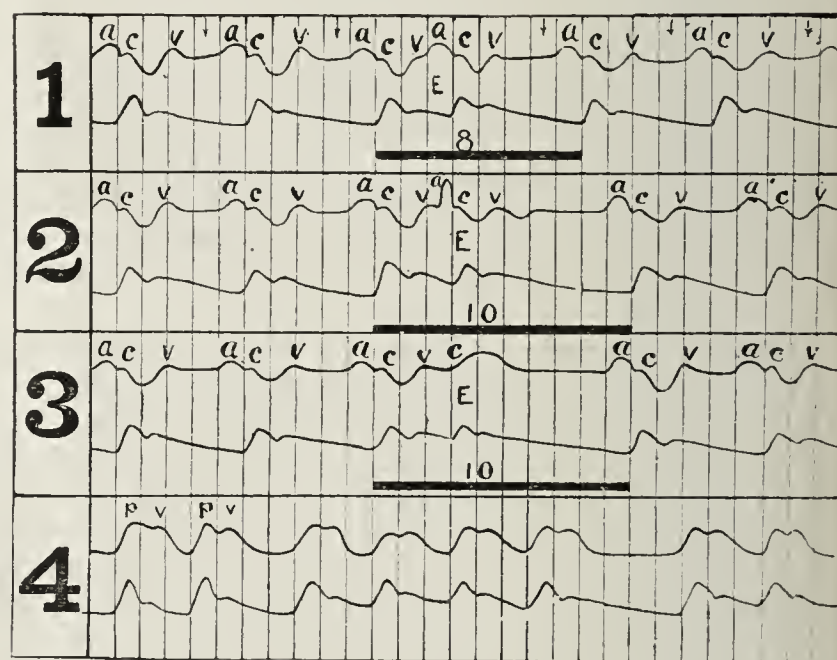


Fig. 3.—Extrasystoles, and auricular paralysis. Underlined portion indicates duration of systole + extrasystole + pause. 1, auricular extrasystole; 2, auriculoventricular extrasystole; 3, ventricular extrasystole; 4, auricular paralysis.

#### VELOCITY OF BLOOD FLOW.

I shall now discuss the velocity of blood flow in disease. In 1904 Erlanger and Hooker<sup>4</sup> demonstrated that the velocity of flow per unit of time is more or less proportional to the product of pulse pressure by pulse rate. By pulse pressure is meant the variation in pressure due to the pulse beat, and hence the difference between maximal and minimal pressure. This product has no absolute value, but has a relative value as a standard for comparison in the same individual. Erlanger and Hooker found it of importance in determining the relation of blood flow to cyclic albuminuria but made no observations on patients. In 1905, I followed the blood pressure in a number of heart cases over a considerable period of time, and found that in them the general condition seemed to improve when the velocity

3. Von Ziemssen (Studien über die Bewegungsvorgänge am menschlichen Herzen; sowie über die mechanische und elektrische Erregbarkeit des Herzens und des Nervus Phrenicus, Deutsch. Arch. f. klin. Med., 1882, xxx, 270) produced exactly similar paroxysms of tachycardia by galvanization, but not by faradization, over the precordium of a subject in which the chest wall had been removed along with chondroma of the ribs.

4. Erlanger, J. and Hooker, D. R.: An Experimental Study of Blood Pressure and Pulse Pressure in Man, Johns Hopkins Hosp. Rep., 1904, xii, 145.



of flow (as shown by product of pulse pressure by pulse rate) increased and to become worse when it decreased, so that the patient's condition usually followed the velocity curve as shown in Figure 5.

This observation, which was unpublished, has since been confirmed by the very long and careful studies of Brun Fellner,<sup>5</sup> Albert Fraenkel,<sup>6</sup> Lust,<sup>7</sup> and others, who show that in general digitalis and strophanthin increase the product. This is unquestionably true, but in the case just quoted the heart muscle was too far weakened to give this response until the digitalis was combined with nitroglycerin, when the velocity was greatly increased. In many cases the change in the velocity coefficient precedes the systemic change for some time, and may therefore be of value in predicting and in warding off impending trouble, so that in many cases it may furnish a good guide for treatment, especially in bed patients.<sup>8</sup>

#### TONICITY OF THE HEART MUSCLE.

Another line of investigation which is yielding promising results is the investigation of tonicity of the heart muscle. It has long been certain that important functional changes go on in the heart without manifesting themselves either on the blood pressure or the arterial or venous pulse curve, and that these variations are the preliminary steps which determine the later changes. Many of these are due to changes in tonicity of the heart

about the auriculo-ventricular groove, and connecting this with a large recording tambour. For convenience the tambour was inverted so that upstrokes record decrease in volume, downstrokes increase. The volume at the end of diastole indicates cardiac tonicity (at least when the change of rate, etc., is allowed for), that at the end of systole shows the amount of blood residual within the ventricle. These are relative not absolute terms. The diagram (Fig. 6) shows the relation of the curve to changes in tonicity, and especially that the latter is independent of systolic output. Other things being equal, an increased tonicity was accompanied by diminution in the volume of residual blood in the ventricle at the end of systole, while decreased tonicity was accompanied by accumulation of it, even to several times the amount thrown out at each systole. Such an accumulation as a rule gave rise to no irregularities nor outward manifestation other than more dilatation (Fig. 7).

Dr. Cameron found that practically all the drugs which are cardiac stimulants—digitalis, strophanthus, nitroglycerin and strychnin—increase cardiac tone to a marked degree. Adrenalin was the only one with which it was definitely diminished. The diminution in tonicity due to aconite was only about what would correspond to the same stimulation of the vagus. These results are especially interesting in the case of strychnin, since this

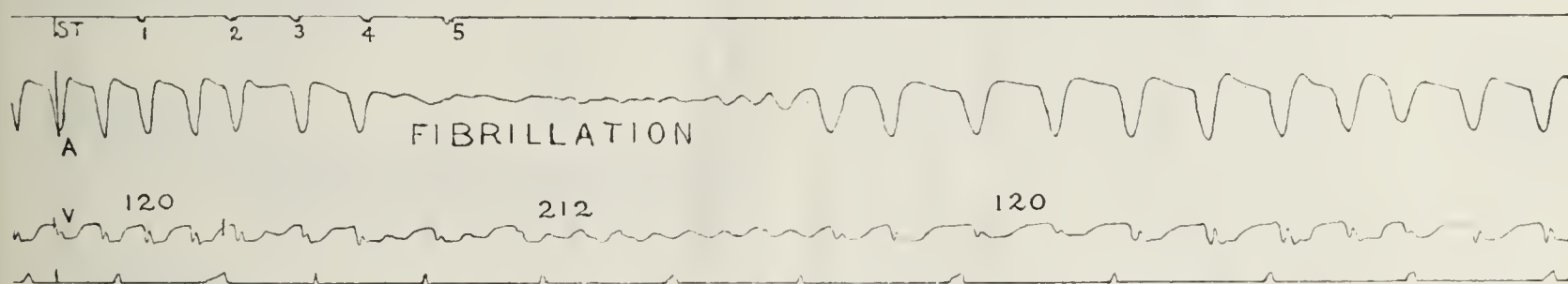


Fig. 4.—Tracing from heart of dog, showing suddenly beginning and suddenly ceasing tachycardia, brought on by faradic stimulation of the auricle A at 1, 2, 3, 4 and 5. V=ventricular contractions. Time in seconds.

muscle. The importance of a systematic study of cardiac tonicity in mammals was emphasized by James Mackenzie in 1904, and also by Gibson and Clifford Albutt, but so far as I am aware no experimental investigation has as yet been published. The subject was therefore studied experimentally by Dr. Cameron at my suggestion and under my direction during the past winter. The results are now being presented as a Doctor thesis at the University of Edinburgh, and as they will be published in detail within the next few months I shall merely describe his general methods and conclusions. Tonicity may be defined as the tendency of the muscle to resist stretching or overfilling of the heart when the walls are relaxed in diastole and changes in tonicity are shown by changes in ventricular volume at the end of diastole.

The changes in volume of the ventricles were studied by inserting the ventricles into one of Yandell Henderson's cardiac plethysmographs, so that it fitted air-tight

effect may be obtained from doses so small that there is absolutely no effect on the mean blood pressure. Many text-books on pharmacology have stated that strychnin has no direct action on the heart, and the German writers do not include it at all in their treatment of cardiac diseases, but these studies of Cameron place the observations of American and English clinicians once more on an experimental basis.

The importance of preserving a proper degree of cardiac tone is shown also on subjecting the heart to a slight strain, as by clamping the thoracic aorta. If the tonicity of the heart muscle is good (Fig. 8, 1) there is a momentary dilatation and then the heart gradually pumps itself out and gets smaller and smaller until it is soon of even smaller volume than before the strain was put on it. Whereas, if the tonicity is low (Fig. 8, 2), the heart dilates and remains dilated; and a dilated heart works at a disadvantage, so that this may lead to further overstrain. If the heart is in very poor condition (Fig. 8, 3), the single strain may lead only to progressing dilatation and finally to death.

#### LABORATORY FINDINGS APPLIED IN THERAPEUTICS.

These experiments illustrate what goes on in muscular exertion and what we use in the Schott treatment. We do not give these exercises to too weakened patients, if we did it would still further depress their tonicity and make them worse. This sometimes actually happens

5. Fellner, B.: Klinische Beobachtungen über den Wert der Bestimmung der wahren Pulzgrösse (Pulsdruckmessung) bei Herz- und Nierenkranken. *Deutsch. Arch. f. klin. Med.*, 1907, lxxxviii, 1.

6. Fraenkel, Albert, and Schwarz: Ueber Intravenöse Strophanthinterapie bei Herzkranken. *Arch. f. exper. Pathol. u. Pharmacol.*, 1907, lvii, 79.

7. Lust: Klinische Erfahrungen mit der intravenösen Strophanthinterapie. *Deutsch. Arch. f. klin. Med.*, 1908, xcii, 282.

8. Since this article was written T. C. Janeway has published notes of a case in which the improvement bore no relation whatever to the velocity coefficient (The Use and Abuse of Digitalis. *Am. Jour. Med. Sc.*, 1908, cxxxv, 781).



when we are over-zealous in the treatment. But we aim to put a very mild strain on the heart, one that it readily overcomes, and one that, just as in our dog's heart, increases the tonicity and leaves the heart smaller than before, with less residual blood and in better condition to resist another strain.

Cameron found, moreover, that the slowing of the circulation, the accumulation of  $\text{CO}_2$  in the blood, and the slightest asphyxia caused a marked diminution in tonicity, so that in any cardiac overstrain we have instituted a vicious circle:

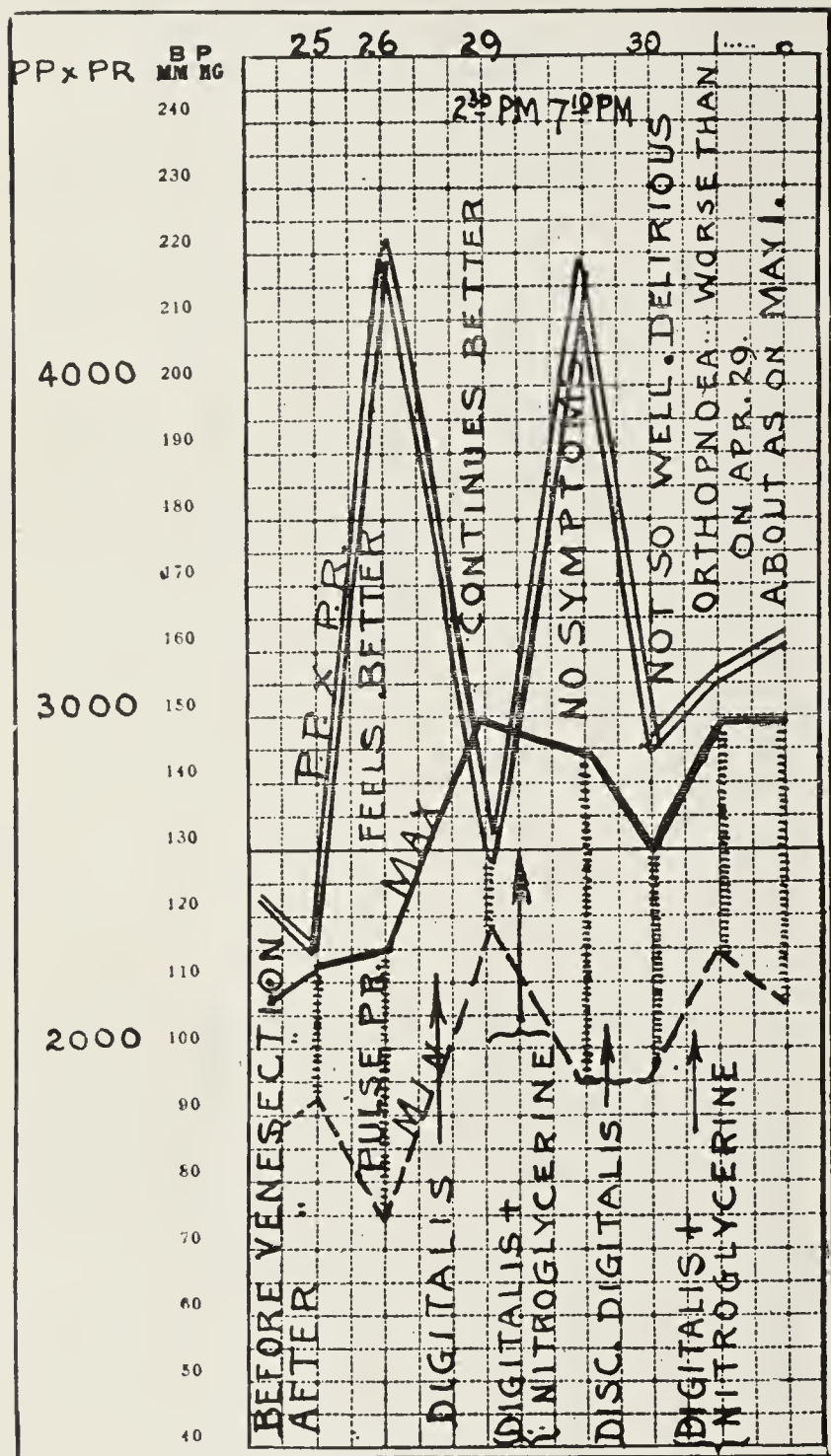
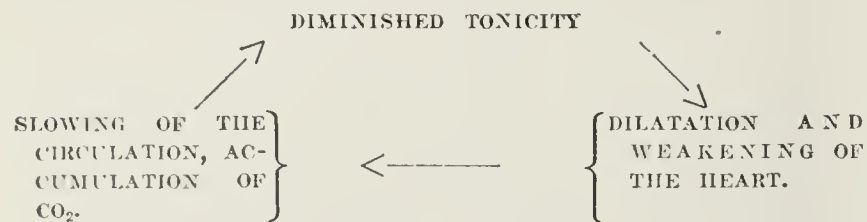
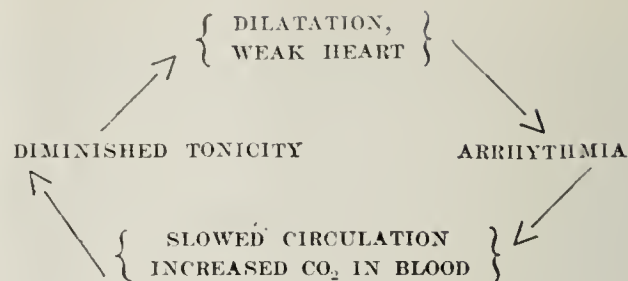


Fig. 5.—Showing course of symptoms in a case of myocarditis. — Pulse pressure  $\times$  pulse rate. — Maximal pressure. --- Minimal pressure. .... Pulse pressure.



Another experiment has shown that the mere presence of an irregularity acts as a factor to bring about dilatation, partly by slowing the circulation and lowering tonus, partly by increasing venous pressure, so that as far as the permanent arrhythmias are concerned we have another vicious circle:



There still remain several subjects on which I should like to touch, namely, the importance of the tonicity of the musculature about the mitral and tricuspid valves for the prevention of leaks, which can be demonstrated by inserting a cannula into the aorta of a sheep's heart, filling the ventricle under pressure, and observing the leak; throwing the muscle into heat rigor by boiling and then proving that the leak no longer appears.

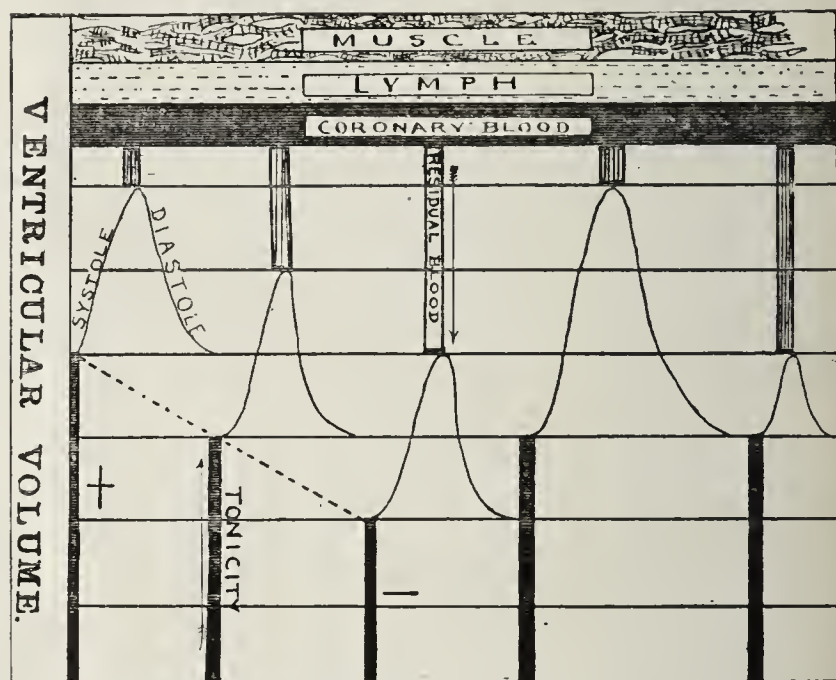


Fig. 6.—Diagram illustrating changes in tonicity and systolic output, showing elements which enter into the total volume of the ventricles and variations in tonicity with and without variations in systolic output. Length of heavy black line indicates degree of tonicity; that of shaded line amount of residual blood.

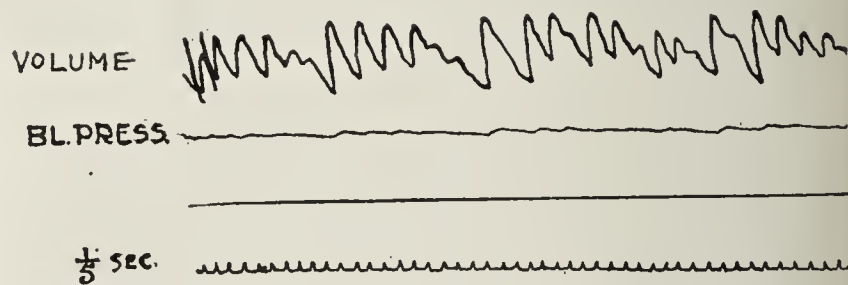


Fig. 7.—Volume curve in experimental irregularity. Showing the tendency to dilatation (downstrokes).

#### RELATION OF LEAKAGE TO MURMUR.

Secondly, I should like to call attention to the importance of obtaining some idea not only of the noise made by the leak but also of the amount of leakage that actually occurs. In the experiments done with Dr. H. A. Stewart<sup>9</sup> on aortic insufficiency, we always found that a leak at the aortic orifice meant fall in diastolic pressure with increased pulse pressure. These leaks were sometimes almost completely plugged by fibrin, leaving only small channels for the regurgitant eddies. The murmur remained; the diastolic pressure returned to normal; and the leak was, for practical purposes, gone. As you may notice in Figure 9, the analogy with the

9. Stewart, H. A.: Experimental and Clinical Investigation of the Pulse and Blood Pressure Changes in Aortic Insufficiency, Arch. Int. Med., 1908, i, 102



vocal cords, a small leak with narrow orifice may give a loud murmur, while a very wide one like the vocal cords of quiet breathing may give none.

In presenting these facts and questions it has been my aim not only to present them as facts, no doubt familiar to many, but particularly with a view toward arousing or increasing interest in the experimental side, not merely of pathology and of abstract pharmacology, but of practical therapy: as a plea for the habit of carrying the problems of the bedside to the laboratory, from the patient direct to the animal, and then at once back again for verification on the patient.

#### DISCUSSION.

DR. WILLIAM S. THAYER, Baltimore: The pulsus alterans, instances of which spring up occasionally and last a considerable length of time, is not a common condition. I have seen two cases, one of which was particularly interesting. This was the case of a patient with myocarditis who was under my observation for several months. She had long periods of irregular heart action, pulsus alterans, and presented all the evidences of grave changes in the heart muscle. Müller

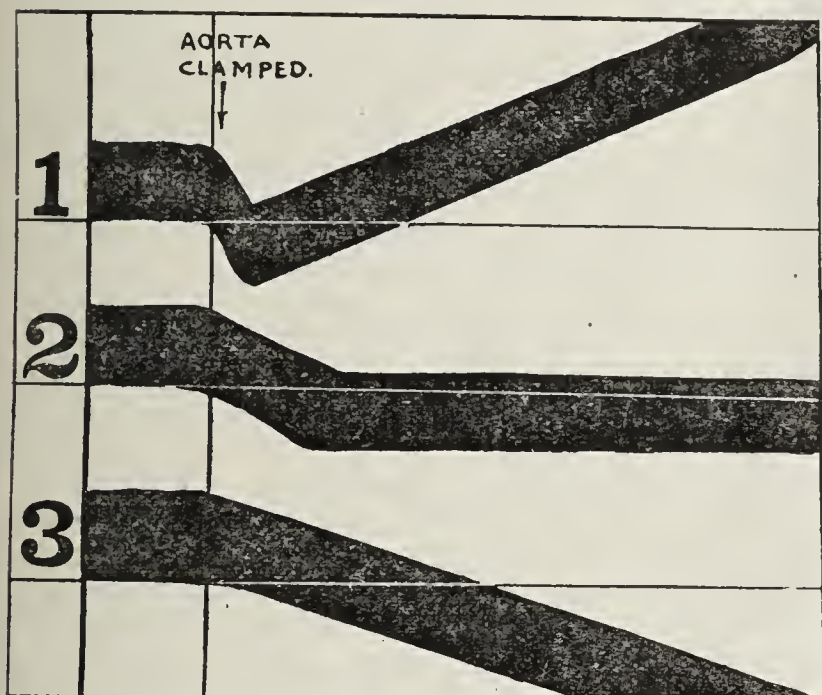


Fig. 8.—Showing effect of clamping the aorta on the volume of the heart. Diagrammatic, after experiments done with Dr. Cameron. 1. Tonicity increased by strain; 2, low tonicity, permanent dilatation; 3, very low, complete heart failure.

in the *Archives of Internal Medicine* has written on the subject of the extra systole. I can not help feeling that a great many instances of extra systole occur in young individuals; and it is among these young individuals that not such a serious view of the condition is taken as is warranted.

DR. G. W. McCASKEY, Fort Wayne, Ind.: It is of great value to the clinician to estimate the pulse pressure by the difference between the systolic and diastolic pressure, as shown by Erlanger's apparatus. This represents the actual work done by the heart, and it indicates in a general way the working efficiency of the heart. If the systolic pressure, for example, is 200 and the diastolic pressure 175 or 180, representing a difference of 25 or 20—this being the pulse pressure—the condition is much more serious than the same systolic pressure with a diastolic pressure 35 or 40 mm. less. The pulse pressure represents the work the heart is doing. All this rests on well recognized physical laws and has its application in clinical medicine. The result gives us Erlanger's velocity coefficient, which represents still more accurately the work the heart is doing. This does not express the volume of blood the heart is forcing through the circulatory apparatus in units of any sort, but is simply an arbitrary datum available only for purposes of comparison, but cer-

tainly has a very considerable clinical value. One of the results of the work that is being done in this line to-day is the diagnostic and prognostic value obtained by the administration of drugs of the digitalis group. I have come to regard the effect of the early administration of digitalis of the highest diagnostic and prognostic value in some obscure cases of arrhythmia. If the giving of digitalis produces a bad effect on the heart I am inclined to believe that perhaps there are initial changes going on in the bundle of His which ultimately will lead to heart-block.

DR. ARTHUR D. HIRSCHFELDER, Baltimore: Extra systole is something of extreme importance. The only physical factors known at the present time to bring about extra systole are those to which I have just called attention. It is impossible to determine in an individual clinical case exactly what influences are at work. Therefore I believe that the only thing one can do under these conditions is, as Dr. McCaskey has suggested, to administer digitalis early when there seems to be a physiologic indication for it, in order to determine whether the arrhythmia is improved by it or not; in making this determination the action of the drug must be most care-

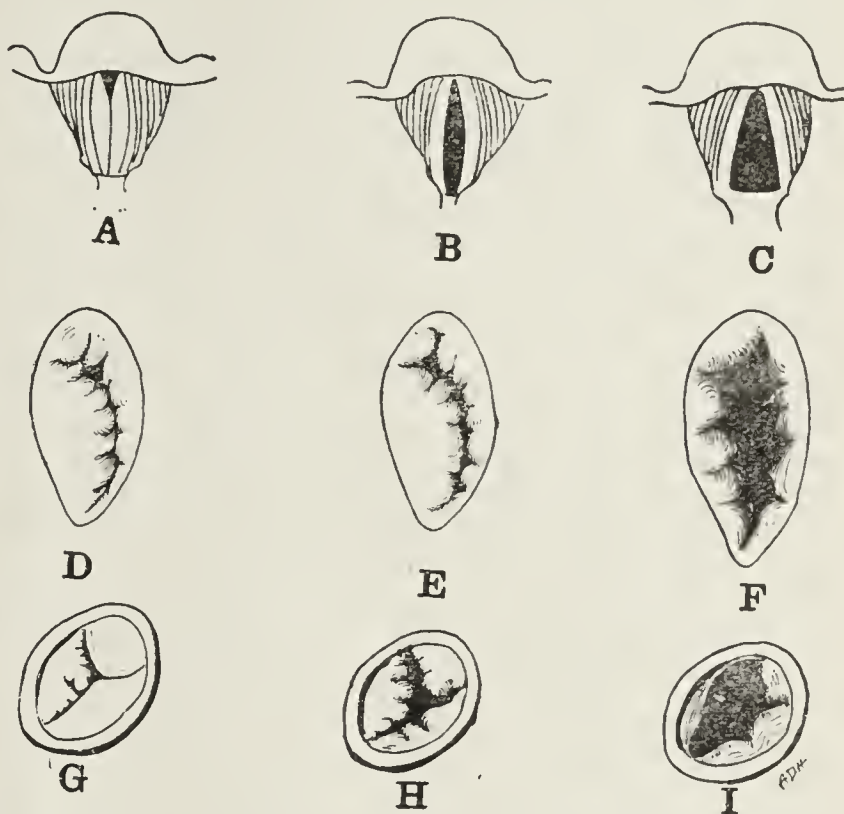


Fig. 9.—Showing analogy of positions of vocal cords for voice production and positions of heart valves in the production of murmurs. Upper line, showing larynx, with (A) vocal cords in position for high head note; (B) for low chest note; (C) for quiet breathing. Middle and lower lines showing auriculoventricular (D, E, F) and semilunar (G, H, I) valves with beats increasing from D, G to F, I.

fully watched. It is also possible to use strophanthus in this condition if the preparation is a good one. It is a little milder and quicker in its action but perhaps more transitory. With regard to the velocity coefficient I am sorry that I am even more conservative than Dr. McCaskey in advocating it as an index for treatment on account of the exceptions which have been mentioned. There is need of further investigations along these same lines before anything of great value can accrue from them. With regard to the value of the estimation of pulse pressure and high tension, as for example a systolic pressure of 200 and a diastolic pressure of 140, as quoted by Dr. McCaskey, I wish to call attention to the fact the pulse pressure naturally increases where there exist conditions which cause a high systolic pressure. The same amount of systolic output should give rise to greater variations in the pressure at high rather than at low pressure. Consequently one must allow for that to a certain extent. Dawson of Baltimore has approximately reached that conclusion, dividing the pulse pressure by the mean pressure. One must make allowance for and bear continually in mind those factors which produce and perpetuate high pressures.



# A CLINICAL METHOD FOR THE DETERMINATION OF THE SODIUM CHLORID CONTENT OF THE BLOOD AND OTHER BODY FLUIDS.\*

DOUGLAS VANDERHOOF, A.M., M.D.

Adjunct in Medicine, Medical College of Virginia.

RICHMOND, VA.

The object of this paper is to present a practical working method for the determination of the sodium chlorid content of the blood and other body fluids, together with the results obtained by this method in a variety of disease processes. Especial interest attaches to such a study because of the questions that have been raised during the past few years relative to chlorid retention and excretion in certain acute and chronic maladies.

The amount of sodium chlorid in the blood of normal individuals is generally estimated as being about 0.5 per cent. (v. Jaksch). In the oft-published tables of C. Schmidt<sup>1</sup> the proportion of sodium chlorid in healthy human blood is given as 0.5546 per cent., while Bier-nacki<sup>2</sup> gives lower values and finds normal variations between 0.441 and 0.468 per cent. The discrepancy in these findings probably depends on the fact that analyses of the ash of the blood are among the most difficult in chemistry for the reason that certain substances, including chlorin, are easily volatilized if too much heat is applied. Furthermore, it is to be remembered that practically all the sodium chlorid resides in the plasma, while very little, if any, is present in the blood corpuscles. Hence analyses of blood obtained postmortem after more or less clotting has occurred are absolutely unreliable, and the error inherent in such a method of procedure is responsible for the bizarre findings in certain recent investigations of the blood in diseased conditions of the body, as I shall presently show.

The method of sodium chlorid determination which forms the basis of this paper is one which is applicable in the routine bedside study of the patient, and one that can be easily carried out by any one versed in the workings of the regular clinical laboratory. It is an adaptation of the well-known Salkowski-Volhard method of the quantitative estimation of the chlorids in the urine and gastric contents. There would seem to be no reason why this procedure, as a clinical method, should not apply in the case of the blood, provided that the proteid constituents be first removed so that the silver nitrate used will not combine with these to form silver albuminates. In order to rid the blood of the albumins it was decided to precipitate and oxidize these bodies by nitric acid as a preliminary step. After this the method departs in no way from the routine procedure as used in the case of the urine. The results of the first experiments gave values for sodium chlorid in agreement with those of previous investigators, and further work showed variations which are exceedingly slight in degree and well within the limits of error of any clinical method.

## METHOD OF OBTAINING THE BLOOD.

The requisite amount of blood is secured from one of the larger veins at the bend of the elbow by means of an aspirating syringe. A simple form of apparatus consists of a piece of glass tubing, diameter 10 mm., with

tapering ends. To one end is attached a short piece of rubber tubing connected with a large-sized hypodermic needle; to the other is attached rubber tubing with a mouthpiece such as is used with the ordinary blood-counting pipette. This latter end of the glass tube is made large enough to readily admit the stem of a regular 1 c.c. volumetric pipette. This apparatus is easily constructed and is similar to one described in Ewing's "Clinical Pathology of the Blood,"<sup>3</sup> except that the needle is not attached by a ground-glass connection.

The skin on the inner surface of the elbow is thoroughly cleaned with alcohol and sterile pledgets, and the apparatus—with the exception of the long rubber tubing—is boiled. After carefully blowing out all the contained water the needle is introduced into the vein through the skin and the blood aspirated by suction. About 2 or 3 c.c. of blood are drawn into the glass tube, the needle is withdrawn, the rubber tubing connecting the needle with the syringe is compressed, the tubing leading to the mouthpiece is disconnected from the syringe, the volumetric pipette is introduced into the syringe and 1 c.c. of blood is measured out. The whole procedure can be done carefully and rapidly before there is any tendency to clotting.

## METHOD OF THE CHLORID DETERMINATION.

One cubic centimeter of blood, exactly measured as above described, is placed in 25 c.c. of nitric acid solution (concentrated nitric acid, C. P. 1 part, distilled water 3 parts). The volumetric pipette is rinsed out four or five times with distilled water and the washings added to the blood and nitric acid mixture. The color varies from reddish-brown to chocolate-brown, varying very appreciably with the hemoglobin content of the blood. The albumin bodies of the blood are at once precipitated and oxidized by the nitric acid, while the sodium chlorid content is unaffected.

To this solution are added exactly 5 c.c. tenth-normal silver nitrate solution. This is well shaken, allowed to stand ten minutes, and then put in a 50 c.c. graduated flask and the amount made up to the 50 c.c. mark with distilled water. This is then poured into a clean beaker, thoroughly mixed, and 25 c.c. are filtered into a graduated flask of that capacity. This filtrate, which is almost colorless, is used for the titration.

Ten drops of a saturated aqueous solution of ferric ammonium sulphate are added to the filtrate as an indicator. Into a burette, graduated in 1-20 c.c., is placed a twentieth-normal solution of ammonium sulphocyanid. Titration is then carried on until every trace of silver is precipitated, when the sulphocyanid combines with the ferric salt to form the reddish-brown ferric sulphocyanid. The end reaction is very sharp and the titration is stopped at the first tinge of color.

The calculation is very simple. The number of cubic centimeters of the sulphocyanid solution required is deducted from the volume of silver nitrate solution used (5 c.c.) and the difference, in the terms of NaCl, represents the amount of chlorid, as NaCl, in one cubic centimeter of blood.

1 c.c. —  $\text{AgNO}_3 = 0.00585 \text{ gm. NaCl.}$

(The calculation requires that the number of cubic centimeters of sulphocyanid solution be multiplied by 2, as only 25 c.c. of the filtrate were used and not the entire 50 c.c., and this sum is then to be divided by 2 for the reason that 2 c.c. of twentieth-normal sulphocyanid solu-

\* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. American Text-Book of Physiology, ed. 2, 1, 50.

2. Untersuchungen über die chemische Blutbeschaffenheit bei pathologischen Zuständen, Ztschr. f. klin. Med., 1894, xxiv, 460.

3. Second edition, page 67.



tion is equal to 1 c.c. tenth-normal silver nitrate solution.) In my experiments I made up an approximately twentieth-normal sulphocyanid solution, and then determined the exact value of 1 c.c. of this solution in terms of silver nitrate and sodium chlorid.

In the following report of cases attempt was made to study a variety of conditions which might prove to be of interest from the possible changes of the sodium chlorid content of the blood. In each case the amount of sodium chlorid in 1 c.c. of blood was determined, but for comparison with previous results in which a weighed quantity of blood was used, the sodium chlorid in 1 gram of blood is estimated by dividing the amount in 1 c.c. by 1.060, the specific gravity of normal blood. This introduces a slight error in the cases of anemia in which the specific gravity is necessarily lower than normal.

That this method is not at all difficult to carry out, with due regard to the accuracy required in any quantitative chemical analysis, is seen in the fact that this small series of cases represents every consecutive experiment I have made with the exception of two early ones in which the technic of obtaining the blood was at fault.

#### REPORT OF CASES.

CASE 1.—Male, aged 43, with aortic insufficiency, broken compensation, dyspnea, cough, enlarged liver, edema of ankles; 1 c.c. blood contains 5.49 mg. sodium chlorid, or 0.518 per cent. sodium chlorid by weight.

CASE 2.—Male, aged 29, with gastric neurosis with absence of free HCl after test breakfasts. For past ten days he has been taking 3 drams of dilute hydrochloric acid daily; 1 c.c. blood contains 5.34 mg. sodium chlorid, or 0.504 per cent. sodium chlorid by weight.

CASE 3.—Male, aged 24, with epilepsy. Patient has been on a diet with restricted salt for past three months, and has taken no bromid during this period; 1 c.c. blood contains 5.49 mg. sodium chlorid, or 0.518 per cent. sodium chlorid by weight.

CASE 4.—Male, aged 40, with chronic interstitial nephritis. He has hypertrophied heart, relative mitral insufficiency, moderate dyspnea, blood pressure from 218 mm. to 235 mm., marked neuroretinitis, occasional vomiting, no diarrhea. The urine is increased in amount, of low specific gravity, with a good trace of albumin and a moderate number of hyaline casts. Determination of the chlorids in the urine shows an excretion of 4.37 gms. in 24 hours. Patient is receiving no medicines, is on liquid diet, and is being given a daily sweat-bath; 1 c.c. blood contains 5.19 mg. sodium chlorid, or 0.489 per cent. sodium chlorid by weight.

CASE 5.—Male, aged 19, with chronic parenchymatous nephritis. He has marked general anasarca, hydrothorax and ascites, and pronounced anemia. Urine: 1,950 c.c. in 24 hours; specific gravity, 1.018; albumin, 8 gm. per liter; many hyaline, finely and coarsely granular casts. Determination of chlorids shows an excretion of 6.16 gm. sodium chlorid in 24 hours. Left chest was aspirated and 1,900 c.c. serous fluid withdrawn. This contained 7.28 mg. sodium chlorid per c.c.; 1 c.c. blood contains 5.80 mg. sodium chlorid, or 0.547 per cent. sodium chlorid by weight.

CASE 6.—Male, aged 32, with acute lobar pneumonia. Seventh day of illness: He has consolidation of whole left lung, continuous fever, delirium, herpes, etc. Urine: 2,450 c.c. in 24 hours, with total chlorid excretion of 1.04 gm. sodium chlorid; 1 c.c. blood contains 5.65 mg. sodium chlorid, or 0.533 per cent. sodium chlorid by weight.

CASE 7.—Same patient as in Case 6. Eighth day of illness: Crisis occurred last night. 1 c.c. blood contains 5.49 mg. sodium chlorid, or 0.518 per cent. sodium chlorid by weight.

CASE 8.—Male, aged 53, with carcinoma of stomach, for which gastroenterostomy has been done. He has marked prostration and anemia. Hemoglobin, 35 per cent.; 1 c.c. blood contains 5.95 mg. sodium chlorid, or 0.561 per cent. sodium chlorid by weight.

CASE 9.—Female, aged 29, with marked secondary anemia

due to bleeding hemorrhoids. Red blood corpuscles, 2,100,000; white blood corpuscles, 7,200; hemoglobin, 25 per cent.; 1 c.c. blood contains 6.24 mg. sodium chlorid, or 0.588 per cent. sodium chlorid by weight.

CASE 10.—Same patient as in Case 4. Uremic coma; duration, 48 hours; void urine involuntarily. This examination was made 27 days after that recorded in Case 4, and 3 days before death; 1 c.c. blood contains 5.34 mg. sodium chlorid, or 0.504 per cent. sodium chlorid by weight.

CASE 11.—Male, aged 17, with acute lobar pneumonia; consolidation of right lower lobe. Sixth day of disease. Urine: 810 c.c. in 24 hours, with total chlorid excretion of 1.92 gm. sodium chlorid; 1 c.c. blood contains 5.19 mg. sodium chlorid, or 0.489 per cent. sodium chlorid by weight.

CASE 12.—Male, aged 34, with Hodgkin's disease. Patient is in hospital for diagnosis and is receiving no medicine. Red blood corpuscles, 3,016,000; white blood corpuscles, 9,600; hemoglobin, 37 per cent.; 1 c.c. blood contains 5.80 mg. sodium chlorid, or 0.547 per cent. sodium chlorid by weight.

CASE 13.—Male, aged 18, with splenomyelogenous leukemia. On admission three weeks ago leucocyte count on three examinations showed 268,000, 220,000 and 241,000 white cells per c.mm., with typical blood picture. The spleen is exceedingly large. Since admission he has been treated with arsenic and x-ray applications. To-day blood count shows: Red blood corpuscles, 2,560,000; white blood corpuscles, 26,800; hemoglobin, 45 per cent.; 1 c.c. blood contains 6.38 mg. sodium chlorid, or 0.601 per cent. sodium chlorid by weight.

The sodium chlorid content of the blood in this series is seen to vary between 0.489 per cent. and 0.601 per cent. The former figure was obtained in two cases, one case of chronic interstitial nephritis and one of pneumonia, the latter in the patient with leukemia with secondary anemia. It is at once noted that the higher values are found in the patients with anemia, including one case each of chronic parenchymatous nephritis, Hodgkin's disease, carcinoma of stomach, secondary anemia due to bleeding hemorrhoids, and leukemia. On the other hand, the lowest values are found in those conditions which are associated with venous stasis as is well seen in one of the pneumonia cases, and in the patient with chronic interstitial nephritis with relative mitral insufficiency and dyspnea. These findings are in entire accord with the results of cryoscopic examinations of the blood in similar conditions. Thus, the extensive researches of Koranyi<sup>4</sup> showed that the freezing point of the blood is higher, i. e., above 0.56 degrees C., in anemias and those fevers which do not interfere with the respiration, including chlorosis, tuberculosis, typhoid and the various cachexias; while the freezing point of the blood is lower than 0.56 degrees C. in all diseases which are accompanied by deficient respiration or kidney function, or both, including pneumonia, broken compensation in cardiac disease, and nephritis.

In spite of the fact that the salt content of the blood is generally accepted to be practically constant in both health and disease, as is abundantly confirmed by cryoscopic studies, yet a review of the recent literature on the subject of chlorid retention reveals frequent reference to "chloridemia."

Furthermore, several monographs, representing arduous chemical investigations, have lately appeared in which the authors have found marked variations in the sodium chlorid content of the blood in the different conditions studied. The most extensively quoted of these is a paper by Rumpf<sup>5</sup> who made complete analyses of the blood, kidney, heart, liver and spleen postmortem. In fifteen cases of nephritis he obtained values for

4. Ztschr. f. klin. Med., 1897, xxxiii, 1-54; 1898, xxxiv, 1-52.

5. Ueber chemische Befunde bei Nephritis, München, med. Wochenschr., 1905, III, No. 9, p. 393.



sodium chlorid in the blood from 0.532 per cent. to 0.141 per cent. He concludes, in part, as follows: "In many cases of nephritis the chlorid content of the blood and of the tissues is increased; nevertheless, the chlorid content in nephritis gives by no means the highest values. Furthermore, there are cases of chronic nephritis in which the chlorid content of the blood is rather diminished than increased in spite of edema, albuminuric retinitis, and uremic phenomena."

This author's conclusions are based on results that are entirely inaccurate for the reason that the blood was obtained at the postmortem table at varying periods after death. As is well known, nearly all the sodium chlorid resides in the plasma, and the clotting and sedimentation of the blood prevented him from obtaining the due proportion of corpuscles and plasma in the specimens weighed out for chemical investigation. It was the frequent reference to Rumpf's paper that led me to devise the method of sodium chlorid determination herein contained. The results in my cases, however, are in entire accordance with the findings of cryoscopy and the generally accepted fact that the sodium chlorid content of the blood, or rather plasma, is remarkably constant both in health and in disease.

The application of this method to the study of transudates and inflammatory exudates may prove to be of interest. I have had the opportunity of making only three experiments in this direction, as follows: Arthritis of knee, clinical diagnosis tuberculosis, 1 c.c. fluid contained 6.38 mg. sodium chlorid; hydrothorax in a case of chronic parenchymatous nephritis, 1 c.c. fluid contained 7.28 mg. sodium chlorid pleurisy, with effusion, 1 c.c. fluid contained 6.38 mg. sodium chlorid.

#### SUMMARY.

The sodium chlorid content of the blood and body fluids may be accurately estimated by an adaptation of Vollhard's method of quantitative chlorid determination after first precipitating and oxidizing the albumin bodies by nitric acid. The method requires one cubic centimeter of blood, aspirated from a vein, and accurately measured in a volumetric pipette. Clinical applications of this method show a practically constant value for sodium chlorid in a variety of conditions such as nephritis with and without edema, uremia, pneumonia, epilepsy, gastric anacidity, and conditions of cachexia. Variations in the amount of sodium chlorid depend on the relative proportion of plasma and corpuscular elements in the specimen examined, with the highest values in cases of anemia and the lowest figures in patients with venous stasis due to heart, kidney or lung affections.

#### CONCLUSIONS.

1. The proportion of sodium chlorid in the plasma of the blood is constant in conditions of health and disease.
2. The term "chloridemia" is unjustified.

Interest in the Case.—It is said of some physicians they are good only for serious cases, for these are the only class of cases they show interest in. This class of physicians necessarily limit their work for the very serious cases are few in number and are usually not serious at first. A keen interest in his ailment is demanded by each patient though it is but a rhinitis or a fancied illness, and many of the fake healers would be out of business if the physician had shown an interest in the case which afterward wandered away from him.—*Leucocyte*.

## RELATION OF SO-CALLED OPHTHALMIC MIGRAINE TO EPILEPSY.\*

ALVIN A. HUBBELL, M.D.

BUFFALO, N. Y.

I venture to offer a word on the subject of the relation of so-called "ophthalmic" migraine to epilepsy—a subject on which discussion is by no means closed.

The "ophthalmic" migraine of Charcot I do not regard as essentially an ophthalmologic subject, but the accompanying, and often quite alarming visual and other sensory disturbances, many of which are naturally referred to the eyes, lead the afflicted to consult an ophthalmologist. This, together with its frequency of occurrence, gives the ophthalmologist a large opportunity to see and study cases of this kind—an opportunity which is unequaled by any other class of practitioners.

From the time of Airy's graphic description,<sup>1</sup> in 1868, and of Liveing,<sup>2</sup> in 1873, to that of Gowers<sup>3</sup> of the present day, the symptoms of this affection have been presented to the profession over and over again, and are, or should be, familiar to all. Therefore, I shall at once invite attention to the relation of this disease, expressed by visual scintillations and scotomata, motor and sensory disturbances, aphasia, etc., to epilepsy.

That a difference of opinion still exists in regard to the relationship of these two diseases is shown by the following quotations from two excellent authorities. Dr. William P. Spratling<sup>4</sup> says: "I believe it (migraine) is associated with the disease (epilepsy), especially in women, who more frequently show a periodicity in convulsive phenomena than men. Unquestionably some of the lighter forms of epilepsy pass for periodic sick headaches. It is a rule for psychic seizures to be followed by an intense, protracted pain in the head, that may persist for several days." On the other hand, Dr. James Hendrie Lloyd<sup>5</sup> says in regard to the possibility of the transition from migraine to epilepsy: "This claim is made by some authors, but the present writer has never seen or heard of an authentic case, and does not believe in the doctrine."

Most authorities endorse the conclusions of Liveing and some of his predecessors, which are voiced by Spratling. Believing that migraine and epilepsy are two distinct forms of neurosis, I desire to do what I can toward disabusing the profession of the idea that a kinship exists between them, or that a genuine transformation of one into the other ever takes place.

By way of illustration, one of the more recent efforts to establish such kinship has been made by Dr. Spiller of Philadelphia, who has described in detail two cases.<sup>6</sup>

CASE 1.—A man, 51 years of age, who, since 44, had had attacks occurring twice a year at first, but now quite frequently. During the first four years there was numbness of the tongue on the right side, and inability to speak, the attacks lasting a minute or two. At 48 he began to have similar attacks of numbness in his right upper limb, and after a short time in his right lower limb. The paresthesia was always confined to the right side of the body, and was associated with impaired function of speech and weakness of the

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. *Philosoph. Trans. Royal Soc., Lond.*

2. *Megrim or Sick Headache, London, 1873.*

3. *Subjective Sensations of Sight and Sound, etc., London, 1904.*

4. *Epilepsy and Its Treatment, 1904, p. 180.*

5. Posey and Spiller's "The Eye and the Nervous System," 1906, p. 710.

6. *Am. Jour. Med. Sci., January, 1900.*



hand. There was also a feeling of tension in the limbs at times, and the right eye would feel drawn upward, to the right, and backward when the numbness passed to the right side of the head. When seen in the attacks, however, the eyes were not drawn upward. In the lighter attacks there was no loss of consciousness, but in the "major" attacks there was loss of consciousness and he would fall. These attacks were preceded for twenty minutes by an unusually "well" feeling, followed by drowsiness, and as they came on he would utter a sound like "uh-uh-uh."

He sometimes remained unconscious in severe attacks for half to three-quarters of an hour. The attack was followed by bewilderment for a short time. There was a slight tremor of the hands, but no jerkings or twitchings. He had not suffered from headache, was seldom dizzy and never had hemianopsia, scintillating scotoma, or other visual disturbances.

This case Dr. Spiller considers one of epilepsy in which the absence of convulsions is a noteworthy feature.

CASE 2.—A well-developed woman, 21 years of age, when 4½ years of age, fell and struck her head, leaving a red spot on the right side. She was at first confused, and in a few minutes became unconscious. After a short time she began to scream and could not be quieted for several hours. For several days afterward her mind was exceedingly active. Some months after the fall she had an attack in which the right arm fell powerless to the side of the body, and the whole right side seemed parietic for about half an hour, and she complained of headache.

These attacks recurred for several years, sometimes being on the right side and sometimes on the left, but never on both sides. As she grew older she explained that in the attacks there was numbness and paresis of the limbs, paraphasia, and intense headache on the side opposite to the affected limbs. The numbness began in the fingers and passed upward. She was unable to speak correctly when the numbness reached the tongue. The visual disturbances were doubtful. In one attack during the past year there was dimness of vision. No convulsions ever occurred. The headache, when frontal, was attended by a sense of sweet odor, when none existed.

On Oct. 4, 1899, she was suddenly attacked by severe headache, a few minutes after which she became quiet, and her father, a physician, thought she was unconscious. She soon began to complain of pain again, and a very small amount of chloroform was administered. After the attack was over she had a very imperfect recollection of what happened. This was doubtfully interpreted as an epileptic seizure.

In these two cases Dr. Spiller believes that he finds a connecting link between epilepsy in the first and migraine in the second by means of the transitory paresis, paresthesia, and disturbance of speech found in both.

Sir William Gowers, Féré, Charcot, Diller, Möbins, and others, refer to their experiences corroborating the theory that the two diseases are related to each other. Gowers,<sup>7</sup> in speaking of the pathology of migraine, and especially of its relation to other diseases, says: "The most important and one of the most frequent of these associations is the relation of migraine to epilepsy. The connection of the diseases is of especial interest because the sensory disturbance of the two has so many common features." He then refers to cases of epileptics in whom migraine was present in themselves or in their ancestors or descendants. He says he has met with a number of cases in which there was both epilepsy and migraine. In some, epilepsy developed after many years of migraine or seemed to grow out of it. In one, the migraine which had existed for years almost disappeared when the fits occurred, and vice versa. In some there were similar sensory symptoms preceding the epilepsy to those in migraine.

In all that Dr. Spiller or others have said it has not been proved that these supposed "connecting-link" symptoms belong essentially to true epilepsy, or that they are necessarily forerunners or development-symptoms of it. Undoubtedly among those affected by transitory paresis and paresthesia there are thousands who never have epilepsy to one who has. They are, however, common in those affected by migraine. Again, undoubtedly, there are thousands who are subject to migraine, even the typical "ophthalmic" form, who are not epileptic, to one who is. My own observations serve to prove this assertion.

The effort has been made to establish a relationship not only between migraine and epilepsy, but also between migraine and other disorders. Gowers<sup>7</sup> says that gout bears a causal relation, and adds that "an alternation is often observed with some other forms of nervous disorders or at least a transition from one to another. Migraine occasionally ceases, and is replaced by simple neuralgia." Liveing<sup>2</sup> has collected many instances of such transition of migraine to gastralgia, laryngeal spasm, anginal seizures, and paroxysmal insanity. In one case, acute mania came on.

In my opinion, more proof than these and similar citations is required to establish a kinship or transition (transformation, according to Liveing), of migraine to other diseases. In the first place the pathology and pathogeny of migraine is very obscure. Second, certain symptoms may or may not attend it, such as aphasia, paresis, paresthesia, etc. Some of these are complained of by persons who are neither migrainous nor epileptic. Third, altered states of the nervous system and of metabolism in various ways may induce or aggravate migraine, or, on the contrary, so act as to alleviate it, or perhaps even to stop it entirely, at least for a time. In my own case, an ocean voyage does away with attacks of migraine entirely, during the time, and often for many months afterward; but it can scarcely be assumed that there is a direct transition or relation between migraine and seasickness. A change, however, is undoubtedly effected, etiologically, by which the migraine is abated.

#### DIFFERENTIAL DIAGNOSIS.

The argument that there is a similarity of symptoms of migraine to those of epilepsy does not seem to me to be well sustained. A paroxysm of epilepsy is sudden in its onset, begins almost without warning, and at once reaches a climax. Its duration is short and the patient soon becomes normal again. That of migraine begins with slight symptoms which gradually increase in severity and reach their climax after a half hour or one hour. Even the visual disturbances which sometimes usher in an attack are at first slight and gradually become more pronounced for ten or fifteen minutes, when they reach their height, and then slowly disappear in the course of another ten or fifteen minutes. In epilepsy there are convulsions, in migraine there are none. In epilepsy there is unconsciousness, in migraine there is not. In epilepsy there are varied sensory and mental disturbances which do not belong to migraine, and vice versa. Epilepsy often leads to insanity; migraine does not. Epilepsy has the character at first of an "explosion," while migraine is at first more like a "nervous inhibition." The sequence of an attack is different in both diseases.

I may add that my personal experience and observation also serve to establish a separate, individual entity, functional, or otherwise, for the two diseases.

7. Diseases of the Nervous System, Am. Ed., 1888, p. 1182.



Having been myself affected from childhood with typical migraine, ushered in by "fortification" and "spectral" visual scotoma and having been somewhat disturbed by the idea of its kinship to epilepsy, a disease to which death would almost be preferable, which Living and other high authorities had promulgated, I have been led to take deep interest in the subject. I have had migraine in all its variations as to intensity, frequency, accompanying motor and sensory disturbances, length of interval between attacks, etc., but have never had a single symptom of epilepsy. In my mother's family and my own, there have been, besides myself, twelve who have been subject to migraine, but not one has had epilepsy in any form.

My practice has given me a large opportunity to extend my inquiries far beyond my family limitations, with results that are not only enlightening, but, as it seems to me, comforting to one afflicted with "ophthalmic" migraine, and who has an intense abhorrence of becoming an epileptic.

Since 1888 I have been consulted by a very large number of migrainous patients. I have not collected the full number, but it must have exceeded two thousand. But to keep the number within the bounds of absolute certainty, I will place it at fifteen hundred, or an average of seventy-five a year. I have questioned these patients in regard to symptoms of epilepsy, and not one of the fifteen hundred had had epilepsy in any form or degree, neither had it existed in any of their ancestors or descendants, so far as I was able to ascertain.

It is not impossible that migraine and epilepsy may exist in the same individual. In fact, I know a few epileptics who are also subject to migraine, but the attacks are entirely separate and independent. Neither will I question the changed manifestations of one disease in the presence of the other, but I do not think that this proves a kinship or transformation. If migraine is related, either etiologically or pathologically, to epilepsy, it does seem that during its existence for a period of years, varying from one to fifty, a certain proportion of fifteen hundred would have become epileptics or shown some symptoms of epilepsy. But no such result has taken place.

I have no doubt that some epileptics may be migrainous, and that occasionally out of so many who have migraine there may be, now and then, one who is also epileptic or who may develop epilepsy. But this does not prove a pathologic kinship. It might as well be assumed that there is a relationship between dyspepsia and epilepsy because certain epileptics have dyspepsia, or certain dyspeptics have epilepsy.

I might enlarge on this subject, perhaps with profit, but Sir William Gowers, apparently with a decided change of views, has most clearly, as it seems to me, epitomized in his late volume<sup>8</sup> conclusions that nearly approach my own. I will make a single quotation from that work:

"The traces of a definite relation of migraine to epilepsy are slight. In extremely rare instances one affection may develop, while the other goes on, and as we have seen, the same premonitory disturbance may even be attached to each. But such cases are so rare as rather to emphasize the rule to which they form exceptions. When the exceptions are carefully examined they show that any relation to epilepsy is indirect."

## DISCUSSION.

DR. WALTER R. PARKER, Detroit: The result obtained from efforts to determine the relationship of diseases when clinical symptoms are similar, the etiology and pathology of which are unknown, is certain to be unsatisfactory. And such is the case in regard to migraine and epilepsy in the so-called borderline cases. Migraine is defined as a neurosis, the cause of which is unknown, giving rise to certain functional disturbances, classified according to the most prominent symptoms, as, first, ophthalmic, if the visual sense is disturbed; second, ophthalmoplegic, if the third nerve is involved, and third, psychic if the mental symptoms predominate; a classification entirely clinical. So, too, epilepsy is a neurosis, the cause of which is unknown. The relation between the two diseases is made entirely on clinical evidence. Some rare cases of extreme asthenopia, with headache, vertigo and reflex gastric symptoms, due to a refractive error or muscle imbalance, may present a group of symptoms not unlike those of migraine or epilepsy. If this is true, is it not possible that, in the consideration of these cases, not enough importance has been given them?

Some of the early writers (Piorry) asserted that ophthalmic migraine was due to "overstrain of the iris and overstimulation of the retina," while a few of the later writers think that eyestrain is never a causative factor. Lloyd, in Spiller and Posey's work, after reviewing the subject of eyestrain as a possible etiologic factor, states that "some hasty observers are led into a conceivable error due to the prevalence of astigmatism." To say that all cases of migraine are due to a refractive error would probably be as far from the truth as to say that all cases of epilepsy that are cured by the correcting of a refractive error are due to hysteria. Either the truth lies between those two extremes or there is a group of cases, presenting all the clinical manifestations of migraine, which might be called a reflex migraine; just as there are cases of reflex epilepsy, each reflex manifestation distinguishable from the real only by the results of treatment. It may be, too, that this small group of cases has been the source of error that has led some observers to hold out promises of cure of migraine and epilepsy that have been so disappointing. Since the causes of migraine and epilepsy are unknown, and since there is a possibility of a reflex group simulating one or the other of the diseases, the relation between them will probably remain in doubt until the morbid process underlying each is developed. Gower says: "As the real nature of the morbid process of epilepsy and migraine is unknown, we are hardly justified in saying more than that in each malady a state of nerve tension seems slowly to develop which is at last relieved by a violent functional disturbance." I have not seen as many cases in fifteen years as Dr. Hubbell sees each year. It is this large number of cases that makes the paper so important, as we are entirely dependent on clinical observation for our comparison of these most unfortunate diseases. As far as any positive deductions are possible, we can say that no direct relation between the two diseases has been proved and, as Dr. Hubbell suggests, we can with propriety assure our migrainous patients that they will probably not develop epilepsy.

DR. LEARTUS CONNOR, Detroit: I do not recall a single case in which I had reason to believe that migraine had any relation to epilepsy, and nothing I did to an eye ever cured an epileptic. Neither have I seen in the literature anything to convince me that any treatment of an eye ever really cured a case of epilepsy. I have seen plenty of cases in which the treatment of the eye has diminished or modified attacks of migraine.

DR. G. C. SAVAGE, Nashville: Migraine can be cured by treatment of the eye in many cases. I have even cured epilepsy by operating on the muscles and by prescribing glasses. No examination, undertaken for the correction of nervous phenomena that might possibly depend on the eye, is complete, unless the feature of eyestrain is considered. A physician in Iowa had one of these troublesome cases which he referred to me. The patient had been to many neurologists and oculists. She was an extremely nervous patient. She had two degrees of right hyperphoria and 5 degrees of plus cyclophoria. I found that it was necessary only to operate on the nasal-central fibers of the right superior rectus muscle. The one operation made her

<sup>8</sup> *The Borderland of Epilepsy*, London, 1907, p. 77.



perfectly well. That has been five years ago. About six years ago a young man with epilepsy was brought to me by his father and two brothers. The father said that the convulsions were so terrific that if the boys were not with the patient he would do himself physical harm. I detected a hyperphoria, without any cycloplegia. I operated, doing a central partial tenotomy, and that young man has not had a single convulsion from that day to this. Instead of having that dulness of mind into which he was passing very rapidly every day, he now has a very active mind.

DR. A. A. HUBBELL, Buffalo: I think that physicians and ophthalmologists would be surprised at the number of cases they would find of Chareot's ophthalmic migraine if they would extend their inquiries a little further. I do not get more than other men with a good-sized practice, but I sometimes meet four or five a day, and if, in cases of headache, you inquire as to these scintillations, you will find them very frequent. I quite agree with Dr. Parker. I perhaps would agree with Dr. Savage. I have not gone into the etiology of this form of migraine at all. My discussion applies simply to its relation to epilepsy, and as to whether one disease may be transformed into the other. It is a disorder of the cortex of the brain—it is not the eye. The refractive errors may have something to do, indirectly, with inducing this form of migraine; but I am not sure that they are the essential cause. I have no doubt that Dr. Savage has cured these patients in this way. I have done the same many times, and many times I have not succeeded. The point I wish to make is simply that migraine is not a cortical explosion in any sense comparable with that of epilepsy; that there is no pathologic kinship.

## DIFFERENTIAL DIAGNOSIS OF AFFECTIONS OF THE OPTIC NERVE.\*

HARRY FRIEDENWALD, M.D.  
BALTIMORE.

The subject for consideration is the differential diagnosis of pathologic conditions of the optic nerve between chiasm and retina.

Pathologic investigation has differentiated various forms of inflammatory affection, of traumatic injury, of vascular disease, of hemorrhages and neoplasms within and around the nerve and different kinds of atrophy of the nerve fibers either primary or consequent on the previously mentioned affections. Clinical observation has shown that these conditions differ in the appearance of the nerve head and in their effect on central and peripheral vision, and that variations are not only found between different affections, but even between different cases of the same or similar affections according to location and extent of lesion. The differential diagnosis, therefore, depends in one case on the ophthalmoscopic picture, in another on characteristic changes in the field of vision; but in most cases we must rely for differential diagnosis on careful study of both the appearance of the nerve head and the function of the nerve as tested for acuity of central, peripheral and color vision, on their changes during the progress of the disease; and the facts thus elicited must be considered in connection with the previous history and habits of the patient and with such other ocular, constitutional, organic and especially nervous diseases as may be discovered.

For the purpose of our inquiry we shall divide the subject into:

- (A) Those cases in which there is ophthalmoscopic evidence of inflammation in the optic disc.
- (B) Those cases in which the nerve head presents the picture of atrophy.
- (C) Those cases in which the disc is normal or approximately normal in appearance.

### A. AFFECTIONS IN WHICH THERE IS OPHTHALMOSCOPIC EVIDENCE OF INFLAMMATION IN THE OPTIC DISC.

The recognition of inflammation of the optic disc is sometimes rendered difficult by the great variations which normal optic discs present, and particularly by the markedly hyperemic condition which has been described as pseudo-neuritis. In these cases there may be marked tortuosity of the vessels, but the nerve remains transparent, the vessel walls are normal, there is never great swelling, and we usually find marked errors of refraction, commonly hypermetropic. Continued observation may be necessary for definite diagnosis.

The presence of fine, congenital patches of connective tissue or of hyaline bodies (Drusen) should never lead to errors in diagnosis, the absence of congestion and tortuosity and in the latter condition the characteristic reflexes enable us to recognize these conditions without difficulty.

The inflammatory affections of the optic disc are commonly divided into the descending optic neuritis or neuro-retinitis and choked disc. For clinical reasons it is of great importance to distinguish them, though their differentiation is by no means always an easy matter. The typical choked disc with the narrow arteries, the full and tortuous veins and the great prominence of the optic disc usually occurs as a binocular affection, and when binocular is the expression of increased intracranial pressure, most frequently produced by tumor, symptoms of which are rarely absent. The tumor may be benign or malignant, syphilitic or tuberculous. There is at first little or no visual disturbance, the central vision is unimpaired, the outlines of the field of vision are not reduced and the enlargement of the blind spot is easily overlooked. But there is occasional or frequent obscuration of vision, when, for a moment, everything becomes black before the patient, a symptom rarely found in other conditions than those of increased intracranial pressure. It is only at a late stage when the neuritis gives way to atrophy that there is rapid and marked failure of vision.

The combination of intense neuritis with such slight disturbance of the function of vision is as important as it is characteristic when we bear in mind that ninety per cent. of tumors of the brain, at some time, produce optic neuritis. Cerebral tumor, especially when in the middle fossa, may likewise produce unilateral choked disc or even choked disc of one eye and simple neuritis or optic atrophy of the other. Unilateral choked disc is most frequently due to orbital causes or to a meningeal syphilis passing down and causing lesions of the sheath.

The causes of choked disc aside from brain tumor are too well known to be dwelt on at this time. (Cerebral abscess, meningitis, hydrocephalus, nephritis, anemia, etc.) To one only do I wish to call special attention; namely, to serous meningitis. It is probable that some of the cases in which the diagnosis of brain tumor was made and in which recovery took place should be put in this category.

CASE 1.—In December, 1905, I saw a little girl, aged 4, who had been ill for three weeks with high temperature and pain in the ears. Convulsions had occurred. The drums were congested and were punctured without obtaining any exudate.

\*Read in the Joint Meeting of the Section on Nervous and Mental Diseases and the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



On ophthalmoscopic examination, marked optic neuritis was found and the patient was referred to Dr. Harvey Cushing, who made a decompression operation, followed by complete disappearance of the neuritis. I have seen the child at intervals and find that she has remained perfectly well.

CASE 2.—A case still more definite is that of Mary P., colored, aged 32, first seen on Feb. 20, 1906, for acute suppurative otitis media and mastoiditis on the left side. The patient did not consent to an operation until March 3. The operation was performed by Dr. S. Rosenheim and myself. There was pus under some pressure in the mastoid cells and the bone was soft. The lateral sinus was exposed for about one-half an inch; part of it was found covered by granulation tissue. The tip of the mastoid was one large cell filled with pus and granulation tissue on the posterior part of which the sinus was likewise exposed. After packing the latter cavity and withdrawing the packing there was a profuse hemorrhage from the lateral sinus, though no violence had been used. It was controlled by packing with iodoform gauze. Her temperature before the time of the operation was about 99 F., pulse 80 to 98. On the following days the temperature was irregular, reaching 103.6 F. on the fourth day after the operation, while at the same time her pulse dropped on the second day after the operation to 64, and remained below 70 for several days, except when the temperature was very high and the pulse rose to 100.

On the fifth day (temperature between 98.8 F. and 100.5 F.) abducens paralysis set in and I found mild optic neuritis. From this period on the temperature remained normal, though the pulse continued slow during the entire first week, but the neuritis increased and rapidly became a typical choked disc with hemorrhages in both eyes, more marked in the left. This condition lasted for some time, when the patient ceased coming, the wound having healed.

Seven months after the operation I found very little swelling of the discs, the veins slightly tortuous, but not very full, the arteries somewhat narrow, the color of the discs pink, and margins obscured; the condition of the left eye being more marked than that of the right eye. V. R. E., 16/30; V. L. E., 10/100. While optic neuritis is known to occur in a small number of cases of lateral sinus thrombosis, there was no evidence in this case of thrombosis, and the diagnosis of serous meningitis following injury of the softened wall of the sinus was most probable.

Spontaneous recovery from choked disc with cerebral symptoms, unless due to hemorrhage which is absorbed, or to syphilitic lesions which disappear under treatment, or in very young children whose suture lines break and thus allow expansion, is very rare.

CASE 3.—Mrs. G., aged 33, married and mother of two healthy children, whom I saw in 1891, had marked papillitis in the right eye with cerebral symptoms. She recovered after several months. There was no evidence whatever of syphilis. In 1896 she had a recurrence with vertigo and vomiting which again yielded to treatment (iodid of potash). I examined this patient last year and found some retinal pigment atrophy around the disc and normal central and peripheral vision. No evidence of atrophy of the discs, no swelling and no sign of previous neuritis.

Passing on to the other variety of optic neuritis, the so-called descending neuritis, we find but very moderate swelling if at all, no fulness or tortuosity of the veins, but an exudate clouding the disc and blurring the margin and perivascular lines bordering the blood vessels. In these cases, vision rapidly drops and frequently is entirely extinguished. The cause of double descending neuritis is usually some form of meningitis. Meningitis at the base is more prone to produce the optic neuritis and especially tubercular and syphilitic basilar meningitis spreading along the sheath as a perineuritis and thus involving nerve and even retina. Epidemic cerebrospinal meningitis, according to Uhthoff, produces optic neuritis in about 16 per cent. of the cases.

It may result from nephritis. When unilateral it is usually due to orbital inflammation or extension from the nasal sinuses.

The differential diagnosis of descending neuritis showing the combination of the great visual disturbance with the characteristic inflammation of the disc presents no difficulty. Both forms of neuritis, the descending as well as the choked disc commonly end in white atrophy, in post-neuritic atrophy.

#### B. AFFECTIONS IN WHICH THE NERVE HEAD PRESENTS THE PICTURE OF ATROPHY.

Optic atrophy is a term applied clinically to such atrophic conditions as show distinct pallor of the optic disc. They may be due to primary atrophy, as found in locomotor ataxia or secondary to injuries, to the pressure of tumors or of sclerotic blood vessels, to embolism or thrombosis of the central retinal vessels, to retinal or chorioidal atrophy, or to any form of neuritis, choked disc, descending or retrobulbar. The picture presented by the optic disc varies greatly. There may be the grayish pallor, with or without marked narrowing of the larger vessels, but with disappearance of the finer blood vessels and with sharply marked border as is usually seen in spinal atrophy. Or there may be the intensely white disc with irregular margins and perivascular lines usually seen as post neuritic atrophy. But it has been clearly shown that the variations are so great that we can not always determine from the appearance of the disc what form of atrophy it presents. And as in the case of pseudo-neuritis, so here we must also be careful not to regard every pale disc as atrophic, for pallor of the disc is at times very marked in high grades of anemia.

The visual function bears no relation to the appearance of the disc; we may find high grades of apparent atrophy with good vision, and vice versa.

Primary atrophy is with rare exception spinal atrophy. It begins at the bulbar end of the nerve, and therefore the pallor of the disc and the visual disturbance occur simultaneously. Uhthoff has defined three forms in which the field of vision is variously affected and which differ in their course and their prognosis. In the first there is diminution or loss of vision throughout the entire field, central vision is lessened and peripheral vision is restricted, though not uniformly, both for form, but especially for colors. In these cases, vision for green and then for red is lost, later for yellow and blue, thus producing a very great widening of the color blind area of the field. The progress is rapid, is hastened by mercury and the prognosis is absolutely bad.

In the second class sharply cut sector-like defects occur, but the parts preserved are normal in respect to color and form vision. The function of the parts retained may remain stationary, though it is usually lost after a time, one sector succumbing after another. This class, according to Wilbrand and Saenger, presents great similarity to that of syphilitic retrobulbar perineuritis with secondary atrophy of the disc.

The third class shows concentric contraction of the field with good central vision and good color vision in the portion preserved. Similar fields are found resulting from syphilitic affection of the intracranial portion of the optic nerve.

Wilbrand and Saenger have found that the course of the second and of the third class is very favorably influenced by the use of mercury, and they recommend



its use here as emphatically as they warn against it in cases of the first class. They suggest as explanation that the differences may lie in mistaking syphilitic pseudo-tabes for true tabes, or the possibility of a combination of cerebral syphilis with true tabes which would likewise explain the occasional occurrence of "post-neuritic atrophy" in locomotor ataxia.

Uhthoff has shown that true primary optic atrophy never occurs in cerebral syphilis, that it is always secondary. It is, therefore, assumed that it likewise does not occur in spinal syphilis, and that the optic atrophy found in syphilitic pseudo-tabes is secondary and therefore yields to specific treatment. The difficulty of a differential diagnosis between the true tabetic primary atrophy and the secondary is very great. The latter is apt to be slow in developing, while primary atrophy, as has been stated, is observed simultaneously with the first visual disturbances. Monocular affections are likely to be syphilitic; variations in visual function more frequently occur in the syphilitic forms; the latter are apt to be complicated with other syphilitic cerebral nerve palsies; pupillary disturbances may occur in both conditions, but the Argyll-Robertson reaction points to locomotor ataxia; hemiopic defects indicate syphilis and the presence of a central scotoma practically excludes primary atrophy. The last named sign, as may be mentioned in passing, likewise helps to differentiate the secondary atrophy of alcoholic pseudo-tabes from the primary atrophy of true tabes.

Wilbrand and Saenger deny emphatically that syphilitic atrophy is ever primary and regard the latter as spinal in every case. They are in accord with Uhthoff's statement that any adult suffering with binocular primary progressive atrophy must be looked on, not only as suffering from serious ocular disease, but also from grave disease of the central nervous system.

Primary atrophy may, as is well known, precede the appearance of the other spinal symptoms by many years, and it is only the termination which may finally determine the definite diagnosis.

CASE 4.—Mr. A., whom I first saw in December, 1895, for left optic nerve affection which had come on suddenly with drooping of the lid, with visions of flashes of light and a large defect in the field of vision, central vision being but slightly affected and the right eye not at all impaired. There was a definite history of luetic infection, but without secondary skin eruptions, mucous patches and other later syphilitic manifestations. Vigorous treatment with iodid of potash and mercury by inunction not only had no effect in arresting the progress of the trouble in the left eye, but did not prevent the same affection arising in the right eye six months later.

The discs at first appeared normal, and showed no atrophy and became pale only after a long period. The sight of the left eye was lost very rapidly, that of the right has shown only slow progress, so that its field is now very small and irregular, but central vision is still almost perfect. In this case, the sudden onset of symptoms, the absence of any early appearance of pallor and the slight ptosis helped to establish the diagnosis as a syphilitic lesion of the optic nerve and even though the treatment did not have the desired effect, the preservation of good central vision in one eye for twelve years and the non-development of any signs of spinal or cerebral disease confirms the diagnosis.

Another case presenting very different appearances is the following:

CASE 5.—A lady, first examined in July, 1890, when her eyegrounds were found normal and with weak convex cylinders her vision was perfect. She was married; her husband had definite syphilis (mucous patches, etc.). In October, 1899, she again presented herself. She had borne four children and had

had one miscarriage. Her younger children were very puny at birth but thrived on small doses of calomel. Subsequently, both had hemiplegic attacks, which were favorably influenced by mercury. An older child had two attacks of paralytic chorea. But though under constant care of her physician, the patient herself never presented a single sign of syphilis. Oct. 1, 1899, she complained of failing vision and the ophthalmoscopic examination showed white discs with V. R. E., 6/12, almost, and V. L. E., 6/24, partly. There were large symmetrical defects in the upper inner quadrants of both fields. Absence of the patellar reflex and slight inequality and loss of light reaction of the pupils were soon noted.

The usual treatment was given, iodid of potash, in very large doses, mercury by inunction for a prolonged period, pilocarpin, nitroglycerin, and later for many years, large doses of strychnia sulphate. The sight of her left eye was soon lost, but the progress of the disease was stayed in the right eye. In 1902 she had lost all color perception for green and red. In 1903, the pupils were noted as equal in size and reacted to light. The patient had had attacks of vertigo and intense headache and a lesion of the mitral valve had recently been discovered.

I last examined the patient in July, 1906, when her vision had dropped to 6/22 almost, and having seen the patient recently, I learned that her vision has not changed perceptibly and that she is still taking large doses of strychnia. The diagnosis made in this case was spinal atrophy, but though eight years have passed, no signs of ataxia have developed.<sup>1</sup>

Among the secondary atrophies aside from the syphilitic those caused by neoplasms must be mentioned. These are usually monocular; the tumors produce ocular motor disturbances and displacements of the eyeball, or if at the chiasm produce the characteristic hemiopic defects in the fields by which they can be recognized. The secondary atrophies due to pressure of the sclerosed carotid or ophthalmic arteries should be thought of in slowly developing secondary atrophy in the aged. Atrophies following embolism or thrombosis of the central retinal artery need no special consideration at this time. The history of their onset, their unilateral character and the excessively altered vessels help to establish the diagnosis.

The atrophies following descending neuritis or choked disc are sufficiently characterized by well marked signs of the neuritis, by the perivascular lines and the connective tissue developed from the inflammatory exudate to permit of ready diagnosis, usually borne out by the previous history. The atrophy occurring in deep glaucomatous excavation of the disc presents so pathognomonic a picture that it can not be mistaken.

Secondary atrophy depending on retinal and chorioidal degeneration bear the diagnosis in their yellowish, muddy appearance; in the thread-like blood vessels and especially in the evident retinal or chorioidal lesions.

Traumatic secondary atrophies, when unaccompanied by traumatic changes in the retina or the chorioid are usually recognized by other scars and by the clinical history. One class deserves special mention. I refer to the monocular atrophies resulting from blows on the head, most commonly on the upper margin of the orbit. The blindness and secondary atrophy in these cases is due to injury of the optic nerve in the optic foramen through which the fracture passes. The blindness is usually permanent and distinct atrophy of the nerve head can be made out within four or five weeks after the injury.

1. This case is an interesting example of Colles' law of apparent immunity of a mother who has borne a syphilitic child. The case shows that though immune to the primary and secondary manifestations, she is not immune to the late nervous sequelae. Since this paper was written, within the month of April, 1908, signs of tabes have set in very acutely and intensely: Ataxia, loss of the patellar reflexes, lightning pains, and disturbance of the function of the bladder.



## C. AFFECTIONS OF THE OPTIC NERVE WITH NORMAL OR APPROXIMATELY NORMAL DISCS.

The affections comprised within this group are the various forms of retrobulbar optic neuritis. It occurs in acute and chronic forms. The most common and best known form is the toxic, produced by tobacco and alcohol, and is characterized by a long but narrow paracentral scotoma, reaching from the blind spot of Marriotte to the point of fixation and later embracing it. Its development is very slow. The vision within the area of the scotoma is partially or completely lost. The course of the affection is usually very slow and great improvement and even complete recovery is possible. As stated above, the disc shows little change. There is usually pallor of the temporal sector. The lesion is a neuritis of the papillo-macular fibers of the orbital portion of the optic nerve, a bunch of fibers which possesses peculiar vulnerability to certain poisons. Auto-intoxication in diabetes may affect it in a manner similar to that just described.

In acute toxic affections resulting from quinin, salicylic acid, methyl alcohol and other substances the blood vessels of the nerve and retina show marked contraction, and there is blindness or a high degree of amblyopia, often followed by early atrophy. The effect of lead poisoning on the optic nerve is to produce a papillitis, together with marked vascular changes.

Numerous infectious diseases may produce retrobulbar neuritis in one or both eyes, with central scotoma or peripheral defects in the field of vision. Central scotoma is more commonly met with and is usually much larger than in the tobacco-alcohol form. Syphilis, rheumatism and influenza may be mentioned as the more important underlying affections. Syphilis, it is thus seen, may produce any one of the forms of optic nerve disease that we have described (except primary atrophy). As an illustration of syphilitic retrobulbar neuritis the following case may be mentioned:

CASE 6.—Mr. A., aged about 45, was seen in November, 1905, with the history of recent syphilis which had not received regular treatment. His right eye, which had always been his better eye (almost emmetropic) had V. 6/30; his left eye (with myopic correction) was normal. There were fine dust-like opacities in the vitreous and on the cornea, but the ophthalmoscopic image was clear. No evidence of chorioiditis.

The right disc showed slight edema. The extent of the field of vision was normal, but there was a large absolute scotoma in the form of a vertical oval below the point of fixation extending as a relative scotoma over this point. Vigorous mercurial treatment, together with iodids and sweats, was ordered and persisted in with the result of obtaining very slow improvement of vision beginning after ten months and not reaching approximately normal vision until more than one year had passed. Since that time, the patient has normal eye-grounds and has had no further trouble.

Acute retrobulbar neuritis in one or both eyes with high degree of amblyopia due to large central scotoma, sometimes with rapid and complete loss of all light perception, is seen in women at the menopause and in young women suffering with sudden disturbances of the menstrual function. Vision is usually regained in great measure, though permanent defects in the field of vision and white optic discs are commonly left. Cases similar to these are sometimes, though indefinitely, classed as rheumatic.

An interesting group of cases of retrobulbar neuritis are those known as hereditary amblyopia, in which there is loss or great impairment of central vision usually without involvement of peripheral vision. The disease

commonly attacks male members of a family in early adult life.

Besides the cases thus far mentioned, there are many others, characterized by large central scotoma, which, for want of satisfactory explanation, are commonly diagnosed as idiopathic retrobulbar neuritis. In recent years it has been shown that a number of these cases, apparently more than generally supposed, are to be attributed to inflammation extending from the sphenoidal sinus and the posterior ethmoidal cells. Birch-Hirschfeld has recently shown that this neuritis is apt to present the clinical picture of retrobulbar neuritis with central scotoma. It is further commonly characterized by being monocular and by its sudden appearance and its tendency to rapid extension of the scotoma so as to involve large parts of the field.

Another important contribution to the etiology of a large number of cases of retrobulbar neuritis has been made in the study of the bearing of multiple sclerosis to the ocular affection. It has long been known that retrobulbar optic neuritis, at times showing inflammation or atrophy of the nerve head, frequently occurs in cases of multiple sclerosis and is of great aid as a diagnostic sign; that it is often characterized by great variability in the visual defect and by the possibility of complete recovery after great loss of vision; and that central scotoma is of frequent occurrence. Fleischer has lately followed and studied the cases of retrobulbar optic neuritis observed during the last twenty-five years in Tübingen. His results show that a large number of the cases of retrobulbar neuritis subsequently developed multiple sclerosis. The interval varied from a few weeks to four, five, eight, ten, twelve and fourteen years. If these observations are confirmed it will bear seriously on the nature and prognosis of many of the so-called idiopathic and other forms of retrobulbar neuritis.

Cases are observed in which the typical central scotoma of retrobulbar neuritis is associated with well-marked inflammation of the optic disc. They belong etiologically to the same classes as those described and must be interpreted as retrobulbar neuritis with involvement of the bulbar end of the nerve.

The differential diagnosis of these affections from each other depends chiefly on the previous history and general examination of the patient. The character of the visual disturbance differentiates them from affections due to lesions behind the chiasm, the careful determination of the form and color defects of the field of vision being the main guide. The most difficult diagnosis often lies between these conditions and those of hysterical amblyopia and of simulated blindness. The difference in the fields of vision in hysterical amblyopia and retrobulbar neuritis usually serves to distinguish these affections. And for the detection of simulation the ingenuity of the examiner is often taxed to the utmost.

## DISCUSSION.

DR. WILLIAM W. GRAVES, St. Louis: In the diagnosis of cases in which the disc is nearly or proximately normal in appearance, I believe that the point which I am going to mention may be at times of very great importance. We know that there is a certain correlation existing between direct light reflex and consensual light reflex; and this is disturbed if the optic nerve be severed or diseased anywhere between the retina and the chiasm. For instance, having a retrobulbar neuritis, or having an injury which interferes with the integrity of the optic nerve on one side, on the right side, for instance, on that side there will be sluggish to absent direct light reaction and normal consensual light reaction. In the



other eye there will be sluggish to absent consensual light reaction, but a normal direct light reaction.

DR. HARRY FRIEDENWALD, Baltimore: The differential diagnosis of cases of optic nerve disease depends, not on the ophthalmoscopic examination alone, and not on the examination of the field of vision alone, but on both of these, and particularly on a very careful general examination. Without the combination of ophthalmoscopic examination and very careful tests of vision in addition to the general inquiry concerning other constitutional or organic diseases, and especially nervous diseases, we can not make any diagnosis. I want to add one word concerning the examination by the perimeter. I do not know in the whole field of ophthalmology any class of cases in which the careful and painstaking examination of the field is of so much importance and on which so much depends as in cases of diseases of the optic nerve.

## A COMPARATIVE STUDY OF THE DOSAGE AND EFFECTS OF CHLORAL HYDRATE, ISOPRAL AND BROMURAL ON CATS.\*

TORALD SOLLMANN, M.D.

Professor of Pharmacology and Materia Medica at Western Reserve  
University. Member of the Council on Pharmacy and  
Chemistry.  
CLEVELAND, OHIO.

WITH THE COLLABORATION OF

R. A. HATCHER, M.D.

Assistant Professor of Pharmacology, Cornell University Medical  
College, Member of the Council on Pharmacy and Chemistry.  
NEW YORK.

### I. INTRODUCTION, METHODS, SYMPTOMS AND CRITERIA.

#### INTRODUCTION.

In a paper on the comparative actions of chloral and isopral on different animals Impens<sup>1</sup> aimed to establish what he called the "toxic quotient" for these drugs, i. e., the quotient of minimal fatal dose divided by the minimal "effective" dose. He states that this factor (or margin of safety) is uniformly greater for isopral than for chloral and that isopral is, therefore, the safer drug. In analyzing these claims one is at once struck with the fact that the difference for most animals is so small that it might well fall within the limits of error. With the cat alone the difference would seem altogether too large to be explained in this manner.

The experiments published by Impens are, however, altogether too scanty to make his conclusions binding; and in affirming the dose of chloral for cats he fails entirely to describe the experiments which led him to the acceptance of the dose which he has laid down. Hatcher<sup>2</sup> pointed out the unreliability of Impens' conclusions. In the case of the cat particularly the few experiments which Hatcher made indicated that no such difference existed for rectal administration. This drew a rather caustic reply from Impens, in which the latter, however, did not attempt to repair the deficiencies of his first publication. This reply has been so ably discussed by Reid Hunt<sup>3</sup> that I shall abstain from further criticism. There remained, however, several

questions of facts which were not adequately decided by either Impens' or Hatcher's work. Most prominent among these was the remarkably small margin of safety of chloral for cats, as claimed by Impens. It seemed important to determine whether this was due to faulty observation on the part of Impens, and if so, how he came to fall into so remarkable an error; or if his results were correct, it seemed important to learn the cause of this idiosyncrasy and thus to form a judgment whether the same idiosyncrasy would be apt to be present in the human subject.

The subject of isopral would scarcely have appeared to me as of sufficient importance to justify the necessary expenditure of time and material; but I deemed that these experiments would throw light on the broader questions of the value of this whole general method of judging the usefulness of hypnotics, establish a normal standard for progressive doses of chloral,<sup>4</sup> and outline the probable limits of error, i. e., what degree of accuracy might be expected from a given number of experiments. The data which have been published thus far are not sufficiently numerous to give any idea of the variations in the individual response of different animals of a species, and until this has been done the establishment of "ratios" is little more than guesswork.

The present series makes this very apparent. I found that there are, indeed, very considerable idiosyncrasies which evidently deceived Impens and which render his criteria of "minimal" effective and toxic doses eminently unsuitable. The elimination of these idiosyncrasies required an extension of the experiments much beyond the limits originally contemplated. The present series comprises seventy-seven experiments with chloral on fifty-seven cats and fifty experiments with isopral on forty cats. Even with this relatively large material the data are not in some particulars as definite as would be scientifically desirable, but they appeared to me as sufficient for practical purposes.

It also appeared to me that the data for the judgment of the method would be more valuable if they were gathered independently at more than one laboratory. I asked Professor Hatcher, therefore, to collaborate, or rather to investigate the questions independently. His results were communicated to me after I had practically completed my own experimental work, and I have obtained his permission to incorporate them in this paper. As will be seen, both series lead to the same conclusions.

In the meantime a new product, bromural, had appeared on the American market and I thought it interesting to test on it the general method which I had elaborated. The experiments with this last drug were intentionally less numerous, comprising twenty-three experiments on ten cats.

#### METHODS.

Cats were used exclusively and the drugs were administered by stomach tube. The choice of these animals was determined by the original object of the investigation, but, furthermore, these animals seem peculiarly suitable for this class of experiments. Cats are more uniform in intellectual development, more tractable and more easily kept and handled in large numbers than are dogs; and the symptoms are more expressive than would be the case, for instance, with rabbits. The gastric administration was also dictated by the original ob-

\* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908. Because of the length of this article, part of it has been omitted here. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the latter will be sent on receipt of a two-cent stamp.

\* From the Pharmacological Laboratories of the Medical Departments of Western Reserve University and of Cornell University.

1. Therap. Monatshefte, September, 1903.

2. THE JOURNAL A. M. A., June 1, 1907, 1849.

3. THE JOURNAL A. M. A., Dec. 7, 1907, 1909.

4. In a fairly exhaustive search through the literature of chloral, I have not encountered any experiments with chloral on cats, except the bald statements of Impens.



ject of the investigation, but it also appears to me as intrinsically preferable to the rectal method. To secure an empty stomach, the animals were not fed on the morning of the experiment. Isopral and chloral (hydrate) were administered in solution.

I employed concentrations of 1 per cent. for the smaller doses and 2 per cent. for the larger. Hatcher used 3 per cent. The occurrence of vomiting, especially with the larger doses, often cut short the experiment. To circumvent this Hatcher gave at first a fraction of the dose (0.2 gm.) and the remainder in about an hour. I did not resort to this expedient. Animals that vomited were, of course, excluded in tabulating the narcotic and fatal results. We both used the same animals repeatedly.<sup>5</sup> This was done partly for reasons of economy, but mainly because we wished to compare the effects of both drugs on the same animals. As I shall show, this repeated use does not alter the effects, provided the animals have not lost more than 10 per cent of their weight. The latter cases are again excluded in tabulating the fatalities.

Bromural is very slightly soluble in water. The dose was weighed out and rinsed through the stomach tube with hot water. The dosage was, therefore, generally less accurate, but the experiments show that the method gives more satisfactory results than might have been anticipated.

SYMPTOMS AND CRITERIA.

My attention was fixed mainly on the narcotic effect, although other phenomena were noted incidentally. The symptoms with chloral and isopral are identical, except as to the time of their occurrence. They correspond closely with those seen in the human subject. There is apt to be more or less nausea, evidenced by depression, sneezing, coughing, retching, or vomiting. There is also apt to be more or less excitement, preceding or interrupting the hypnotic effect. In the typical cases, there is, with succeeding doses:

1. *Drowsiness.*
2. *Light natural sleep:* the animal slumbers in a natural position, and is easily and completely roused, as by a heavy step on the floor.
3. *Deep natural sleep:* the animal lies in a natural position, soundly asleep. It is roused only by rather severe stimuli, and then incompletely, appearing stupid, and dozing again very quickly. Forced to its feet, it is very clumsy and walks with a stagger. The reflexes are nearly normal.
4. *Light coma:* the animal lies extended on its side or belly, relaxed, but with some muscular tone remaining; it may make some spontaneous movements, but is generally unconscious. It responds rather weakly to pain. The reflexes are generally depressed.
5. *Deep coma:* the animal is completely relaxed and anesthetic. The reflexes disappear, the corneal reflex persisting until rather late.

The experiments performed by Professor Hatcher are those of series HA to HZ; those performed by me comprise series A to Z, AA to AY and BA to BK (see Appendix A).

2. ANALYSIS OF THE PRINCIPAL PHENOMENA.

In presenting the results of our experiments it would be manifestly impracticable to print the protocols in full. They are sufficiently illustrated by a few examples in Appendix B. For purposes of discussion I have

compiled special tables of the results bearing on each question. These will be presented in due order, each followed by a short summary. I shall first analyze the main phenomena and follow this by the analysis of such factors as might conceivably modify the results. The doses throughout refer to grams of drug per kilogram of body weight.

I. RELATION OF THE DOSE AND MAXIMAL EFFECT.

The relevant data for these drugs are brought together in Tables 1 to 3,\* the animals showing each effect being arranged in the respective columns. The conclusions are presented in Table 4.

TABLE 4.—SUMMARY OF DOSAGE AND EFFECT.

	Chloral.	Isopral.	Bromural.
Dosage producing sound natural sleep in most animals.	0.09-0.15	<0.09-0.10	0.10-0.15
Dosage producing effects varying from sleep to coma.	0.18-0.25	0.11-<0.18	0.25-<0.35
Dosage producing deep coma in all animals	0.30 up.	<0.18 up.	<0.45 up.
Dosage producing the lowest apparent fatality.	0.15	0.11	
Dosage producing the lowest true fatality.	0.35	0.25	<0.45
Dosage just fatal to most animals.	0.42-0.45	0.25-0.30	0.45-0.50
(Probable mean=).	(0.44)	(0.25)	(0.45)
Largest dose survived.	0.50	0.35	0.45

*Difference from the figures of Impens:* The conclusions as to isopral and chloral are radically different from those of Impens, as will be seen from the following table:

CHLORAL HYDRATE.			ISOPRAL.	
Dose.	Impens.	Sollmann.	Impens.	Sollmann.
Hypnotic.	0.2	0.09-0.15	0.09	0.09-0.10
Just Fatal.	0.25	0.44	0.4	0.25

The differences are perhaps explainable on the basis of different methods of treating the experimental results: I have drawn my conclusions on the basis of impartial averages from an extensive series of results; Impens appears to have drawn his conclusions from a few entirely exceptional cases.

He defines the "minimal effective dose" of a hypnotic as "the smallest possible quantity of the drug which may induce sleep" (in any animal) and asserts that this is 0.2 gm. per kg. in chloral. In reply, I have never failed to obtain sleep with 0.09 gm. or less than one-half of his minimum. Similarly, he defines the "toxic dose" as the smallest dose which ever causes death; both definitions are, of course, framed for exceptions and not for averages, and the definition for toxic dose is especially objectionable.

Accepting it, however, for the sake of argument, both his toxic doses are wrong. That for chloral would be nearly twice too high, if we count my animal P 111 as a chloral fatality, or 50 per cent. too low if we do not. The toxic dose for isopral he places at 0.4, but in my hands two animals out of three died with doses as low

\*These, as well as some of the other tables, will be reproduced in the Transactions and in reprints.

5. The general table in Appendix A shows the distribution of the experiments.



as 0.25; and if we count the late deaths against isopral, the lowest recorded fatality would be 0.11 gm.

Impens judges the relative safety of a drug by its "toxic quotient," which he defines as the toxic dose divided by the therapeutic dose. The larger this quotient the greater is the margin of safety. This appears perfectly logical; but it must be remembered that the toxic quotient not only retains every source of error in determining the individual doses, but it may even double them. As I have shown, a limited number of experiments may easily lead to figures which are 50 per cent. or more out of the way. Even with our extensive series the results may easily be 15 per cent. from the truth. Should the therapeutic dose be 15 per cent. too high and the toxic dose 15 per cent. too low, or vice versa, then the error in the "toxic quotient" would be exactly doubled, i. e., it would be 30 per cent.

When it is remembered that Impens apparently contented himself, at least in some cases, with an approximation of 50 per cent. in determining the therapeutic dose,<sup>7</sup> the differences which he reported in the toxic quotient of isopral and chloral for most animals (generally less than 33 per cent.) appear a very inadequate basis for his claims of superior safety. *The toxic quotient is of value only if the differences transcend the possible limits of error.* In the cat Impens' figures would lead one to suppose that this ideal should have been reached. He calculates the quotient for isopral as  $0.40 \div 0.09$  equals 4.4; for chloral as  $0.25 \div 0.2$  equals 1.25. As I have shown, his doses, unfortunately, are far from correct. According to my averages, the quotient would be  $0.25 \div 0.10$  equals 2.5 for isopral; and  $0.44 \div 0.15$  equals 3.0 for chloral—in other words, chloral would be the safer. As a fact, however, the difference falls within the limits of error and I would consider that the quotient is essentially the same for all three drugs.

## II. COMPARISON OF CHLORAL AND ISOPRAL ON THE SAME ANIMALS.

To judge in how far the averages deduced from a series of animals might be invalidated by individual difference of susceptibility, we made several series of experiments in which both drugs were given alternately to the same animal with intervals of several days' rest. This method presents the inconvenience that only a very few doses can be tried out on each animal, but it serves effectually as a check on the methods of averages. I take the opportunity to present in Appendix B a few protocols which illustrate the methods of observations in all my experiments.

Comparing the cases with "therapeutic doses" (isopral 0.09 to 0.11) it is seen that the quotient (dose of chloral divided by dose of isopral) required to produce equivalent effects is in no instance less than 1 or greater than 2. In the animals F, Q, H, M and N, in which the greatest accuracy was reached, it ranged between 1.7 and 2. The average of these figures, 1.85, is probably correct with a limit of error of  $\pm 10$  per cent. This average shows that the figures estimated in the preceding section from experiments on different cats, namely, 1.5 to 1.8, is substantially correct. These experiments also show that, on the same cat, *the fatal dose of isopral is always smaller than the fatal dose of chloral*, i. e., the opposite of what is claimed by Impens.

7. Compare the determination of the "effective dose" of isopral for the frog, *Therap. Monatsch.*, 1907, xvii, p. 471.

## III. RAPIDITY AND DURATION OF THE ACTION.

Some of the most important practical differences between the three drugs refer to the rapidity and duration of their action. To arrive at reliable conclusions these phenomena were recorded for each experiment.

*Summary.*—With therapeutic doses the onset and culmination of the effects and the start and completion of recovery are most rapid with isopral, nearly as rapid with bromural and markedly slower with chloral. This is in full agreement with the clinical reports. These differences are less pronounced as the doses are increased, but they persist to some extent as concerns the development of the symptoms and the first signs of improvement. The duration of the coma is shortest with bromural and nearly equal for isopral and chloral. Complete recovery from nearly fatal doses is most prompt with bromural and slowest with isopral.

With small doses, death is always acute with chloral, remote with isopral. The cause of this difference will be discussed later. With typically fatal doses, the fatalities are predominantly acute with isopral, slow with bromural and rather evenly distributed with chloral. Acute death occurs more rapidly with isopral than with chloral or bromural. Death after

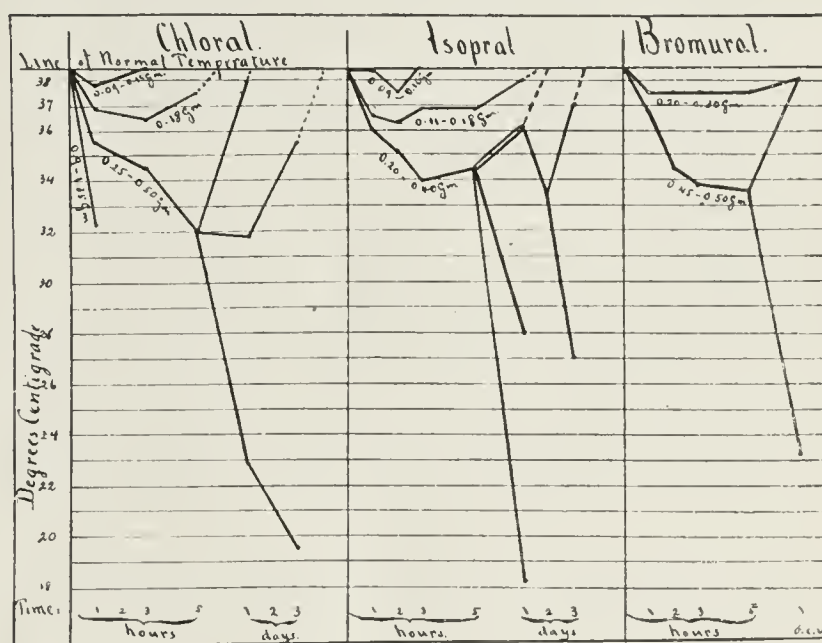


Fig. 1.

intervening recovery is conspicuously more common with isopral than with the other drugs, in harmony with its more severe after-effects.

## IV. EFFECT ON TEMPERATURE.

The similarity in the curves of the three drugs is striking. All tend to produce a fall of temperature and in the same degree, proportional to the degree and duration of the motor effects, rather than directly to the dose. When the muscular tone is well preserved, as in the "deep sleep," the fall is slight (0.5 C.) and transient (maximum in 1 to 2 hours, normal in 3 hours).

In the doses which produce "light coma," i. e., when there is considerable relaxation, but when the paralysis is incomplete and the reflexes are more or less preserved, the temperature falls by 2 degrees (C.) in one to two hours and returns to normal somewhat more slowly, but is generally normal on the following morning. With bromural the muscular system preserves a much better tone, and consequently the temperature in this stage falls by only 1 degree (C.). There is with all the drugs a tendency to react against the fall of temperature by shivering.

With doses which produce "deep coma" the temperature drops as much as 6 degrees (C.) in five hours with chloral, 4.5 degrees (C.) in three hours with iso-



pral. and 6 degrees (C.) in five hours with bromural. The degree and the rate of this fall are practically independent of the dose, so long as deep coma is produced. The further course is also determined solely by the persistence of the coma, i. e., of the motor paralysis, recovery to the normal temperature coinciding with the passing of the comatose conditions. If the coma persists the temperature continues to fall, and it does so even if some degree of muscular motion is restored. The lowest point reached by this progressive fall depends mainly on the surrounding temperature, animals in this condition behaving exactly like cold-blooded animals. Some remarkable temperatures were observed which seem worthy of record.

V. EFFECT ON THE RATE OF RESPIRATION.

These observations are analyzed and plotted exactly like those made on the temperature, as shown in Table 13 and Figure 2. The doses placed in the same group gave practically identical averages. Chloral and isopral often produce a short primary increase of respiration, more often noted with the smaller doses. It is presumably due to the nausea. This primary increase was observed with chloral, 0.09 to 0.30 in 5 cases out of 17; 0.35 to 0.50 in 1 case out of 6. In isopral, 0.09 to 0.11 in 4 cases out of 9; 0.18 to 0.40 in 2 cases out of 12. The examination of the curves shows the following:

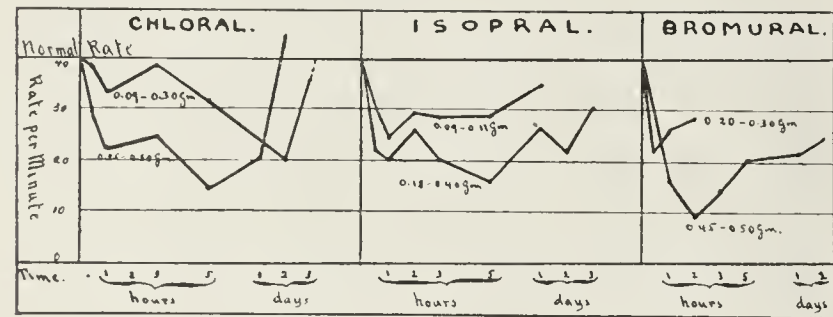


Fig. 2.

With small doses, the curves run differently. The chloral causes much less slowing on the day of administration and considerably more on the succeeding days. The lesser immediate effect I am again inclined to refer to the greater nauseating action on the first day; while the greater depression on the succeeding days coincides with the more lasting action. The curves for the larger doses show that the effects of chloral and isopral are qualitatively and quantitatively identical. Bromural produces the greatest immediate showing, which I am inclined to refer to the absence of nausea.

The mere count of the respiration can be conceded but a very limited value, as it may be compensated for by an increase in the respiratory excursions. Even were these measured, however, the comparison of the relative effects of the drugs on the respiratory center would be very difficult on account of the complicating nausea. So far as the count throws any light on the question, however, the direct effect of these drugs on the respiratory center seems to be quantitatively identical, and proportional to their general narcotic effect.

VI. THE OCCURRENCE OF NAUSEA, EMESIS AND EXCITEMENT AND THEIR INFLUENCE ON THE FATALITY.

More or less nausea and retching were present with all doses of chloral and isopral, while they were conspicuously absent with bromural. The nausea was in some cases accompanied by simple depression, in others by excitement, varying from restless movements to a

maniacal condition and convulsions. The emesis generally occurred in from fifteen to thirty minutes, i.e., before the narcosis was complete. The animals retained a good appetite. The inclination to emesis and excitement varied in individual animals. The proportion of cases in which the nausea culminated in actual emesis is shown in Table 14. It will be noted that the emetic effect of isopral for the same dose (0.18-0.40) is but one-fourth that of chloral, whereas the narcotic effect is one and a half times as great. In other words, for a given degree of narcotic action, isopral causes but a sixth of the gastric irritation of chloral. The same difference is seen when equivalent doses of the two drugs are compared on the same animal. Twelve animals vomited with chloral and not with isopral; while the reverse behavior was never observed. The table also shows that the emetic tendency may be materially lessened by giving the drugs in divided doses. Bromural, however, is vastly superior to either. Emesis was only observed once with this drug, making it doubtful whether even this was due primarily to the bromural.

The nauseant action is particularly undesirable in these drugs, since the weakened heart is not equal to the concomitant excitement. This, I believe, explains the exceptional cases in which chloral proved fatal in small doses. Each of these cases showed convulsive excitement. A very striking instance of the effect of excitement as shown in Experiment I 95.

EXPERIMENT I 95.—Cat of 2060 gm.; 0.15 gm. of chloral per kg. Rather light and restless sleep in 39 minutes. Considerable incoordination. In one hour the animal is somewhat improved. In one and one-half hours it is sleeping quietly, but awakens on snapping the fingers. Its walk is somewhat clumsy. It struggles violently when the thermometer is inserted into the rectum. During the struggle the heart stops suddenly and does not resume. Gasping respirations continue for several minutes. The thermometer registers 37.5. Nothing is found on autopsy to account for the syncope.

On the other hand, the emesis tends to save life; and from this standpoint chloral appears to be a much safer drug than isopral, i.e., the number of cases which recover without treatment from an ordinarily fatal dose is twice as favorable for chloral. This is shown in Table 15. Only the cases in which the drugs were given as a single dose are included.

TABLE 15.—PROPORTION OF CASES WHICH RECOVERED FROM THE ORDINARILY FATAL DOSES.  
(The average just-fatal dose may be accepted as 0.44 for chloral and 0.25 for isopral.)

Drug and Dose.	Number of Animals Used.	Vomited and Survived.	Survived Without vomiting.	Died Without Vomiting.	Total Survived.	Proportion of Animals which Survived.
Chloral, 0.45-0.50 . . . . .	11	7	1	3	8	73%
Isopral, 0.25-0.35 . . . . .	17	2	4	11	6	35%

Nothing could illustrate more strikingly than this table the almost criminal looseness of the statement of the promoters of isopral, that it is "the safe hypnotic of the chloral group." On the contrary, *excessive doses of isopral produce death twice as frequently as the doses of chloral of corresponding narcotic effect.*

VII. EFFECT ON WEIGHT.

As has been repeatedly mentioned, animals which recover from large doses of these drugs are very apt to exhibit anorexia and marasmus, which find their expres-



sion in loss of weight. It appears to me that this loss of weight is much more rapid than when food is withheld from normal animals; but the number of controls does not warrant a definite statement on this point. The fact that this effect was so much more common and pronounced with isopral than with chloral, shows that it is not simply the result of gastric derangement, but of a metabolic disturbance; furthermore, the animals generally ate fairly well. Bromural also caused considerable loss of weight.

In analyzing the changes of weight, these were calculated as percentages of the original weight, tabulating both the total change of weight since the animal came under observation and the change occurring after the administration of the dose of the drug. The latter data alone are used in the following summaries. Considering in the first place the gross changes of weight occurring in from two to nine days, the following results were obtained (Table 16):

TABLE 16.—EFFECT ON WEIGHT.

Drug and Dose.	Number of Experiments.	Extremes of the Changes in Weight.	Mean	Proportion of the Experiments showing:			
				Increase of Weight.	No Change of Weight.	Slight Loss of Weight (to 10%).	Severe Loss of Weight (above 10%).
Chloral.							
0.08-0.10 .	6	+6.1 to -4.8%	+2.5 %	50%	17%	33%	
0.15-0.40 .	18	+1.7 to (-25%)?	-7.75%	...	...	67%	33%
Isopral.							
0.09-0.10 .	12	+4.8 to -10%	-7.75%	17%	25%	58%	
0.11-0.35 .	11	-3.4 to -30%	-15.5%	...	...	36%	64%
Bromural.							
0.05-0.20 .	11	+4.0 to -9.0%	-5%	9%	18%	73%	
0.25-0.45 .	5	0 to -29%	?	...	20%	30%	30%

It is seen that the isopral throughout causes a much more serious loss of weight than does chloral; and this holds for small as well as for large doses. Bromural appears to stand intermediate, although there are not sufficient data to form a definite judgment. The loss varies greatly with different animals and does not seem to be proportional to either the dose or the narcotic effect.

These experiments show that the loss of weight if serious, tends to progress for several weeks and requires over a month to return to the normal.

3. RELATION OF CERTAIN FACTORS TO TOXICITY.

In this series of experiments, the animals were used without selection, in the order in which they were brought to the laboratory, and they were re-used as needed with the sole stipulation that the narcotic effects of the preceding dose must have completely disappeared. This method of indiscriminate use involves the possibility of several theoretical sources of error; viz., the effect of the age and size of the animals, and the effects of previous doses acting either through modifications of the general resistance or of the special susceptibility. The examination of the actual data shows in how far these factors influenced the results and which of the experiments must be excluded. This exclusion has been practiced in the preceding presentation of the results. I shall now present the data on which it was based. They reveal several interesting features.

I. THE INFLUENCE OF SIZE AND AGE.

The size of cats runs sufficiently parallel to the age, so that the original weight of the animals indicates both factors. This ranged from 650 to 3,500 gms. The animals were arranged in two series, those below 1,500 gms. being classed as kittens, those above this weight as cats. Table 17 shows the number of animals of each class exhibiting a given effect for a given dose.

It will be seen that the results are fairly evenly distributed amongst the two classes of animals. Age and size, therefore, do not materially influence the action of these narcotics, at least within the limits of error. This factor therefore, does not need to be considered.

II. THE INFLUENCE OF REPEATED USE ON THE EFFECT.

A study of Table 18 shows that the previous administration of small doses of either chloral or isopral does not influence the actions of subsequent doses; the previous administration of large doses also has no noticeable effect on subsequent doses, unless there has been a material loss of weight (above 10 per cent.), when the fatality is markedly increased.

The factor of previous use could, therefore, be neglected except when the weight was markedly diminished.

III. THE INFLUENCE OF LOSS OF WEIGHT ON THE EFFECT.

Losses of weight up to 8 per cent. had no perceptible influence on the effects of non-fatal doses (to 0.18 gm. per kg.). The influence of the mortality from larger doses is shown in Table 19.

It is plainly apparent that the mortality is distinctly increased when the original weight had diminished by more than 10 per cent. With a loss of weight of less than 10 per cent., 80 per cent. of the animals recovered; when the previous loss exceeded 10 per cent., only 15 per cent. recovered. As I have previously stated, these cases were excluded in calculating the fatal doses of chloral and isopral.

TABLE 19.—INFLUENCE OF LOSS OF WEIGHT ON MORTALITY.

Loss of Weight.	0	Less than 10 %	10 to 17 %	29 to 30%
Chloral, 0.25 to 0.42.				
Fatal. . . . .	2	0	2	1
Not Fatal. . . . .	7	1	1	0
Isopral, 0.20 to 0.25				
Fatal. . . . .	1	0	2	1
Not Fatal. . . . .	3	1	0	0

The increased mortality after serious loss of weight is the more striking when it is remembered that the doses were calculated according to the weight at the time of administration; so that an emaciated animal would receive a smaller absolute dose than an animal in good condition. Since the weight of the central nerve axis diminishes but little even in advanced starvation, the dose per unit of nerve-weight would be very considerably less in a starved animal. That emaciated animals are less resistant to narcotics has already been confirmed by Mansfield.<sup>8</sup> His explanation was, that the body fat attracted a considerable part of the lipid-soluble poisons and thus protected the brain. Clotetta,<sup>9</sup> however, has shown that the converse experiment, i. e., increase of body fat, does not offer any protection. The explanation therefore, is the less satisfactory but more probable one of lessened general resistance.

8. Archiv. internat. de pharm. et Ther., 1905, xv, p. 467.  
9. Ibid, 1907, xvii, p. 1.



## 4. SUMMARY.

## QUANTITATIVE EFFECTS AND DANGER.

The effects of these narcotics can be divided into a limited number of fairly well-defined stages, but no criteria were found by which to distinguish the gradations of the effects within each stage. A fairly large range of doses, therefore, produces apparently identical effects; there are, furthermore, considerable variations in the individual reactions of different animals. A fair comparison between different hypnotics can, therefore, be made only on the basis of the averages of a considerable number of experiments, or by trying the several drugs on the same animal. The comparison of a few exceptional or artificially selected results is wholly misleading. The conclusions of Impens are, therefore, entirely unjustified; those of Hatcher were much nearer to the truth.

The determination of the true "minimal hypnotic dose" of a drug is impossible, at least on cats. The smallest doses which produce effects sufficiently definite to serve as criteria, are relatively much larger than the doses which would be used therapeutically to induce sleep.

If the dose of chloral required to produce a given effect is taken as 100, that of isopral would be about 60 (as stated by Hatcher) and that of bromural about 100. The bromural narcosis is, however, less profound. These ratios hold for all doses, small and large. The toxic quotient of the three drugs is about the same. The contrary conclusion of Impens is based on highly exceptional results. In practice, however, chloral is only half as dangerous as is isopral since excessive doses are generally expelled by vomiting, and since the subsequent very dangerous cachexia is less pronounced. On the other hand, relatively small doses of chloral do at times cause sudden death, namely when there is great excitement. The statement of the promoters that isopral is "the safe hypnotic of the chloral group" is, therefore, as previously stated, almost criminally misleading. Large doses of bromural are nearly equally as dangerous as corresponding doses of chloral, so that it cannot be called "absolutely harmless." Since it is only advised, however, for the mildest cases, the temptation to give large doses would be absent.

## RAPIDITY AND DURATION OF ACTION.

The hypnotic and motor effects of therapeutic doses of isopral and bromural set in and pass off much more quickly than those of chloral. The difference grows less pronounced as the dose is increased. The cachexia after large doses is considerably more profound and lasting after isopral than after the other drugs.

## EFFECTS ON SPECIAL FUNCTIONS.

*Temperature:* The effect of the three drugs on temperature is quantitatively and qualitatively very similar. It is proportional to the degree and duration of the muscular paralysis, rather than to the dose. In the deep stages of coma, the heat mechanism resembles that of cold blooded animals. Very low temperatures (15.5 C.) were recorded in some cases. Animals whose temperature fell below 30 C. did not recover, even when artificial heat was supplied.

*Respiration:* The direct effects of the three drugs on the respiratory center, as judged by the rate of respiration, appear to be qualitatively and quantitatively identical.

*Gastric Irritation.* Bromural does not produce perceptible gastric irritation. Isopral and chloral both cause nausea or vomiting. This irritant effect appears to be about six times as large for chloral as for isopral, referred to the dose required to produce the same degree of narcosis.

*Cachexia:* Excessive doses of all three drugs cause a profound cachexia, evidenced by the persistent loss of body weight. This deleterious action is about twice as great with isopral as with chloral.

## FACTORS INFLUENCING RESISTANCE.

Age, size and repeated administration do not influence the susceptibility. Emaciation, however, lowers the resistance markedly.

## PRACTICAL CONCLUSIONS.

The claims for the superior safety of isopral are totally unjustified. It differs from chloral mainly in the lesser dose ( $\frac{1}{2}$  to  $\frac{2}{3}$ ) required to produce a given effect; in the quicker and shorter action, and in producing less gastric disturbance.

Bromural also acts more quickly and less persistently than chloral. The action of therapeutic doses is, moreover, less profound. There is no gastric irritation. Larger dose would be equally as dangerous as chloral.

## DISCUSSION.

PROF. W. A. PUCKNER, Chicago: Dr. Sollmann has brought out very forcibly the need of controlling all statements made by interested persons, which statements are almost surely bound to be biased to a greater or less extent. A great deal of work of this kind should be done and must be done, and I sincerely hope that other pharmacologists will take up and investigate proprietary drugs. So far there has been a hesitancy. Nobody cares to take up a proprietary product. If one says good things about it one's comments are used as advertising matter, and if one says bad things about it one will be attacked by the owner of the drug. So there has been a tendency on the part of investigators to let alone all proprietary drugs. I think it is the duty of these men, however, to determine for us the real value of such products.

DR. F. E. STEWART, Philadelphia: I think it would be an excellent thing if manufacturers would pass over their products to the Council before they do any advertising at all; then their claims would be founded on facts rather than fancy. Such a course would certainly do a great deal to help this work.

DR. TORALD SOLLMANN, Cleveland: I think this is a good suggestion. It would save a good many heart-burnings.

## THE TREATMENT OF SOME FORMS OF LENS DISPLACEMENT OTHER THAN THOSE OF TRAUMATIC ORIGIN.\*

L. D. BROSE, M.D.

EVANSVILLE, IND.

For a better comprehension as to the kind of cases to which reference is made in this paper I will enter on the subject by relating the following cases, classified under four groups. Group I embraces those cases of congenital lens displacement where treatment is sought, either to improve the existing vision, or because it is feared that at some future time the lens displacement may set up grave intraocular disease. Group II embraces those cases where the lens has become not only displaced but cataractous because of chronic intra-

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



ocular disease. Group III includes those cases of congenital lens displacement complicated by acute glaucoma. Group IV includes those cases of displaced and cataractous lens that are the result of acute glaucoma.

## GROUP I.

O. B., aged 14 years, consulted me May 18, 1898, because of poor vision, which on examination was found to be due to ectopia lentis, the lens in both eyes being displaced upward and slightly inward. Vision of right eye, 10/200, increased to 15/160 by minus D. 2.50 S. Vision of left eye, 6/200, increased to 15/70 with minus D. 2.00 S. The family of which he was a member consisted of father, mother and four brothers and sisters, all with poor eyesight, except the father, and due in each instance to upward congenital lens displacement. April 27, 1904, he again consulted me, and asked that a dissection operation (suggested by me at the time of my first examination) be made on one eye. He was led into accepting the operation (1) because he was now teaching school and found his poor vision a decided handicap, and (2) by the circumstance that his mother had been rendered blind in one eye through an attack of acute glaucoma, and later had been obliged, during an attack of glaucomatous disease in the second eye, to undergo an emergency operation for the removal of the lens.

On July 19, 1904, he entered St. Mary's Hospital, where, on the following day, the left lens was needled. The operation was not followed by reaction, and he left the hospital at the expiration of one week. Dec. 24, 1904, and again April 15, 1905, the needle operation was repeated. By April 6, 1906, the lower portion of the lens had been absorbed, leaving a clear pupil and vision 15/40 with plus D. 13.00 S., and improved Nov. 24, 1906, to 15/20, with ability to read finest Snellen fluently with plus D. 15.00 S.

## GROUP II.

E. S., a large and well developed man, 28 years of age, consulted me Jan. 13, 1902, with the complaint that he was losing his sight. The family consisted of father, mother and a brother, all with good sight, and he himself distinctly recalls that during school life there were seats in front for short-sighted pupils, but that his seat was always far back of these, and it was not until he was 18 years of age, and while sighting a gun, that he became aware of dimness in the right eye. Thereafter, in shooting he made use of the left eye, vision in which remained good until a few weeks before calling on me, when, after awaking one morning, he discovered it was likewise dim. He denies syphilis and does not recall an injury or previous eye disease.

*Examination.*—In both eyes there was downward displacement of the lens, tremulousness of the upper portion of the iris, which stood deeper than the lower portion. In the right eye, there was partial cloudiness of the lens, with vision 15/80, improved to 15/50 with minus D. 1.00 S., combined with plus D. 1.50 cylinder axis 90. In the left eye, there was a progressive cataract and vision 15/50, and not subject to improvement. By Oct. 4, 1902, there remained in the left eye only light perception while the cataract had matured, with distinct increase in the downward and forward displacement of the lens.

Jan. 29, 1903, he entered St. Mary's Hospital, where, on the following day, an extraction operation was undertaken under local anesthesia. An upward corneal section was made, followed by iridectomy. Immediately after the latter and before any other step in the operation was attempted, the four recti muscles were thrown into violent contraction, furrowing the eyeball and expelling particles of soft lens matter with considerable, very fluid, vitreous. The greater part of the lens, however, disappeared within the vitreous chamber and no effort at its recovery was attempted. The eye was bandaged and not disturbed until the third day, when the anterior chamber was found re-established and the corneal incision closed. On the seventh day, violent iridocyclitis set up, and a few days later a small hypopyon was seen on the floor of the anterior chamber.

*Treatment.*—Morphia subcutaneously, with hot local applications for pain, and large repeated doses of salicylate of soda. Eventually, the inflammation subsided, leaving a dense membrane occupying the original pupil. Fortunately, at the point where the iris had been excised, there remained in the dense secondary membrane a small round opening, so that vision 15/160 was gained by use of plus D. 10.00 S. Nov. 20, 1905, the sight in the right eye having sunk to the counting of fingers at two feet, and notwithstanding our poor success with the left eye and our telling him that the same unfavorable conditions existed in this eye as had existed in the other, so that the percentage of failure was necessarily greater than after ordinary cataract operation, he requested that I undertake an operation on it for sight restoration. This we did Jan. 3, 1907, making a small dissection, albeit the patient was 33 years of age.

Within two hours after the operation the eye began to pain, and during the night the pain became so severe that it was attended by vomiting. Hypodermic injections of morphia brought only partial relief, and there being increased tension, with deep anterior chamber and semi-dilated pupil, an iridectomy was made. The choroido-ciliary inflammation gradually subsided, and at the expiration of eight weeks he had vision 15/200. April 8, and again September 18, the dissection operation was repeated, and each time called forth more or less pain, soreness and intraocular inflammation, for the relief of which repeated paracentesis was successfully employed. After the last needling the lens rapidly underwent absorption, and our ultimate restoration of vision was 15/60, with the aid of plus D. 9.00 S., combined with plus D. 1.50 cylinder axis 120. However, in the vitreous humor many floating opacities remained.

## GROUP III.

CASE 1.—Mrs. J. B., aged 44 years, mother of the patient reported in Group I, consulted me April 1, 1898. She stated she had always seen poorly in the distance, and four years ago completely lost the sight in the right eye through a violent attack of pain. At a glance, it was to be seen that the blindness was the result of an attack of glaucoma, the lens being pushed against the posterior surface of the cornea, with widely dilated pupil, atrophic iris tissue and equatorial staphyloma. With the left eye she counted fingers at fourteen feet, and read Snellen D. 1.50 at seven inches. The iris was tremulous below, and the lens was displaced upward and somewhat outward. Beyond a large crescent to the outer side of the optic disc, the fundus was without detectable lesion. On July 20, 1898, the eye began to pain and by the following day the pain became so violent that she had frequent attacks of vomiting while on her way to consult me.

*Examination.*—Intense circumcorneal injection; great increase of intraocular tension; pupil dilated and distorted by the transparent lens, which had partially escaped into the anterior chamber. Patient was directed to St. Mary's Hospital, where, under general anesthesia, a needle was passed through the outer side of the eye, from behind forward, and the lens secured so that it could not slip backward into the vitreous while attempting extraction. A downward corneal section was made, and the lens removed by a Weber scoop. No loss of vitreous occurred, and the eye rapidly healed, with vision 15/50, with plus D. 13.00 S.

CASE 2.—Mrs. G. W., aged 38 years, and a sister to the preceding patient, consulted me June 7, 1898, when I found small maculae corneae in both eyes, due to measles in childhood, large posterior staphyloma, vitreous opacities, extensive disseminated choroiditis and double upward lens displacement. With the right eye she counted fingers at twelve feet, improved to 15/80, with plus D. 5.00 cylinder axis 90. With the left eye, fingers at eight feet, and improved to 8/200, with minus D. 11.00 S. The disseminated choroiditis and vitreous opacity was most pronounced in the right eye. Feb. 3, 1903, she again consulted me, when I found the right eye without light perception, the result of an untreated attack of glaucoma. She remained under observation during the following four months, receiving general treatment for the choroidal disease, then became discouraged over non-improvement, and I did not see her again until Nov. 21, 1905, when she came with an attack



of glaucoma in the second eye. The disease had been permitted to exist five weeks without treatment and not even the perception of light remained in the eye. The severe pain she had suffered had almost disappeared and patient was told we were powerless to give her sight again.

CASE 3.—J. W., the 43-year-old brother of the two preceding patients, consulted me May 28, 1898. He stated that about two years ago, the right eye pained him for a time and then in a day or two the sight, which had always been defective, became much more so.

*Examination.*—The transparent lens was seen occupying the floor of the posterior chamber, the iris below the pupil was pushed forward, while above it stood deeper and wobbled with every movement of the eyeball. The cornea and vitreous contained opacities, while vision in the eye was reduced to the counting of fingers at seven feet. By depressing the head and placing plus D. 10.00 S. in front of the eye he saw 15/200. In the left eye the lens was displaced upward and outward, and he had vision 15/50, improved to 15/30 with minus 0.50 cylinder, axis 180.

On Nov. 24, 1900, he became aware that he was rapidly losing sight in the left eye and that he recognized the faces of those about him with difficulty. By the following day the eye pained him so violently that he had attacks of vomiting. I found the eye intensely injected, pupil dilated; the lens crowding the iris against the posterior surface of the cornea with great increase of intraocular tension. He still counted fingers with the eye at eight feet. Patient was forthwith sent to St. Mary's Hospital, where the anterior chamber was opened with a v. Graefe knife, and an iridectomy made. The operation was accomplished without wounding the lens or its capsule. After the second day, eserine was regularly instilled into the eye. Uninterrupted healing followed, with retraction of the lens into the lower part of the hyaloid fossa, and the recovery of vision 15/30 by the help of plus D. 16.00 S.

#### GROUP IV.

W. S., colored, 61 years of age, was admitted by Surgeon B. W. Brown to the U. S. Marine Hospital at this port, because of an attack of severe inflammation in the right eye, which had been treated without relief by a general practitioner some ten days, presumably for iritis. Surgeon Brown made the diagnosis of glaucoma and asked that I verify its correctness. I found the patient suffering great pain with tension in the eye greatly increased, and even light perception extinguished. An iridectomy forthwith executed relieved the pain, but did not restore sight.

Jan. 10, 1905, the left eye became hard and painful, and I was again invited to see the patient and do an iridectomy for glaucoma. This not only relieved his pain but restored sight.

Dec. 18, 1905, he again applied to the hospital because of failure of sight and was admitted by Surgeon J. B. Stoner, who in the interim had assumed command at this port, and it was through the kindness of Surgeon Stoner that I was again permitted to see the patient. I found the lens cataractous and slightly displaced downward and forward.

In October, 1906, the cataract having matured, I undertook its extraction. Notwithstanding a general atheromatous condition of the blood vessels and an irregular heart, we were obliged to operate under general anesthesia, because the patient was so excitable and nervous that mere contact of the hand with his face called forth violent starting up and excitation. On completion of the corneal section, made upward, the vitreous at once prolapsed into the wound so that the lens was extracted by aid of the Reisinger double hook. Uninterrupted healing followed, and, while there had been loss of considerable vitreous fluid, vision 15/50 resulted with plus D. 8.00 S., combined with plus D. 3.00 cylinder, axis 40.

In the treatment of cases embraced under Group I we have to consider, first, the amount of vision obtainable by means of correcting lenses and if it suffices for the person's calling in life. This being impossible of accomplishment, we may next consider operative interference, which may be iridectomy, discission or extraction. The age of the patient, the degree of displacement,

the size of the lens and the amount of vision obtainable, either with or without correcting lenses, after complete mydriasis, enables us to decide for or against iridectomy.

Since congenital lens displacement is almost invariably upward, or upward and either to the nasal or temporal side, it follows that the point of election for iris excision would be below; hence, the possibility of the lens at some future time undergoing secondary downward displacement, either through elongation of its suspensory ligament or solution of its fibers must not be overlooked. Were this to take place, the benefit derived through the iridectomy would, for the greater part, be lost.

The family history of the forbears, as illustrated in Group III, may disclose this tendency, and I can not too strongly urge that it be carefully inquired into before the choice of iridectomy is finally made. Discission is proper when the patient is under 25 years of age and finds his vision insufficient for his needs. However, I have had the experience that discission was technically impossible of accomplishment, because the lens was so movable that it gave way under the needle without our being able to open its capsule. Extraction is naturally resorted to when it has been decided that operative interference is in place and that neither iridectomy nor discission is the thing to do. It is especially to be practiced in patients over 35 years of age.

Group II embraces a class of patients where the displaced lens is opaque and complicated by pathologic intraocular changes, so that in the choice of operative measures we must elect to do either discission or extraction. After the age of 25 my preference is for extraction, preceded by preliminary iridectomy. If the result is unsatisfactory and I am satisfied that the lens is capable of absorption through needling, I should elect to do this on the second eye rather than to extract. Before the age of 25 years, and provided the tendency to excitation of active intraocular inflammation is not too great, one may prefer the needle operation. A word of caution: Do not attempt to better a fair result through division of secondary membranous cataract when the vitreous contains opacities that in all likelihood will be increased thereby. The obtainable vision in this group will often leave much to be desired, and we must exercise care at the outset and not lead the patient to expect the impossible.

For the cases embraced under Group III, either iridectomy alone, or combined with extraction, must be considered. The position of the dislocated lens, whether it will likely be retracted again into the hyaloid fossa, whether one has wounded the lens or its capsule during the performance of the iridectomy, and whether the lens was previously, in part, opaque or not, must serve in deciding which operation it is best to make.

For the cases in Group IV, only extraction can be thought of in the restoration of sight, and since there is the added danger of the extraction being complicated by intraocular hemorrhage, the prognosis at the outset must be a guarded one. Preliminary iridectomy, if one has not already been made, is to be recommended, and if the intraocular tension is still suspiciously high, sclerotomy may be done ere attempting extraction of the cataractous lens.

#### DISCUSSION.

DR. J. L. THOMPSON, Indianapolis: In all the cases which I have seen the displacement has been upward and outward, directly outward, or downward and outward. In not a few



the lens would swing outward and backward like a door on its hinges. All of these patients were myopic. In two of them (cousins), the lenses were subsequently displaced downward, when the myopia gave place to a hyperopia equal to that found after an extraction for cataract.

## Clinical Notes

### FLEAS ON RODENTS AND MEN ON THE PACIFIC COAST.

WILLIAM B. WHERRY, M.D.

Bacteriologist to the San Francisco Board of Health.  
SAN FRANCISCO.

I am unaware that any flea determinations made on the Pacific Coast have been published where they would be accessible to the medical profession generally. Another reason for publishing this note is the importance of recording the seasonal prevalence of fleas occurring on rats and men in a focus where plague exists.

During the months of August to November, 1907, when acute plague was present in greatest degree, I collected about a thousand fleas from rats and men and sent them to Prof. Carl F. Baker, Para, Brazil, who is recognized as the greatest authority on American *Siphonaptera*. He will report on these later.

In October, 1907, Mr. M. B. Mitzmain<sup>1</sup> published a preliminary note on rat fleas, collected in San Francisco, Oakland and Pt. Richmond, with the following determinations:

*Ceratophyllus fasciatus* (Bosc.) 32 females, 31 males.  
*Ctenopsyllus musculi* (Duges) Baker, 8 females, 4 males.  
*Pulex pallidus* (Tsch.) 10 females, 4 males.  
*Ctenocephalus canis* (Curtis) Baker, 12 females, 5 males.  
*Pulex irritans* (Linn) 2 females, 2 males.

I wish to add the following determinations, kindly made for me by Mr. R. W. Doane, under the direction of Prof. V. L. Kellog, at Leland Stanford Junior University:

Date.	Host.	Flea.	Females.	Males.
Nov. 1907- Feb. 1908.	On <i>Mus decumanus</i> .	<i>Loemopsylla cheopis</i> (Roth, 1903.) <sup>2</sup>	23	19
	On <i>Mus decumanus</i> .	<i>Ceratophyllus fasciatus</i> .	8	16
	On <i>Mus decumanus</i> .	<i>Ctenocephalus canis</i> .	3	
	On <i>Mus musculus</i> .	<i>Ctenopsyllus musculi</i> .	1	5
Oct. 1907- Feb. 1908.	On man, beds and bedding.	<i>Pulex irritans</i> .	210	124
		<i>Ctenocephalus canis</i> .	1	1
		<i>Ceratophyllus</i> sp. (?)		2

The fleas from human beings were collected from themselves by medical inspectors visiting plague-infected houses; most of them by a laboratory assistant, who lived in the worst infected district, and by nurses at the plague isolation hospital. It will be noted that in this series only two specimens of an undetermined species of *Ceratophyllus* were found on human beings.

During August and until December, 1907, fleas could be found with comparative ease on rats brought in for bacteriologic examination. Most of these rats had been drowned and soaked in kerosin or some disinfecting solution. Any percentage of infestation based on such determinations was obviously so erroneous that it was not attempted. It may be of interest, however, to know

that during September, 1907, as many as 181 fleas were collected from two rats, which were found dead. The markedly greater infestation of particular rats was not only noted at this time when plague was epidemic, but later in February, 1908, in the "off season," when as many as 75 fleas were collected from a rat, though at this time there was a very noticeable reduction in the number of human and rat fleas.

During May, 1908, while temporarily acting as assistant surgeon U. S. Public Health and Marine-Hospital Service, under the direction of Dr. J. D. Long, in charge of the situation at Oakland, I started estimating the percentage of rat infestation at the very beginning of the true flea breeding season, taking all the precautions observed by the last Indian Commission to prevent the escape of the fleas. The figures of these estimations will be forwarded to the Surgeon General, but I might state that during the month of May less than one flea to each rat was found and that by far the most prevalent species was *Ceratophyllus fasciatus*.

It may be appreciated by those who have not seen the reports of the last Indian Commission, if it is stated here that most of their successful experiments in the transmission of plague were conducted with *Loemopsylla cheopis*; two experiments with *Ceratophyllus fasciatus* were also successful. All of the twenty-seven experiments with *Pulex felis*, the cat flea, failed. Only three out of 37 experiments with the human flea, *Pulex irritans*, were successful. However, this low percentage was explained by the fact that human fleas do not thrive well on rats and guinea-pigs.

I am indebted to Drs. W. L. Terry and Agnes Walker and Miss K. C. Wynn for assistance in the collections of fleas.

936 Lake Street.

## LONG LACTATION.

DOUGLAS H. STEWART, M.D.

NEW YORK.

This case is reported because it is unusual and curious and may be of interest to the statistician:

Mrs. H. was delivered of a girl in February, 1902. The child is now living and of average size, weight and strength. The mother's right breast is still secreting milk, six years, four months and some days after delivery. There is no history of pregnancy save as above, but plastic and retro-flexion operations have been performed since the confinement. The quality of the milk seems to correspond with that usually found two months after ordinary labor. The quantity is small, yet two teaspoonfuls are easily obtained at a milking.

The mother's statement that the secretion has been constant throughout the whole period is borne out by female relatives, who have been assuring her all along that the state of affairs was unnatural and must, therefore, be wrong. Finally, as the breast was a little tender, she consulted me.

The breast is small and has some enlarged milk ducts; otherwise it does not seem abnormal save in milk-formation. The child was not nursed, the reason assigned being that the mother did not have enough milk. Attempts to get the child to the breasts were not continued because of short nipples.

Bimannual examination reveals no unusual conditions of uterus or appendages.

128 West Eighty-sixth Street.

1. Monthly Bull., California State Board of Health, 1907, iii, 38.  
2. In a Revision of the Non-Combed Eyed Siphonaptera Jordan and Rothschild place the fleas previously termed *Pulex Cheopis* (Roth.) in the new genus *Loemopsylla*. The fleas described above by Mitzmain as *Pulex pallidus* (Tsch.) should probably be counted as *L. cheopis*. Jour. Hygiene, 1908 (Parasitology, Supplement No. 1.)



A NEW FORM OF SACCHAROMETER FOR USE  
WITH FEHLING'S SOLUTION.

GEORGE REILY MOFFITT, M.D.

HARRISBURG, PA.

The idea of this saccharometer was suggested by the following passage from Tyson's "Practice of Medicine":

Fehling's solution is so composed that if an equal volume is exactly reduced by an equal volume of urine, that urine contains  $\frac{1}{2}$  of 1 per cent. of glucose; if by half bulk, 1 per cent.; if twice the bulk,  $\frac{1}{4}$  per cent., and so on. Should the urine contain more than 1 per cent. of sugar, it should be diluted one to ten and the result multiplied by ten.

After making a number of quantitative tests for glucose by Fehling's clinical method, while resident physician at the Germantown Hospital, I found that I could tell with some degree of accuracy the percentage of glucose in a specimen merely by the depth of the solution in the test-tube when the reaction occurred, for in making the tests I used 5 c.c. of a mixture of one part Fehling's solution and four parts water, the diluted Fehling's solution, therefore, being of the same depth at the beginning of each test.

Because of this fact, together with the suggestion offered by the above passage, it occurred to me that were a test-tube marked at the depths of 6, 7, 8, 9 and 10 c.c., 5 c.c. of the diluted Fehling's solution (containing 1 c.c. of the undiluted solution) being introduced and the sugar test performed in the usual manner, the marks would indicate  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{6}$ ,  $\frac{1}{8}$  and  $\frac{1}{10}$  per cent. of glucose respectively, the reading being taken from the surface of the solution when the reaction occurred.

For example, if when the reaction occurred the surface of the solution stood at the 7 c.c. mark, that is, if 2 c.c. of urine had been required, that urine would have contained  $\frac{1}{4}$  per cent. of glucose. If, however, the urine contained more than  $\frac{1}{2}$  per cent. of glucose, i. e., if when the reaction occurred the surface of the solution was below the 6 c.c. mark, the urine must needs be diluted with nine parts of water, the test being repeated with the diluted urine and the result multiplied by 10.

Thus if the reaction occurred when the surface of the solution stood at the 9 c.c. mark, that is, if 4 c.c. of the dilute urine had been required, the urine would have contained 1.25 per cent. of glucose, as shown by multiplying  $\frac{1}{8}$  by 10.

The completed saccharometer, as shown by the cut, is graduated in two columns, one for urine containing less than 1 per cent. of glucose, which is used undiluted; the other for urine containing over 1 per cent., which must be diluted. The mark "F" is placed at the depth of 1 c.c. and the mark "W" at 5 c.c.

The column marked "Undil." is graduated according to the above description. In the column marked "Dil.

1-10" the mark "1%" is placed at the depth of 10 c.c. or 5 c.c. above "W," as 5 c.c. of the diluted urine contains 0.5 c.c. of the undiluted. The mark "2%" is midway between this point and "W," or opposite the  $\frac{1}{5}$  per cent. mark of the other column, and so on. It will be seen that by multiplying any number in the "Undil." column by 10 it will give the number at the corresponding level in the other column. For instance, 2.5 per cent. is opposite  $\frac{1}{4}$  per cent., 5 per cent. is opposite  $\frac{1}{2}$  per cent., and so on.

The results of the tests by this instrument are found to correspond to the results obtained by the polariscope, by Einhorn's saccharometer and by Robert's differential density method. The apparatus simplifies the technique of the quantitative test with Fehling's solution by eliminating the necessity of accurately measuring the amount of urine added while performing the test and doing away with any subsequent calculation, for by the graduated scale, when the characteristic reaction occurs, the percentage of sugar may at once be observed.

The test is carried out by filling the saccharometer to point "F" with Fehling's solution and adding water to point "W." This solution is boiled, and if no precipitate appears the test is carried on in a manner similar to the qualitative test, a few drops of the suspected urine being added at a time, boiling and shaking after each addition.

In case there is more than 1 per cent. of sugar the urine may be diluted by filling the saccharometer to the  $\frac{1}{8}$  per cent. mark with water and adding the urine until the  $\frac{1}{10}$  per cent. mark is reached. The diluted urine is then poured into a suitable vessel and the test carried on as before, reading the per cent. of sugar from the scale marked "Dil. 1-10."

Fortunately the urine in most cases of glycosuria contains more than 1 per cent. of glucose, for the test is much more accurate with the diluted urine than with the undiluted.

To procure greater accuracy in making the test 1 c.c. of Fehling's solution may be placed in the saccharometer by a 1 c.c. pipette instead of pouring in the solution to mark "F," or 0.5 c.c. of Fehling's solution No. 1 and 0.5 c.c. of Fehling's solution No. 2 may be separately introduced into the saccharometer by a graduated 1 c.c. pipette.

For convenience in the laboratory where many tests for glucose are made daily a mixture of one part of Fehling's solution to four parts of water may be made up for the day's use. In making the routine sugar analyses the saccharometer may be filled to "W" with this diluted Fehling's solution and the test carried on similarly to the qualitative test when, if sugar be found, the amount is immediately known.

1705 North Front Street.

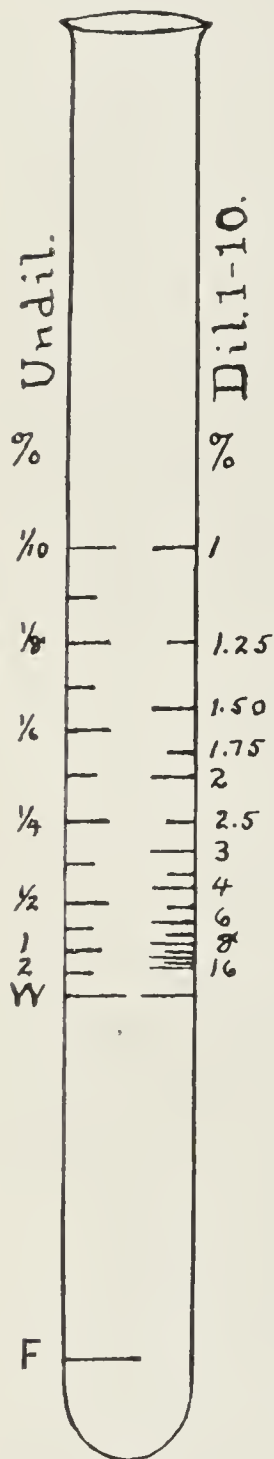
PAINLESS TONSILLECTOMY AND ADENECTOMY  
WITH QUININ ANESTHESIA.

EDWARD J. BROWN, M.D.

MINNEAPOLIS.

Some months ago<sup>1</sup> THE JOURNAL reviewed the experimental work of H. Thibault with infiltration anesthesia by quinin. It at once struck me that this might be the ideal anesthetic for tonsillectomy. I have used quinin hydrochlorid in 3 per cent. solution during the

1. "A New Local Anesthetic," by H. Thibault, Jour. Arkansas Med. Society, September, 1907. Abst. in THE JOURNAL A. M. A., Nov. 16, 1907, p. 1719.



New saccharometer.



succeeding months in all my tonsillectomies in older children and adults with very great satisfaction. In one case I painted the greatly enlarged right tonsil of a 12-year-old boy once with 1 per cent. holocain and then injected into the pillars and deep parts of the tonsil not to exceed 70 minims of the quinin solution and 10 minims of a 1 to 1,000 adrenalin solution. The pillars were separated, the tonsil drawn forcibly through the No. 10 wire loop of a Peters' snare and cleanly removed in its capsule. Practically no blood was lost and the boy at once exclaimed: "It did not hurt a bit."

With a curved and reinforced needle three and one-half inches in length, made for the purpose, I have in a few cases of manageable patients injected the above solution into adenoids, the soft palate being drawn forward with a retractor. While this has proved less satisfactory than in case of tonsils, since it is much more difficult, it has probably rendered the adenectomies less painful than after the repeated painting with 20 per cent. solution of cocain. In most of these cases the injection has been preceded by a single painting with 1 per cent. holocain.

In a few cases of submucous nasal septum operations I have injected the quinin solution freely and found that the operation was rendered entirely painless with the use of very much less cocain or holocain.

In the removal of a large, pigmented and painful mole from the neck of a 71-year-old woman suffering from recurrent carcinoma the solution was injected, the mole removed by an elliptical incision and the wound closed. The patient remarked that the operation was much less painful than under similar operations with cocain infiltration.

I believe that quinin in solution offers a means of local infiltration anesthesia which is ideal in safety, efficiency, convenience and cheapness.

39 Syndicate Block.

## COAL-TAR IN CHRONIC ECZEMA.

R. L. SUTTON, M.D.  
KANSAS CITY, MO.

I desire to call attention to the value and efficiency of common coal-tar in the treatment of certain types of eczema. This substance, a dark, thick, semi-liquid, is obtained as a product of the dry distillation of bituminous coal and contains a number of active chemicals, carbolic acid and creosote being among the most important. It can be purchased from any of the large roofing or paving companies for about 25 cents a gallon.

It is particularly indicated in the chronic, recurrent form of the disease in which the skin is dry, cracked and scaly, with considerable papillary hypertrophy and but slight thickening of the outer layers of the epidermis. Eruptions of such a type are frequently seen about the knuckles, especially as a sequel to repeated attacks of an occupation dermatitis, or are at times manifested without apparent cause on the shins, forearms or other parts of the body. In these cases I have found this remedy much superior to salicylic acid and like keratolytics.

It is applied, undiluted, on smooth pieces of cotton cloth, these being fixed in place by means of bandages or adhesive plaster. At the end of twenty-four to seventy-two hours there is a resulting exfoliation of the superficial strata of the corneum and the outer scales

can be easily rubbed off. If the reaction is very marked, an infrequent occurrence, the inflammation can be readily subdued by means of plain or carbolicized zinc oil (carbolic acid 5.0, zinc oxid 55.0, olive oil 40.0). The application of the tar can then be repeated if necessary.

It can hardly be possible that so common a substance possessing such valuable therapeutic properties has never before been employed in dermatology. If it has I have been unable to find any record of the fact. At any rate, it is of sufficient worth and reliability to merit a permanent place in the therapy of one of the most troublesome of all skin affections.

## Therapeutics

### THE LENHARTZ TREATMENT OF GASTRIC ULCER.

Dr. Samuel W. Lambert, New York (*American Journal of the Medical Sciences*, January, 1908), describes this treatment and believes that it is an advance in the therapy of this disease. Lenhartz published the results of his treatment in January, 1904, but the treatment did not at first receive the attention that it deserved.

Instead of a starvation period with rectal alimentation, Lenhartz's treatment aims to furnish more nutrition to the patient and improve the general condition and thus favor the healing of the ulcer. It also aims "to prevent distention of the stomach by a limitation of the size of each portion of food taken and of the amount of fluids taken and by the use of ice applications externally." And lastly it aims "to prevent the action of the excessive hydrochloric acid on the ulcer by combining it with food albumin and by the use of bismuth subnitrate internally." These objects are accomplished as follows: By giving the patient nourishment every hour, and this nourishment concentrated and rich in albumin so that "the acid of the gastric juice will be rapidly combined with the food proteid." The food should be slowly and completely masticated, and this is best accomplished by feeding the patient "in teaspoonful amounts and by never allowing him to feed himself during the first two weeks of his treatment." Three or four weeks' rest in bed ordinarily must be insisted on. When there is hemorrhage an ice bag to the epigastrium is recommended, and bismuth subnitrate internally. Iron should be given later for the subsequent anemia.

"The food given should be fresh milk, iced; raw eggs (the whole egg is beaten up and iced). Both the milk and the egg are prepared in covered glass tumblers, surrounded by cracked ice, and kept at the bedside. The feeding spoon is also kept iced in the same manner." If the patient prefers, Lambert allows a mixing of the eggs and milk and feeding the mixture instead of the usual alternation as advised by Lenhartz. After the third day, granulated sugar is added to the eggs. On the sixth day "raw scraped beef, boiled rice and zwieback prepared in the usual manner" are given. Lambert substitutes cooked, chopped chicken for the raw ham in the treatment of Lenhartz. Finally butter is added to the diet. After the tenth day Lambert allows a broiled chop, beefsteak, or chicken as a substitute for the raw beef. Later ice cream is added and the zwieback is changed to toasted bread, and other cereals take the place of rice. For the first ten days of the treatment the food is given hourly from 7 in the morning until



9 at night. Lambert found advantage in the Lenhartz routine feeding, though, of course, not so long continued, in several patients with hyperchlorhydria who did not have peptic ulcer.

From the recorded experiences Lambert's conclusions seem justified, viz., that while the Lenhartz treatment does not always perfect a cure and should not take the place of surgery when dangerous hemorrhage has occurred or an ulcer is recurrent, it seems to cure a patient more pleasantly than the starvation method; the patients are in better condition after the treatment, as they are really built up by it; there is less need for morphin; there is less vomiting, and apparently less hemorrhage.

#### SNAKE POISONING IN THE UNITED STATES.

Dr. Prentiss Willson, Washington, D. C., in the *Archives of Internal Medicine*, June, 1908, gives the results of his study and analysis of 740 cases of snake poisoning in this country. The article is complete and should be carefully read, but many of the valuable conclusions arrived at and the sensible interpretation of conditions and the proper management of the poisoning may well be described here.

Snakes may be divided into two large classes, the colubrine and the viperine, the former class being, with few exceptions, absolutely harmless, and in the United States but two members of this colubrine class are venomous or dangerous to man. These are the so-called coral snakes. The viperine snakes are divided into two families, the true vipers and the pit-vipers, all of which are venomous. It is the pit-vipers only, however, that are found in the Western Hemisphere, and they have been so named from "the presence of a pit or fossa at the side of the face below and between the nostril and the eye." New England is almost free from venomous snakes, though the rattlesnakes, varying in species in different parts of the country, may be found all over the United States. The copperhead snake is found in the middle states and the southern states, while the coral snake is found in the southern states and in the southwest. "The water moccasin, sometimes called the cotton-mouth, or branch moccasin, is found only in the southern states."

Willson states that "all the pit-vipers, rattlesnakes, copperhead, and water moccasin correspond closely to the popular ideas concerning the general appearance of the poisonous snakes. The head is broad and triangular, and sharply differentiated from the neck. The body is thick and heavy in comparison with its length, and the tail is short and blunt. The three features characteristic of all the pit-vipers and of no other American species, the detection of any one of which establishes beyond all doubt the venomous nature of any given snake are: First, the presence in the anterior portion of the upper jaw of two hollow erectile fangs; second, the pit; and, third, the presence on the ventral surface of the tail of scales undivided in the median line." "In identifying the coral snakes the main dependence must be placed on the presence of the fangs and on the peculiar and gaudy coloring." The importance of immediately deciding that a snake that has bitten a human being is venomous is, of course, understood. When, however, the snake has been killed and perhaps crushed, the difficulty of such decision is increased, and, therefore, the detailed signs above described become important.

Snake bites are becoming more and more infrequent,

especially in the settled portions of the country, and the rattlesnake especially is being slowly but surely exterminated. The poisonous venom from the pit-viper causes a profound fall in blood pressure, which is undoubtedly the cause of death. The rattlesnake venom causes a decided fall in blood pressure associated with dilation and congestion of the entire portal system, this resulting in a complete failure of the circulation. The circulatory failure from these poisons is attributed to the depression of the vasomotor center in the medulla. Multiple hemorrhages may occur from snake venoms "due to their disintegrating action on the endothelium of the blood vessels."

The symptoms of snake poisoning are both constitutional and local, and the constitutional, as just described, are largely those of prostration. The rapidity with which the general symptoms occur varies, but they are usually in evidence less than fifteen minutes. During the preliminary stage, of course, the signs of nervous shock and fear are in evidence. Dizziness, muscular debility, especially of the legs, and finally collapse, if much poison has been absorbed, rapidly occur. "The respiration may be either rapid or shallow, or slow and stertorous." The pulse is of low tension, rapid and feeble, and the temperature subnormal. The skin is cold and clammy from perspiration. "Nausea is usually present, and vomiting is of frequent occurrence." Voluntary motion is more or less completely absent, and the mind may become clouded, though at times it remains remarkably clear. Rarely active delirium may be present at this stage of the poisoning. Coma is rare, except as a terminal event in fatal cases. "Involuntary evacuations of the rectum and bladder may occur."

Local symptoms are always present in cases of crotalin (viperine) poisoning, even when constitutional disturbances are absent. Besides the characteristic appearance of the snake bite, viz., "two (occasionally only one) punctured wounds situated in the center of a rapidly-spreading tumefaction," there are soon the usual evidences "of a rapidly-spreading and inflammatory process of severe grade, with markedly hemorrhagic and necrotic tendencies."

Any subsequent feverish process is probably due to the septic condition of the wound, or there might be a short reactionary rise of temperature after recovery from a collapse. The above symptoms occur from the bite of the crotalin series or the poisonous members of the viperine class, viz., the rattlesnakes, copperheads and water moccasins. Poisoning in this country from the small number of colubrine snakes which are poisonous, viz., the coral snakes, occurs so rarely that the symptoms can not be carefully studied. The bites from these coral snakes cause "profound prostration, frequently terminating fatally, probably from paralysis of the respiratory center, and with a characteristic absence of local symptoms."

The specific infection starting from the local inflammation from crotalin poisoning is the serious complication of such a snake bite, if the immediate poisoning does not prove fatal. The recovery from the immediate constitutional symptoms varies "from a few hours to two or three days," and the story then becomes one of septic infection or the healing of a poisoned wound.

The prognosis, of course, "varies with the amount and toxic quality of the venom injected, with the location of the bite and with the age and sex of the patient. The mortality from the coral snake bites, which in this country, as above stated, are rare, is very high and seems to



be more than 50 per cent. The death rate in the United States from snake bite is very small, and 99 per cent. of such deaths are due to the crotalin snakes, or pit-vipers. The probable mortality in this country from snake bite is 10 per cent., and probably acute poisoning from alcohol and later septic infection are responsible for a considerable portion of this percentage. Bites on the head and trunk are much more dangerous than on the extremities, and the mortality in children under 10 years of age is double that in adults.

While the majority of patients recover from the bite without any treatment for the reason that the amount of venom injected is not a fatal dose, still, as this amount can never be determined, active treatment should be given in every instance. The local and general treatment may be discussed separately, but the local treatment is of primary and overwhelming importance. There can be no doubt that the main therapeutic indication is the prevention of the systemic absorption of a fatal dose of venom from the amount, be it large or small, contained in the tissues immediately around the wound, and if this can not be met the outlook for the patient, no matter what line of general treatment is employed, becomes exceedingly grave. The limitation and retardation of absorption, by ligatures and other means, and the removal or destruction of the injected venom, are thus the objects of all local treatment. For these purposes local freezing mixtures or ligatures have been used, and Willson believes that the former, as exemplified perhaps by ethyl chlorid spray, is of little value, and that ligatures where the part can be ligated should be the treatment. Of course bites on the head and body may be temporarily frozen as the only quick means of slowing the circulation and, therefore, absorption. The value of the ligature to the part that can be ligated depends on the length of time elapsed between the receipt of the injury and the beginning of the treatment. As soon as seen the circulation of the part should be absolutely cut off until other local measures can be instituted, and Willson says this is best accomplished by the use "of a series of ligatures between the bite and the heart, at least one of which should be applied to that segment of the limb containing one bone." There is, of course, danger of causing gangrene, especially "in the parts devitalized by the crotalin venom, hence as soon as possible the ligatures should be partially relaxed." If the patient is seen a considerable time after the bite, and constitutional symptoms are in evidence and the local lesion is badly swollen, ligation seems of doubtful utility. On the other hand, ligatures so applied as to impede the return flow of blood and lymph render the absorption more gradual and allow the system to combat the poison and not be overwhelmed by it. Such artificial hyperemia, Willson thinks, does not add to the danger of extensive local necrosis, and should be substituted for the complete stoppage of the circulation as soon as practicable. While cautioning against allowing a limb to be ligated too long, Willson warns against a too sudden resumption of the circulation allowing rapid absorption of the poison. Such a sudden return of the circulation to the part has sometimes caused death from constitutional symptoms. He would advise intermittently relaxing the ligature nearest the heart, letting it become looser and looser until it is entirely removed. The other ligatures may then be taken off in the same way. It would perhaps be rarely justifiable to amputate a prominent part of any limb for a snake bite, at least in this country.

As most patients suffering from snake bite are seen by the physician only after the complete ligation of an extremity for an hour or more, with the distal portion of the limb swollen and discolored, the most advisable treatment at this time seems to be "a dissection of the wound with free multiple incisions throughout the swollen area, together with such measures as kneading and massage of the part, and its immersion in warm, mild antiseptic solutions to promote hemorrhage and escape of serum." While all the venom could probably not thus be gotten rid of, enough might be removed to make the difference between a poisonous and non-poisonous dose, when the circulation of the part is again allowed to take place. Of course such treatment of multiple incisions should be made with care not to cause injuries to tendons or future cicatricial contractures. As to the local antiseptic that should be used, the most important seems to be a 1 per cent. solution of permanganate of potash. In the local management of snake bites the general principles of aseptic surgery should never be lost sight of.

The general treatment of the patient resolves itself into four heads:

- "1. To destroy the source of the poison.
- "2. To neutralize the poison already in the circulation.
- "3. To aid and to stimulate its elimination.
- "4. To support the patient."

The first has already been discussed. As to the second indication, Willson says that an antitoxin or "serum treatment of snake poisoning, so far as this country is concerned, does not exist;" consequently our treatment must be directed to combating the toxic effects of the poison by such antidotal treatment as seems indicated. Alcohol as ordinarily used, Willson says, is useless and is in no sense antidotal to or destructive of snake venom. Patients bitten by snakes have recovered from enormous doses of alcohol, but some have undoubtedly succumbed to such doses. Strychnin Willson does not think much indicated in poisoning by American snakes, and especially in crotalin poisoning. The profound lowering of the blood pressure should be met and the shock should be treated by absolute rest with the head low, the body kept warm with artificial heat, and the administration in some manner of suprarenal solutions, probably best by hypodermic injection. One cubic centimeter (15 minims) of a 1 to 1,000 active principle suprarenal solution in water could be repeated in an hour or two, if needed. Physiologic salt solution, either intravenously, by hypodermoclysis, or by enteroclysis, as deemed advisable from the severity of the symptoms, may be used. "This solution may be impregnated with oxygen."

Artificial respiration is of much less importance in the viperine (crotalin) poisoning, i. e., the kind that occurs mostly in this country, than it is in the colubrine poisoning which occurs elsewhere. In other words, as above stated, the colubrine poisoning acts specifically on the respiratory center. However, artificial respiration could never do any harm if it did not save life.

The after-treatment is that of the local lesion, inflammation, or sepsis if it occurred.

#### LOTION TO SOFTEN THE HANDS OF LABORERS.

The *Druggists Circular*, March, 1908, suggests:

R.	c.c.	
Glycerini .....	20	fl3vi
Aque ammoniæ .....	5	or fl3iss
Spiritus myrciæ .....	20	fl3vi
Aque, ad .....	100	ad fl3iv
M. et sig.: Apply to the hands after washing and dry by friction.		



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, AUGUST 8, 1908.

## SPOROTRICHOSIS—A REVIEW.

In 1898 Schenck<sup>1</sup> reported an unusual case of refractory subcutaneous abscesses of the arm, the point of entrance of the infection being a scratch by a nail of the index finger, whence the infection extended along the lymph channels. From the contents of these abscesses Schenck isolated in pure culture a fungus which was regarded as "possibly related to the *Sporotricha*." The abscesses contained a gelatinous pus and often they were succeeded by ulcers with undermined edges. The illness in this case lasted about six months.

Two years later Hektoen and Perkins<sup>2</sup> observed a similar case with an almost identical clinical course, the abscesses developing after an abrasion of the finger from a blow by a hammer. A number of abscesses and ulcers formed in the subcutaneous tissue of the forearm and there was swelling of the axillary and supraclavicular lymph nodes. The illness lasted three months. Cultures from the gelatinous pus yielded pure growths of the same fungus that Schenck obtained and this was now named "*Sporothrix schenckii*."

Of the cultural and other peculiarities of this fungus, which is a strict aërobe, the following may be mentioned: On solid media such as agar the growth at first is opaque white or grayish-white, extending downward into the medium so that soon a dense coherent mass is formed which may show a snow-white efflorescence. As the cultures grow old they become dark brown or black. In liquid media round tufts or balls develop. Gelatin is liquefied slowly.<sup>3</sup> The fungus consists of a branching septate mycelium from which ovoid bodies develop by budding either from the extremities of lateral or terminal filaments or from the sides of the threads. These characteristics are shown well in the illustrations in the articles cited. Those ovoid bodies are regarded as spores and it is their formation in large numbers that gives the surface of cultures a snowy, efflorescent appearance. Mycelium as well as spores stain well with ordinary dyes and also by Gram's method.

White rats and white mice seem to be the most susceptible animals and in them this fungus causes a

slow, circumscribed, nodular inflammation with pus and ovoid fungal bodies (spores<sup>2</sup>) in the center, while at the periphery encapsulating processes go on. This is best seen in the peritoneal cavity. Subcutaneous inoculation in mice causes extensive superficial ulcerations with undermining of the margins. In the two human cases referred to the parasite was not seen in the lesions, being obtained by culture from the pus. Threads do not develop recognizably in the tissues of inoculated animals, only oval, spore-like bodies occurring in the pus in which they undoubtedly multiply as such.

It may be mentioned that Brayton<sup>4</sup> also described an instance of multiple chronic abscesses of the forearm, with gelatinous contents, developing after puncture of the finger by wire, but this case was not studied microbiologically.

Since the publications mentioned nothing more has been heard of this peculiar infection in English literature and no additional cases appear to have been recognized in this country. In Paris, however, a number of cases of various forms of human infection with sporothrix have been described since 1903 when de Beurmann and Ramond<sup>5</sup> reported an instance of multiple subcutaneous abscesses of fungal origin. More recently Lutz and Splendore<sup>6</sup> in San Paulo, Brazil, and Greco<sup>7</sup> have made important contributions to the study of sporotrichosis in man and in animals.

De Beurmann and others<sup>8</sup> describe several instances of sporotrichal abscesses, scattered without any evident elective localization over different parts of the body. The source of infection in these cases is not known and the mode of dissemination is evidently different from that in the American cases. The French authors trace in detail the evolution of the sporotrichal lesion: first there is a small nodular induration in the skin or subcutaneous tissue; gradual, painless softening takes place resulting in from four to six weeks in an abscess with gelatinous contents and without much tendency to enlargement or ulceration if not incised, although spontaneous ulcerations are also described. There is no impairment of the general health. Cultures from the pus give pure growths of the sporothrix. Iodid of potassium exercises definitive curative action whereas mercurials do not. The fungus isolated from the pus in the French cases does not appear to differ in any single essential from *Sporothrix schenckii*, hence it should be so called in accord with the accepted laws of scientific biologic nomenclature. On the other hand a sporothrix isolated by Dor<sup>9</sup> from the pus of a case in which the numerous subcutaneous abscesses were very large seems to have presented quite distinct character-

4. Indiana Med. Jour., 1899, xviii, 272.

5. Ann. de Dermatologie et Syphillographie, 1903, 768. Also Matrechot and Ramond, Compt. rend. de Soc. biol., 1905, lix, 379.

6. Centralbl. f. Bakt., 1 Abt., 1907, xlv, Orig., 632.

7. Argentina Medica, 1907.

8. See summary, by de Beurmann and Gougerot, Ann. de Dermatologie et Syphillographie, 1906, 538.

9. Presse Médicale, April 14, 1906, 234.

1. Bull. Johns Hopkins Hospital, 1898, 286.

2. Jour. Exp. Med., 1900, v, 77.

3. For further details see also Foulerton, Trans. Path. Soc. of London, 1901, lli, 259.



istics; in this case the infection appeared soon after the lodgment of a needle in the mucous membrane of the pharynx.

Lutz and Splendore<sup>6</sup> record five cases of human sporotrichosis which they have studied completely. These cases all presented the clinical course and the appearances of the cases of Schenck and of Hektoen and Perkins, the infection gaining entrance through the skin of the finger or back of the hand. The sporothrix isolated appears to correspond to the *Sporothrix schenckii*. The South American authors also attribute curative effects to potassium iodid given internally. These authors furthermore have observed the spontaneous occurrence of ulcerative sporotrichosis in rats, the lesions being usually situated on the extremities or the tail. Secondary internal localizations were rarely seen. Having found the fungus on the mucous membrane of the mouth of healthy rats, Lutz and Splendore are inclined to ascribe the cutaneous sporotrichosis of rats to infection from bites.

Among other instances of sporotrichal infection special mention is made of Greco's case<sup>7</sup> in which the foot was involved; of Danlo's and Bland's<sup>10</sup> instance of palpebral localization; and of the localization in the triceps observed by de Massary, Doury and Monier-Vinard.<sup>11</sup>

Additional cases of cutaneous sporotrichosis have been described,<sup>12</sup> thus showing that this form of infection may be much more prevalent than is suggested by surface indications.

We come now to the consideration of the most recently discovered phase of sporotrichal infection, namely, the involvement of mucous membranes. De Beurmann and Gougerot<sup>13</sup> note the saprophytic occurrence of *Sporothrix schenckii* on the bucco-pharyngeal and laryngeal mucous membranes and in a case of cutaneous and subcutaneous sporotrichal abscesses they found the sporothrix in a small ulcer on the soft palate. It has been mentioned that Lutz and Splendore found the sporothrix in the mouth in rats. The case described by Letulle<sup>14</sup> shows well the pathogenic possibilities of this organism: The disease began in January, 1907, as a small nodule on the right forearm and a large number of similar lesions soon cropped out on various parts of the body. Rapid regression took place under treatment with potassium iodid, but in August extensive pharyngeal and laryngeal ulceration had developed which microscopic examination showed to be of sporotrichal nature. At first the ulcers were small, round and grayish with elevated red borders; later the ulceration became continuous, presenting a grayish yel-

low surface and at one point a small colony of sporothrix actually formed at the same time as typical ovoid bodies were found free in the pus as well as enclosed in polymuclear cells and giant cells. Caseation was not observed. The patient, 66 years old and a vendor of lettuce, died in January, 1908, as the result of a cachexia owing to progressive dysphagia. There was found after death some lobular pneumonia, no internal sporotrichal invasion, but a large ulcer of the larynx, pharynx and oesophagus. Sporothrix is said to have been found on the leaves of lettuce.

In conclusion it may be pointed out that from the foregoing it is quite evident that from now on sporotrichal processes must be reckoned with in the diagnosis and treatment of chronic nodular infections, especially of the skin and subcutaneous tissue. That certain mucous membranes become involved is shown by Letulle's noteworthy case. Heretofore sporotrichosis, no doubt, has been confounded with syphilis or tuberculosis or other diseases—more probably the former because of the curative effect on both of potassium iodid. The clinical resemblance of cutaneous sporotrichosis to glanders also is noted by Lutz and Splendore. It is also clearly evident that whenever possible microbiologic methods of diagnosis must be used in order that the exact nature of the process may be determined. The more that this is done the sooner will the exact nosology and distribution of sporotrichosis become known.

#### OLYMPIADS, ANCIENT AND MODERN.

Accounts of the recent athletic contests in London have been inspiring reading. The results have been complimentary to the brawn and physical endurance of our representatives, who, on the whole, excelled those of many other nations, particularly those of the United Kingdom. Surely no one now need consider seriously the animadversion that the virility of the American youth is declining. The contests were attended by many interesting and dramatic incidents. Probably never in the history of athletic events has anything been witnessed comparable with the spectacle at the finish of the "Marathon" race. For several minutes before the appearance of the first runner there was a tense hush among the 80,000 people who were in the immense stadium at Shepherd's Bush, where all the contests had been held. The course, of about twenty-six miles, was laid from Windsor, where the Princess of Wales started eighty-six runners, through a beautifully diversified country. Presently there appeared Donaldo, an Italian, whose spirit was far stronger than his body. A pitiful wreck, with drawn face and tottering legs, barely able to support himself, he was closely followed by friends in order that they might prevent his falling. When more than a hundred yards from the finish he dropped in a heap, was lifted up and started anew, only to collapse once more when some forty feet from the tape. Being

10. Bull. Soc. méd. des Hôpitaux, 1907, p. 1450.

11. Ibid., 1907, p. 1526.

12. Bull. Soc. méd. des Hôpitaux, 1907; Dominici and Rubens-Duval, p. 1055; Laubry and Esmein, p. 386; Rubens-Duval and Fage, p. 380; Lesné and Monier-Vinard, p. 268; Monier-Vinard, p. 353; de Beurmann and Gougerot, pp. 596 and 950.

13. Ibid., 1907, p. 1069 and 585.

14. Presse médicale, 1908, xvi, 177; also Letulle and Debré, Bull. Soc. méd. des Hôpitaux, March 19, 1908, 379.



again helped to his feet. he stumbled, reeling then from side to side like a drunken man, collapsing again and again, and his unconscious body was finally carried across the line. During these pathetic struggles there came Hayes, an American, who rapidly traversed the two-thirds of the stadium track necessary to be completed. The latter was adjudged the winner, Donaldso having been disqualified by reason that he had been carried across the line. Among the sixteen contestants who finished immediately after Hayes, four were his compatriots. It is only fair to say that among those of our representatives in these games the only strictly American name was that of Tewanina, the Indian runner; the list of the rest gives a deliciously Hibernian flavor. We seem, nevertheless, entitled to conclude that the cult of the physical has suffered no decline among our people in our day.

Witness again that superb demonstration recently given by the youths of the Young Men's Christian Association, who, in relays, by night as well as day, over rough roads, through civic thoroughfares, and by swimming across lakes, carried a mayor's message from New York City to Chicago. Nor need we dilate on the physical achievements of our college men, except to note that Dr. Dudley A. Sargent,<sup>1</sup> the director of the Hemenway gymnasium, has found a marked improvement in the physique of both college athletes and students during the past quarter century. The average weight and height of the Harvard student of 1880 were about the same as that of the American youths from 21 to 26 years of age who entered the Federal Army in 1861. The present day undergraduate is an inch taller, from four to eight pounds heavier, while his strength has shown a gain of 30 per cent. In 1880 only 50 per cent. of the Harvard students would have surpassed the height and weight of the army average, while to-day 65 per cent. are superior to that standard. This "is a most remarkable uplift in growth and development for any considerable body of men in any country or community to have attained in twenty-five years."

The original Olympiads seem to us moderns to have been quite characteristic of the spirit and genius of the ancient Greek people. Such, however, was not altogether the case. "The foremost minds of Greece censured and condemned that for which commonwealths established statues, often free dinners for life in town halls, or even breached their walls that the conquering hero might enter amid civic acclamations." Hippocrates and Galen inveighed against the Olympiads, at least with regard to their purely physical aspects. The former spoke of the "athletic diathesis" as being something achieved or come by, and not something of the natural order; he was suspicious of this diathesis, which he differentiated from "the faculty of health." He was, however, a great upholder of gymnastics, the general even training of all

the faculties. *Mens sana in corpore sano* was his ideal, though the phrase was Juvenal's. Galen considered the athletic forms of training which develop experts to be excessive, as leading up to some kind of technical power. Aristotle held that the state or habit of athletes was useful neither for the welfare of commonwealths, nor for the health of the individual; their labors were bound up with forced strain and violence; he wondered why they had no good complexions; they were particularly susceptible to colds; they were liable to pass away quickly. And thus Euripides, that keenest of critics: "While evils numberless prevail in Greece, none is worse than the tribe of athletes, who first do not learn well to live, nor could they; for how could one who is a slave to mastication [was there Fletcherism in those days?] and subject to his stomach's needs, acquire a prosperity greater than his sire's, nor, on the other hand, are they enabled to toil in poverty and keep their oar with fortune's flying stroke; or, untrained in good habits as they are, 'tis cruelly hard for them to shift to desperate vicissitude. . . . For who that wrestled well, what nimble-footed man, or who that raised the discus, or thumped some jaw with skill, did aught avail his ancestral commonwealth after he received the wreath?"

The situation was not so incongruous as might seem. No doubt Hippocrates and Galen represented fairly well the medical opinion of their eras—which is not essentially changed to-day. While appreciating to the full the picturesqueness of athletic sports and the noble and most wholesome enthusiasm which they inspire, nevertheless, many physicians now deprecate over-training and over-exercise, such as seems almost essential to the winning of great races. To-day, as in the time of the first Olympiads, many athletes much too soon develop tachycardia, hypertrophied and even permanently dilated hearts; they become pale-faced, tire easily, suffer from dyspnea, develop kidney lesions, and are less resistant than the ordinary citizen, who is not excessive in his exercise. The gist of the matter, here as in all things else, lies in moderation. Especially should the "Marathon" race now be given up. The first course was run by a most heroic soldier to announce the great victory; when he had done this he dropped dead. It is a cruel race, which to-day has not the like splendid motive. The immortalization of the Marathon run may safely be left to poets, who, knowing nothing whatever about athletics, may thus nevertheless play their honorable part.

#### THE ARMY MEDICAL RESERVE CORPS.

After a struggle of four years on the part of the Surgeon General of the Army, backed by the medical profession, Congress at its last session was induced to give much needed relief to the Army Medical Corps, by an Act, approved last April, entitled "A bill to increase the efficiency of the Medical Department of the Army." Conditions in the Army prior to this were deplorable,

1. Harvard Graduates' Magazine, June, 1908.



so far as the organization of the Medical Department was concerned, as apparently no thought had been given to requirements for war. In fact, officers were far too few to perform the ordinary duties of peace times. Such a condition is quite contrary to that prevailing in the army of every civilized country, except our own, of maintaining during peace a personnel greatly in excess of its actual needs, but so constituted as to be capable of ready expansion in war time, without entailing the occurrence of horrors such as those that attended the Spanish-American War. These were inevitable under the then existing conditions, because they were due not to professional, but to military lack of training. From the insurance viewpoint then, this must be regarded as good policy.

Another deficiency was that the prospects of promotion with adequate compensation were so poor that it had become impossible even to maintain the Medical Department at the meager strength allowed by law, and year by year fewer and fewer candidates could be induced to take the entrance examination. The deficiency in the number of medical officers—who hold an honorable position, as they, like other officers, have a commission signed by the President—was made up by the employment of surgeons under contract, whose status was anomalous, as they were in the Army and not of it—holding no commission which would confer on them the rights and privileges due to all members of an honorable profession.

The new law corrects all these bad features wholly or in part. The number of medical officers is notably increased, so that while our Army Medical Corps is not yet nearly so large, relatively to the size of the Army, as that considered necessary by other nations, it is of so respectable a size that there is now no occasion to blush for our apparent callousness toward our soldiers as compared with the care shown by other countries.

The candidate for the Medical Corps has not at present, it is true, any prospect of the great rewards that come to the leaders of the medical profession in civil life, but he can at least expect promotion and pay which are above the average for the civilian practitioner.

The contract surgeon system has been done away with forever, it is hoped, as all contract surgeons in the service at the time of the passage of the act cited, if so recommended by the Surgeon General of the Army, have been commissioned as first lieutenants in the newly created Medical Reserve Corps.

One other very important result has been effected by the struggle to obtain adequate recognition from Congress. Before this was started the profession in general took little interest in Army matters. The accomplishments of certain individual medical officers, such as Reed, Carroll and Gorgas, were, of course, well known; but physicians generally hardly realized that they were represented in the Army by members of the profession

whose achievements, both from patriotic motives and for the honor of medicine, concerned them. It is probable, too, that their obligations in this direction were appreciated the more on account of the recent achievements of the Japanese army, which have demonstrated to the world, that, with the proper organization, numbers, and education of the medical corps, there is no reason why any army should be decimated by disease, or that sick and wounded soldiers should not, at all times, have the care and attention to which they are justly entitled.

The surgeon general has also wisely taken advantage of the feeling thus created, still further to advance the medical service of the army. In order to do this he has lately got in touch with many of the most prominent physicians, surgeons, hygienists and laboratory workers in the country with a view to inducing them to join the new Medical Reserve Corps. We are informed that nearly one hundred favorable responses to the invitation to join this corps have been received from such men. In peace, such officers will not be called on for active duty, so they need fear no interference with the invaluable work which they are performing in their various communities. Their names, however, will lend dignity to the Medical Reserve Corps and give it a standing which could not be otherwise acquired. In war, active service can be required of only those officers of the Medical Reserve Corps who are willing to serve. The need, individual circumstances and home duties would all necessarily be factors in determining the action taken by each. On the other hand, while officers of the Reserve Corps can be commissioned only as first lieutenants under the law, men of the high type indicated holding commissions therein or accepting active service in war would naturally be advanced to the highest volunteer rank available.

---

#### THE ILLINOIS PSYCHOPATHIC INSTITUTE.

In the *Bulletin of the Illinois State Board of Charities* for July, the work of the Psychopathic Institute, for which preparations have been in progress for some months, is outlined. In fact it may be said to have been already in operation for some time to a limited extent at Kankakee, but the intention now is to carry its operations into all the institutions for the insane, and to make it the central school of instruction in scientific methods in psychiatry of the state. That there has been a need of some such stimulus for better methods and work has been evident for years, and it is to the credit of the present state administration that it has been thus provided for.

This is not a new experiment as the plan adopted is evidently modeled on that of the New York State Pathological Institute, the value of the work of which is amply attested in the latest report of the State Commissioners in Lunacy of that state, who consider it one



of their most valuable adjuncts in the steady uplift of the medical work of the state hospital for the insane. That such will be the verdict in Illinois, if such an institution can be conducted along similar lines as in New York, is a foregone conclusion. Of course much will depend on the individual in charge of the institution, and Illinoisans may reasonably regret that their state so early lost the services of the man who has so successfully developed the work in New York. It has, however, the advantage of the successful experience in that state as a guide, and it may not be too much to expect that it will keep at least fully abreast with its institution. The head of a pathologic institute of this kind must be more than a skilful and scientific pathologist; he must be a clinician and a psychologist as well, and above all he must have the faculty of arousing and maintaining the scientific spirit and enthusiasm of those whose work he is to direct. If he is to be subordinate to the head of one of the state hospitals, considerable responsibility will rest on his immediate superior, on whose cooperation and good judgment the best success of the work will largely depend. As is recognized in New York State, it is the assistants on the medical staff who will have to receive the instruction and be mainly depended on for the actual personal observation and study. It should therefore increase to some extent their labors, but should also increase the consideration they receive, and they should be duly encouraged to do research work, with the assurance of obtaining proper credit for it, so that hospital positions may be made more desirable than has been the case heretofore. Provision should be made for internships from which the medical staff can be recruited and which, in any case, will be looked on as worth the seeking of the young graduate in medicine. In the large insane hospitals of the present day there are many opportunities for practical work in general medicine and surgery as well as in the special department for which the institution is designed, and internships ought to be attractive for first-class men.

If the results of such an institution as the new psychopathic institute were only to save a small percentage of the victims of insanity from becoming chronic charges on their friends or the public or to restore to sanity and usefulness a minute proportion of the cases now considered hopeless—and they should be very much more than this—the wisdom of its establishment ought to be manifest to the most economical objectors. It is in other ways one of the most important steps that have been taken to bring the Illinois hospitals for the insane in accord with modern ideas of what they ought to be.

#### THE TRANSMISSION OF PRESSURE FROM THE BLADDER TO THE KIDNEY.

There is a widely prevalent notion that overdistention of the bladder results in "a damming back of the urine" through the distended ureters on to the kidneys, with consequent congestion and damage to those organs.

From an interesting series of experiments on the ureters of the dog, D. R. Lucas<sup>1</sup> concludes that this does not occur. He has found that in the dog not only are the normal uretero-vesicular valves quite competent to prevent regurgitation, but the ureters are "capable of forcing urine into the bladder even when sufficient pressure is gradually exerted in the bladder to burst it, no rise of pressure taking place in the ureter either from regurgitation or accumulation of urine secreted by the kidney." It is probable, therefore, that whatever effect is exerted on the kidney by retention and distention of the bladder is reflex in origin.

#### THE BLIGHT ON MEDICAL JOURNALISM.

That conditions in this country in the matter of medical literature and medical journalism are not unique is shown in a paper presented to the recent Congress for Internal Medicine at Vienna, by the president, F. v. Müller,<sup>2</sup> of Munich. All the evils of which we complain exist there also (although as this country contains the major part of the medical journals of the world, the extent of such evils, if not the diversity, is magnified here), viz., overproduction of articles that contain nothing new; the bolstering up of indifferent journals with the names of well-known men who, however, take no active part in the production of the journals and disclaim all responsibility for them; multiple publication of an article or publication in different journals of articles that are mere *réchauffés* of the same matter; premature communications; innumerable case reports, and interminable bibliographies. But the worst of all are the journals conducted for various side issues, which publish lying statements as to circulation and "write-ups" of commercial products. Müller's appeal to the "forces above material interests" to persuade writers to write only when they really have something to say, and publishers to publish only to supply a public want, will, we fear, fall on deaf ears. There is only one way to bring about the desired reform, and that is for the profession to show unequivocally what it wants. When the profession is educated up to a comprehension of that fact and acts on it, there will be no need to call on the "forces above material interests" for the suppression of the evil.

#### EUPHEMISMS—MEDICAL AND OTHERWISE.

A study of the psychology of language would bring out many interesting points with reference to the effect of the spoken word on our attitude toward the thing spoken of. There is a large class, especially among those in a transitional stage of civilization, which is opposed to calling a spade a spade. Among such people it is considered improper to refer to a lower extremity as a leg; polite society requires "limb" as a substitute. On the farm the boar becomes a "male hog," and it is said that by some of these language-prudes the poor inoffensive bull is referred to as a "gentleman cow!" Such

1. Am. Jour. Physiol., xxii, No. 2.

2. Abstract of Müller's paper appears in Miscellaneous Department, page 513.



attempts at verbal smoothness and mock delicacy have rightly been the subject of sarcastic comment and have been held to indicate an adolescent stage in civilization—a half-way house, as it were, between the coarseness of the frontier and the culture of the metropolis. Our British cousins, in particular, have not been slow to deprecate the western aversion to calling a thing by its right name. One is surprised, therefore, to see in a recent number of a British medical publication<sup>1</sup> an apology for the medical euphemism. The present tendency on both sides of the Atlantic to discuss questions of a medicosocial nature has, according to our contemporary, made it necessary to adopt a new vocabulary, "in order to avoid shocking the feelings of ladies bent on reform, who, while willing, nay anxious, to discuss the social questions, still squirm at the descriptive term." By way of example the quasimedical terms, "avariosis" and "neisserosis," have been proposed to designate, respectively, syphilis and gonorrhea. The former term, "avariosis," has its etymology in Brienx's play, "*Les Avariés*"—"The Damaged Ones"—which deals with the sociologic importance of syphilis. These terms, we are told, "bid fair to become acclimatized." That the British, of all people, should even suggest the abandonment of that frankness—we had almost said brutal directness—of speech of which they are so justly proud, gives color to the pessimistic charges of British national deterioration. What is to be gained by the euphemism it is hard to say. As the prurient user of the term "limb" develops an altogether artificial and unnecessary sense of indelicacy toward the object spoken of, so it is a question whether substituting "neisserosis" for gonorrhea will not tend more to accentuate the method by which the disease is acquired than its importance as a sociologic evil. We suggest that "ladies bent on reform" whose feelings are shocked by the use of a dignified scientific term are inherently unfitted for the difficult and delicate task of attacking a world-old problem which has thus far defied solution.

## Medical News

### CALIFORNIA.

**Epidemic at State Hospital.**—An epidemic of diphtheria is reported from the Southern California State Hospital, Patton, where 40 cases are now isolated. The source of the epidemic has not yet been traced. All the patients are doing well and no deaths have occurred.

**Commencement.**—The College of Physicians and Surgeons, Los Angeles, held its annual commencement exercises June 26. Diplomas were conferred on a class of 10 by Dr. Charles W. Bryson, dean of the faculty, and the doctorate address was delivered by Dr. James P. Booth.

**Hospital Notes.**—The new German Hospital, San Francisco, was dedicated June 27, with formal ceremonies. The new structure consists of two six-story brick buildings, which have been erected at a cost of about \$700,000. The hospital was opened to receive patients July 9, and under the direction of the new superintendent, Dr. Hoffman, and resident physician, Dr. Walter G. Harder, the patients were transferred to their new quarters without difficulty or inconvenience.—Plans have been completed for the new City and County Hospital, San Francisco, which is to cost \$250,000. It is to be a three-story fireproof structure with a main building and two wings.

**Personal.**—Dr. Stewart M. Dougherty, Napa, has been appointed second assistant physician at the Napa State Hospital.

vice Dr. Tyre H. Stice, and Dr. Louis A. Frary has been appointed third assistant physician, vice Dr. S. M. Dougherty, promoted.—Dr. Peter C. Remondino, San Diego, has been made professor of the history of medicine and medical bibliography in the College of Physicians and Surgeons, Los Angeles.—Drs. Charles A. Dukes and Oliver D. Hamlin have been appointed members of the Oakland board of health.—Dr. E. Scott Blair, San Bernardino, has succeeded Dr. A. P. Williamson, resigned, as superintendent of the Southern State Hospital, Patton.—Dr. Horace G. Cates, division surgeon for the Southern Pacific, with headquarters at Los Angeles, for the last 17 years, retired August 1, and has been succeeded by Dr. Edward T. Dillon.—Dr. and Mrs. Washington Dodges, San Francisco, have gone to Europe.

### COLORADO.

**Care of Feeble-Minded Children.**—The State Board of Charities and Corrections is arranging to canvass the state in order to obtain material on which to base a petition to be presented to the next legislature asking for a state institution for the care of feeble-minded children. The necessary information is peculiarly difficult to get.

**New Hospitals.**—Miss Ida L. Gregory of Denver has given fifteen acres of ground with eighteen cottages, six miles above Morrison, for a sanatorium for tuberculous children. The institution will be formally opened July 20.—A new city hospital with 25 beds has just been opened at La Junta. The hospital cost \$20,000, more than half of which was donated by citizens of Otero County.

**Addition to State Hospital for the Insane.**—The new wing of the women's department at the State Hospital for the Insane at Pueblo is now complete and 50 patients will be removed from the Arapahoe County Hospital, Denver, to Pueblo. Fifty more will be taken there from other counties and about 50 insane women will still be without suitable care until the state shall provide another hospital.

**Woman's State Medical Society Organized.**—The women physicians of Colorado have organized a Woman's Colorado State Medical Society. All women physicians in good standing in their county medical societies are eligible to membership. The objects of this society are to bring the medical women of Colorado into communication with each other for their mutual advantage and the protection of their interests, to encourage social and harmonious relations within the profession, and to promote all measures adapted to the relief of suffering, the promotion of health and protection of life.

### DISTRICT OF COLUMBIA.

**To Suppress Noise.**—The superintendent of police has detailed a special squad of policemen for the suppression of unnecessary noises between midnight and 8 a. m.

**Health Report.**—According to the weekly health and mortality record for the week ended July 25 there were 128 deaths, of which 69 were white and 59 colored. Of the births, 87 were white and 39 colored. There were 123 cases of typhoid fever under treatment, an increase of 21 over the number on hand at the close of the previous week.

**Fellowship Vacant.**—A research fellowship in the department of medicine of the George Washington University, carrying with it an annual stipend of \$300 is vacant. This fellowship is open to research in any of the medical sciences. Applicants should address Dean W. F. R. Phillips, department of medicine, 1325 H St., N.-W., Washington, D. C.

**Pure Food Inspection.**—The vigorous crusade against the insanitary preparation of food inaugurated by the health office last month has resulted in an epidemic of cleanliness among those yet to be investigated. Several proprietors of lunch rooms have been convicted in the police court of violations of the law and about a dozen are to close their doors.

**Banquet to General Sternberg.**—A banquet in honor of the seventieth birthday anniversary of Gen. George M. Sternberg was given June 8, when nearly 200 men celebrated in the annals of government, science and literature met to honor the former surgeon-general. Hon. John W. Foster, former secretary of state, presided as toastmaster. A silver loving cup was presented to General Sternberg by those who attended the banquet, and a large American flag was given him by the attachés and patients of the Sternberg Sanitarium in Maryland.

### ILLINOIS.

**Personal.**—Dr. John W. Dreyer, Aurora, has been appointed head physician for Illinois by the Modern Woodmen, vice Dr. James A. Rutledge, Elgin, elected national director.—After

1. Med. Press and Circular, June 3, 1908.



a long illness Dr. Lewis A. McFadden, Peoria, has recovered and resumed practice.—Champaign County Medical Society has sent in a petition to the board of trustees of the University of Illinois, expressing regret at the resignation of Dr. George T. Kemp, formerly professor of physiology in the university, and asking that the board will endeavor to secure his return.—Dr. Edward L. Kerns, Rock Island, has been reappointed medical director of the Modern Woodmen of America, and Dr. Joseph C. Dodds, Champaign, has been appointed head physician of the order for Illinois.

**Psychopathic Institute Installed.**—With the completion of the quarters to be occupied by the State Psychopathic Institute at the Illinois Eastern Hospital for the Insane, Hospital, an important step has been taken in the matter of the care and treatment of the insane of the state. Dr. H. Douglas Singer is director of the institute and the scope of the work will be broadened so as to form systematic instruction along the most modern lines of all assistant physicians of insane hospitals in the state. One or two assistant physicians at a time will be sent from each of the eight state institutions, to the institute to receive from three to five days' preliminary instruction under Dr. Singer, which will consist in the introduction of the new system of examination and record keeping. After this instruction has been given Dr. Singer will visit each institution and spend about a week at each; will personally inspect the work that is being done, and make suggestions toward securing uniformity. Following this, a regular course of from four to six weeks, including laboratory work, will be given at the institute. In the equipment of the institute laboratory special attention has been devoted to research and pathologic work and clinical investigation.

#### Chicago.

**Deaths of the Week.**—During the week ended August 1, 610 deaths occurred, or 97 more than for the preceding week, and 107 more than for the corresponding week of 1907, the respective annual death rates per 1,000 being 14.68, 12.35 and 12.44. Acute intestinal diseases led the death causes with 173; next came consumption with 57, and violence (including suicide), with 43.

**Deaths of Infants.**—During July 669 babies under one year of age died in Chicago. Probably two-thirds of these deaths could have been avoided, and most of them may be attributed to ignorance and neglect of the parents. The department of health is now directing the work of 75 physicians in the crowded districts of the city, in the line of education of mothers in the proper care of their children. The most common abuse is reported to be overfeeding and the feeding of improper food.

**Mandamus Proceedings Not Pressed.**—Mandamus proceedings in an effort to compel the Illinois State Board of Health to recognize his diploma were begun recently by Joseph William Zeh, a graduate in 1908 of the National Medical University, a medical night school of Chicago. Last fall this school was declared not in good standing by the Illinois board. The case was to have been tried in the Superior Court of Cook County, Monday, August 3, and the board was ready, but no one representing the plaintiff appeared.

**Arrested for Selling Bogus Diplomas.**—Dr. William G. French, a graduate of Hahnemann Medical College of Chicago in 1906, was arrested by the Illinois State Board of Health August 1, on the charge of selling a bogus diploma for \$75 to Stanislaus M. Kolar, a drug clerk. The diploma bore the name of the Andrew Carnegie University and was signed by "William Gayle French, A.M., M.D., president of the board of trustees; Frederic C. Hanmore, Ph.G., secretary of the faculty, and W. M. Marquardt, B.S., registrar." An institution by the same name was chartered in Illinois July 31, 1908, but by different persons than those whose names appeared on the diploma.

**Summer School of Insanity.**—Sixty students have been enrolled in the summer classes of the Chicago School of Civics and Philanthropy under the auspices of the Chicago Commons. Of this number 24 are attendants in various hospitals for the insane and are studying particularly the methods of rehabilitating the minds of their patients. There are 36 in the course of "social agencies of modern cities." In this class the students are learning to become probation or truant officers, reformatory aid society or settlement workers. The course, which is in charge of Edward Worst of the Chicago Normal School, gives instruction in the methods of educating the insane and in varieties of recreation and games adapted to the use of such persons.

#### INDIANA.

**Personal.**—W. G. Moenkhaus, Ph.D., has been made professor of physiology; Dr. A. G. Pohlman, professor of anatomy, and Dr. W. R. Alburger, professor of pathology in the Indiana University.

**Hospital Notes.**—The new surgical department of the Protestant Deaconess Hospital, Indianapolis, was opened June 26. —The tuberculosis hospital commission on July 14 secured a site at Rockville for the Tuberculosis Hospital, at a cost of \$24,792.50. —A free tuberculosis clinic has been opened at the Indianapolis City Dispensary, with Dr. Frank L. Truitt in charge. In addition a trained nurse is retained, who will inspect all homes of the patients, instructing patients and their families in the hygiene of their homes and the care of their health. —The Anti-Tuberculosis Society, Evansville, has decided to found a farm colony near that city. —The Sisters of Charity, Indianapolis, have purchased the Victor residence at Missouri and Fifteenth streets, for a hospital.

#### IOWA.

**Medical Society Meetings.**—At the twentieth annual June meeting of the Dubuque County Medical Society, held June 23, the president, Dr. James Anderson, delivered the address of welcome; Dr. Robert B. Preble, Chicago, read a paper on "Indications for and Therapeutic Value of Phlebotomy," which was discussed by Drs. Isaac S. Bigelow, James R. Guthrie, Alanson M. Pond and John S. Lewis, all of Dubuque; Dr. E. Wyllis Andrews, Chicago, gave a lantern-slide demonstration of "Practical Points in the Radical Cure of Inguinal Hernia"; Dr. John C. Hancock, Dubuque, presented a paper on "Subdeltoid Bursitis"; Dr. Oliver S. Ormsby, Chicago, a paper on "Some Common Errors in Diagnosis in Cutaneous Disease"; Dr. William A. Pusey, Chicago, demonstrated a new method of treating nevi and other skin lesions by solidified carbon dioxide, and Dr. John S. Lewis, Dubuque, read an article on "Housecleaning, Debt-paying." After the afternoon session, there was a demonstration of pathologic specimens, and in the evening a dinner was given at the Dubuque Club, at which Dr. James R. Guthrie presided as toastmaster.

#### KENTUCKY.

**Details of Merger.**—The final details of the merger of the medical colleges of Louisville have been worked out by the committee, composed of Drs. James M. Bodine, chairman, Clint W. Kelly, William H. Wathen, Thomas C. Evans, Lewis S. McMurtry, Joseph B. Marvin, H. Horace Grant, Martin F. Coomes, Henry B. Ritter, and Richard B. Gilbert. By the terms of agreement the property of the Louisville and Hospital Medical College, located at First and Chestnut Streets, and the Kentucky School of Medicine, on Sixth Street, between Chestnut and Walnut, is acquired. The City Council will be asked by the trustees of the university to appropriate \$30,000 for the equipment of the laboratories of the medical department. The following officers were elected: Dr. James M. Bodine, president; Dr. Joseph B. Marvin, vice-president; Dr. Thomas C. Evans, dean, and Dr. Philip F. Barbour, secretary. The executive committee is composed of Drs. William H. Wathen, Clint W. Kelly, Lewis S. McMurtry, H. Horace Grant, and the president and dean, ex officio. The auditing committee is composed of Drs. Henry E. Tuley, Martin F. Coomes, Henry B. Ritter; purveyor, Dr. Hugh N. Leavell. Committee to take inventory of the laboratory of the three schools: Drs. Joseph B. Marvin, Ellis S. Allen, Bernard J. O'Connor and Harry A. Davidson. The following major faculty was elected by the commission: Drs. William Bailey, Joseph M. Bodine, Thomas C. Evans, William E. Grant, Henry A. Cottell, Leon L. Solomon, Virgil E. Simpson, Henry M. Goodman, Edward Palmer, Joseph B. Marvin, John G. Cecil, Richard B. Gilbert, Samuel E. Woody, William O. Roberts, Thomas L. Butler, J. Garland Sherrill, Argus D. Willmoth, Turner Anderson, Louis Frank, William B. Doherty, Henry E. Tuley, J. Morrison Ray, Adolph O. Pfingst, Isadore N. Bloom, Charles W. Hibbitt, Bernard Asman, Isaac Lederman, Carl Weidner, Lewis S. McMurtry, Frank C. Wilson, Samuel G. Dabney, John Edwin Hays, H. Horace Grant, Philip F. Barbour, Edward Speidel, George A. Hendon, Walter F. Boggess, Ezra O. Witherspoon, Harry A. Davidson, William H. Wathen, Martin F. Coomes, Henry Orendorf, Fouche W. Samuel, William A. Jenkins, John R. Wathen, George B. Jenkins, Arthur J. Boyd, Oscar C. Dilly, Ellis S. Allen, Curran Pope, Granville S. Hanes, Gaylord C. Hall, Clint W. Kelly, Irvin Abell, Benjamin F. Zimmerman, Hugh N. Leavell, Sidney J. Meyers, Bernard J. O'Connor, Ellis Duncan and William C. Dugan.



## LOUISIANA.

**Provision for Tuberculosis Clinic.**—At a meeting of the Louisiana Anti-tuberculosis League July 9, a resolution was unanimously adopted providing for \$2,500 to establish a tuberculosis clinic in a central location in New Orleans. This amount should be considered as providing for the maintenance of the clinic for one year.

**No New Medical College.**—It is announced by the party advocating a medical department for the Louisiana State University that the plans for a medical college in connection with the university have been abandoned on account of the financial depression and the failure to obtain an appropriation from the state legislature.

**Milk Supply and Flies.**—In the annual report to the State Board of Health, made by Dr. Frederic J. Mayer, New Orleans, medical inspector, he recommends two state institutes of hygiene to be held in the near future, one to consider "Milk in Its Relation to Health," and the other to discuss "The Fly as a Transmitter of Disease."

**New Orleans Health Report.**—The State Board of Health, in its biennial report, includes an exhaustive statement of the health condition of the city in the last quarter of a century. From the year 1880 to 1907, 25,394 deaths are said to have occurred from tuberculosis and 14,634 deaths from heart disease. The building of an isolation hospital for smallpox patients is urged by the health officer, and he suggests that measles be made a reportable disease.

**Charges Against Physicians.**—Drs. Maxime Landry and Lambert E. Poree, New Orleans, are said to have been charged with violation of the law by failing to report cases of tuberculosis, and Dr. Ernest A. Rappanier of the same city has been charged with failure to report a case of scarlet fever. Dr. Poree is said to have been fined \$25 each, on two charges, and Dr. Rappanier to have been fined a similar amount. Both physicians gave notice of appeal.

## MARYLAND.

**Personal.**—Dr. Peter W. Hawkins, La Plata, is said to be seriously ill.—The attorney general has decided that Dr. Guy Steele, Cambridge, is entitled to be considered the health officer of Dorchester County.

**State Exhibit at Tuberculosis Congress.**—Representatives of twenty or more Maryland institutions and organizations interested in the fight against tuberculosis, are making arrangements for a state exhibit at the National Congress on Tuberculosis.

**Water Supply and Sanitary Condition.**—A meeting was held in Cumberland July 15, to discuss the water supply and sanitary condition of the city. Dr. Marshall S. Price, secretary of the State Board of Health, in the course of an illustrated talk on public and private water supplies, advised against the use of the Potomac River as a source of water supply on account of its pollution, and stated that for many years this, with the exception of a few artesian wells, has been the only source of water supply for the city. The physicians of Cumberland have prepared an ordinance providing for the creation of a board of health.

## Baltimore.

**Typhoid Fever Increasing.**—Typhoid fever is reported to be on the increase. During the week ended July 23, 55 cases were reported, with 5 deaths.

**New College Building.**—The Baltimore Medical College will erect a library building on North Howard Street, four stories in height, to cost about \$60,000.

**Sanatorium Opened.**—The Jewish Sanatorium for Consumptives was opened July 20, with 15 patients. It is under the care of Dr. Max Smirnaw. Two cottages are nearly completed, which will accommodate 12 persons, so that by fall the institution will be able to provide for 50 patients.

**Isolation Hospital.**—The Sydenham Hospital for Infectious Diseases at Bay View is almost completed. The building is to be one story high and has capacious porches. At the south end there are two wards, one for men and one for women, while at the north end there are similar arrangements for colored patients. Each ward will accommodate eight patients.

**Medical Library Building.**—Estimates are being secured for the erection of the new library building for the Medical and Chirurgical Faculty of Maryland, for which a site was recently purchased on Cathedral Street. The building will have a breadth of 60.8 feet and depth of 128 feet. On the first floor there will be an assembly hall seating 500, a smaller

hall seating 150, social and smoking, committee and section rooms. The second floor is devoted entirely to the library, which will have a capacity of 68,000 volumes; and the third floor is to be given over to section rooms, committee rooms and laboratory.

**Personal.**—Dr. Adolph Meyer, recently elected director of psychiatric clinic in Johns Hopkins University (the Henry Phipps endowment), will shortly sail for Europe with the architect, to inspect foreign psychiatric clinics.—Dr. James H. Bay of the staff of the University Hospital was recently operated on for appendicitis.—Dr. Leonard M. C. Parker has gone to Europe.—Dr. Arthur M. Shipley has been appointed director of the University Hospital Dispensary.—Dr. Arthur P. Herring has been elected secretary of the state lunacy commission, vice Dr. George J. Preston, deceased. Dr. Hugh H. Young has been elected president of the board, vice Dr. Charles F. Bevan, resigned.

## MASSACHUSETTS.

**Epidemic in Naval Yard.**—On account of the recent epidemic of diphtheria in the hospital of the Charlestown Naval Prison, the prison has been thoroughly fumigated and cleansed and the prisoners quartered in the prison yard. The number of patients has decreased from sixteen to three and these are being cared for in the Naval Hospital, Chelsea.

**Personal.**—Dr. Charles S. Minot, Stillman professor of anatomy in Harvard University Medical School, has been elected a corresponding member of the Vienna Physico-Medical Society.—Dr. Arthur H. Cutter has been elected a member of the visiting staff of the Lawrence General Hospital.—Dr. Herman Cooper, Amesbury, has been seriously ill.—Dr. John J. Martin has been made president of the Beverly Board of Health.—Dr. George B. Sargent, Lawrence, has succeeded Dr. John G. McAllister, deceased, as United States pension examining surgeon.—Drs. Thomas E. Cavanaugh, Holyoke, and Michael J. Shea, Chicopee Falls, sailed for Europe July 1.—Dr. Percy Reynolds has been placed in charge of the new department of physical education and hygiene at the Massachusetts Agricultural College.

**Tuberculosis Notes.**—The new Boston Consumptive Hospital was opened July 7 and fifty patients are now under treatment. Dr. Simeon Cox is superintendent of the institution.—The board of health of Cambridge has appointed an advisory board of physicians which will have general charge of the health conditions in the city, and will be ready for prompt action in case of epidemic or other emergencies. The members of the board are Drs. Edmund H. Stevens, Frederic W. Taylor, Thomas E. Cunningham, Walter Wesselhoeft, and Charles H. Thomas.—The Cambridge Tuberculosis Camp was opened informally July 15, and will accommodate about 200 patients. Dr. Felix F. McGirr is resident physician at the camp and Drs. John J. Whoriskey, Fred R. Jouett, J. Arnold Rockwell, and John F. Fair make up the visiting staff.—The board of health of Cambridge has assumed charge of the dispensary of the Cambridge Anti-tuberculosis Association, where the following physicians will receive and diagnose cases: Drs. Wentworth L. Hayes, William H. Burke, Frederic J. Goodridge, and George E. Norton.

## MICHIGAN.

**Epidemic Diseases.**—Diphtheria is reported to be present in Ontonagon County, and five cases have appeared in Houghton.—The smallpox epidemic is still progressing in Vermontville.—Smallpox is reported from Marshall.—Smallpox is reported at Atlantic, Baltic and South Range.—Several new cases of smallpox are reported in Hancock.—On July 14 thirty cases of smallpox were under treatment at the Ontonagon County Isolation Hospital.

**Personal.**—Dr. George Dock, professor of theory and practice of medicine at the University of Michigan, Department of Medicine and Surgery, Ann Arbor, has resigned and accepted the chair of theory and practice of medicine in the Tulane University of Louisiana, New Orleans.—Dr. John H. Carstens, Detroit, announces his candidacy for the mayoralty of the city on the basis of direct appeal to the people. His candidacy will be free from promises, pledges and politicians.—Dr. Casper K. La Huis, Kalamazoo, is said to be critically ill at his home.—Dr. John C. Salmon, Howard City, has been elected medical director of the Michigan G. A. R.—Dr. Howard A. Grube, Coldwater, has been appointed chief surgeon of the Soldier's Home, Grand Rapids.—Dr. Thomas M. Koon, Grand Rapids, has returned after a year abroad.—Dr. D. Emmett Welsh has succeeded Dr. Perry Schurtz as health officer of Grand Rapids.



## MINNESOTA.

**Pasteur Institute Report.**—The Minnesota Pasteur Institute, Minneapolis, which was established in August last, has treated 161 cases since that time.

**Tuberculosis Camp Ready.**—Hopewell Park, the new tuberculosis camp established by the city of Minneapolis, is completed and ready to receive patients.

**Communicable Diseases.**—Diphtheria is reported prevalent at Aurora.—Crookston has twenty-two cases of typhoid fever, and the disease is reported to be epidemic in Mankato, where the Catholic school adjoining St. Joseph's Hospital has been converted into an emergency hospital.

**Personal.**—Dr. Adolph O. Bjelland has been elected president of the Mankato Anti-Tuberculosis Society.—Dr. Daniel C. Darrow, Moorhead, was thrown from his buggy, July 2, sustaining painful cuts and bruises.—Dr. Archibald E. Wilcox, Minneapolis, has been appointed medical member of the board of charities and correction, vice Dr. Charles G. Weston, resigned.

## MISSOURI.

**Staff Assignments.**—At the regular meeting of the board of control of Levering Hospital, Hannibal, the following assignments were made for the medical staff for the year: Dr. James N. Baskett, physician in charge; Dr. Thomas Chowning, attending surgeon; Drs. Charles E. Paxon and Henry L. Banks, consultants; Dr. John J. Bourn, attending physician; Drs. Robert H. Goodier and Archie L. Shanks, consultants; Dr. Richard Schmidt, attending gynecologist; Drs. Elmer E. Waldo and Clifton R. Dudley, St. Louis, consultants; Dr. Edward H. Bounds, attending obstetrician and pediatrician; Drs. I. E. Hill and W. Cloyd Guss, consultants; Dr. W. Cloyd Guss, pathologist; Dr. Ulysses S. Smith, attending oculist and aurist; Drs. Edward T. Hornback and James S. Howell, consultants, and Dr. I. E. Hill, x-ray specialist.

## NEW HAMPSHIRE.

**Communicable Diseases.**—Eight cases of diphtheria were reported in Manchester June 22.—Epidemics of mumps and measles are reported in Gilford.

**Society Meeting.**—At the annual meeting of Belknap County Medical Society, held in Laconia, June 1, Dr. Albert J. LaFrance was elected president; Dr. Edwin P. Hodgson, Lakeport, vice-president; Dr. Alpha H. Harriman, Laconia, secretary, and D. T. Bates Cook, Laconia, treasurer.

**Personal.**—Dr. Wallis D. Walker, Portsmouth, has been appointed deputy medical referee, vice Dr. William H. Nute, Exeter, resigned.—The medical and surgical staff of St. Joseph's Hospital, Nashua, have elected the following officers: Dean, Dr. Pierre E. Dansereau; president, Dr. A. Wilfred Petit, and secretary, Dr. James T. Greeley.—Dr. Charles E. Congdon, Nashua, has been appointed medical referee of Hillsboro County, vice Dr. James T. Greeley.—Dr. Herbert L. Taylor, city physician of Portsmouth, has resigned.

**In the Courts.**—The jury in the superior court in the case of Drs. Michael E. Kean and Clarence M. Dodge, Manchester, who sued for claims for medical treatment rendered Miss Laura J. Dunn, is said to have returned a verdict for the plaintiffs. Dr. Kean was awarded \$457.80 and Dr. Dodge \$116.65.—Dr. William M. Richardson, Londonderry, filed a petition asking for an injunction that Dr. P. W. F. Corning be restrained from interfering with his territory and patients. Dr. Richardson alleges that Dr. Corning agreed to take his practice for six months and then relinquish it, but that he failed to do the latter.

## NEW JERSEY.

**County Society Meetings.**—At the annual meeting of the Warren County Medical Society, held in Belvidere, the following officers were elected: President, Dr. Edward H. Moore, Asbury; vice-president, Dr. Edgar N. Brasefield, Phillipsburg; secretary, Dr. William J. Burd, Belvidere; treasurer, Dr. G. Wyckoff Cummins, Belvidere, and reporter, Dr. John H. Griffith, Phillipsburg.—Sussex County Medical Society, at its recent annual meeting, elected the following officers: President, Dr. Edward W. Jones, Layton; vice-president, Dr. Enos E. B. Beatty, Newton; secretary, Dr. Shepard Voorhees, Newton; treasurer, Dr. Ephraim Morrison, Newton, and censors, Drs. Lewis C. Burd, Ogdensburg, and Joseph G. Coleman, Hamburg.—The following officers were elected at the annual meeting of the Salem County Medical Society: President, Dr. Lester H. Hummel, Salem; vice-president, Dr. John M. Summerill, Penn Grove; secretary-treasurer, Dr. Henry Chavanne,

Salem; reporter, Dr. John F. Smith, Salem, and censor, Dr. William H. James, Pennsville.

## NEW YORK.

**County Tuberculosis Hospital.**—The board of supervisors of Rensselaer County, at a meeting held in Troy, July 17, appropriated \$25,000 for the erection of a hospital for advanced cases of tuberculosis, to accommodate 65 patients.

**To Furnish Antitoxin.**—The Health Department of New York City has shipped fifty horses to its sanitarium at Otisville which are to be used as antitoxin subjects. Nineteen horses from the Borough of Brooklyn have been added to this number.

**Communicable Diseases.**—The churches of the town of Wheatfield are to be closed for two weeks and no public gatherings are to be held for the same period on account of the presence of at least 50 cases of smallpox in Niagara County.—Elmira reports 20 cases of typhoid fever.

## New York City.

**War on Rabies.**—Sixty special policemen have been detailed by the Board of Health for the purpose of destroying stray dogs. All dogs without muzzles or unleashed are to be considered as stray dogs. Whether the dog has a license or not is of no importance. The police are not required to report the number of dogs killed.

**Mosquitoes Bred in New York.**—The state entomologist of New Jersey resents the imputation that New York imports its mosquitoes from New Jersey. It is stated that the conditions at the mouth of the Bronx River are such as would furnish New York City with mosquitoes, and that it is more than possible that New York City furnishes the Palisade district in New Jersey.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ended July 25, 400 cases of tuberculosis, with 173 deaths; 219 cases of measles, with 7 deaths; 175 cases of diphtheria, with 22 deaths; 131 cases of scarlet fever, with 9 deaths; 71 cases of typhoid fever, with 15 deaths; 14 cases of whooping cough, with 7 deaths; 12 cases of cerebrospinal meningitis, with 7 deaths, and 9 cases of varicella—a total of 1,031 cases and 240 deaths.

**Advice on the Care of Babies.**—A handsome cardboard folder containing instructions to mothers on the care of babies has been prepared by Dr. N. S. Macdonald and is being distributed at the Mothers' Seaside Rest at Coney Island. In a few days the booklet will be issued in Italian, Hebrew and German, and all churches, charity societies, missions, etc., are invited to take a supply for distribution. The subjects of infant feeding, clothing, fresh air, bathing, sleep and how to get aid in case of sickness are treated.

## OHIO.

## Cincinnati.

**Dr. Culbertson's Will.**—Under the will of the late Dr. James Coe Culbertson, his wife is given his interest in the *Lancet-Clinic*, his stocks, bonds and personal property. The estate is appraised at \$20,000.

**Report of Health Officer.**—Dr. Mark Brown, health officer, in his annual report states that during 1907 there were 6,414 deaths, a decrease of 781 as compared with the preceding year, equivalent to 16.88 per 1,000. The highest mortality was in March, the lowest in October, and the average monthly mortality was 534. Almost 30 per cent. of the deaths occurred in public institutions. During the year 6,014 births were reported, 373 less than the number of deaths, which is accounted for by the fact that many deaths during the year were not reported to the department of health. Hundreds of school children were sent home on account of contagious diseases, and thousands were recommended for treatment. Defective eyesight was found in 3,184 cases; diseases of the eye in 502; defective hearing in 272; otitis media in 190; hypertrophied tonsils in 1,918; adenoids in 486, and tonsillitis in 459.

## PENNSYLVANIA.

**Personal.**—Dr. Fremont W. Frankhauser, Reading, has recovered after several weeks' confinement, due to an infected eye.—Dr. Janet H. Sherman, assistant physician at the insane hospital at Norristown, has resigned on account of ill health.—Dr. Samuel D. Shull, Chambersburg, has been appointed resident physician at the Frankford Hospital, Philadelphia.

**Advisory Board Appointed.**—The mayor of Pittsburg has appointed an advisory board to assist the typhoid fever commission recently appointed to investigate the cause of the disease in the city. Dr. James F. Edwards, superintendent of



the bureau of health, is chairman of the committee, and Dr. Eugene G. Matson, city bacteriologist, has the management of the investigation.

**Sewage to be Kept from River.**—Dr. Samuel G. Dixon, state commissioner of health, has begun his crusade against the pollution of the north branch of the Susquehanna River by ordering Danville to erect a sewage plant and submit the plans to the State Health Department. The plant is to be in operation by July, 1910. For several years Danville has been subject to epidemics of typhoid fever, and the town is scarcely ever without the disease. The source of the infection is said to be the river water, which is known to be polluted by sewage.

**Society Meetings.**—At the annual meeting of the Lehigh Valley Medical Society, held in Delaware Water Gap, July 9, Dr. Adam L. Kotz was elected president, and Dr. J. Anson Singer, East Stroudsburg, vice-president. The physicians of Apollo, Vandergrift, Vandergrift Heights and Leechburg have organized a medical society, with Dr. Joseph D. Orr, Leechburg, as president; Dr. Thomas J. Henry, Apollo, vice-president; Dr. Joseph C. Stahlman, Vandergrift, secretary; and Dr. John C. Hunter, Apollo, treasurer. Carbon County Medical Society has elected the following officers: President, Dr. Allen W. Catterson, Palmerton; vice-president, Dr. J. H. Young; secretary-treasurer, Dr. James B. Tweedle, Weatherly; and censors, Drs. William H. Clewell, Summit Hill, Wilson P. Long, Weatherly, and William W. Reber, Leighton.

#### Philadelphia.

**Phipps' Institute to Move.**—It is asserted that the Henry Phipps Institute for the Prevention and Cure of Tuberculosis will move from this city. This step is taken, it is said, by the prohibitive prices asked for the properties that the institution has tried to procure.

**Personal.**—Dr. Theodore Le Boutillier has been appointed clinical professor of pediatrics in the Woman's Medical College of Pennsylvania. Dr. John H. Musser has been made chairman of the American committee for the sixteenth International Medical Congress. The following physicians have gone to Europe: Drs. Albert P. Francine, Gordon M. Christine, Hermann Heller, Othmar Barthmaier, J. T. Lippincott, Frank O. Nagel, M. S. Lowenstein, G. Hudson Maknen, Harvey E. Schoek, E. A. Shumway, Alexis D. Smith and Emil M. Welty.

**Publication of Poison Prescriptions.**—At a recent meeting of the Philadelphia Association of Retail Druggists the matters of newspapers publishing prescriptions containing cocaine, strychnin and digitalis was thoroughly discussed, and it was pointed out that to till these was against the law, besides being dangerous to the public. On motion the press committee of the association was requested to call on the publishers of the *Record* and the *Evening Telegraph* and call their attention to the facts of the case, with a view of having them discontinue the practice.

#### GENERAL.

**Coming Meeting.**—The twenty-first annual meeting of the Medical Society of the Missouri Valley will be held at Council Bluffs, Iowa, under the presidency of Dr. William F. Milroy, Omaha, September 3 and 4. The oration on medicine is to be given by Dr. C. H. Hardin, Kansas City.

**Scarlet Fever on Warship.**—Several cases of scarlet fever developed on the United States battleship *Nebraska* on her cruise from San Francisco to Honolulu. The patients have been transferred to the hospital ship *Relief*, and the *Nebraska* was isolated while coaling at Honolulu.

**Medical Association Meetings.**—The twenty-third annual meeting and ladies' night of the White River Medical Association was held in White River Junction May 20. The following officers were elected: Dr. Frederick von Tobel, Lebanon, N. H., president; Dr. Frederick T. Kidder, Woodstock, vice-president; Dr. James A. Leet, Enfield, N. H., secretary-treasurer, and Drs. Isaac N. Fowler, Lebanon, N. H., E. C. Carleton, and D. S. Drake, censors. The Iowa-Illinois District Medical Association held its annual meeting in Geneseo, Ill., July 16, under the presidency of Dr. George E. Decker, Davenport, Iowa. The following officers were elected: President, Dr. Frank H. First, Rock Island, Ill.; vice-president, Dr. George M. Middleton, Davenport; secretary, Dr. Charles S. Young, Geneseo, and treasurer, Dr. Theodore W. Kemmerer, Davenport, Iowa.

**Pure Food and Drugs Congress.**—The First International Congress for the Repression of Adulteration of Alimentary and Pharmaceutical Products will be held in Geneva, Sept. 8, 1908. There are already many members from the United States, but it is desirable to have the largest representation possible from

this country. The congress is held under the auspices of the White Cross Society and the Swiss government. The fee for membership is \$4.00. Dr. H. W. Wiley of Washington, D. C., chairman of the American committee, will forward names of members and their subscriptions and will give further particulars of the congress to those who request it. Reduced rates will be given on steamship lines and on European railroads. Intending members are urged to send in their subscription at once.

#### CANADA.

**The Opium Traffic in Canada.**—From the report of Mr. McKenzie King, deputy minister of labor at Ottawa, which he recently issued, the opium traffic in Canada has its chief seat on the Pacific Coast. In three Canadian cities there are at least seven factories whose combined receipts for 1907 were between \$600,000 and \$650,000. The crude opium is imported in cocoanut shells and is manufactured first into powdered opium and afterward into opium prepared for smoking. Most of the manufactured article is consumed by the Chinese themselves in Canada, but the consumption is increasing among the white people, while some finds its way surreptitiously into the United States. It is likely that the government will soon take the importation and sale of opium into its own hands.

**Hospital News.**—Dr. J. N. E. Brown, superintendent of the Toronto General Hospital, and Dr. R. W. Bruce Smith, inspector of hospitals in Ontario, have gone to Europe to study the most recent and modern methods of hospital construction and equipment, preparatory to the erection and equipment of the new Toronto General Hospital. The Toronto Orthopedic Hospital recently held its annual meeting for 1907 and has issued a decennial report for 1898-1908. The institution was founded in the former year; and this is the only hospital in Canada devoted exclusively to the treatment of the lame, ruptured, crippled and deformed. In the 10 years there have been more than 2,500 admissions, with but 11 deaths from all causes during that time. Over 2,000 operations have been performed.

#### FOREIGN.

**French Surgical Congress.**—The twenty-first French Surgical Congress convenes this year at Paris, October 5. The questions to be discussed are: "Surgery of the Biliary Passages"; "Surgical Treatment of Cavities of Pathologic Origin," and "Surgical Treatment of Facial Neuralgia."

**Sleeping Sickness Pamphlet.**—On account of the prevalence of sleeping sickness in equatorial Africa, the French minister of the Colonies has distributed a pamphlet prepared by Dr. A. Kermorgant, inspector general of the colonial sanitary service, setting forth the prophylaxis of the disease. It is printed in French and in the different dialects spoken in the colonies.

**Assault on Professor Marie of Paris.**—A former patient at the Villejuif insane asylum returned after his discharge and shot the physician-in-chief, the eminent alienist, Prof. A. Marie, last month, one bullet entering the chest and another the thigh, but neither doing much harm. Both bullets were removed at once, and Marie is not considered in danger. He recently assumed the editorship of the *Archives de Neurologie*.

**The Annual Meeting of the Leipsic League.**—The eighth general meeting of the Association to Promote the Economic Interests of German Physicians was held in June at Danzig. It was announced that the association has successfully arranged 155 cases of conflict between the medical and executive officers of the sickness insurance companies, and 122 are still pending. The long conflict at Cologne is nearing its end, as the company can not obtain medical aid outside the association adequate for its purposes. More medical positions were registered during the year than there were applicants, but 2,532 places were filled by the intermediation of the association. On the other hand, there were far more inquiries for locations for general practice than there were places.

**French Practitioners' Congress.**—For the second time the rank and file of the profession have assembled to discuss matters concerning medical education and the material interests of practicing physicians. The Second Practitioners' Congress met at Lille, June 25, with 1,500 members in attendance, including delegates representing over 7,500 other physicians—a truly national gathering. The necessity for reform in the present system of medical education in France was the main subject discussed, but much light was thrown on other themes by the various addresses, especially the dispensary and hospital abuse by the well-to-do, medicolegal testimony, etc. The best fruits of these congresses, however, are said to be the growth of the spirit of organization, the welding of the profession into a solid body, the realization of the fact that the needs and aims of one are the needs and aims of all, and that by organizing they can be obtained and realized.



## LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, July 25, 1908.

## Open Air Schools.

The London County Council is extending the scheme of open-air education which they introduced about a year ago for the benefit of delicate children. The first open-air school was conducted in Bostall-wood, Plumstead, from July 22 to October 19, last year, as an experiment and proved a marked success. While this school administered to the educational and hygienic requirements of 49 boys and 64 girls for a period of three months, it is now proposed to run for a period of five months three such schools, each capable of accommodating 75 children. The children will be divided into three classes of 25 each. The staff will consist of one head teacher, three assistant teachers, a nurse, a cook, a cook's helper, and a school-keeper. The cost of feeding the children is about 70 cents a head each week. This is paid by the parents when they are able to do so; when they can not, it is paid partially or entirely out of voluntary funds. In last year's experiment, every child was benefited physically and the improvement was greater than could have been anticipated. The children were suffering, in the main, from the debilitating conditions which arise from city life. The commonest ailments were anemia, enlarged cervical glands, adenoids, and hypertrophied tonsils. Children who were admitted suffering from active disease, showed gratifying improvement. Dr. Sears, the medical officer, in his report says: "The general effect of the open-air school life on the children was easily discernible in their improved color and less restrained demeanor. They seemed brighter and more full of spirits at the end of the school day than at their commencement. Their movements were brighter and their intellects were keener as a result of their attendance at the school."

## Women Refused Admission to the Royal College of Surgeons.

The result of the poll of the fellows and members regarding the admission of women to examination for the diplomas of membership and fellowship of the Royal College of Surgeons is as follows: A majority of 415 against admission of women to the membership and a majority of 1,182 against their admission to the fellowship. The votes of the fellows taken separately showed a majority of 288 in favor of admitting women to the membership and a majority of 34 in favor of admitting them to the fellowship. The votes of the members taken separately showed a majority of 703 against admitting women to the membership and a majority of 1,216 against admitting them to the fellowship. Of the fellows 1,043 voted out of 1,373 available; 8,543 members out of 13,800 available. The report on this subject will be considered by the council in October. It is noteworthy that the fellows, who are all surgeons of some eminence, should, on the whole, favor the admission of women, while the members, who are almost all general practitioners and the rank and file of the profession, should favor the refusal.

## BERLIN LETTER.

(From Our Regular Correspondent.)

BERLIN, July 1, 1908.

## The Study of Medicine by Women in Germany.

The study of medicine by women is with us in Germany much more recent and less extensive than with you. While in the United States, according to the information that has reached us, thousands of women physicians are in practice, with us the feminine colleagues are numbered only by hundreds. This, I might say, is fortunate from the standpoint of the German physicians, who, as I have formerly shown, are as a whole engaged in a hard enough struggle for their living. The opposition of physicians to the pursuit of medical studies by women was, therefore, for some years strong, for the reason that a reduction of income was feared from the new competition. But it is an old experience that new ideas, if they are right in principle, in the end prevail in spite of all opposition, and if we wish to be impartial we must accord to medical study by women an essential justification.

It must be admitted that women have a right to an independent economic life, and that those who find no matrimonial home are entitled to choose their own occupation. That this choice of calling should extend to the professions we must admit. It is not of value to attempt to show that women have not accomplished anything important in the fields in which they have hitherto labored. Women, as a rule, take up a profession merely to have a good purpose in life.

After long delay the German government has taken notice of these considerations. After repeated petitions women were finally admitted to the study of medicine in the German universities by a decree of the imperial chancellor in April, 1899. Even to-day they do not possess complete equality with men in all the German states, since some admit women not as really matriculated students, but simply as listeners (*Gasthörerinnen*). This is especially true of Prussia, but it is to be expected that this barrier will be removed at the next semester.

Of other states one need only mention Mecklenburg-Schwerin, Hesse, Sachsen-Weimar, Alsace-Lorraine as those in which women hitherto have been permitted to study only as listeners. In these states it is placed at the option of the individual professors whether they will permit women to participate in their lectures or not. It is certain that after Prussia has decided to remove the limitations the other states will soon follow, so that women can matriculate at all the German universities on equal terms with men. They may, it should be repeated, take the state examination for the doctor's degree at any German university. At present there are about 400 women as students at all the German universities.

## Relations of Professors at the German Universities.

At the close of this semester Professor Quineke will resign his office as director of the medical clinic at Kiel. In this action one of our most eminent professors takes leave of his activity as a teacher. The number of great investigators, to whom the German medical faculties in the second half of the last century owed their prosperity, is now reduced to a small fraction. What brilliant stars have been extinguished in the course of the last two decades from the firmament of German medical science! Virchow, Helmholz, Du Bois-Reymond, v. Graefe, Volkmann, Langenbeck, Mikulicz, v. Bergmann, Kölliker and many others are gone. If we consider with strict disinterestedness and critical judgment the generation that has followed these men, we must admit that they do not come up to their predecessors in importance. To be sure, many a younger professor may yet win fame for himself, but the hope for it—as must be admitted—is not very great according to the developments so far. This assumption is strengthened by the observation that our age is not so rich in the lights of science as the foregoing. The same phenomenon shows itself in the other departments of science as well as in medicine. Only in technic and that part of the natural sciences closely related to it are there at the present day a not inconsiderable number of eminent men. This observation is true not only of Germany, but of all civilized countries.

Professor Quineke resigns his place not at the request of the government, but of his own free will. The government in Germany has not the power to remove a professor against his will except when he has been guilty of a serious offence. In Austria the university professors are required by law to retire at the age of 69; there is a so-called age limit. As an honor some of them are permitted to hold their positions another year. It has been a matter of discussion whether such a legal arrangement would not be desirable in Germany, and there is much in favor of it. Few professors have the self-knowledge and the energy to give up their position of their own free will at the moment when intellectual decadence sets in; on the other hand, it is not easy for the government to come to the determination to make known to a meritorious scholar the necessity of his leaving his place. In this way it has been, and still is, our experience that eminent scientists remain in their offices when their intellectual capacity—more important, their ability to teach—make them no longer fit for their positions, which is naturally a disadvantage for the university to which they belong. This was already noticeable with Virchow, and also of v. Leyden it can be truly said that he remained in his place a year longer than was agreeable to the government or to the students. And there are in the German universities, especially in the Berlin university, professors of great reputation (I do not wish to mention names) who it is true still do scientific work to some extent, but no longer fulfill their duty as teachers. In view of these facts, we might wish, in the interests of education, that our government was a little less considerate in personal questions. Such a "golden inconsiderateness" was possessed by the former "ministerial director," Althoff, in a high degree, for which he was naturally blamed in certain quarters. But, although he doubtless overshot the mark in many cases in consequence of his zeal, he knew how to do the right thing generally, and placed business above personal matters.



## Pharmacology

### THE BROADER AIMS OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

TORALD SOLLMANN, M.D.

Member of the Council, Professor of Pharmacology and Materia Medica at the Medical Department of Western Reserve University.  
CLEVELAND, OHIO.

(Continued from page 421.)

#### XX. THE CRITICS OF THE COUNCIL.

The preceding papers of this series have been devoted so largely to condemnation and denunciation, that the work and purposes of the Council may have appeared mainly condemnatory and destructive. This would be far from the truth; for the purposes of the Council are wholly constructive. The actual work, it is true, has been and still is to a considerable extent destructive; but this is merely an incident in the broader aims, and I hope sincerely that the need for it is only temporary.

Much of the matter with which the Council has been concerned was so unsound as to be unsuited for constructive work. A thorough-going trimming, an efficient house-cleaning, was the first necessity. Constructive work has been going on at the same time; but it could scarcely be noticed until the ground had been, at least partially, cleared by the removal of some of the unsound debris. In fact, the Council has tried to utilize even this destructive work for reconstruction. In exposing what was bad, it has attempted to indicate what was good. In condemning a product, it has aimed to point out the way to reformation. In exposing the false pretenses and questionable or dishonest practices of certain manufacturers it has endeavored to foster a sentiment which would place a profitable premium on true, safe and conservative statements; a sentiment which would make it possible to conduct the business of purveying medicines on the highest professional plane.

#### IMPOSSIBLE TO PLEASE ALL.

It would be quite too much to expect that the Council should perform its complex tasks to the absolute satisfaction of all those, even, who are in sincere sympathy with its aims. Some will always think that it does not go far enough or fast enough; others, that it goes too far or too fast.

Those who think that the Council goes too slowly, should remember that the results of evolution are more permanent than the results of revolution; and that education is more effective than dictation. Education and evolution both require time; but their results are lasting.

Those who consider that the Council has gone too far; that some of its rulings are needlessly severe; that it has in some instances spoken sharply when a soft voice might perhaps have reached as far—should remember that the Council does not deal solely with people who want to do the right thing. It has, unfortunately, all too often to do with people who try to do the wrong thing. The functions of the policeman can not always be performed in a perfectly lady-like manner; and those who are mixed up with a bad mob must expect to receive some incidental raps, for which the policeman, in private, is sincerely sorry.

Both classes of critics should remember that the Council is seriously judging and acting on pressing questions of great complexity and far-reaching importance. Its fund of information and experience for this purpose is probably more extensive than that of any of its critics. I do not pretend, of course, that the Council knows more about a particular product than does its manufacturer; but it would be strange indeed if the Council had not arrived at a broader conception than its critics of the intricate ramifications of the general problem which has been its daily concern for over three

years. The critic usually has in mind only one product, or one particular phase of the problem. The Council, on the other hand, must endeavor to look on that product or that phase in the light of all the products and of the whole problem.

#### THE THERAPEUTICALLY-SUGGESTIVE NAME.

The vexing question of therapeutically-suggestive names may serve as an illustration. Of the several serious objections to these names, the most conspicuous is that they encourage self-medication. The better class of manufacturers now agree with the Council that such a name as "Rheumatica" would be equivalent to advertising to the laity. The Council, on the other hand, might be willing to concede that such a name as "Arthrica" would be without meaning to the public, and might from this standpoint, be admissible. Sooner or later, however, the name "Arthritica" would be submitted. Who can predict how many educated laymen would come to understand what this means? Evidently no one. The manufacturer of "Arthritica," however, would point to "Arthrica" as a precedent; and if "Arthritica" were accepted, it would be very difficult to explain to the manufacturer of "Rheumatica" why his product should be refused. The manufacturer of "Arthrica" has not considered these intermediate cases, which make it impossible to draw a natural line of division. The only safe way to prevent burned fingers is to keep away entirely from the fire.

(To be continued.)

#### MANOLA.

##### Nostrum Prescribing and Its Results.

MUSCODA, WIS., July 31, 1908.

To the Editor:—Enclosed is a copy of a letter sent to Dr. X. of Y., and his reply in the form of a marked advertisement of Manola clipped from a medical (?) journal. The style of the advertisement sent would lead one to classify the product with "Peruna and the Bracers." The preparation was prescribed by Dr. X. for a Mr. Q., for a cough and "run-down" condition. Q. has been unable to do any work since he began taking it, but for three months he thought it benefited him, after which time he stopped taking it for three months and then took it again for five weeks. As he was emaciating rapidly and was troubled with high fever and night sweats, he came to me, and I found him in an advanced stage of pulmonary tuberculosis. The patient had wasted nearly eight months of precious time, closely housed and depending on the restorative virtues of Manola, instead of consulting a physician at a time when a properly regulated out-of-door life might have saved him. And all because Dr. X. prescribed Manola to be taken for several months.

Who is Dr. X. who did the prescribing? Polk's Register, 1906, records him as a graduate of a university in Germany; surgeon for the C. M. & St. P. Railway Company; member of the American Medical Association; member of the American Association of Railway Surgeons; member of the state historical society; medical examiner, etc. Shades of Esculapius! This young man, now near death's door, asked me if Manola was not a good medicine, for, said he, "Dr. X., a very prominent physician, prescribed it to be taken continuously for a long time." And what could I, an insignificant doctor, reply? I said, "I don't know. I have not used it." And then I wished that I belonged to some other profession whose members are not "suckers" to bite at the bait of drug promoters and thus help them to fleece innocent persons while on the road to chronic invalidism and death. C. R. PICKERING, M.D.

COMMENT: The above is only one example—a typical one, however—of the results of nostrum prescribing. The physician who in the above instance prescribed Manola—an old practitioner, over 70 years of age—when asked by another practitioner for information regarding it, has to fall back on an advertisement. This is what the advertisement says:

"New strength can be given to the failing heart, tissue changes arrested, and senile decay indefinitely postponed by the prescription of MANOLA which furnishes to the exhausted cell protoplasm the inorganic elements necessary for a renewed and increased activity, improves the quality and quantity of the blood, supports the heart, tones up the nerves.



induces refreshing sleep, and checks the decline of mental and bodily vigor.

"Manola can be depended on in all cases of loss of strength and weight in old and young alike."

A wonderful remedy, truly, that will do all this. Evidently Ponce de Leon in his search for the fountain of eternal youth labored under the insuperable disadvantage of being born 400 years too soon. Had he but known, the fluid he sought, which "indefinitely postpones senile decay" and "checks the decline of mental and bodily vigor" was to be found, not in the untrodden wilds of Florida early in the sixteenth century but in the "laboratory" of a nostrum manufacturer four centuries later.

Had this advertisement appeared in a newspaper and had one of Dr. X's patients consulted him regarding taking this "patent medicine"—for now it would be a "patent medicine"—he would most certainly have told the patient that it was foolish to believe such rubbish and not to waste his money on the stuff. And yet "Dr." Hartmann in his wildest flights of Perunaese oratory has never transcended in mendacious assertiveness the claims made for this "strictly ethical preparation."

Three years ago<sup>1</sup> we exposed the methods by which this nostrum was exploited, and concluded: "Here we have the doctor not only used as an unpaid peddler for a secret remedy, but also as a club to make the druggist fill his shelves with the stuff. . . . Certainly, it can not get much worse, unless the nostrum manufacturers get the doctor to go on the street and peddle their stuff on a percentage."

Manola illustrates another point: One of the curses connected with the nostrum business is the fact that many of the preparations are exploited by pseudo-pharmaceutical and pseudo-chemical companies. The Manola Company is reported as a side affair, and controlled by those who own the Laxties Homeopathic Pharmacy Company of St. Louis. What is the reason for creating a special company to exploit this nostrum? Is it because physicians might be prejudiced and not willing to buy from a homeopathic concern, or is it because the concern itself wishes to retain at least the outward semblance of decency?

The above case brings out another evil inseparable from nostrums. While the great majority are useless and most of them innocuous, they do harm in a negative way. The layman, depending on the advertisements in the newspapers and believing what the advertisements state, takes a "patent medicine" and delays consulting a physician until too late. In the case of a physician, he, too, believes what the advertisement says, takes it for granted that he is doing what is right, neglects to study his case, to make a correct diagnosis, and to follow up the treatment by careful study of the case as it progresses.

In a case like the above nothing can relieve the physician of his responsibility; he can not fall back on the advertisement. In the case of the patient taking a "patent medicine," he depends on his own judgment. In the case in question, the patient depended on one whom he believed knew what should be done. And the physician was false to his trust!!

## Correspondence

### Collapse Following Injection of Diphtheria Antitoxin.

KÖNIGSBERG, GERMANY, July 14, 1908.

To the Editor:—Dr. F. W. Thomas' article on "Sudden Collapse Following Injection of Diphtheria Antitoxin," in THE JOURNAL, July 4, leads me to report a similar experience.

J. F., a boy of 13, fairly tall and well developed, had always been in good health. On Jan. 27, 1907, I was called to see his sister, aged 11, who was suffering from an ordinary attack of faucial diphtheria. I gave her at once 3,000 units of antitoxin. The next morning at 10 o'clock I called and administered 1,000 units to each of the other two children—that is, to J. F. and his sister of 6 years—as an immunizing dose.

Immediately after I had injected the dose in the subcapsular region of the boy he fell over, unconscious and pallid, in a cold sweat, with pupils dilated and with no radial pulse. I gave him hypodermically strychnin, gr. 1/30, and whisky, induced artificial respiration and after ten minutes (it seemed hours) he recovered consciousness. He was intensely weak and, of course, remembered nothing of what had occurred. When asked if the pain of the injection had made him faint he said that he had scarcely felt it. I left him about 11:30 a. m. At 2:30 p. m. I was called again hurriedly and found him just about recovering from a similar attack. He had attempted to walk up to the next floor when, without warning, he fell at the foot of the stairs. With the usual restoratives he recovered and, though under observation for several days, had no further trouble.

His little sister of 6 years and the one of 11 years had no such experience, although receiving part of the same batch of antitoxin.

What happened? Were the serum at fault, the other two children ought to have shown some effects from it, and, as antitoxin is always manufactured in large quantities, we should have learned of other similar cases in the district. My belief is that I emptied the entire contents of the syringe into the lumen of a vein, and that the collapse was entirely due to the sudden entrance of a large quantity of foreign fluid into the blood stream. This explanation fits Dr. Thomas' case, too. He had the unpleasant symptoms only after the first injection, although he gave five more within the next twenty-two hours. His patient's poor previous condition accounts for his having recovered more slowly than did my patient. It is also to be assumed that Dr. Thomas used the same quality of antitoxin in all his injections.

Considering the enormous number of times this drug is administered, it is surprising that such accidents have not occurred more frequently. With a crying and struggling child we are apt to plunge the needle almost anywhere and as quickly as possible press the piston home. As the ordinary dose contains one to five cubic centimeters of serum the sudden entrance of this amount into the blood current is bound to have a profoundly depressing effect on the heart. A far safer way would be to take from two to three minutes while injecting and thus avoid experiences such as the above, which are far from pleasant.

ISAAC M. HELLER.

### Surgery of Ureteral Calculus.

BOSTON, MASS., July 28, 1908.

To the Editor:—In my article, "The Surgical Treatment of Ureteral Calculus in the Female," in THE JOURNAL, Sept. 28, 1907, there is a short historical summary of the various operations for the removal of stones in the ureter.

I find that I have quite unintentionally omitted in discussing the vaginal route for the removal of stones, to give to Dr. Arthur T. Cabot, of Boston, Mass., due credit for having been one of the pioneers in this field. It was really owing to Dr. Cabot's work that the vaginal route was popularized. In 1884, Emmet ("Principles and Practice of Gynecology," 1884, p. 796) removed a stone through the vagina of a woman by vaginal incision. Emmet found the stone close to the bladder opening of the ureter. At that time Emmet stated that stones situated near the cervix, high up in the vault of the vagina, had better not be approached by the vaginal route because of the danger of opening the peritoneal cavity. Cabot (*Am. Jour. Med. Sc.*, January, 1892, ciii), however, found by dissections that it was safe to attack stones under the broad ligament, and he reported a case in which this operation was done. To quote from his article, "In the female we have even readier access to this part of the ureter through the vagina. The ureter in the last two or even in some cases three inches of its course runs in the broad ligament in close relation to the upper part of the vault of the vagina, where it can be reached and incised without danger of opening the peritoneum." I find also that I have given to Kelly ("Operative Gynecology," Oct. 2, 1906, p. 541) the credit for using a hook to facilitate the removal of the stone. Cabot (loc. cit.) was the first to recommend this maneuver, and he reports a case in which it was of service.

EDGAR GARCEAU.

1. THE JOURNAL A. M. A., May 6, 1905, p. 1462, and Propaganda for Reform in Proprietary Medicines, Fourth Edition, p. 91.



## Second Leprosy Conference.

NEW ORLEANS, July 27, 1908.

*To the Editor:*—In 1897 medical men met in Berlin under the auspices of the German government to study the conditions of leprosy throughout the world. The success of that meeting and the results which followed it have led to another such meeting to be held in August, 1909, at Bergen, Norway, under the auspices of the Norwegian government. It is believed by those in charge of the preliminary program that many members of the profession who are not specialists in this disease would be glad to take part in such a conference as the one proposed, which will deal not only with the pathology, treatment and scientific investigation of the disease, but also with the questions of topography and sanitary measures as applied to leprosy. A list is desired of physicians interested in the question of leprosy in any way. A communication addressed to Dr. Armauer Hansen, Bergen, Norway, or to the undersigned, will secure any published notice, program, etc.

ISIDORE DYER, M.D., 124 Baronne Street.

---

*Miscellany*

---

**How to Remove the Blight on the Medical Press.**—At the recent Congress for Internal Medicine at Vienna the president, F. von Müller of Munich, appealed to the profession to check the overproduction of articles for the medical press. Especially in internal medicine the periodical literature has assumed such dimensions, he said, that no one can keep an oversight over it all. Even well-endowed libraries are no longer able to subscribe for all the journals relating to internal medicine and its allied sciences. He added that it is not possible to centralize by a congress resolution the periodical literature on medicine according to the model that has been set by chemistry. But the present unbearable conditions can be improved if all factors will work together; authors by restricting what they write to what is really important for the reader; editors by sharply drawing the line between what must be printed and what may be printed, by insisting on condensing and striking out everything that it is superfluous to print. He appeals also to publishing houses, urging them not to found new journals, unless they respond to an actual demand. He added that this might conflict with material interests, but that there are forces above material interests, and he appealed to these for all concerned.

Schwalbe comments on his words in the *Deutsche med. Wehnschr.*, June 4, saying that it is too much to hope for an echo from the publishing houses to this appeal to ideal forces, as they are money-making concerns. But physicians can do much, especially those who may be called on to spread their names on the title page of some new journal, surrounded by the halo of the wealthy patron of science.

He remarks that many professors thus allow their names to appear as a signboard for half a dozen more or less obscure journals; so that while disclaiming all responsibility for the contents of the journal sailing under their name, they do not find it repugnant to serve as a bait to snare subscribers and advertisers. If an editor is unable to find a patron of this kind at home he goes across the border or—as an editor with considerable business talent has recently done there—he secures the name of some medical member of a reigning house. And colleagues are found who are attracted to these “titled” sheets and send in their subscriptions! Advertisers are won in the same way.

He continues that few physicians have any conception of the fraud in the figures published in regard to the circulation of such journals, especially the list of actual subscribers in proportion to their announced edition. Many journals require a still stronger elixir to keep them alive, and they find this in medical write-ups, with or without the connivance of the editor. In this way journals are founded and flourish, they change publishing house and editor from time to time, but there is no change in the harm they do. And some of them rejoice in the protection of “publishers” with high-sounding names.

All these “publishers” should take Müller’s appeal to heart, he continues; they nearly all belong to academic circles and should have special regard for the ideals of our science. He urges hospital directors and clinicians to restrain as much as possible the zeal of their assistants to earn their spurs in medical literature and begs all to refrain from publishing anything until it has been sufficiently controlled and is really ripe for public announcement. When a new method or new remedy comes out it is not necessary to have every hospital and clinic in the land publish its experience with the method or remedy. When it has once been thoroughly written up nothing further should be published on the subject, unless it presents a material contribution for or against. The same communication should not appear several times; in a thesis, in a *Centralblatt*, in society proceedings, at a congress and again, possibly, at an international congress. Schwalbe urges further restriction of the “horrible tapeworm articles,” saying that if the reader is not convinced by three case histories, nothing more will be gained by two dozen. The bibliography should only be added when it is indispensable for the argument. In regard to the editorial censorship, he exclaims that very few authors welcome any change in their articles. They mostly regard every suggestion of the editor in regard to shortening their articles as a crime of lèse majesté. He has found that the editor is considered of so little importance that his OK is assumed to be a mere formality, and authors send their articles direct to the printer of the journal. Even Virchow had this to contend with. Others merely announce the title of their article and are insulted when told that the article itself must be seen before it can be accepted or declined. Rejected articles may find hospitality in some of the newly founded journals, but these periodicals would soon die a natural death if all their material was second rate. Consequently they manage to secure an article occasionally from some leading man whose good nature impels him to use his pen and his ink as a stimulant to revive or keep alive some of these weakly journals. If these men will take Müller’s words to heart, great good will be accomplished, and the present evil conditions will soonest show signs of improvement.

Schwalbe decries further the custom of publishing an article simultaneously in a home and foreign journal, and he suggests that it might not be a bad plan if some of the communications presented at medical congresses could be gone over by some skilled editor before they were presented, to eliminate the superfluous.

**International Congress on Tuberculosis.**—Dr. John S. Fulton, Colorado Building, Washington, D. C., secretary-general of the International Congress on Tuberculosis, announces the provisional program for Section 2 of this congress, on “Clinical Study and Therapy of Tuberculosis—Sanatoria, Hospitals and Dispensaries.” Dr. Vincent Y. Bowditch, Boston, the president of the section, will deliver an address at the opening of the session, Monday, Sept. 29, 1908, and the following program is offered:

Duration of the Actively Infectious Stage. Robert N. Willson and Randle C. Rosenberger, Philadelphia.

Mixed Infections. M. P. Ravenel, Madison, Wis.; Arnold C. Klebs, Chicago.

The X-Ray. Francis H. Williams, Boston.

Opsonic Index. T. W. Hastings, New York.

*Tuesday, Sept. 29, Symposium on Diagnosis and Treatment of Early Tuberculosis.*

Under this head the following topics will be presented: Vital importance of early diagnosis; neglect of thorough examination to be condemned; comparative importance of treatment in sanatoria near at hand and of entire change of climate; the present status of sanatorium treatment; x-ray in diagnosis; short exposure roentgenography in early diagnosis; opsonic index in early diagnosis; cutaneous, conjunctival, and ophthalmic reactions; present status of serum diagnosis; early diagnosis by laboratory aids; hemoptysis as a symptom of early pulmonary disease; physiologic effects of residence in high altitudes; high altitude treatment in regard to fever; diet in pulmonary tuberculosis.

Papers on the topics enumerated will be read by the following: Frederick I. Knight, Boston; C. Theodore Williams, London; Carroll E. Edson, Denver; Lawrence F. Ellek, Philadelphia; Francis H. Williams, Boston; Henry Hulst, Grand Rapids, Mich.; George P. Sanborn, Boston; Arnold C. Klebs, Chicago; C. von Pirquet, Vienna; A. Wolff-Eisner, Berlin; Fernand Arloing, Lyons; Paul Courmont, Lyons; E. R. Baldwin, Saranac Lake, N. Y.; James M. Anders, Philadelphia; N. Zuntz, Berlin; O. Amrein, Arosa, Switzerland; Irving Fisher, New Haven; R. C. Newton, Montclair, N. Y.; Noel Bardswell, Midhurst, Eng.



*Wednesday, Sept. 30. Symposium on Specific Therapy of Pulmonary Tuberculosis.*

## 1. Tuberculin and its Derivatives.

Treatment by Tuberculins. More Especially by Tuberculin Bernaek. E. Bernaek, Neuchatel.  
Value and Practicability of Tuberculin Treatment. K. Hammer, Heidelberg; J. Denys, Louvain.  
Human and Bovine Tuberculosis, with Special Reference to Treatment by Tuberculin. Nathan Raw, Liverpool.  
Specific Therapy. J. Petruschky, Danzig; Edward L. Trudeau, Saranac Lake, N. Y.

## 2. Serum Treatment.

Marmorek Serum. Alexandre Marmorek, Paris.  
Maragliano Serum. E. Maragliano, Geneva.  
Periostitis et Adipositis Tuberculosa Toxica Multiplex Treated with Serum Marmorek. O. Amrein, Arosa, Switzerland.  
Maragliano Treatment at the Phipps Institute. L. F. Flick, Philadelphia.  
Untoward Effects Following the Use of Maragliano's Serum. H. R. M. Landis, Philadelphia.

*Thursday, Oct. 1, 1908. Symposium on Sanatoria, Hospitals, Dispensaries and Home Treatment for the Tuberculous.*

Treatment and Isolation of Tuberculous Patients in General Hospitals. Louis Landouzy, Paris; Maurice Letulle, Paris.  
Cost of Construction and Maintenance of Sanatoria; Class of Cases Suitable; Comparative Value of Sanatoria, Hospitals, etc. Gotthold Pannwitz, Berlin; Arthur Latham, London.  
Cost and Maintenance of Sanatoria; Special Reference to Those Established by Insurance Companies. Richard Freund, Berlin.  
Graduated Labor in the Treatment of Tuberculosis. M. S. Paterson, Frimley Sanatorium, Eng.  
Effect of Manual Labor on the Opsonic Index. A. C. Inman, Brompton Hospital, Eng.  
Comparative Value of Rest and Exercise in the Treatment of Tuberculosis. F. M. Pottenger, Monrovia, Calif.  
Value and Technic of Rest in Tuberculosis. Norman Bridge, Los Angeles, Calif.  
Ultimate Results of Sanatorium Treatment. Lawrason Brown, Saranac Lake.  
The Establishment of Dispensaries in Cities and Towns. R. W. Philip, Edinburgh.  
Dispensaries for the Prevention of Tuberculosis and Their Object. Albert Calmette, Lille.  
Dispensary Examinations of Tuberculous Families; Their Results and Their Significance in the Systematic Combat Against Tuberculosis. A. Kayserling, Berlin.  
Work of the Chicago Tuberculosis Institute. Alexander M. Wilson, Chicago.  
Comparative Value of the Dispensary and the Sanatorium Treatment of the Tuberculous. Fritz Egger, Basel.  
Accommodation of Pulmonary Patients of Advanced Stage. Director Mayer, Brandenburg, Berlin.  
Urgent Necessity for Hospitals for Far Advanced Cases. Hector Mackenzie, Brompton Hospital, London.  
The New Hospital for Advanced Cases in Boston. Edwin A. Lock, Boston.

*Friday, Oct. 2.*

Day Camps. David Townsend, Boston.  
Night Camps. William C. White, Pittsburg, Pa.  
Treatment of Tuberculous Patients in Their Homes and in Places Other Than Sanatoria. Charles L. Minor, Asheville, N. C.  
Dr. Thomas D. Coleman, Augusta, Ga.  
Economic Housing of Consumptives. P. M. Carrington, Fort Stanton, N. M.  
Importance of Sanatoria for the Well-to-Do as Well as for the Poor. Charles F. Gardiner, Colorado Springs; Will H. Swan, Colorado Springs; Herbert M. King, Liberty, N. Y.

*Friday, Oct. 2. Special Papers Proposed by the French Committee.*

Comparative Cytology for the Diagnosis of Tuberculous Effusions. A. Cade, Lyons.  
Tuberculous Rheumatism and Inflammatory Tuberculosis of the Viscera. A. Poncet, Lyons.  
Tuberculosis in the Etiology of Mental Maladies. R. Lepine, Lyons.  
Pleural Tuberculous Adhesions and their Role in Sudden Death. Prof. Lacassagne and Dr. Martin.  
Sanatorium of Ste. Feyre (Crense) for Teachers. M. Leune.  
Efficacy of Extract of Mistletoe in the Control of Hemoptysis. R. Gaultier.  
Economical Treatment of Tuberculosis—Aerium or Hospital Sanatorium. Raoul Brunon, Rouen.  
The Ronvray Forest Sanatorium in the Ronen Region. Dr. Coton and Dr. Giraud.  
Laboratory Methods in Diagnosis of Cutaneous Tuberculosis. J. Nicolas, Lyons.  
1. The Mangini Sanatorium and its Achievements. 2. Variations in Respiratory Combustion Among Tuberculous Patients Treated in a Sanatorium at a High Altitude. F. Dnmarest, Hauteville.

*Special Papers Proposed by the Swiss Committee.*

Construction of the Sanatorium at a High Altitude for Tuberculous Patients. H. Verrey, Lansanne.  
Clinical Indications and Contraindications for the Climate of High Altitude. Dr. Exchaquet, Leyson.  
Asthma and Tuberculosis. Leopold de Reynier, Neuchatel.

*Other Special Papers.*

Tuberculinum Pnrum. I. Gabrilowitsch, Halila, Finland.  
The Clinical Value of Examinations of the Blood of Tuberculous Patients According to the Method of Arneeth. C. Dluski and M. Rozpedzlkowski, Lakopane, Poland.

The Therapeutic Value of the Tuberculin Tests Controlled by the Opsonic Method. S. Bernheim, Paris.

The Dislocation of the Lung Apices and the Rules for Locating the First Disease Centers. Carl Hart, Schoeneberg-Berlin.

A Statistical Study of One Hundred Cases of Laryngeal Tuberculosis, Treated with Formaldehyde. E. S. Bullock, Silver City, N. M.

Immunity Production, by Inoculation of Increasing Numbers of Bacteria, Beginning with One Organism; Its Therapeutic Application. Gerald B. Webb, W. W. Williams, Colorado Springs, and M. A. Barber, University of Kansas.

The Prevalence and Treatment of Tuberculosis in Hospitals for the Insane in United States and Canada. Richard H. Hutchings, Ogdensburg, N. Y.

**French Cancer Research Association.**—In June and July this newly organized association held its first two meetings. They were open to the public and were well attended. Borrel discussed the problem of the origin of cancer, and the two processes in its growth: the progressive transformation on the surface of normal cells into cancer cells, and the growth in the depths by simple cellular multiplication of the already neoplastic elements. The histogenesis of cancer, he said, might be explained by the existence of a virulent agent invading the cells by contact, but this would have to be demonstrated by inoculation and this inoculation can not be done on man. He has observed canceroids developed in the epidermis of rats and mice, exactly at the point of contact with the cells of an inoculated tumor. This seems to show that under certain conditions of inoculation the still problematic cancer virus might pass from the graft to the graft-holder. This is almost a demonstration of the inoculability of cancer. He urged complete and scientific study of "cancer houses," streets, villages and countries, and commented on the epidemics in certain groups of mice. In some fully 10 per cent. of the old females become affected with spontaneous tumors, while other cages are exempt. Experiences at the Pasteur Institute disprove the assumption of local heredity from consanguinity as an explanation of these epidemics. Everything in these mouse cancers seems to suggest, he said, some local cause of contagion. He added that the spontaneous tumors almost always occurred in the dirtier cages, infested with vermin, especially with bedbugs, and the latter also infested with parasites, acari, which they may carry from mouse to mouse in the cages. The microscope frequently reveals debris of large parasites, acari, nematoid worms, etc., in the young spontaneous tumors. Certain cases of cancer in man also plead in favor of the assumption of an acarus as a possible agent of inoculation. One fact only is certain, he concluded, namely, that the different forms of cancer are not directly transmissible from man to man, and that contagion, if it exists, can be only by indirect means. Menetrier addressed the meeting on "Precancerous Morbid Conditions," stating that cancer is not a primary morbid form, but the outcome of multiple anterior and preparatory pathologic conditions from defective development or chronic inflammatory modification. The already modified elements in the precancerous conditions are those which undergo the cancerous evolution.

**The Effects of Alcohol on the Liver.**—The hepatic conditions due to chronic alcohol poisoning are enumerated by Garnier in the *Progrès Médical*, March 21, 1908, as follows: 1. Latent hepatic steatosis of alcoholics, described by Gilbert and Lereboullet in 1902. This is a purely parenchymatous alteration, coming on without symptoms and usually discovered when the patient comes under observation on account of some other condition. It has a serious prognosis, the patients succumbing rapidly to intercurrent disease. If recognized, however, recovery is possible with total abstinence and proper treatment. 2. Fatty cirrhosis. The hypertrophic form, described almost simultaneously in 1881 by Hutinel and Sabourin, usually due to alcoholism, but may be caused also by tuberculosis; Hanot's and Gilbert's tuberculous fatty hypertrophic hepatitis is the same disease, differing only in its causation. The atrophic form—the atrophic cirrhosis of rapid course of Hanot, also sometimes tuberculous. Both types have a grave prognosis. In all the above a hepatic cell is affected, either alone or simultaneously with the connective tissue. There remains still a class, more numerous and more important, in which the interstitial tissue is alone involved, the venous cirrhosis. This includes: 3. Diffuse alcoholic hypertrophic cirrhosis, described by Gilbert and Garnier in 1897, which may also be caused by tuberculosis, of rapid course, terminating in hypo-



thermic coma. 4. The cirrhosis of Laennec. 5. Hypertrophic cirrhosis described by Hanot and Gilbert in 1890, of less serious import than the others. The hepatic cell in this disease shows a remarkable vitality, sometimes revealing itself in an accumulation of pigmentary granules—the pigmentary hypertrophic alcoholic cirrhosis. Another variety of this type is the anascitic, relatively benign, but frequently with severe gastro-esophageal hemorrhages which may be fatal. Still another variety is the diabetic form. The integrity of the hepatic cell is the common peculiarity of all. The diagnosis of alcoholic cirrhosis is easy in typical cases, but may be rendered difficult by coexistence of more than one form. In summing up the effects of alcohol on the liver, Garnier says that, in whatever way it acts, it injures the hepatic cell, and that experimental cirrhosis has not been produced, is doubtless due to the fact that the experiments are carried over too brief a period—the animals succumb before their lesions have time to cicatrize. Sclerosis is explainable without invoking any hypothetic action of alcohol on the connective tissue; the poison attacks and kills the liver cell; if the process is slow and only a few cells are killed at a time, the connective tissue hypertrophies and takes the place of the destroyed cells, a fibrous cicatrix forms and the process of sclerosis begins. In acute overwhelming liver intoxication the cell is functionally disordered, and, while icterus may appear, it is not usually so severe as to cause death. If the intoxication is chronic, from doses frequently repeated but not singly capable of producing massive intoxication, but still considerable, the cell becomes profoundly affected, undergoes fatty degeneration, and frequently the organism gives way and death follows with the symptoms of hepatic insufficiency which are those of fatty hypertrophic cirrhosis. With a more gradual toxic process, the cellular lesions are more discrete and may give rise to no prominent symptoms; we find only the fibrous cicatrices left which give rise to simple cirrhosis. This is what occurs from small doses taken over a long period, as in wine drinking, in which it often occurs, which Lancereaux considered to affect the interstitial tissue especially. The cirrhosis here indicates the attempt of Nature to repair damage; the organism defends itself as best it can. If the defense is relatively successful, the cirrhosis takes the hypertrophic form; if, on the other hand, the resistance is less well organized or the toxic attack too strong, the liver gives way, the cirrhosis of Laennec is produced, leading most often to a fatal termination.

**Pathogenesis and Relief of Medical Nomenclature.**—Mamlock in a communication in the *Deutsche medizinische Wochenschrift*, July 2, reiterates the protest against the application of personal names to diseases, etc. He quotes a number of new rank instances of this abuse from recent medical literature, among them the technic for serum diagnosis of syphilis, indexed in the German journals as the "Wassermann-A. Neisser-Brucksche Reaktion." The new cutaneous tuberculin reaction is also recently referred to in the *Wiener klinische Wochenschrift* as "Perlsucht-Pirquet." He regards this latter term as a verbal "neoformation which must be regarded as unusually malignant." He suggests that the time has now come for revision of medical nomenclature from the bottom up, as has been done for anatomy and as is now being attempted in neurology. The principles adopted by the BNA would be most excellent for the purpose, he says. These principles are short and simple terms, philologically correct—merely memory signs, not necessarily laying any claim to description or to speculative interpretation—and that related terms shall, so far as possible, be similar, and that adjectives, in general, shall be arranged as opposites. The objections against the retention of personal names are stated by the BNA as: 1, historical injustice is frequently done, the name borne being that of some later worker; 2, the variations of the name in different countries; 3, in the literature of the specialties personal names are often used in great excess; and 4, no systematic plan seems to have been followed in adopting personal names. The only convincing argument in favor of retention of personal names is to awaken the historical sense of the student. The BNA compromised by adding to the objective name the personal name in brackets, leaving to time the final decision. Mamlock thinks that the revision of medical nomenclature

would be a grateful task for an international medical congress, and that no one could have any objections to the appointment of a special committee for this purpose.

**Sudden Death in Dementia Præcox.**—A. Gianelli, *Rivista di Patologia nervosa e mentale*, April 4, 1908, reports the cases of two patients, suffering from dementia præcox, one of 13 years and the other of 4 years' duration. Both patients died suddenly in syncope, while apparently in ordinary good physical health. The autopsies revealed nothing sufficient to account for the deaths except that, as in somewhat similar cases reported by Dreyfus and Tetzener, there was a swollen condition of the brain and a much less than normal difference between the volume of the brain and the cranial capacity as measured by water. In Dreyfus' case this was only 1.2 per cent., while normally it should vary between 10 and 15 per cent., the brain weight being 1,592 grams while the cranial capacity was 1,610 c.c. In Gianelli's cases the proportions were very similar, the cranial capacities being 1,396 and 1,472 c.c. respectively to brain weights of 1,320 and 1,450 grams. In Dreyfus and Tetzener's patients, however, death was preceded by convulsions, which were lacking in both of Gianelli's patients. He suggests that the cerebral swelling may have been more sudden in his cases, paralyzing at once the bulbar centers of respiration and circulation.

**Protracted Subfebrile States in Children.**—G. Jacobson has encountered a number of cases in which children seemed to be a little ailing for a long time, for months or years, and the thermometer showed a slight increase of temperature, this subfebrile condition persisting unmodified by iron, quinin or antipyretic drugs. Any overexertion had a tendency to exaggerate the fever, even prolonged reading, and remaining in bed attenuated it, but never banished it completely. Periods of intermission occurred occasionally, lasting a week to six months, and during these afebrile periods the children grew strong and ruddy, but began to pine again as the subfebrile temperature returned. The urine and blood findings were always negative, and none of the children has shown any signs of tuberculosis. All of them, however, had suffered at some time from adenoid vegetations, chronic pharyngitis or from follicular tonsillitis or earache. The throat symptoms were insignificant or the findings were apparently negative, but closer examination revealed some unsuspected insignificant focus of persisting nasopharyngitis, cure of which restored conditions to normal at once. Jacobson's communication on the subject was published in the *Bulletins de la Société de Pédiatrie*, May, 1908.

**Puerperal Staphylococcus Infection.**—G. L. Basso reports 3 cases and reviews 22 he has found in the literature in which staphylococemia occurred in pregnant women or puerperæ. Only 5 of the patients recovered. The 9 patients with *Staphylococcus albus* all died. He ascribes the recovery in one of his 3 cases to intravenous injections of mercury bichlorid, the chills and fever subsiding under their influence, while the pulse rate did not seem to be affected. There does not seem to be any specific syndrome for staphylococcus infection differentiating it from streptococcus sepsis. The course of the sepsis was acute, subacute or chronic, its duration ranging from four days to three months. His monograph on the subject fills the *Ginecologia*, April 30, 1908.

**Alienists' Testimony and the Weber Case in France.**—Three years ago a woman named Jeanne Weber was accused of having strangled six children in her charge in the course of two years, including some of her own children, the others her nephews. The medical experts in the case were Brouardel, Thoinot, Brissaud, Socquet and four other specialists. Their verdict was unanimous that the children had died natural deaths. After her acquittal the woman lived with a man for several months, when his child also died and she was again arrested. Thoinot and Socquet, two of the former experts, declared that the child had died of intestinal trouble. After this the woman led a wandering, outcast life, public opinion holding her responsible for having killed seven children. Last May the child of a friend spent the night with her, at her request, and the child was found dead from unquestionable strangulation. The public is denouncing the experts who



allowed the woman to continue her murderous career. The alienists now believe that the woman's privations and mental distress have induced an actual obsession until she finally committed the act of which the public believed her guilty in the past. The newspapers are publishing interviews with various medical men, and medicolegal testimony is receiving much unfavorable criticism. The "Weber children" have been cited in the literature of late as examples of a familial tendency to "thymus death."

**Some Vital Statistics from Europe.**—According to the official statistics, Germany stands next to the highest of European countries in respect to the increase in population for the year 1906, the excess of births over deaths being 14.9 per thousand of the population. The figure was 13.2 per thousand the preceding year. In Denmark the percentage was slightly higher, 15.1 per thousand. For the year 1905, several countries, Bulgaria, the Netherlands, Roumania and Denmark exceeded Germany, but so far as the reports from other countries in Europe are at hand, the proportion was considerably lower, France having only 0.9 per thousand. The number of divorces in Germany has increased from 7,928 in 1900 to 12,180, Berlin having one divorce to each fourteen marriages. The number of marriages was 16.3 per thousand inhabitants, a slight increase over former years. France and Ireland had the lowest birth rate, 1900-1905, it being respectively 21.2 and 23.1 per thousand. Russia led with 41.6; Germany had 34.7, and Great Britain 26 during this five-year period. The *Semaine Médicale* cites figures to show that the birth rate has fallen in all the countries of Europe since 1900, except in Ireland, Spain and Roumania.

**Effect of Roentgen Rays on Young Amphibians.**—Illumination by Roentgen rays has a decidedly detrimental and destructive effect on young animals, as indicated by the experiments of Dr. H. E. Schmidt (*Archiv für mikroskopische Anatomie und Entwicklungsgeschichte*). His work confirms that of Verthes, Schaper, Bohn, Gilman and Baetjer who found that exposure to Roentgen rays, as well as to radium, had an inhibitory effect on the growth of young larvæ and the hatching of eggs. Schmidt exposed axolotl eggs to Roentgen illumination, using as controls eggs from the same spawn. The results of the experiment indicate that such exposure reduces the hatching 100 per cent. and that the animals invariably die a short time after hatching. The most marked effect was on the brain and spinal cord. Scarcely any trace of normal nervous tissue of the brain and cord could be found in animals after exposure. It is his opinion that the brain and spinal cord show a distinct susceptibility to destruction by Roentgen and radium rays.

## Book Notices

**HERNIA.** By R. W. Murray, F.R.C.S., Surgeon, David Lewis Northern Hospital, Liverpool. Cloth. Pp. 99, with illustrations. Price, \$1.80. Philadelphia: P. Blakiston's Son & Co., 1908.

The author is a warm supporter of the so-called sacular theory of hernia first brought forward by Mr. Hamilton Russell of Melbourne. According to the views of Russell and the author a preformed sac offers the only satisfactory explanation of all abdominal herniæ which have no definite traumatic origin. Many believe there is considerable evidence in favor of this sacular theory and agree with the statement that "in a fair proportion of adult herniæ the sac is of congenital origin." One can not agree, however, with the author when he advocates as his method of operation, high ligation of the sac and overlapping of the external oblique aponeurosis. A larger experience and more careful revision of cases will be necessary before surgeons will consent to the principles of the Bassini operation or its modifications. An investigation made by Dr. Nathan Raw (page 8) for the author is of great interest in connection with the question of recurrence of herniæ after operation. In 200 consecutive postmortem examinations a potential hernial sac was found in 47, and in these 47 bodies 68 diverticula were present. Of the latter 13 were inguinal,

52 femoral and 3 umbilical. In 16 cases more than one diverticulum was found. The book is a valuable one in view of the novelty of the theories presented and is worthy of a careful perusal.

**SKIN AFFECTIONS IN CHILDHOOD.** By H. G. Adamson, M.D. (Lond.), M.R.C.P., Physician for Diseases of the Skin, Paddington Green Children's Hospital. Cloth. Pp. 287, with illustrations. Price, \$2.00. New York: Oxford University Press, 1907.

The author deals with the various affections of the skin, particular attention being paid to those diseases peculiar to early life, e. g., ringworm of the scalp, lichen urticatus and the eruptions of congenital syphilis.

The book is well written and the specialist's point of view is not too much to the fore. Congenital syphilis, for instance, is properly regarded as a general disease, and the author discusses chiefly the dermatologic aspects of this affection, due weight being given to other physical signs as aids to diagnosis.

The directions for treatment of the various affections, on the whole, are good, though more of detail might have been introduced. No allusion, however, is made to the opsonic management of the multiple abscesses in infants, due to the staphylococcus. In view of the favorable reports of this method of treating these infections it deserves mention. The book fulfills fairly well the intention of the author, expressed in the preface, of being "a practical guide to the clinical study and treatment of skin affections in children."

**MUSCLES OF THE EYE.** By Lucien Howe, M.A., M.D., Professor of Ophthalmology, University of Buffalo. In Two Volumes, Vol. i. Illustrated. Cloth. Pp. 455. Price, \$4.25 net. New York and London: G. P. Putnam's Sons, 1907.

The author in the preface states that in view of the mass of accumulated literature on muscular anomalies it would be useless to add to it were it not on a plan different in its scope from that of the various detached articles already written. His plan is: 1. To collect data relating to this subject, separating as clearly as possible demonstrated facts from statements based on theory. 2. To formulate these concisely and in the simplest terms possible. 3. To supply data needed to correlate our anatomic and physiologic facts without clinical experiences. He has approached the subject in a way that will be appreciated by the practical ophthalmologist. There are numerous illustrations, chiefly in black and white, and photography has been brought into use to register various ocular movements. In an appendix are photographs and biographic notes of ophthalmologists who have particularly concerned themselves with the ocular muscles. It is to be hoped that the second volume will bear out the promise shown in this first volume.

**SYPHILIS.** By Edward L. Keyes, Jr., A.B., M.D., Ph.D., Clinical Professor of Genitourinary Surgery, New York Polyclinic Medical School and Hospital. Pp. 577, with illustrations. Price, \$5.00. New York: D. Appleton & Co., 1908.

This work is based on cases seen in private practice and not on hospital records, which usually deal with the severer forms of the disease. The chapter on prophylaxis is good and is of especial interest. Keyes speaks highly of mercurial injections, especially injections of the insoluble salts, and states that in cases in which mercury will act at all these injections are more efficient than other methods of administration of this drug. He gives a secondary place to the iodids. The general practitioner will find this a practical and reliable work.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### DESTRUCTION OF ROACHES.

LUMBERTON, N. C., July 8, 1908.

To the Editor:—Can you give me a positive means for the destruction of roaches?  
A. THOMPSON.

ANSWER.—The so-called Persian or Dalmatian insect powder, pyrethrum flowers, unofficial, appears to be the most effective roach exterminator, but when these insects have obtained the upper hand, it is extremely difficult to get rid of them. The



powder should be dusted into every crack and crevice daily until the pests have disappeared; the application of the powder should be most thorough. Borax has been used and by some people it is believed to be as efficient as the insect powder. It is dusted in the places where the roaches congregate and breed.

#### ANTISEPTIC POWER OF SOAPS.

DAVIS, W. VA., July 9, 1908.

To the Editor:—Please give the antiseptic strength of such soaps as detergol, snol and lysol. Drs. HARDY and BUTT.

ANSWER.—Soaps have slight antiseptic power; this is greater when they are markedly alkaline, as the official *sapo mollis*. Recent investigations indicate that the antiseptic power is more marked with salts (soaps) of the saturated fatty acids (e. g., stearic) than in the case of soaps of the unsaturated fatty acids. While free alkali increases the antiseptic power of the soaps, the investigations indicate that increase in bactericidal power depends more on alkali liberated by hydrolysis when the soap is dissolved in water than on alkali already present in the soap. (Reichenbach, H.: *Ztschr. f. Hyg. u. Infekt. Krank.*, LIX, 296.) We find no reference to snol or detergol. Lysol is a preparation of cresol, practically identical with liquor cresolis compositus, U. S. P., and is said to have about the same germicidal power as phenol (carbolic acid). This is given by some authorities as 1 to 333.

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Aug. 1, 1908:

Kirkpatrick, T. J., major, M. C., granted leave of absence for one month, about August 15.

Kendall, W. P., major, M. C., ordered from Ft. Ethan Allen, Vt., to Ft. Ontario, N. Y., for temporary duty, and return.

Girard, J. B., col., M. C., detailed to represent Medical Dept. of the Army at the Fifth Pan-American Medical Congress at Guatemala, Aug. 5 to 10, 1908.

Shaw, H. A., major, M. C., granted leave of absence for one month, about August 8.

Moncrief, W. H., capt., M. C., granted leave of absence for two months, when services can be spared, with permission to ask extension of one month.

Reagles, Jas., contract surgeon, granted sick leave of absence for twenty days.

The following named first lieuts., M. R. C., recently appointed from contract surgeons, with rank from July 7, 1908, were ordered to active duty in the service of the United States, July 28, 1908:

Anderson, E. A.,	Halliday, C. H.,	Patterson, E. W.,
Ashburn, J. K.,	Hereford, J. R.,	Priest, Howard,
Bierbower, H. C.,	Holmes, T. G.,	Richardson, G. H.,
Brown, I. C.,	Hughes, M. E.,	Sabin, W. E.,
Brown, P. D.,	Jackson, T. W.,	Shepherd, J. M.,
Brown, W. E.,	Jenkins, F. E.,	Sievers, R. E.,
Campbell, G. F.,	Johnstone, E. K.,	Slyater, J. T. H.,
Clayton, G. R.,	Jones, E. C.,	Smith, R. D.,
Cook, G. W.,	Jones, G. B.,	Smith, W. H.,
Cullen, C. W.,	Kellogg, P. S.,	Sparrenberger, F. H.,
Cutliffe, W. O.,	Leeper, J. F.,	Springwater, S. A.,
Davis, O. F.,	Le Hardy, J. C.,	Stallman, G. P.,
Delacroix, A. C.,	Lemmon, Robt.,	Stephenson, A. V.,
De Krafty, S. C.,	McCard, D. P.,	Stuckey, H. W.,
de Nledmann, W. F.,	McLeod, H. C.,	Tetrault, C. A.,
Dulin, C. T.,	McPheeters, S. B.,	Thorne, J. L.,
Eliot, H. W.,	Merrick, J. N.,	Trenholtz, C. A.,
Escobar, J. A.,	Mills, F. H.,	Tukey, W. H.,
Farrow, E. J.,	Mount, J. R.,	Tyler, G. T.,
Hadra, Fredk.,	Myers, W. H.,	Walker, T. C.,
Hall, W. E.,	Pascoe, J. B.,	Wheate, J. M.,

### Navy Changes.

Memorandum of changes in the Medical Corps, U. S. Navy, for the week ending Aug. 1, 1908:

Payne, J. H., P. A. surgeon, detached from the Navy Yard, Boston, and ordered to the *Salem* when commissioned.

Bacon, S., asst.-surgeon, detached from the Naval Hospital, New Fort Lyon, Colo., and ordered to the *South Dakota*.

Crow, G. B., asst.-surgeon, ordered to the Naval Hospital, Norfolk, Va.

Chilton, A. L., asst.-surgeon, ordered to the Naval Hospital, Philadelphia.

Pnelps, J. R., asst.-surgeon, ordered to the Naval Hospital, Boston.

Butts, H., asst.-surgeon detached from the Naval Station, Cavite, P. I., and ordered to the Naval Hospital, Canacao, P. I.

Kelly, H. L., asst.-surgeon, detached from the Naval Hospital, Canacao, P. I., and ordered to the Naval Station, Cavite, P. I.

### Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and other officers of the Public Health and Marine-Hospital Service for the seven days ended April 29, 1908:

Ranks, C. E., surgeon, granted leave of absence for 20 days, from Aug. 23, 1908.

Carrington, P. M., surgeon, granted leave of absence for 16 days, on account of sickness.

McIntosh, W. P., surgeon, granted leave of absence for one month, from Aug. 14, 1908.

Cobb, J. O., surgeon, granted leave of absence for 7 days, from July 29, 1908.

Stoner, J. B., surgeon, granted leave of absence for 1 day, July 26, 1908.

Wertenbaker, C. P., surgeon, directed to proceed to Wachapreague and Cape Charles City, Va., for the purpose of examining keepers and surfmen of the Life-Saving Service.

Blue, Rupert, P. A. surgeon, detailed as member of a Revenue-Cutter Service retiring board, San Francisco, Aug. 3, 1908.

King, W. W., P. A. surgeon, detailed as member of a Revenue-Cutter Service retiring board, San Francisco, Aug. 3, 1908.

Stimson, A. M., P. A. surgeon, granted leave of absence for 1 month and 15 days, from Aug. 17, 1908.

Bryan, Wm. M., asst.-surgeon, granted leave of absence for 1 day, July 21, 1908, under Paragraph 191, Service Regulations.

Brinkerhoff, W. R., director leprosy investigation station, granted leave of absence for 30 days, from Aug. 3, 1908.

Bailey, C. Williams, acting asst.-surgeon, granted leave of absence for 7 days, from July 28, 1908.

Baird, W. A., acting asst.-surgeon, granted leave of absence for 16 days, from July 16, 1908.

Gleason, C. M., acting asst.-surgeon, granted leave of absence for 20 days, from Aug. 1, 1908.

Kennedy, G. R., acting asst.-surgeon, granted leave of absence for 30 days, from July 23, 1908.

Small, E. M., acting asst.-surgeon, granted leave of absence for 4 days, from June 20, 1908.

Stearns, H. H., acting asst.-surgeon, granted leave of absence for 1 day, on account of sickness, July 13, 1908.

Tuttle, Jay, acting asst.-surgeon, granted leave of absence for 30 days, from Aug. 2, 1908.

Villoldo, P., acting asst.-surgeon, directed to proceed to Cienfuegos, Cuba, for temporary duty, upon completion of which to rejoin his station at Havana.

Watkins, McD., acting asst.-surgeon, granted leave of absence for 1 day, July 29, 1908.

#### BOARD CONVENED.

A board of medical officers was convened to meet at Seattle, for the purpose of examining an alien immigrant. Detail for the board: Passed Assistant Surgeon M. W. Glover, chairman; Assistant Surgeon C. W. Chapin, recorder.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended July 31, 1908:

#### SMALLPOX—UNITED STATES.

Illinois: Chicago, July 11-18, 1 case.  
Indiana: Fort Wayne, June 27-July 4, 1 case; Indianapolis, July 12-19, 17 cases; La Fayette, July 13-20, 1 case; South Bend, July 11-18, 4 cases.  
Kansas: Wichita, July 11-16, 1 case.  
Louisiana: New Orleans, July 11-18, 1 case.  
Ohio: Cincinnati, July 10-17, 1 case; Springfield, July 11-18, 1 case; Toledo, June 27-July 11, 7 cases.  
Washington: Spokane, July 4-11, 7 cases.  
Wisconsin: La Crosse, July 11-18, 6 cases.

#### SMALLPOX—FOREIGN.

Algeria: Algiers, June 27-July 4, 2 deaths.  
Arabia: Aden, June 15-29, 8 deaths.  
Brazil: Bahia, June 1-30, 115 cases, 1 death; Para, June 27-July 4, 2 cases, 2 deaths; Rio de Janeiro, July 14-21, 378 cases, 151 deaths; Santos, July 15-21, 1 death.  
Canada: Halifax, July 4-11, 1 case.  
China: Foochow, June 6-13, present; Nanking, June 4-11, epidemic.  
Egypt: Cairo, June 17-July 1, 7 cases, 4 deaths; Suex, May 27-June 24, 4 cases.  
India: Bombay, June 9-23, 49 deaths; Calcutta, May 31-June 13, 25 deaths.  
Italy: Genoa, May 1-31, 2 cases; Naples, June 20-July 4, 12 cases; Palermo, 6 cases, 1 death.  
Japan: Kobe, June 13-20, 4 cases; Osaka, June 6-20, 13 cases, 4 deaths.  
Java: Batavia, May 31-June 13, 7 cases.  
Mexico: Aguascalientes, July 5-12, 1 death; Mexico City, May 31-June 6, 16 deaths.  
Peru: Lima, June 27, 1 case.  
Portugal: Lisbon, June 27-July 4, 2 cases.  
Russia: Moscow, June 20-27, 24 cases, 7 deaths; Odessa, 3 cases; Riga, June 27-July 11, 6 cases; St. Petersburg, June 13-27, 117 cases, 21 deaths; Warsaw, May 23-30, 7 deaths.  
Siberia: Vladivostok, June 4-14, 3 cases.  
Spain: Valencia, June 27-July 4, 4 cases, 1 death.  
Straits Settlements: Singapore, May 31-June 13, 2 deaths.  
Turkey in Europe: Constantinople, June 28-July 5, 10 deaths.  
Turkey in Asia: Bagdad, May 16-June 21, 36 cases, 23 deaths.

#### YELLOW FEVER.

Brazil: Manaus, June 13-27, 14 cases, 14 deaths; Para, June 20-27, 2 cases, 2 deaths; Rio de Janeiro, June 14-21, 1 case.  
Cuba: Daiquiri, July 28, 2 cases, 1 death.  
Mexico: Laguna, June 27-July 4, 1 case; Veracruz, July 14-17, 2 cases.

#### CHOLERA.

Ceylon: Colombo, June 6-13, 3 deaths.  
India: Bombay, June 9-16, 1 death; Calcutta, May 31-June 6, 52 deaths; Rangoon, May 31-June 13, 14 deaths.

#### PLAGUE—UNITED STATES.

California: Alameda County—Oakland, July 21, 1 case, 1 death; Contra Costa County—Concord, July 15, 1 case, 1 death; Prencis Valley, July 24, 1 case, 1 death—10 miles from Martinez.



## PLAGUE—FOREIGN.

China: Canton, June 13-20, present.  
India: Bombay June 9-23, 69 deaths; Calcutta, May 31-June 6, 45 deaths; Rangoon, May 31-June 13, 68 deaths.  
Indoo-China: Saigon, May 31-June 13, 30 cases, 26 deaths.  
Japan: Osaka, June 6-20, 2 cases, 3 deaths.  
Peru: general, June 20-27, 53 cases 16 deaths; Callao, 1 case.  
Turkey in Asia: Bagdad, May 16-June 21, 36 cases, 23 deaths.  
Venezuela: Caracas, July 18-23, present; La Guaira, present.

**Association News**

## HONORARY MEMBERS.

## Acknowledgments from Distinguished Foreigners Recently Elected.

LONDON, July 12, 1908.

*To the General Secretary, American Medical Association:*

I beg to acknowledge the receipt of your letter of June 30, informing me that the House of Delegates had elected me an honorary member of the American Medical Association, and I wish to express to you my gratification at this great compliment which they have paid me. With kind regards, believe me,

Yours very truly, E. TREACHER COLLINS.

BERLIN, July 14, 1908.

*To the General Secretary, American Medical Association:*

It gave me great pleasure to learn that the House of Delegates has honored me by the election among the number of the honorary members of the American Medical Association. I admire the Association as the most powerful medical corporation of the world, representing the scientific as well as the ethical interests of the profession. When witnessing the proceedings in June, I felt deeply impressed by the work of the Association in both directions.

This honorary membership I esteem the highest title that has been conferred on me. I beg to express my thanks to the House of Delegates, and to remain,

Very truly yours, A. MARTIN.

EDINBURGH, July 14, 1908.

*To the General Secretary, American Medical Association:*

I esteem it a high honor to have been elected an honorary member of the American Medical Association and beg you to convey my appreciative thanks to the House of Delegates. With kind regards, believe me,

Yours sincerely, E. A. SCHÄFER.

[COMMENT. The present list of honorary members is as follows: Prof. O. Haab, Zurich, Switzerland, elected 1902; Prof. A. Maitland Ramsay, Glasgow, Scotland, 1904; Prof. J. Hirschberg, Berlin, 1905; Prof. A. von Rosthorn, Heidelberg, Germany, 1906; Prof. F. Trendelenburg, Leipzig, Germany, 1906; Prof. L. Killian, Freiburg, Germany, 1907; Prof. Carl Hess, Würzburg, Germany, 1907; Prof. Edward F. Schäfer, Edinburgh, Scotland, 1908; Prof. August Martin, Berlin, Germany, 1908, and Prof. E. Treacher Collins, London, 1908.—Ed.]

## NEW MEMBERS.

List of new members of the American Medical Association for the month of July, 1908:

## ALABAMA.

Appleton, H. L., Gadsden.  
Cole, H. P., Mobile.

Greene, J. B., Birmingham.  
Harris, A. B., Birmingham.  
Robinson, Annie M., Birmingham.  
Seay, J. E., Pratt City.

## ARIZONA.

Wilson, J. C., Willcox.

## CALIFORNIA

Hadden, David, Berkeley.  
Nagel, C. S. G., San Francisco.  
Onestl, S. J., San Francisco.  
Temple, Jackson, Santa Rosa.

Thompson, H. A., San Diego.  
Thompson, L. L., Gridley.

## COLORADO.

Barry, J. D., Denver.  
Plumb, C. W., Grand Junction.

## CONNECTICUT.

Henze, C. W., New Haven.  
Laden, M. R., Hartford.  
Kebler, L. F., Washington.  
Walker, R. R., Washington.

## GEORGIA.

Fullilove, H. M., Athens.

## HAWAII.

Weddlek, John, Walluku, T. H.

## ILLINOIS.

Adams, D. S., Macomb.  
Akins, J. C., Forreston.  
Berfield, Clyde, Castleton.  
Blough, G. F., Camp Grove.  
Boren, A. J., Stillwell.  
Bowers, G. S., Galesburg.  
Bowman, W. T., Moweaqua.  
Braun, H. W., Mounds.  
Brewer, E. M., Rantoul.  
Briggs, F. E., Roanoke.  
Capel, J. V., Harrisburg.  
Carr, R. H., Chicago.  
Clyne, Meade, Chicago.  
Cord, C. E., Chicago Heights.  
Culver, Eugenia M., Glencoe.  
Douglass, D. T., Colfax.  
Ferrell, Barney, Carterville.  
Gardner, I. A., Chicago.  
Golden, J. F., Chicago.  
Gray, W. B., Altona.  
Hall, F. G., Galesburg.  
Hare, C. B., Chicago.  
Hendricks, E. L., Lanark.  
Horn, Albert T., Chicago.  
Hottinger, E. S., Chicago.  
Howard, C. E., Lewistown.  
Humphrey, D. W., Bowen.  
Jansen, S. A., Chicago.  
Keech, R. K., Decatur.  
Lewis, T. W., Chicago.  
Liegett, F. L., Rankin.  
McDermid, Andrew, Chicago.  
Medaris, Anna, Chicago Heights.  
Michael, O. W., Muncie.  
Myers, J. C., Clinton.  
Mitchell, R. A., Marshall.  
Morlan, H. J., Ludlow.  
Peacock, Albert, Chicago.  
Rider, C. J., Bushnell.  
Rebb, F. C., Farmington.  
Roberts, I. T., Johnston City.  
Rogers, N. C., Rockford.  
Ross, J. F., La Prairie.  
Schreifels, Leonard, Granite City.  
Schwartz, Rollin, Evanston.  
Schwarz, L. E., Chicago.  
Shelton, W. B., Bingham.  
Snively, W. D., Rock Island.  
Taylor, E. D., Woodhull.  
Terry, H. A., Tambico.  
Volini, Camillo, Chicago.  
Warner, F. G., Grafton.  
Weir, C. E., Berwick.  
Weld, E. H., Rockford.  
Whitefort, A. R., St. Elmo.  
Wiggins, G. A., Milan.

## INDIANA.

Anderson, D. A., Indianapolis.  
Eaker, J. V., Harrodsburg.  
Bentle, Perry C., Greensburg.  
Carver, W. F., Albion.  
Cook, S., Gentryville.  
Egolf, H. M., Liberty.  
Elliott, R. H., Connersville.  
Feacler, J. P., Mishawaka.  
Frink, C. W., Elkhart.  
Harris, O. K., Ellettsville.  
Heller, Fred, Brownstown.  
Hewitt, H. S., Mishawaka.  
Hoover, E. M., Elkhart.  
Hutto, O. D., Kokomo.  
Kitchell, J. E., Deer Creek.  
Lee, G. W., Lafayette.  
Lockridge, A. B., Rockville.  
Longfellow, T. W., Windfall.  
Martin, W. H., Kokomo.  
McAuliffe, D. L., North Vernon.  
McBride, F. B., National Military Home.  
McKee, C. E., Dublin.  
Mobley, L. F., Summitville.  
Besler, F. L., Amboy.  
Ross, L. F., Richmond.  
Schenck, F. O., Crawfordsville.  
Storch, L. A. E., Indianapolis.  
Trueblood, J. W., Monroe City.  
Veach, P. H., Staunton.  
Wainscott, O. C., Peru.

## IOWA.

Bowers, A. S., Orient.  
Bridgeman, H. L., Columbia.  
Garrett, J. M., Ft. Dodge.  
Haerem, H. T. K., Story City.  
Haisch, O. E., Dubuque.  
Hoole, W. M., Keokuk.  
Jones, H. D., Schleswig.  
Langworthy, H. G., Dubuque.  
McCall, H. E., Clearfield.  
McEwen, Earle, Mason City.  
Phillips, W. C., Clarinda.  
Prescott, L. W., Sloan.  
Stallford, J. H., Sac City.  
Wallahan, J. H., Corning.

## KANSAS.

Lake, M. E., Erie.  
Morrow, N. C., Altamont.

## KENTUCKY.

Barnette, W. T., Mackville.  
Berkshire, P. L., Spottsville.

Ploom, I. N., Louisville.  
Blayes, H. B., La Grange.  
Carter, W. F., Brodhead.  
Casner, A. A., Joy.  
Jordan, J. C., Rocky Hill.  
O'Connor, B. J., Louisville.  
Page, W. A., Barlow City.  
Parsons, W. H., Kosmosdale.  
Redmon, L. C., Lexington.  
Russell, G. F., Louisville.  
Simpson, J. P., Herschel.

## LOUISIANA.

Rooks, J. E., Doyline.  
Veazie, H. A., New Orleans.

## MAINE.

Richardson, H. K., Bradford.

## MARYLAND.

Freeman, E. B., Baltimore.

## MASSACHUSETTS.

Phunkett, H. B., Lowell.  
Ritter, Henry, Springfield.  
Sinclitico, Giuseppe, Lawrence.  
Young, J. H., Boston.

## MICHIGAN.

Bryant, B. L., Detroit.  
Greene, A. E., Leslie.  
Iverson, Christine, Kalamazoo.  
Marks, W. J., Jackson.  
Maxwell, J. C., Paw Paw.  
Merritt, C. W., St. Joseph.  
Morse, W. F., Saginaw.  
O'Leil, Anna, Detroit.  
Pasternacki, B. W., Detroit.  
Sanderson, J. H., Detroit.  
Schulte, Jos., Detroit.  
Stewart, J. D., Hartford.  
Taylor, R. S., Detroit.

## MINNESOTA.

Duncan, Wm. T., Fergus Falls.  
Hall, E. E., Little Falls.  
Jensen, J. C., Hendricks.  
Kirkwood, S. M., St. Paul.  
O'Brien, R. P., Minneapolis.  
Plehn, J. F., Bellingham.

## MISSISSIPPI.

Garraway, C. R., Shipman.  
Hickman, W. W., Naxapeter.  
Young, J. W., Grenada.

## MISSOURI.

Andrews, John, Grant City.  
Best, W. W., Bolckow.  
Butler, L. P., St. Louis.  
Hayden, J. G., Kansas City.  
Hookins, Ross, St. Louis.  
Johnson, W. L., St. Louis.

## MONTANA.

\* Spelman, J. F., Anaconda.

## NEBRASKA.

Ballard, C. H., Omaha.  
Betz, W. H., Bellevue.  
Cerny, Joseph, Wilber.  
Dwyer, T. J., Omaha.  
McClenghan, Sam'l, Omaha.  
Patterson, Franklin.  
Watson, E. A., Plainview.  
Wearne, F. J., Omaha.  
Wills, C. L., Anselmo.

## NEW HAMPSHIRE.

Amsden, H. H., Concord.  
Foster, G. S., Manchester.

## NEW JERSEY.

Mabey, J. C., Montclair.

## NEW MEXICO.

Montgomery, C. F., Lake Arthur.

## NEW YORK.

Albers, F. M., Brooklyn.  
Bartholow, Paul, New York City.  
Bolt, F. E., East Meredith.  
Bonine, Ellis, New York City.  
Campaigne, W. N., Troy.  
Cheesman, T. M., Garrison.  
DuBois, H. G., Camden.  
Griffin, Gerald, Albany.  
Hopkins, Maria K., Gloversville.  
Hoyt, C. W., Rochester.  
Lewis, L. C., Belmont.  
Lintz, William, Brooklyn.  
Olin, J. D., Watertown.  
Richards, W. M., New York City.  
Stone, C. L., Brooklyn.  
Suess, C. L., Lancaster.  
Tartaro, Giuseppe, Buffalo.  
Weiss, Julius, New York City.  
Weiss, L. D., New York City.

## NORTH CAROLINA.

Mudgett, W. C., Southern Pines.

## NORTH DAKOTA.

Nolte, W. C., Dazey.



## OHIO.

Benkert, L. C., Columbus.  
Bing, Byron, Pomeroy.  
Blower, J. G., Glouster.  
Bondy, E. R., Cleveland.  
Bown, S. J., Richwood.  
Bubbs, J. L., Cleveland.  
Burson, A. L., Irwin.  
Carpenter, W. B., Lewis Center.  
Case, W. L., Mt. Gilead.  
Cowden, D. L., Kimbalton.  
Cross, J. A., Youngstown.  
Diekmeyer, H. P., Cincinnati.  
Edmiston, W. E., Columbus.  
Fisher, W. H., Toledo.  
Floyd, M. B., Dayton.  
Frye, A. E., Youngstown.  
Gaston, R. E., Cincinnati.  
Gill, W. C., Cleveland.  
Goodwin, E. M., Cleveland.  
Green, C. S., Fostoria.  
Herrick, W. H., Cleveland.  
Hochwalt, G. A., Dayton.  
Holmes, J. E., Columbus.  
Holston, J. D., Massillon.  
Humphrey, C. M., Akron.  
Hunter, A. C., West Alexander.  
Jenkins, D. J., Broadway.  
Jewett, G. E., Elmwood.  
Leeper, W. C., McConnelsville.  
Marshall, R. J., East Liverpool.  
Palmer, C. D., Cincinnati.  
Price, H. H., Cambridge.  
Rankin, I. C., Akron.  
Revercraft, A. J., Fostoria.  
Robinson, G. E., Ostrander.  
Simpson, D. G., Warren.  
Smith, W. A., Cardington.  
Stuntz, Harry, Sabina.  
Tedesche, L. G., Cincinnati.  
Tressel, J. H., Alliance.  
Virtne, F. M., Sulphur Springs.  
Wagner, L. H., Cleveland.  
Weaver, W. B., Miamisburg.  
Willey, A. J., Delaware.  
Williams, R. E., Alton.  
Woltmann, Harro, Mansfield.

## OKLAHOMA.

Beltman, C. E., Skedee.  
Hayes, R. B., Gypsum.  
Langston, W. H., Gypsum.  
Shankle, H. D., Morris.  
Walker, Delos, Oklahoma City.  
White, F. A., Madill.

## PENNSYLVANIA.

Batt, W. R., Harrisburg.  
Bloss, R. H., Bethlehem.  
Cornelius, Thorne, Pottfield.  
Dean, H. G., New Castle.  
Heiser, W. H., Nanty Glo.  
Hill, A. H., Shamokin.  
McClough, W. J. L., Wash-  
ington.  
Morrow, W. G., West Hickory.  
Nofer, G. H., Philadelphia.  
Trach, D. C., Kresgeville.

## PHILIPPINE ISLANDS.

Goff, A. P., Manila.

## SOUTH CAROLINA.

Hart, W. L., Yorkville.

## SOUTH DAKOTA.

Bright, H. F., White Lake.

## TENNESSEE.

Dancy, A. B., Jackson.  
Dulaney, R. W., Knoxville.  
McKee, W. C., Trenton.  
Pistole, W. H., Memphis.  
Whitelaw, W. H., Brownsville.

## TEXAS.

Osborne, W. C., Monaville.  
Paxton, J. H., Elkhart.

## UTAH.

Budge, D. C., Logan.  
Hampton, R. R., Salt Lake City.

## VIRGINIA.

Strother, W. A., Bedford City.

## WEST VIRGINIA.

Jarrell, K. M., Clear Creek.  
Johnson, G. W., Terry.  
Mayer, Joseph, Winfield.  
Quimby, A. J., Wheeling.

## WISCONSIN.

Chorlog, J. K., Madison.  
Farnsworth, A. L., Baraboo.  
Hicks, L. N., Burlington.  
Palm, C. A., Kenosha.  
Poppe, H. B., Wautoma.

## WYOMING.

Lane, Frances M., Cody.

## Colleges Not Recognized in North Dakota.

By a resolution of the North Dakota State Board of Medical Examiners, adopted July 16, 1908, a medical college which is rated below 50 per cent. by the Council on Medical Education of the American Medical Association will not be recognized and its graduates will not be admitted to examination after that date.

## Arizona April Report.

Dr. Ancil Martin, secretary of the Arizona Board of Medical Examiners, reports the written examination held at Phoenix, April 6-7, 1908. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 6, all of whom passed. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Hahnemann Med. Coll., Chicago.....	(1895)		82
Medical Coll. of Indiana.....	(1900)		80
Sioux City Coll. of Med.....	(1897)		79
American Med. Coll. of St. Louis.....	(1893)		77
Jefferson Med. Coll.....	(1904)		75.8
Medical Coll. of Virginia.....	(1904)		81

## Illinois May Report.

Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at East St. Louis, May 12-14, 1908. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 167, of whom 136 passed and 29 failed. Two candidates took an incomplete examination. The following colleges were represented:

College.	PASSED.	Year Grad.	Total No. Examined.
Chicago Coll. of Med. and Surg.....	(1908)		9
Northwestern Univ. Med. School.....	(1908)		2
Barnes Med. Coll.....	(1908)		26
Homeopathic Med. Coll. of Missouri.....	(1908)		3
St. Louis University.....	(1907) (42, 1908)		43
Washington University, St. Louis.....	(1905) (1906)		
(2, 1907) (38, 1908).....			42
St. Louis Coll. of P. and S.....	(1905) (10, 1908)		11

## FAILED.

Howard University, Washington.....	(1901)	1
College of P. and S., Chicago.....	(1904)	1
Kentucky University.....	(1902)	1
Barnes Med. Coll.....	(1906) (5, 1908)	6
Homeopathic Med. Coll. of Missouri.....	(1908)	4
St. Louis University.....	(1908)	1
Washington University, St. Louis....	(1906) (4, 1908)	5
St. Louis College of P. and S.....	(1908)	10

## Ohio June Report.

Dr. George H. Matson, secretary of the Ohio State Medical Board, reports the written examination held at Columbus, June 8-10, 1908. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 140, of whom 150 passed and 6 failed. Five reciprocal licenses were granted at a meeting held July 7, 1908. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Rush Med. Coll.....	(1901)		88
College of P. and S., Chicago.....	(1908)	84, 89	
University of Maryland.....	(1902) 84; (1906)		79
Baltimore Med. Coll.....	(1907)		82
Johns Hopkins Medical School.....	(1906)	85, 88	
Harvard Medical School (1900) 82; (1906) 92; (1908)			87
University of Michigan.....	(1908) 86, 86, 87, 87		87
University of Michigan, Homeo. Dept.....	(1908)	79, 84	
Michigan Coll. of Med. and Surg.....	(1901)		75
Medical Coll. of Ohio (1908) 76, 79, 81, 81, 81, 82, 82, 82, 83, 84, 84, 85, 86, 86, 87, 87, 87, 89, 89, 89, 90, 92.			
Miami Med. Coll (1904) 84; (1908) 77, 79, 79, 82, 84, 84, 87, 88, 90, 90, 91, 92.			
Eclectic Medical Institute, Cincinnati.....	(1908)	81, 88	
Toledo Med. Coll.....	(1908)	87, 88	
Cleveland Coll. of P. and S. (1907) 82; (1908) 75, 79, 82, 83, 84, 84, 85, 85, 85, 86, 87, 87, 89, 91.			
Cleveland Homeo. Med. Coll.....	(1908)	82, 85, 86, 91, 93, 93	
Western Reserve University (1908) 81, 83, 83, 83, 85, 86, 86, 87, 87, 87, 87, 87, 87, 87, 87, 88, 88, 88, 88, 88, 89, 90, 92, 92.			
Starling Med. Coll.....	(1906)		75
Starling-Ohio Med. Coll. (1908) 75, 77, 79, 79, 79, 80, 81, 82, 82, 82, 82, 83, 83, 84, 84, 85, 85, 85, 86, 86, 86, 87, 88, 89, 90, 90, 90.			
Jefferson Med. Coll.....	(1907)	83, 84, 84, 88, 90	
University of Pennsylvania.....	(1907)	83; (1908) 86, 87, 91	
University of Lausanne, Switzerland.....	(1902)		89
University of Budapest, Hungary.....	(1886)		82

## Medical Education and State Boards of Registration

### Meeting of the National Confederation of State Medical Examining and Licensing Boards.

The eighteenth annual meeting of the National Confederation of State Medical Examining and Licensing Boards was held in Chicago, June 1, 1908, ten states being represented. Among other items of business transacted several committees were appointed:

1. A committee on standing of medical colleges, consisting of Dr. George W. Webster, Chicago, chairman; Dr. Henry Beates, Jr., Philadelphia; Dr. James A. Duncan, Toledo, Ohio; Dr. J. W. Bennett, Long Branch, N. J., and Dr. C. A. Tuttle, New Haven, Conn.

2. A legislative committee, consisting of Dr. Edwin B. Harvey, Boston, chairman; Dr. N. R. Coleman, Columbus, Ohio, and Dr. James A. Egan, Springfield, Ill.

3. A committee on examination, consisting of Dr. T. J. Happel, Trenton, Tenn., chairman; Dr. A. Ravogli, Cincinnati, Ohio, and Dr. J. C. Guernsey, Philadelphia.

The selection of officers for the ensuing year resulted in the choice of Dr. T. J. Happel of Tennessee for president; Dr. A. Ravogli of Ohio and Dr. J. C. Guernsey of Pennsylvania, vice-presidents, and Dr. Murray Galt Motter of the District of Columbia, for secretary and treasurer.

The next meeting will be held at Atlantic City, N. J., June 4, 1909.

### Connecticut Homeopathic July Report.

Dr. Edwin C. M. Hall, secretary of the Connecticut Homeopathic Medical Board, reports the written examination held at New Haven, July 14-15, 1908. Only one candidate appeared for license, a graduate of Boston University, 1906, who passed with a percentage of 91.



## FAILED.

College of P. and S., Chicago.....	(1906)	71
Miami Med. Coll.....	(1908)	71
Eclectic Med. Inst., Cincinnati.....	(1906) 68: (1908)	72. 72
Meharry Med. Coll.....	(1908)	65

## LICENSED THROUGH RECIPROCITY.

College.	Year grad.	Reciprocity with.
Hospital Coll. of Med., Louisville.....	(1905)	Nebraska
Detroit Coll. of Med.....	(1907)	Michigan
Long Island Coll. Hosp.....	(1907)	New York
Eclectic Med. Inst., Cincinnati.....	(1893)	Indiana
Western University, Toronto, Canada.....	(1904)	Illinois

## Mississippi May Report.

Dr. S. H. McLean, secretary of the Mississippi State Board of Health, reports the written examination held at Jackson, May 12-13, 1908. The number of subjects examined in was 8; total number of questions asked, 64; percentage required to pass, 75. The total number of candidates examined was 238, of whom 107 passed, including 71 non-graduates, and 131 failed, including 74 non-graduates. The following colleges were represented:

College.	PASSED.	Year. Grad.	Total No. Examined.
Medical Coll. of Alabama.....	(1908)		1
Louisville Med. Coll.....	(1894)		1
Tulane University of Louisiana (1901) (1907) (2, 1908)			4
Mississippi Med. Coll.....	(1908)		2
College of P. and S., New York.....	(1907)		1
Leonard School of Medicine.....	(1908)		3
University of Nashville.....	(1901) (3, 1907) (4, 1908)		8
Memphis Hosp. Med. Coll.....	(1903) (10, 1908)		11
College of P. and S., Memphis.....	(1908)		2
Chattanooga Med. Coll.....	(1908)		1
University of the South.....	(1907)		2

## FAILED.

Denver and Gross Coll. of Med.....	(1907)	1
Louisville Med. Coll.....	(1904) (1907)	2
Flint Med. Coll.....	(1905) (3, 1908)	4
Tulane University of Louisiana.....	(1883) (1907)	2
Mississippi Med. Coll.....	(3, 1907) (7, 1908)	10
St. Louis Coll. of P. and S.....	(1908)	2
Leonard School of Medicine.....	(1908)	1
College of P. and S., Memphis.....	(1907)	1
Memphis Hosp. Med. Coll. (1900) (2, 1903) (1905)		18
Meharry Med. Coll.....	(5, 1907) (4, 1908)	9
University of Nashville (1902) (1903) (1906) (1907)		5
(1908)		1
Chattanooga Med. Coll.....	(1908)	1
University of the South.....	(1905)	1

## Marriages

A. L. OFFIELD, M.D., San Jose, Cal., to Miss Irene Doyle, of San Francisco, July 16.

GEORGE W. WEST, M.D., to Mrs. Lula G. Bunge, both of Eufaula, Okla., July 14.

CHARLES H. MORROW, M.D., Gloucester, Mass., to Miss M. Luella Tabor, of Boston, July 22.

WILLIAM M. C. BRYAN, M.D., St. Louis, to Miss Helen Louise Kimlin, of Quincy, Ill., June 24.

FREDERICK LYONS APPEL, M.D., to Miss Elizabeth Jane Traf-ton, both of Muscatine, Iowa, June 1.

GEORGE WILLIAM CLARKE, M.D., to Miss Mabel Whitford Aylesworth, both of Roseville, Ill., July 18.

IRVING L. NETTLETON, M.D., Bridgeport, Conn., to Miss Ida May Young, of Brantford, Ontario, June 17.

WILLIAM THOMAS POWER, M.D., New York, N. Y., to Miss Esther Redmond, at London, England, July 18.

BERNHART L. RIESE, M.D., Chicago, Ill., to Miss Clara Freund, of Vienna, Austria, at Chicago, August 6.

ALBERT FRANKILTON, M.D., Milwaukee, Wis., to Miss Grace Lansing Hamilton, both of Milwaukee, Wis., July 8.

WILLIAM D. BELL, M.D., P. H. and M.-H. Service, Washington, D. C., to Miss Mae McKinnon, of Cambridge, Mass., at Boston, June 11.

FRANZ SOLIER, M.D., Bryan, Ohio, to Miss Louise Harris, of Syracuse, N. Y., at Long Island College Hospital, Brooklyn, N. Y., March 19.

## Deaths

Horace Young Evans, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1858; surgeon of the Philadelphia City Troop during the Civil War; at one time a member of the board of managers of the University Hospital; president of the Welsh Society and the Philadelphia County Medical Society; fellow of the College of Physicians; died at Breakwater, Maine, where he had gone to recover from heat exhaustion, July 23, after an illness of four days, aged 63.

Nathaniel Jacob Beachley, M.D. Eclectic Medical Institute, Cincinnati, 1854; Indiana Medical College, Indianapolis, 1877; for many years a member of the Nebraska State Medical Association; assistant surgeon of the Twenty-second Indiana Volunteer Infantry and surgeon of the Sixty-ninth Indiana Volunteer Infantry during the Civil War; died in Lincoln, Neb., July 10, from senile dementia, after an illness of three years, aged 76.

Claiborne Watkins, M.D. Jefferson Medical College, Philadelphia, 1867; a member of the American Medical Association; a Confederate veteran; one of the founders of the Medical Department of the University of Arkansas, Little Rock, and a number of years a member of its faculty and later emeritus professor; died at his home in Little Rock, July 20, from paralysis, after an invalidism of five years, aged 64.

Edward L. Ballou, M.D. University of Buffalo (N. Y.) Medical Department, 1878; a member of the Medical Society of the State of New York; for twenty years health officer of West Seneca; one of the founders of the Gardenville High School, and one time president of the town school board; died at his home in Gardenville, July 25, from heart disease, after a short illness, aged 54.

Jerome H. Crouse, M.D. Rush Medical College, Chicago, 1867; Jefferson Medical College, Philadelphia, 1868; until recently a member of the Indiana State Medical Association; vice-president of the Indiana Rush Medical College Alumni Association; died at his home in Dayton, Ind., June 16, from carcinoma of the stomach, after an illness of six months, aged 65.

George W. Cook, M.D. New York University Medical College, New York City, 1853; a member of the Medical Society of the State of New York and New York Academy of Medicine; for many years a practitioner of Syracuse; died at the Hospital of the Good Shepherd in that city, June 22, after an illness of two years, aged 80.

Bolling A. Pope, M.D. College of Physicians and Surgeons in the City of New York, 1890; a member of the American Medical Association, and one of the most prominent ophthalmologists of New Orleans; died at his home in that city, July 19, from cirrhosis of the liver, after a short illness, aged 42.

William E. Best, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1860; formerly of North Branch, Mich.; surgeon in the volunteer service during the Civil War; died suddenly in his apartments in Cottage Grove, Ore., July 21, from cerebral hemorrhage, aged 68.

William T. Williamson, M.D. American Medical College (Eclectic), St. Louis, 1879; a member of the Indiana State Medical Association; died at his home in Fort Branch, Ind., July 22, from pyemia, following a carbuncle of the neck, after an illness of about three weeks, aged 64.

George E. West, M.D. Long Island College Hospital, Brooklyn, 1885; of Rock Island, Ill.; chief of the record department and actuary of the Modern Woodmen of America; died in St. Anthony's Hospital, Rock Island, Ill., July 21, a week after an operation for appendicitis, aged 46.

John McEwen Wetmore, M.D. College of Physicians and Surgeons in the City of New York, 1855; consulting surgeon to the Laura Franklin Free Hospital for Children, New York City; died suddenly from heart disease, at his home in New York City, July 21, aged 76.

John Walker Wilson, M.D. Medical Department of the Tulane University of Louisiana, New Orleans, 1905; a member of the American Medical Association; died at his home in Glory, Texas, February 22, from pneumonia, after an illness of three weeks, aged 34.

Guy L. Dodge, M.D. John A. Creighton Medical College, Omaha, 1902; of Lost Cabin, Wyo.; was instantly killed about fourteen miles north of that place, June 28, by the accidental discharge of his gun, while on a hunting trip, aged 28.

George Albert Ordway, M.D. Hahnemann Medical College and Hospital of Chicago, 1893; Dartmouth Medical School, Hanover, N. H., 1895; of Cochituate, Mass.; a Civil War



veteran; died in the South Framingham (Mass.) Hospital, July 22, aged 64.

**Morgan Reese Banks, M.D.** Western Reserve University Medical College, Cleveland, Ohio, 1848; said to have been the oldest practitioner of Pennsylvania; died at his home in Livermore, June 19, from senility, after an illness of two months, aged 95.

**David W. Mathews, M.D.** Rush Medical College, Chicago, 1884; formerly of Savanna, Ill.; surgeon of the Colorado Fuel and Iron Company at Walsenburg, Colo.; died at the Minnequa Hospital, Pueblo, Colo., July 22, from typhoid fever, aged 47.

**Albert Heilbrunn, M.D.** University of Berlin, Germany, 1857; a specialist on diseases of the nervous system of Philadelphia; died at his cottage in Atlantic City, N. J., July 17, from cerebral hemorrhage, after an illness of six days, aged 76.

**Frank Savoy, Jr., M.D.** Medical Department of the Tulane University of Louisiana, New Orleans, 1893; a member of the Louisiana State Medical Society; died at his home near Church Point, La., July 18, after a prolonged illness, aged 38.

**Jennie C. E. Hayner, M.D.** Northwestern University Woman's Medical School, Chicago, 1880; a member of the Illinois State Medical Society, and for many years a practitioner of Chicago; died at her home in Chicago, July 25.

**Edward Vincent Brown, M.D.** New York University Medical College, New York City, 1863; a homeopathic practitioner of North Tarrytown, N. Y.; died at the home of his son in Portland, Ore., July 26, from gastritis, aged 71.

**Augustus Wright, M.D.** Kentucky School of Medicine, Louisville, 1890; of Elkin, Ky.; one of the oldest practitioners of Clark County; died at Tate Springs, Tenn., July 24, from pneumonia, after a short illness, aged 74.

**William G. Cole, M.D.** Hahnemann Medical College and Hospital of Chicago, 1891; associate professor of materia medica in Hahnemann Medical College, San Francisco; died recently at his home in Guerneville, Cal., aged 41.

**Carleton P. Flint, M.D.** Medical School of Harvard University, Boston, 1896; of New York City; died in Seabright, N. J., July 25, from injuries received by being run down by an automobile, the night before.

**William Westford Grubbs, M.D.** Louisville (Ky.) Medical College, 1890; a member of the Medical Association of the State of Alabama, and formerly mayor of Enterprise; died at his home in that place July 19.

**Charles Winter Trader, M.D.** University of Maryland School of Medicine, Baltimore, 1878; formerly of Somerset County, Maryland, and Hastings, Okla.; died at Cuervo, N. M., July 15, from heart disease, aged 51.

**Frederick East, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1889; a member of the Medical Society of the State of New York; died at his home in Rochester, July 22, aged 54.

**Augustus Herman Wurtele, M.D.** Jefferson Medical College, Philadelphia, 1893; an ophthalmologist of Philadelphia; died suddenly at his home in that city, July 21, from cerebral hemorrhage, aged 38.

**Walter C. Baker, M.D.** Hahnemann Medical College and Hospital, Philadelphia, 1904; of Philadelphia; died in St. Luke's Hospital in that city, July 27, from cerebral hemorrhage, after a long illness.

**Andrew O'Malley, M.D.** College of Physicians and Surgeons in the City of New York, 1891; died at his home in San Antonio, Texas, from kidney disease, July 20, after a long illness, aged 43.

**James Rigg, M.D.** Drake University College of Medicine, Des Moines, Iowa, 1888; first postmaster of Oacoma, S. D., and formerly a practitioner of Plankinton, S. D.; died recently in Chicago.

**Martin K. Lott, M.D.** University of Louisville (Ky.) Medical Department, 1875; died recently at his home in Cameron, Texas, and was buried at his old home in Belton, Texas, July 21.

**Joseph M. Hicks.** (Years of Practice, Ind.); for sixty-eight years an eclectic practitioner of the state; died at his home in Indianapolis, July 21, from influenza and senile debility, aged 81.

**Frank H. Marey, M.D.** Ohio Medical College, Medical Department University of Cincinnati, 1892; formerly of Bearden, Tenn.; died at his home in Albuquerque, N. M., July 22, aged 38.

**David M. Shoemaker, M.D.** Eclectic Medical Institute, Cincinnati, 1881; formerly of Brookville and Muncie, Ind.; died

suddenly at the home of his daughter near Chicago, July 19, aged 63.

**Eugene L. F. E. Grauer, M.D.** Homeopathic Medical College of Missouri, St. Louis, 1907; resident physician at the St. Louis Children's Hospital; died in that city, July 24, aged 23.

**Paul S. Redfield, M.D.** New York University Medical College, New York City, 1866; died at his home in Providence, R. I., July 19, from nephritis, after a long illness, aged 70.

**James Osborn Furlow, M.D.** University of Louisville (Ky.) Medical Department, 1875; of Montgomery, Texas; died in Shelbyville, Texas, from pneumonia, February 12, aged 54.

**J. Jephtha Edwards, M.D.** Physio-Medical College of Indiana, Indianapolis, 1897; formerly of Wailesboro, Ind.; died at his home in Mooney, Jackson County, Ind., July 19, aged 40.

**Harvey C. Chapman.** (Years of practice, Ill.); a surgeon during the Mexican War; formerly of Montgomery County, Illinois; died at his home in Trinidad, Colo., July 6.

**P. B. Chandler, M.D.** Yale Medical School, New Haven, Conn., 1908; of Marengo, Iowa; was killed in a collision between two cars at Allen Junction, Minn., July 20.

**Gibson W. Bower, M.D.** Jefferson Medical College, Philadelphia, 1867; died at his home in Myerstown, Pa., July 21, from dropsy, after an illness of two months, aged 63.

**James Paul, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1852; died at his home in Chestnut Hill, Philadelphia, July 24, after a long illness.

**Hiram P. Merville, M.D.** University of Buffalo (N. Y.) Medical Department, 1867; a veteran of the Civil War; died at his home in Milwaukee, July 27, aged 68.

**C. A. Tobie, M.D.** University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1860; died at his home in Colesburg, Iowa, March 21, aged 75.

**Wiley C. Smith, M.D.** University of Nashville, Medical Department, 1856; of Elgin, Texas; died at the home of his son in South Elgin, July 20, aged 77.

**Robert E. Bass, M.D.** Jefferson Medical College, Philadelphia, 1855; died at his home, near Rice Depot, Va., July 20, aged 76.

**John Austin Thompson, M.D.** Rush Medical College, Chicago, 1870; died at his home in Letts, Iowa, March 24, aged 70.

---

## Medical Economics

---

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

---

IN FAVOR OF A GREAT NATIONAL DEPARTMENT OF PUBLIC HEALTH.

By J. N. McCormack, M.D.  
BOWLING GREEN, KY.

Important actions and results in medical affairs, almost uniformly favorable, have followed each other with such rapid succession since the reorganization movement began that it is difficult for most of us to realize that it has all occupied less than eight years of time. The phenomenal territorial extension, and the growth, in both membership and power, of the county societies, the insistent and practically successful demand for pure drugs and clean medical journals, the much needed and far-reaching reform in medical education, licensure and reciprocity, and the defeat of the multi-millionaire insurance combine, have in some measure indicated what may reasonably be hoped for when the profession becomes as thoroughly organized and united, and as wisely led, and the public becomes as appreciative, as will one day be possible. Other more recent happenings give no less ground for encouragement.

At the recent Chicago session of the Association, through resolutions in which the issue was squarely raised, the House of Delegates was called on to decide officially and finally whether it would favor such an extension of the powers and duties of the United States Public Health and Marine-Hospital Service as would gradually develop it into a department of public health, in addition to the other important duties for which it was created, or would adhere to its original and often expressed determination, in which it is joined by the American



Public Health Association, the National Confederation of State Boards of Health and the Committee of One Hundred of the American Association for the Advancement of Science, to urge that a great new national department of public health should be established at Washington on such broad lines as would embrace or utilize the Marine-Hospital Service, the pure food and census bureaus, the Bureau of Animal Industry and such other scientific laboratories and activities operating under other heads as would properly belong to such a department, and create such others for research work and collective investigation as would at once place our government on an equal footing with the other great nations of the earth in this important field of labor.

After full hearing before the Reference Committee on Legislation and Political Action, and after conceding to the Public Health and Marine-Hospital Service full credit for all it had done in combating yellow fever in the south, plague in California and its efficient inspection of immigrants, resolutions asking Congress to establish such a new department as is above indicated were unanimously reported by the committee and adopted by the House of Delegates without a dissenting voice. In furtherance of this, "the Committee on Legislation was requested to arrange for such conferences with the Committee of One Hundred, the surgeons-general of the Army, Navy and the Public Health and Marine-Hospital Service, the bureaus above named, and others, or their representatives, jointly or severally, that may be deemed best, with a view to attempting to secure such a coordination and cooperation of all these forces as will further the creation of such a department."

A resolution was also adopted asking "the different political parties to make formal declaration in their respective platforms soon to be submitted to the people" as to what their policies would be in regard to such a department. Although the time for action was short, every possible influence was at once brought to bear on the delegates of the conventions of both of the great parties. My information is that Mr. Taft was entirely favorable, but the plank in the Republican platform was far from satisfactory, although even the recognition of the work was a substantial gain. Mr. Bryan's endorsement was cordial, the correspondence with him, elaborating the reasons for the request, was in the hands of every delegate before the convention assembled, many leading members of the platform committee took an active interest in the matter, and the plank was inserted almost exactly as I wrote it, with the preamble omitted.

A special resolution was also adopted by the House of Delegates by which I was "directed to represent the Committee on Medical Legislation at its request during the second session of the Sixtieth Congress." This will be worth while only on condition that county societies everywhere can be induced to bring their influence to bear at once on the candidates for Congress of both political parties in every district. In a large per cent. of these districts, as is true of nearly every one of them in Kentucky, the vote is sufficiently close so that a properly organized profession can control the result, and the time has come for this influence to be exercised. It will be the more powerful because used in direct conflict with every selfish interest we might have. No one is fit to represent an intelligent constituency in Congress, or to hold any other public office, who has not sense enough to understand the importance of what we are trying to do, and that the health and lives of women and children are at least as important as that of hogs and sheep, and we should be far more interested in this than any mere party question, or the success of any individual candidate. The average politician has a profound respect for the organized vocations which can control votes, in which ours should be second to no other, and we owe it as a sacred duty to humanity, quietly and with the dignity befitting such a calling and work, to exercise this power to its full extent.

In this connection there is another matter which it is important that county societies should understand, and about which candidates for Congress should be fully advised. A resolution is pending before Congress authorizing the President to investigate and readjust the bureaus in all of the departments, with the view to more coherent and effective service. It is

thought by some that with a proper grouping and classification of all of the existing scientific bureaus making investigations and performing duties having a kinship to what we have in mind, such a department or subdepartments as we desire might be created with little if any additional legislation or expense.

Arrangements are being made for the conference of heads of departments and bureaus indicated above, and the result of this will be given to the profession before the meeting of Congress. In the meantime it is urged that each county society in the United States hold a meeting as early as practicable and appoint active but judicious committees, one for each of the great political parties, to secure an expression of opinion from each of the candidates which may be read to the society in advance of the election, and that a copy of such resolution and the names and addresses of the chairman of each committee and of the candidates for Congress be forwarded to me at Bowling Green, Ky. I will know what can be accomplished at Washington just as soon as I can learn the interest county societies are taking in this work.

#### POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.  
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

##### Twelfth Month.

##### DISEASES OF THE EYE.

##### First Weekly Meeting.

Anatomy of Eye and Adjacent Structures.  
Physiology of Vision.  
Diseases of Eyelid and Lachrymal Apparatus.

##### Second Weekly Meeting.

Catarrhal, Follicular and Vernal Conjunctivitis.  
Purulent Conjunctivitis (Gonorrheal and Non-Gonorrheal).  
Trachoma, Pterygium.

##### Third Weekly Meeting.

Suppurative Keratitis.  
Non-suppurative Keratitis.  
Diseases of Iris.

##### Fourth Weekly Meeting.

The Eye During and After the Exanthemata.  
The Diagnosis of Cataract.  
The Diagnosis of Glaucoma.  
Foreign Bodies in Eye.

##### Monthly Meeting.

Such Intraocular Diseases as Are Met with in the Treatment of Syphilis, Rheumatism, Nephritis, Tuberculosis and Diseases of the Brain and Spinal Cord.  
Extraocular Lesions, Symptoms and Effects from Eruptive Diseases and Adjacent Skin Affections.  
Diagnosis and Treatment of Iritis.

##### FIRST WEEKLY MEETING.

##### Anatomy of Eye and Adjacent Structures.

The Orbit: Bones in both orbits. Four walls, base, apex, angles. Important foramina.  
Contents of Orbit: Blood vessels, nerves, muscles.  
The Eye: Shape, size, axes. Capsule of Tenon.  
Tunics: (a) Sclerotic and cornea, (b) choroid, iris and ciliary processes, (c) retina.  
Refracting Media: (a) Aqueous humor, (b) vitreous humor, (c) crystalline lens and capsule.  
Appendages: Eyebrows. Eyelids, structure. Conjunctiva, portions, folds, structure. Lachrymal apparatus, gland, canals, sac, nasal duct.

##### Physiology of Vision.

Function of media, iris, sclera, choroid and retina.  
Refraction: Formation of image, inversion. Accommodation.  
Defects in focus, hypermetropia, myopia and astigmatism.  
Effect of age on accommodation, presbyopia.



**Monocular and Binocular Vision:** Automatic action from intensity of stimulus. Fusion and overlapping of images in binocular vision. Projection from binocular vision.

**Field of Vision:** Variation for colors and in diseases.

**Color Perception:** Theories of color perception (color photography). Defective color perception (color blindness).

#### Diseases of Eyelid and Lachrymal Apparatus.

Eyelid.

Blepharitis: Symptoms, course, treatment.

Stye, chalazion.

Ptosis: Causes, treatment.

Blepharospasm.

Trichiasis, distichiasis.

Entropion, ectropion; symptoms and treatment of each.

Lachrymal Apparatus.

Daeryocystitis, catarrhal and suppurative; abscess of lachrymal sac.

Stricture of nasal duct.

#### SECOND WEEKLY MEETING.

#### Diseases of Conjunctiva.

Conjunctivitis.

Catarrhal.—Acute: Causes, association with exanthemata and other diseases. Treatment.

Chronic: Etiology, symptoms, treatment.

Follicular.—Granular: Incidence, diagnosis, differentiation from trachoma.

Vernal: Etiology, symptoms.

Purulent Gonorrheal Ophthalmia.

In the Adult: Symptoms, prophylaxis, treatment.

Ophthalmia Neonatorum: Prophylaxis, diagnosis, treatment.

Non-gonorrheal Ophthalmia: Bacteriology.

Phlyctenular: Symptoms, diagnosis, treatment.

Trachoma. Pterygium.

Trachoma: Etiology, forms (a) papillary, (b) granular, (c) mixed, diagnosis, treatment.

Pterygium: Pathology, course, treatment.

## Society Proceedings

#### COMING MEETINGS.

American Public Health Association, Winnipeg, Can., Aug. 25-28.

American Acad. of Ophthal. and Oto-Laryng., Cleveland, Aug. 27-29.

Wyoming State Medical Society, Sheridan, Aug. 28.

New Mexico Medical Society, Albuquerque, Sept. 2-3.

Washington State Medical Association, Walla Walla, Sept. 2-4.

Medical Society of the Missouri Valley, Council Bluffs, Sept. 3-4.

Colorado State Medical Society, Denver, Sept. 8-10.

Med. Soc. of the State of Pennsylvania, Cambridge Spgs., Sept. 14-17.

#### WISCONSIN STATE MEDICAL SOCIETY.

*Sixty-second Annual Meeting, held at Milwaukee.*

*June 24-26, 1908.*

The President, DR. W. E. GROUND, Superior, in the Chair.

#### Address of Welcome.

The address of welcome was delivered by Hon. Clinton G. Price, assistant city attorney of Milwaukee, representing the mayor. Dr. W. E. Ground, president, responded.

#### The Ideal in Medicine.

DR. WILLIAM E. GROUND, Superior, in his presidential address, pointed out that the aim of the present practitioner was to prevent disease by teaching his patients proper modes of living rather than cure of disease after it was acquired.

#### Etiology, Pathology and Treatment of Acute Chorea.

DR. G. H. FELLMAN, Milwaukee, referred to the evidence in support of the rheumatic theory and stated that it had become so strong that the majority of writers now claimed that chorea was an infectious disease of rheumatic origin. In treatment he recommended rest in bed, proper hygienic and hydrotherapeutic measures, and, in severe cases, a trained nurse. He advised Fowler's solution, beginning with small doses and increasing it rapidly, and watching the patient

closely for evidence of arsenical poisoning; also aspirin, belladonna and bromids for sedative effects, and strychnin for mental depression.

#### DISCUSSION.

DR. L. BOORSE, Milwaukee, stated that there was no unanimity of opinion as regards the specific nature of the infectious agent in chorea, and noted the fact that children who developed chorea presented evidence of previous physical deterioration and excessive nervous irritability; that the frequent occurrence of chorea in rheumatism precluded accidental coincidence, but that the evidence was insufficient to conclude that rheumatism was the exciting cause in all cases.

DR. A. W. MYERS, Milwaukee, made the point that about 50 per cent. of all chorea patients ultimately presented signs of chronic valvular heart disease. Chorea should be looked on as an infectious process. Drugs were of secondary importance; rest, diet and hygiene, both physical and mental, were of primary importance. The period of rest in severe cases might have to be prolonged many weeks, and in extremely severe cases absolute isolation might be needed. In cases with a definite rheumatic history he advised trying the effect of the salicylates for a few days.

DR. A. J. BURGESS, Milwaukee, stated that in his experience the disease is infectious. He said that drugs are useless, and recommended rest for the heart. He disapproved of salicylates, as tending to irritate the stomach and offset the effect of diet. He noted the fact that dogs in large number have chorea, and recommended the study of the disease in them.

DR. D. W. HARRINGTON, Milwaukee, believed that chorea was a disease of the nervous system; not exactly an infectious disease, but the result of a variety of infections, among which he enumerated rheumatism and various fevers, such as scarlet and puerperal fever. He recommended a diet containing vegetable and fruit acids, to increase the alkalinity of the system, and advised salicylate of sodium in cases in which there was a rheumatic condition, not so much for the salicylic acid as for the sodium that would be carried into the body.

DR. T. J. REDLINGS, Marinette, deprecated the use of the expression "use a careful diet" as not sufficiently definite. A child of a given weight required a given amount of food relatively. It was easy for the physician to familiarize himself with the food value of the different foods, and say specifically the child should have so many ounces of milk, so many ounces of meat, so much sugar, etc. The infant required a larger percentage of protein. All the text-books used the expression "be careful with your diet," and emphasized the fact that the day had passed when physicians were justified in using it; they must state definitely what the infant should have on the basis of its body and weight.

DR. G. H. FELLMAN stated it was just as much proved that chorea was due to rheumatism as that scarlet fever might be due to a certain diplococcus. He endorsed Dr. Redlings' statements as to scientific feeding of infants, but said that individuals vary, and even if fed according to weight could not be nourished by that diet. For that reason the general direction given "be careful of your diet" is more applicable than to state eat this or eat that.

#### After-Care of Obstetrical Cases in Country Practice.

DR. M. V. DEWIRE, Sharon, indicated the unfavorable conditions as compared to city practice: no hospitals; patients careless about calling physicians until about time of labor; analysis of urine made only occasionally; usually no measurement of pelvis; conditions in some places being dirty; nurses few, and in many cases unfit. Hemorrhage was the cause of most concern, and he outlined in some detail the approved measures for its control and the after-treatment of these patients.

#### DISCUSSION.

DR. J. H. SURE, Milwaukee, disapproved of manipulating uterine or promoting contraction immediately after birth, involution being a physiologic process and requiring some time. He thought it best to leave the placenta so long as there was no bleeding; if there was bleeding the placenta had probably separated and was lying free in the uterine cavity, and in such case it was well to express it, but if expressed before



being separated, fragments were liable to be left behind and infection to follow.

DR. G. A. HIPKE, Milwaukee, discussed the treatment of postpartum hemorrhage when the Credé method of placenta expulsion was wrongly used after the placenta had been expelled, making no allowance for the natural tendency of the uterus to relax and contract, and preventing thrombus from forming; and also the fact that the case should remain an obstetrical case until involution of the uterus and its appendages takes place, and they are in their normal position.

DR. M. V. DEWIRE stated, that notwithstanding the objection of Dr. Sure, he had always made it a rule to examine the cervix immediately following birth, and that when laceration was discovered it was repaired immediately following labor. He said that there was no way of determining whether there had been injury except by examination, and that if examination were not made the woman might become an invalid. At any rate, examination should be made within three months.

#### Phases of the Practice of Medicine of To-Day.

DR. WALTER S. LINCOLN, Dodgeville, stated that the practice of medicine had fallen into disrepute some years ago, and that the condition still prevailed to some extent to-day. He cited among the causes the wonderful advances of surgery, following the discovery of antiseptics and asepsis, thus eclipsing the purely medical side; the commercial spirit of the age, the medical nihilism. He also mentioned the attitude of the surgeon toward the physician and the spirit of jealousy in the profession itself. As remedies, he proposed the cultivation of a more tolerant spirit toward each other, particularly between specialist and general practitioner, the utilization of new ideas if there is good in them, and the cultivation of a high professional ideal.

#### DISCUSSION.

DR. J. B. MEARS, Fond du Lac, stated that the disease affecting the practice of medicine was inanition, and that he did not think the profession had sunk so low in the estimation of the world as the paper indicated; that he did not believe it had ever had a better position before the world than now; that the wonderful advancement of surgery had opened up the pathway for young men in that field; that medicine had won as many laurels as surgery; that he had little sympathy with those who are lecturing on the withering blight of the "commercial spirit," and recommended closer association of physicians through county and state societies for mutual benefit.

DR. J. R. BARNETT, Neenah, took a middle ground between the two preceding speakers, claiming the one to be pessimistic and the other optimistic, and that the evolution of medicine had been such that to-day medicine was coming into her own.

#### Exceptions to Rules in Administration of Certain Drugs.

DR. W. G. KEMPER, Manitowoc, asserted that in some cases it was necessary to disregard generally accepted rules in applying drugs. Confining himself to opiates and ergot, he gave illustrations where such drugs were administered apparently in defiance of the generally accepted authorities. He mentioned two cases of epileptic convulsions in children, in which morphin was administered with good results, and also called attention to the use of ergot in confinement cases. He believed that the judicious use of ergot would be of great benefit to mankind, and laid stress on the proper administration of drugs in exceptional cases.

#### DISCUSSION.

DR. J. R. BARNETT, Neenah, said that the sedative dose depends on the degree of severity and the persistence of the convulsive trouble; and that while he thought the treatment of Dr. Kemper as applied was conservative, he also thought it was fortunate that his opportunities had been limited to two cases. He had found ergot disappointing, sometimes causing tonic contractions, and sometimes apparent contractions of the circular fibers instead of the longitudinal fibers.

DR. C. S. SHELDON, Madison, deprecated the use of any cut and dried plan in the use of remedies, maintaining that the physician should adopt the means to the end, and adjust his treatment to the condition as he finds it.

DR. M. L. HOWISON, Menominee, stated that he had used ergot considerably, more especially in early practice, and did not think there was a great deal of danger. He stated that the symptoms preceding hemorrhage will appear in almost every case to warn the physician, without the necessity of keeping the hand over the uterus. He would proceed cautiously in the use of ergot.

#### Administration of Oxygen for Postanesthetic Nausea and Vomiting.

DR. R. P. PEAIRS, Milwaukee, stated that nausea and vomiting occurred more frequently after ether than chloroform, but of a more severe type following chloroform. In 100 cases in which ether was used by the drop method, 64 per cent. of the patients suffered from nausea, vomiting in about the same proportion, but in only 30 per cent. did it occur more than three or four times. The anesthetic itself was the most frequent cause, but the reason for this was not clear. Eighty-four per cent. of women suffered from nausea and vomiting when ether was used. The usual methods of treatment, such as cocaine, morphin, etc., are ineffective. He considered the use of oxygen as most beneficial for the relief of this condition, as it was harmless and easily given.

#### DISCUSSION.

DR. W. T. NICHOLS, Milwaukee, strongly endorsed the use of oxygen for the relief of postanesthetic nausea and vomiting. He advised careful technique in the preparation of the patient and administration of the anesthetic. The patient should be in as normal condition as circumstances will allow, and the system should contain an abundance of water.

DR. A. J. PULS, Milwaukee, recommended the inhalation of pure oxygen gas to prevent nausea and vomiting, though stating that while he had failed in three cases, two being complete and one partial, he endorsed the plan of giving plenty of liquid days before surgical interference.

DR. C. M. ECHOLS, Milwaukee, expressed the opinion that the list of cases was too small to form the basis of anything more than a tentative conclusion.

DR. J. M. BEFFEL, Milwaukee, called attention to two cases, in the first of which the patient had had two anesthetics before, with bad results, and was apprehensive as to a third. The anesthetic was administered by Dr. Peairs, and the result was gratifying; the other case was that of a patient in bad physical condition, in which the anesthetic was nitrous oxid, followed by oxygen with correspondingly good results.

DR. PEAIRS stated that the nitrous oxid and oxygen mixture was the ideal anesthetic, but was objectionable on account of the expense.

#### Carcinoma of the Breast.

DR. C. W. OVIATT, Oshkosh, emphasized the importance of an early diagnosis, followed by surgical intervention, and stated that in at least 50 per cent. of cases in the early stage the disease was curable, while in the late stage it was never curable. In the examination the chest should be entirely exposed, the axilla freely palpated, and auscultation practiced, to determine if the disease was advanced. In the hospital work the neoplasm could be subjected to immediate microscopic examination by the freezing method. Physicians should remember that about 80 per cent. of all neoplasms of the breast were primarily malignant, or were destined to become so; pain was not necessarily present in early stages; a retracted nipple was a late symptom. In cancer of the breast untreated and allowed to take its natural course, a fatal result might be expected within three years. In treatment, the knife offered the only remedy worthy of consideration.

#### DISCUSSION.

DR. J. M. DODD, Ashland, recommended educating the people to have growths removed as soon as discovered.

#### The Physiology of the Digestive System.

DR. WALTER C. CANNON, Boston, Mass., delivered the annual address in medicine. The address was illustrated with stereopticon views, and the address was confined to studies of the mechanical factors in digestion, the method of study employed being mainly the use of the x-ray on animals. The



animals were given food mixed with a small amount of sub-nitrate of bismuth, thereby making it possible to see the movements of the walls of the canal and movements of the food in the stomach and in the small and large intestines with the ray. Dr. Cannon stated in conclusion that the experiments would seem to indicate the necessity of mental tranquillity during digestion, and that in the animals experimented on excitement caused the peristaltic waves to disappear.

#### Routes of Invasion in Tuberculosis.

DR. M. P. RAVENEL, Madison, confined his address to three different routes: heredity, infections through the alimentary tract, contact, such as kissing or soiled hands, the latter playing a small part in the dissemination of the disease. He stated that hereditary tuberculosis was rare in the civilized world, and gave statistics of orphan asylums, where the children are largely the offspring of tuberculous parents, showing that the disease was almost unknown there. He concluded that inhalation was the chief method of contagion in tuberculosis, but not the only cause, and that in children about 25 per cent. of the cases were due to injection rather than inhalation. He recommended the use of milk from tuberculin-tested cows as a preventive, and general legislation throughout the country requiring milk furnished for public consumption to be furnished only from such tested cattle.

#### Early Diagnosis of Tuberculosis.

DR. THOMAS H. HAY, Stevens Point, laid emphasis on the fact that early diagnosis is of supreme importance in this disease. He stated that there were from 85 to 90 per cent. of good results in incipient cases, as compared with 12 per cent. in advanced cases. There were men in the profession who still believed this to be an incurable disease, which is not the case. When the stage of the disease is reached in which sputum examination revealed tubercle bacilli, the case was no longer an incipient one, dependence on the presence of bacilli not being a safe guide. When a patient showed loss of weight and strength, had feeling of indisposition in the afternoon, and possibly night sweats, slight cough, slight expectoration, catarrhal history, loss of appetite, increased pulse and rise in temperature of from three-fourths to one degree in the afternoon, careful and immediate examination is indicated. He gave in detail the usual methods.

#### Rural Tuberculosis.

DR. FRED JOHNSON, North Freedom, stated that too little attention had been paid to the ravages of the white plague in the rural districts. Conditions such as double windows, small stuffy bedrooms, trees and window shades shutting out all light; houses banked up with manure and close proximity of houses to barns, were all conducive to spread of infection. He referred to milk as a fine culture medium, and to the care that should be exercised in its handling, including testing of cattle for tuberculosis.

#### Tuberculosis.

DR. N. L. HOWISON, Menominee, advised national laws prohibiting the marriage of tuberculous persons. The ideal plan for treatment was the sanatorium or private hospital. Patients should be informed at the beginning that they had consumption, and that their recovery depended largely on themselves. He recommended fresh air, sunshine, proper food, exercise, and at least nine hours of sleep. Exercise causing sudden rise of temperature should be discontinued; drugs play a subordinate part; he has found stimulants always beneficial, if given in diluted form. He attributed growth of tuberculosis to methods of living in modern civilization. People should not be afraid to come in contact with tuberculous individuals, but should instruct them along lines by which they may protect themselves and others. The disease should be reached in its incipency through early diagnosis and examinations, with patient stripped to the waist, carefully made by the stethoscope and by percussion and examination of sputum and careful record of temperature. Sputum can be examined free at all times in the State Hygienic Laboratory at Madison, and in addition to the examination, when sputum is sent in, a pamphlet will be returned with a report of the examination, to the physician, which pamphlet can be handed to the pa-

tient, and will outline to the patient the principles of care that he should exercise.

#### Discussion on Tuberculosis.

DR. H. A. DEARHOLT, Madison, raised the point that the doctors should enter politics and get into communication with the various health departments and take prominent part in the crusade against tuberculosis.

DR. C. H. STODDARD, Milwaukee, illustrated by the use of diagrams the method of Kroenig, a method not mentioned in any text-book on physical diagnosis or practice. The method consisted of percussion with the hammer or pleximeter over the apices of the lung, using a dermatographic pencil, and afterward making comparison.

DR. J. M. BEFFEL, Milwaukee, stated that in view of the enormous death rate from tuberculosis, he considered that the efforts of the profession should be directed largely toward its prevention rather than its cure. He gave figures showing the death rate, and stated that from a commercial aspect it was costing the United States \$370,000,000 yearly. Great work had been done in the direction of prevention and cure of this disease in Milwaukee, and it must go on through the state.

DR. RAVENEL stated that he had seen only one case in which liquor was indicated, and thought that liquor in any form was bad in the cure of tuberculosis. He endorsed the practice of stripping the patient to the waist on examination. He did not believe in giving the patient a hopeless diagnosis, as mental therapeutics in this disease was very valuable, and every encouragement should be held out; but the truth should always be told, because rigid discipline is necessary for the cure. He reiterated his belief that milk used for human consumption should be from tuberculin-tested cows.

DR. N. L. HOWISON, Menominee, replying to Dr. Ravenel, stated that there was great variance of opinion regarding the use of stimulants in the treatment of consumption; that he did not use strong stimulation, but had secured good results by the use of mild stimulants.

(To be continued.)

#### AMERICAN ORTHOPEDIC ASSOCIATION.

*Twenty-second Annual Meeting, held in Chicago, June 4-6, 1908.*

(Continued from page 431.)

#### Paralysis of the Shoulder, Especially Its Mechanical Treatment.

DR. DAVID SILVER, Pittsburg, first considered the relative frequency of paralysis of the upper extremity, and the reason for the regression of the paralysis in the arm and for the tendency to its more frequent persistence in the deltoid. He reiterated the principle of relaxation in the treatment of paralyzed muscles, and described its application to the shoulder by means of a simple and comfortable appliance. Cases treated by this method were reported, and photographs exhibited.

#### Presentation of Apparatus.

DR. PHIL HOFFMAN exhibited a modified osteoclast; and DR. COMPTON RIELY, a new osteoclast, a safety paralytic knee-brace lock, a combination Club Foot shoe and brace, and a Club Foot brace. MR. LITTLE exhibited drawings of his osteoclast, which he had not brought with him.

#### DISCUSSION.

DR. J. RIDLON, Chicago, criticised all three osteoclasts and said that he preferred the Gratin.

DR. E. RYERSON, Chicago, said that with the lever osteoclast one is liable to keep on pressing after the leg has been broken and to push the fragment through the skin.

DR. WILSON was pleased with the Little osteoclast, which he considered the simplest, most efficient and easiest to manage of any he knows of. He would not use it for adult bones, however.

DR. HOFFMAN said that he has used his instrument for five years. He said that the bearings of his osteoclast are as strong as those of the Gratin, and that it will break bones as easily. It is the other parts that are lighter, thus making



the instrument portable. It is much simpler than the Gratin, and can be taken apart and cleaned. It is also cheaper.

DR. RIELY said that the lever of his osteoclast could be released instantly. While it might be a little trouble to place the leg in the rings, there is no danger of its being caught there.

#### Operative Treatment of Intracapsular Fracture of the Hip-Joint—Operative Treatment for Paralytic Eversion of the Foot.

DR. G. G. DAVIS, Philadelphia, reported three cases in which, by open incision, the edges of an ununited fracture were freshened, and then the limb was put up, in the abducted position, in plaster-of-Paris. The result in both the first two cases was good. The third patient could walk without support on her discharge from the hospital, but subsequently had an attack of rheumatism in the leg operated on, requiring her to use crutches.

#### DISCUSSION.

DR. WILSON said that he reported a case in which a nail had gone further than he intended, and had penetrated the acetabulum, without causing any alarming conditions. He thought that this result must have been the reason for his success in other cases. In the case reported, the patient was so pleased with the result that she refused to have the nail removed. He had not intended the nail to be so long, but had miscalculated, not having allowed for the pushing of the separated fragments together in the process of driving home the nail.

DR. STEWART L. MCCURDY, Pittsburg, said that if the nail is within the capsule, and if the force used has been considerable, the ligamentum teres will be injured and its nutrition destroyed, the nail remaining in the joint as a foreign body. He has removed the nail in three cases in which this had happened and caused great pain. Each patient made a good recovery, and goes around on crutches.

DR. PECKHAM mentioned four cases in which he performed this operation. He wondered whether it would not be a good thing to make the nail intentionally long enough to go into the acetabulum.

DR. WILLARD described a screw invented by one of his assistants. The screw part is made of ivory, and the head of brass. The head is removed, and the ivory subsequently becomes a part of the bone.

DR. DAVIS said that if in Dr. Peckham's cases he had got good union, even though with some shortening, he should be satisfied.

#### Surgery of the Motor Peripheral Nerves.

DR. ALFRED S. TAYLOR, New York, said that the application of surgery to peripheral nerves is based on the power of nerves to regenerate, the power of one nerve to assume vicariously the function of another nerve of the same type, and the persistence of muscle for the regenerated nerve to act on. The time that has elapsed since the onset of paralysis is of variable importance, while the condition of the paralyzed muscles is of prime importance. Accessory factors influencing the results are contractures of muscles and ligaments and undergrowth and deformity of bones, especially at the joint ends. He described the technique in end-to-end suture (nerve-crossing, if necessary), various methods of lateral anastomosis, and bridging and transplantation giving the after treatment and results of each.

#### DISCUSSION.

DR. E. RYERSON, Chicago, does not think Spitzzy's method of nerve transplantation rational, and he considers Murphy's procedure dangerous. He does not feel that one is justified in taking off healthy nerves to attach to a diseased one. He suggested the use of the dog's artery, instead of catgut, in the brachial plexus cases.

DR. DAVIS said that the question of injuring the healthy nerve into which the paralyzed nerve is transplanted requires great consideration. In one case of deltoid paralysis he produced a temporary wrist-drop.

DR. YOUNG said that he has united the two largest nerves in the body. The results were only moderately successful.

By using fine instruments he found that he could avoid injuring the nerves.

DR. H. M. SHERMAN, San Francisco, asked whether or not the scar tissue might not grow again, after having been removed. He thinks that it would be wiser to wait to see whether or not power would return in a case of birth palsy than to subject the child to the danger of operation.

DR. STERN described a case in which he operated for the cure of athetoid motion in the hand. The athetoid motion was almost entirely abolished, and the patient has sensation in the arm, but no voluntary motion.

DR. CHARLES E. THOMSON, Scranton, Pa., said that he always employs catgut in his work. He described an operation done for nerve injury in each of five cases. The result in four was very satisfactory. The fifth was a case in which the spinal cord had been completely crushed. Dr. Thomson freed the two nerves on each side and traced them out along the ribs. He then drew them in, passed them down, and united them to the nerves below the injury. Nothing of the ultimate result could be known, because the man died of an abdominal injury received at the same time as the injury to the cord.

DR. SAMUEL C. BALDWIN, Salt Lake City, said that the lack of success in these cases may be due to cicatricial constriction of the nerves, as he found in operating for a second time in one case. He removed the scar tissue and secured a good result.

DR. A. S. TAYLOR, New York, said that before a decision can be reached regarding the relative advantages of lateral implantation and end-to-end anastomosis, some experimental work must have been done. The use of arteries for bridging is good theoretically, but he does not see how it would be possible to keep an adequate supply always on hand. Although the parents have been pleased with the result, there was no physical evidence of improvement in the actual results. One has to expect a certain amount of regrowth of connective tissue. His experience has been that at the end of two or three months there is a spontaneous improvement which continues for about two years and then stops.

#### Operation for Burn Scars. Correction of Deformities Following Colles' Fracture.

DR. STEWART L. MCCURDY, Pittsburg, said that the operation for burn scars consists in extending cicatricial bands across joints by splitting them along the crest from end to end, and cutting to the right at a right angle from the end of the first cut, and to the left at the other end. The flaps thus made are dissected loose from the deep tissues. As the contracted portion is extended, the angles of the flaps drop into the corners left by the end or right-angled incision. In the other paper, he gave suggestions for the early treatment of Colles' fracture. The method of correcting the deformity consists in opening the seat of fracture, separating the bones, reducing, breaking up adhesions, and treating as a recent fracture.

#### DISCUSSION.

DR. H. M. SHERMAN, San Francisco, referred to the difficulty in reducing the deformity after the fragments have become separated and in holding the fragments in proper position afterward. The force required is sufficient to produce sloughing or interfere with the circulation. The posture treatment should be followed, instead of pressure to hold the fragments in place.

DR. PECKHAM mentioned a case in which one-third of the body was severely burned. The surface had completely healed, leaving no scar whatever.

DR. MCCURDY referred to an explosion in which a large number of persons were burned, but in which no keloid had formed. In none of his cases of fracture had there been either sloughing or infection. It is important, he said, to break up the adhesions thoroughly and to make the correction at the time of the operation.

#### Etiology and Treatment of Lateral Curvature.

DR. P. W. NATHAN, New York City, stated that abnormal weight-bearing can not be the cause of spinal deviation. Static conditions are never responsible for organic or structural



lateral curvature. These are caused by a distinct pathologic process, which appears at puberty and, after running a definite course, disappears and leaves the spine deformed. After the disease has run its course, the deformity is incurable, although the posture may be improved.

## DISCUSSION.

DR. MCKENZIE said that he had seen a well-marked case of lateral curvature in an infant.

DR. R. W. LOVETT, Boston, said that other statistics than those used by the author of the paper showed that many cases of lateral curvature appear before the age of 10. He suggested that the condition may follow empyema, the curvature being to the sound side of the chest, and may also follow infantile paralysis of the muscles of one side of the back. He thinks that many curves are due to structural causes.

DR. H. M. SHERMAN, San Francisco, said that he wrote a paper some time ago, stating his belief that scoliosis is due to a condition in the bone, probably rickets. This would give a basis for the structural change, followed by the definite deformity.

DR. P. W. NATHAN said that the statistics quoted merely confirmed his own findings. He admitted that empyema and infantile paralysis do sometimes produce scoliosis. The remainder of the cases that are not plainly due to rickets he considered to be those that come on before adolescence and immediately after puberty.

**Mechanics of the Shoulder Joint from an Anatomic Viewpoint.**

DR. JOEL E. GOLDTHWAIT, Boston, said that erect position of the shoulder is that of greatest stability, there being from 50 to 60 degrees less motion in the rotation of the humerus in the glenoid cavity than when the shoulder droops forward. In the latter position, the lesser tuberosity of the humerus rests against the coracoid process, which is not above the head of the bone, but in front of it, in this droop shoulder position. This leads to irritation at the point of pressure and to inflammation of the coracobrachialis bursa. The restriction of motion at this point that such an inflammation causes, with the change in the angle of the pull of the long head of the biceps tendon, favors and makes easy displacements of the head of the humerus.

## DISCUSSION.

DR. H. P. H. GALLOWAY, Winnipeg, Manitoba, asked whether or not the cases of subdeltoid bursitis are associated with subcoracoid bursitis, and whether it is possible to know whether the trouble is due simply to the coracoid bursa or to the subdeltoid.

DR. STERN asked the treatment in cases of subdeltoid bursitis.

DR. ALBEE referred to two cases of dislocation of the shoulder in young men, on whom he had operated by a modification of Burrell's method, with satisfactory results, neither patient having had any recurrence of the dislocation.

DR. ARNOLD has observed that when he has tried to relieve the shoulder from weight-bearing by putting it in a high sling the patients had more pain than when the arm was hanging down.

DR. J. E. GOLDTHWAIT, replying to a question, said that in writing the paper he had in mind the ordinary spring-back brace. He believes that the ordinary position in which surgeons place the shoulder after traumatic dislocation is not the best position, being equivalent to the forward position of the shoulder. The arm should be tied to the side, rotating it outward at a right angle. In answer to Dr. Galloway, he said that subdeltoid and subcoracoid bursitis are frequently associated, but that often there is not subdeltoid bursitis. The treatment in subdeltoid bursitis, he said, is the same as the treatment of any other bursa. When an operation is performed, if the patient is not naturally erect, the surgeon should insist on the shoulders being thrown back.

**Occurrence of Anterior Poliomyelitis in Massachusetts in 1907.****Investigations by the State Board of Health.**

DR. ROBERT W. LOVETT, Boston, in this paper, gave the result of an inquiry addressed to every physician in Massachusetts, asking for a report of the cases seen in 1907. An anal-

ysis of 238 cases reported, with regard to distribution, time of occurrence, evidence of contagion, and other factors bearing on etiology, showed that the data obtained pointed to separate foci of infection, with transmission to neighboring towns.

**Necessity for Early Orthopedic Treatment of Poliomyelitis.**

DR. WISNER R. TOWNSEND, New York, stated that the majority of cases of poliomyelitis are followed by deformities, practically all of which can be prevented by appropriate treatment. This may occur soon after the attack. Orthopedic treatment is desirable from the beginning. He gave statistics of the deformities occurring within eight months after the epidemic of 1907 in and around New York City.

**Results in the Treatment of Infantile Paralysis.**

DR. E. H. BRADFORD, Boston, presented this paper early in the session, but it was discussed in connection with other papers on poliomyelitis.

**Discussion on Poliomyelitis.**

DR. W. R. TOWNSEND, New York, in relation to cases of recovery mentioned in Dr. Lovett's paper, said that he had not seen one genuine case of complete recovery. The cases in which recovery had been pronounced complete were those in which there had been marked depression, and the paralysis had not been relieved, although this weakness had been improved.

DR. MCKENZIE described an epidemic of the disease in Canada in 1905 or 1906. He saw none of the cases during the attack, but the conditions in those that he saw afterward were similar to the conditions ordinarily following infantile paralysis. In two families three children in each were left badly crippled by the illness. In the treatment he laid a great deal of emphasis on education. He cited at length a case to show the effects of educating the child gradually to use apparatus.

DR. J. RIDLOX, Chicago, said that during the last four years he has seen several cases of anterior poliomyelitis in adults, and that care should be taken not to overlook its symptoms when they appear in older persons.

DR. RIELY laid emphasis on the beneficial effects of rest in these cases and mentioned an illustrative case.

DR. ARNOLD said that the late epidemic of poliomyelitis had been felt in Connecticut also, where the same phenomena were noted as in Dr. Lovett's cases. He said that the disease also occurs epidemically among dogs, cats and chickens. He has seen cases of complete recovery, especially in chickens. These epidemics usually occur in the fall, and wet seasons are prone to bring them about. He suggested the use of these animals for the purpose of studying the pathology of the disease. As a transition between complete rest and putting the child on its feet he suggested exercise on the floor.

DR. H. M. SHERMAN, San Francisco, referred to the use of electricity in such cases, and said that he regarded it merely as a means of irritating the child. He has always succeeded in getting a fair idea of the child's power to use the various muscles by tickling it or by picking its foot with the end of a match, in order to get it to try to use the muscles. He does not see how faradism to the muscles can affect the condition of the spinal cord, which is the seat of the disease. He suggested that pediatricists, when called in to see a sick child, should always test its power to use its muscles, as well as examine its throat.

DR. PECKHAM was in sympathy with Dr. Townsend's plea for orthopedic treatment of these infantile cases, as well as with Dr. Sherman's views regarding electricity. He has given up the use of the latter.

DR. H. M. SHERMAN remarked that a large number of cases of paralytic clubfoot and paralyzed legs of mild type appear with no history of a previous sickness to account for the condition.

DR. MCKENZIE said that faradism will produce no contraction in a muscle that has the reaction of degeneration.

DR. J. E. GOLDTHWAIT denied that it is commonly supposed that the disease is confined to children.

MR. LITTLE said that his experience in England had been also that the commonest history in such cases had been that the child had gone to bed well and awakened paralyzed.



DR. H. L. TAYLOR stated, as the result of his observation, that a careful examination of the voluntary power by a competent orthopedic surgeon would usually prove more useful than a report of the electrical examination by a neurologist. He has received reports of this kind absolutely misleading in the light of the clinical examination. He has found treatment to be absolutely harmful during the attack and for the first two months afterward and to be absolutely useless after that time.

DR. R. LOVETT said that his reason for writing the paper was to call the attention of general practitioners to the inquiry, thus enabling them to recognize these cases better. He thinks that the most sensible treatment would be to empty the bowels rather than to blister the spine. He considers the disease an intestinal infection with an anaërobic bacillus such as might be obtained through milk. He believes that the matter of partial paralysis receives too little attention. A muscle may be either partly or completely paralyzed, or may be simply stretched and disused. Between the stages of activity and paralysis there is a stage of slight weakness. More attention should be paid to voluntary attempts to move muscles and less to massage and electricity.

DR. W. R. TOWNSEND, New York, said that an educational campaign would accomplish more if the orthopedists allowed electricity to be employed, even though they do not believe in it.

#### Drop Phalanx.

DR. WALTER G. STERN said that the essential lesion in this condition is a subcutaneous rupture, or an overstretching of the extensor tendon at or near its insertion into the distal phalanx. The deformity is produced by indirect violence, often slight. The power of active extension of the phalanx is lost, and the phalanx drops down and remains flexed at a right angle. Passively, the finger can be fully extended.

#### DISCUSSION.

DR. H. I. TAYLOR asked how many cases had been treated by splinting and how many operations; also the duration of the deformity.

DR. STERN replied that in three of his eight cases he found it necessary to suture. The remainder were treated by splinting for six weeks. These were recent cases, the patients were operated on within a few weeks after the occurrence of the injury.

#### Typhoid Spine.

DR. GEORGE B. PACKARD, Denver, reported cases, giving the histories, duration, diagnosis and treatment. In some there was evidence of structural change.

#### DISCUSSION.

DR. RUGH said that he had had two cases, one of which was very much of the character of those described by Dr. Packard. The other was one of severe injury following the delirium of typhoid. The progress of the typhoid spine was so much more rapid than that of the tuberculous condition also present that Dr. Rugh believed that the diagnosis had been made out.

DR. J. E. GOLDSWORTHY said that in many cases of typhoid spine there is no inflammatory condition, and posture relieves these cases.

DR. JOHN L. PORTER, Chicago, has found that patients who had left the hospital and returned later usually say that they had had pain in the spine since shortly after getting up and around. He believes that the severity of the condition is in proportion to the amount of inflammatory reaction that takes place. All his patients recovered under the sole treatment of keeping them flat on the back.

#### Painful Feet of Raynaud's Disease.

DRS. H. AUGUSTUS WILSON and CHARLES H. MUSCHLITZ, Philadelphia (paper read by the former), said that the painful feet of Raynaud's disease are of a peculiar character. The pains are symmetrical, worse in cold weather, easily affected by use, and not immediately relieved by rest, and frequently the pain continues for a long time after the discontinuance of the function that has produced it. Characteristic bilateral

gangrenous spots develop. The most trivial operative procedures are followed by non-healing and sloughing. Nails, when they become loose, slough more or less extensively if forcibly removed. Pressure apparatus of any kind is productive of sloughing and gangrenous spots.

## Medicolegal

### Additional List of Alcoholic Medicinal Preparations for the Sale of which Special Tax is Required.

Continuing the list (Circular 713, of Dec. 3, 1907) of alcoholic medicinal preparations for the sale of which the United States government requires a special tax, Internal Revenue Circular No. 727 of July 1, 1908, gives the following additional list of similar preparations, analyzed and passed on since the date of Circular 713:

American Alimentary Elixir.	Glycerin Tonic (Elixir Pepsin).
Aromatic Bitters.	Greiner's Blackberry Cordial.
Bismarck Laxative Bitters.	Health Bitters.
Bismarck's Royal Nerve Tonic.	Herbton.
Blackberry (Karl's Medicine Company).	Herbs Bitters.
Blackberry Cordial (International Extract Company).	Jack Pot Laxative Bitter Tonic.
Blackberry Cordial (Irondequoit Wine Company).	Jarvis Blackberry Brandy.
Blackberry Cordial (Strother Drug Company).	Juniper Kidney Cure.
Blackberry and Ginger Cordial (Standard Chemical Company).	Karlsbader Stomach Bitters.
Black Tonic.	Kola and Celery Bitters.
Bradenberger's Colocynthis.	Kola Wine.
Brown's Utrime Tonic.	Kreuzberger's Stomach Bitters.
Celery Pepsin Bitters.	Lee's Celebrated Stomach Bitters.
Clifford's Peruvian Elixir.	Mikado Wine Tonic.
Crescent Star Jamaica Ginger.	Milburn's Kola and Celery Bitters.
Coca Wine.	Miod Honey Wine.
Colasaya.	Neuropin.
Dr. Brown's Blackberry Cordial.	Newton's Nutritive Elixir.
Dr. Brown's Tonic Bitters.	O'Hare's Bitters.
Dr. Hopkins' Union Stomach Bitters.	Old Dr. Jacques' Stomach Bitters.
Dr. Hoffman's Golden Bitters.	Our Ginger Brandy.
Dr. Sterki's Ohio Bitters.	Ozark Stomach Bitters.
Dubonnet.	Pepsin Stomach Bitters.
Dubonnet Wine.	Peptonic Stomach Bitters.
Elixir of Bitter Wine (Pleasant Tonic Bitters Company).	Pioneer Ginger Bitters.
Elixir Calisaya.	Quinquina Dubonnet.
Eucalyptus Cordial.	Rimsovo Malto-Sove Vino Chino.
Ferro China Baseal.	Severas Stomach Bitters.
Ferro China Bissler.	Sirena Tonic.
Ferro Quina Bitters.	Smart Weed.
Fine Old Bitter Wine.	Steinkonig's Stomach Bitters.
Gastrophon.	St. Raphael Quinquina.
Gentian Bitters.	Strauss Exhilarator.
Genuine Bohemian Malted Bitter Wine Tonic.	Tatra.
	Tolu Rock and Rye.
	True's Magnetic Cordial.
	White's Dyspepsia Remedy.
	Zeman's Medicinal Bitter Wine.

### Privilege Does Not Extend to Mere Observer of Operation.

The Supreme Court of Iowa says that the suit of Woods vs. Incorporated Town of Lisbon was to recover damages alleged to have been caused by a defective sidewalk. It was alleged that the injuries received produced a miscarriage and otherwise permanently injured the plaintiff, who, on account of said injuries, was compelled to go to a hospital for treatment. Certain operations were performed by Dr. C., with the assistance of Dr. Y., and in the presence of still others. The defendant contended that the plaintiff's fall had not produced a miscarriage, and that the operations were made necessary by a diseased condition that existed at the time of the accident. Neither Dr. Y. nor the Drs. C. were called by the plaintiff to show her condition before she was taken to the hospital, or at that time, nor did either of them testify as to the character of the operations performed for the plaintiff. But a Dr. B. witnessed one of the operations, and was called by the defendant to testify relative thereto. On his preliminary examination it appeared that he had never met Dr. Y. before the day of the operation, and that on that day he met him on the street while on his way to the hospital. Dr. B. had been employed by the defendant to be present at the operation if possible, and he in fact went to the hospital when Dr. Y. did. Before reaching the hospital Dr. Y. told Dr. B. what the operation was to be, but neither at that time nor at any other time was there any consultation between them as to the case, or as to the nature of the operation about to be performed. The testimony showed absolutely that the relation of physician and patient did not



exist, that Dr. B. in no way participated in the work, and that he was merely an observer thereof.

The trial court held Dr. B. an incompetent witness under Section 4608 of the Iowa Code. That section provides "no practicing . . . physician, surgeon . . . who obtains such information by reason of his employment, . . . shall be allowed, in giving testimony, to disclose any confidential communication properly intrusted to him in his professional capacity, and necessary and proper to enable him to discharge the functions of his office according to the usual course of practice or discipline." The Supreme Court holds the trial court's ruling erroneous.

The statute, the Supreme Court says, has been construed to include knowledge or information acquired by the physician by observation or examination. And if the relationship of physician and patient had existed at the time in question, the ruling would have been correct. But, as stated above, there was no such relationship, and without it the testimony offered was clearly competent. There was no confidential relation, and hence no privilege existed.

The plaintiff urged that Dr. B. was not in the operating room with her consent, or that of her husband, and that because thereof he could give no testimony as to what he observed. The court, however, knows of no authority going to this extent; but, on the contrary, such a holding would be directly adverse to the rule of the cases and to the language and intent of the statute itself.

In *Sutcliffe vs. Traveling men's Association*, 119 Iowa, 220, it is said that the mere presence of the physician did not render the communication confidential when not such in fact. And in *State vs. Height*, 117 Iowa, 650, this court held that the testimony of a physician who had made an examination of a man against his will was competent because the confidential relation protected by the statute did not exist.

#### "Immediate" and "Proximate" Causes of Death.

The Supreme Court of New York, Appellate Division, Second Department, says that in the case of *Ostrander vs. Orange County Traction Co.*, an action to recover for a party's death, the company insisted that the injuries received at the time of the accident were not the proximate cause of death; that the evidence did not connect the accident with the immediate cause of death. The attending physician testified that death resulted from edema of the lungs, superinduced by heart disease. But it was urged that testimony that the immediate cause of death was edema of the lungs and heart disease signified nothing here, as the material question involved was, not the immediate cause of death, but the proximate. To the court, however, it seemed that the immediate cause of death was of great significance. On that must depend the question of proximate cause. The proximate cause of death must be the cause that produced the condition resulting in death; and if it was conceded, as it was here, that the immediate cause of death was edema of the lungs, due to heart disease, then the plaintiff was bound to show that the accident produced, or at least developed, the heart disease, with its consequent edema of the lungs. Evidence that the deceased suffered from paralysis, that the injury was sufficient to produce paralysis, and that paralysis might result in death, would be sufficient to sustain the plaintiff's judgment, if it was shown that the deceased actually died from paralysis, or if it was shown that paralysis was the inducing cause of the heart disease, with its consequent edema of the lungs; but, when it was once conclusively shown that the immediate cause of death was edema of the lungs, it was incumbent on the plaintiff to show, not that the deceased was afflicted with paralysis, which might have resulted in death, but that this paralysis had some definite relation to the edema. It was not material how seriously she might have been injured. If she did not die as the result of such injuries, then the plaintiff in this action, depending entirely on her death, was not entitled to recover damages. For instance, if the deceased had died from smallpox, the plaintiff in this action would not be entitled to recover because her intestate might have been injured in an accident on the defendant's railroad; and that was equally true of the cause of death which was conceded to have existed. The rule is that the question to be determined is: Was there an unbroken connection between the wrongful act and the

injury—a continuous operation? Did the facts constitute a continuous succession of events so linked together as to make a natural whole, or was there some new and independent cause intervening between the wrong and the injury? In this case the deceased died from edema of the lungs, and no fact was produced to show that edema of the lungs could have been produced by the accident, and without such facts the plaintiff failed to show that she was entitled to recover in this action, for the reason that it was not shown that the death was due to any fault on the part of the defendant. There must be a connection of the accident with death—a continuous succession of results traceable to the defendant's wrong; and the evidence in this case failed to establish the necessary facts.

#### Physician's Prescription Druggist's Protection.

The Court of Appeals of Kentucky says, in the case of *Commonwealth vs. Byers*, where a physician prescribed for a man's wife brandy, creosote and syrup of hypophosphites, that, when a prescription is presented to a druggist who is authorized to sell on the prescription of a regular practicing physician who possesses the statutory requisites, the druggist, so long as he acts in good faith, is entitled to the protection of the law so far as the sale is concerned. The prescription itself is all that he may look to or is required to look to. He can not know whether the person for whom it is prescribed is sick or not, and, if it should be developed in any case that the person holding the prescription or for whom it is given is not in fact sick, then it becomes a question between the commonwealth and the physician issuing the prescription, and not between the commonwealth and the druggist who, in good faith, fills it.

Besides, in a case like this, where the prescription is for the wife and is issued in the name of her husband, in the absence of any charge of fraud or wrongdoing, the court is of opinion that the law is not violated. The purpose of the statute in requiring the prescription to state the name of the person to whom it is prescribed was to prevent druggists, physicians, or others from evading the law, and issuing, filling or using prescriptions issued in blank; but it was certainly not intended that the person for whom the prescription was filled should necessarily be the patient. This would, indeed, be a harsh rule; for, if one were sick enough to require the services of a physician, he or she might and frequently would be unable to go personally and have the prescription filled.

In order to comply strictly with the requirements of the statute, the prescription in this case should have stated that it was for the man's wife, whereas it stated that it was for him. If there was any violation of the law, it was on the part of the physician in failing to state accurately the person for whom the liquor was prescribed. However, the court is of opinion that the record showed that he was aiming to comply with the requirements of the law.

#### Contract "to Nurse" a Person Not One to Practice Medicine.

The Supreme Court of Illinois says, in the case of *Oswald vs. Nehls*, that the duties assumed by the plaintiff under a contract set forth were "to personally care for and nurse the said Ludwig J. Nehls for and during the term of his natural life." It was argued that this contract was unenforceable because its performance required the plaintiff to practice medicine without being legally licensed so to do. But the court does not agree with that view. The agreement "to nurse" an adult person necessarily conveys the idea that the object of the care is sick or is an invalid. It means more than mere watchfulness. It means such care of the person and attention to the surroundings as will conduce to the comfort and hasten the recovery of the patient. The practice of medicine, within the meaning of the Illinois statute regulating the practice of medicine, and as generally understood, necessarily requires a knowledge of all those things a professional nurse is supposed to know. It embraces much more. It includes the application of knowledge of medicine, of disease, and the loss of health. *People vs. Blue Mountain Joe*, 129 Ill., 370. Neither the terms of the contract nor the acts done in performance thereof by the plaintiff were illegal under the Illinois statute relating to the practice of medicine.



## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### New York Medical Journal.

July 25.

- 1 Complicating Exophthalmic Goiter. C. G. Stockton and A. E. Woonert, Buffalo.
- 2 \*Supposed Evils of Expert Testimony. F. X. Dercum, Philadelphia.
- 3 \*Expert Testimony and the Alienist. W. A. White, Washington, D. C.
- 4 \*Intraventricular versus Abdominal Treatment of Mechanical Dystocia. E. H. Grandin, New York.
- 5 Dog Days: The Physician's Vacation. J. Knott, Dublin.
- 6 \*Conjugal Diabetes. A. C. Croftan, Chicago.
- 7 \*The Doctor as a Public Educator. F. Van Fleet, New York.

2. **Expert Testimony.**—Dercum says that much misunderstanding exists, especially on the part of physicians, as to the nature of expert testimony and as to its proper rôle and functions; that much has been said from time to time of the evils, so called, of expert testimony, and that every now and then correctives for these supposed evils are proposed, which he believes to be very unwise. He refers particularly to a paper on psychiatric expert evidence in criminal proceedings (*New York Medical Journal*, March 7, 1908; abstracted in *THE JOURNAL*, March 21, p. 991). Expert evidence differs from ordinary evidence in that it is essentially opinion evidence. Dercum discusses the qualifications necessary to constitute an expert and opposes any attempt to limit the expert to an official class. As to the so-called evils of expert testimony, observations in the courts extending over a quarter of a century have convinced him that these evils are greatly exaggerated, and are due, not to methods of legal procedure, but to the expert himself. The bias of the expert is the first evil. Instead of regarding himself as a witness he often assumes the rôle of counsel. Before the trial he should form an unbiased opinion on the facts and present it to the counsel employing him, without regard to the contention of that counsel, and if the opinion is favorable it should also present all the facts, favorable or unfavorable, with equal force. After forming his opinion, the conscientious expert should rearrange the facts in his mind and see how they would favor a conclusion opposite to that which he has reached. Other difficulties are due to the ignorance of the witness as to the nature of evidence, both lay and expert, to a faulty method of presenting the testimony, and to the use of technical terms. Dercum discusses the hypothetical questions and the method and demeanor of the expert. As to the question of opposing experts, it is not so much the members of the bar or the courts, but physicians themselves, who keep alive this reproach, as Dercum believes from an entire misconception of the facts. Differences of opinion regarding actual findings are usually slight; it is in their interpretation that the greatest differences are found, and here they may be perfectly legitimate. Most trials as regards insanity deal really with borderline cases, and in this class very many cases occur which are not litigation cases; nevertheless competent opinions differ concerning them. In every department of knowledge similar differences of opinion are developed. For instance, in a large percentage of cases in the Supreme Court of the United States, dissenting opinions, often in exact opposition, are handed down. Are we, then, to speak of the evils of the Supreme Court? No plan will do away with differences of expert opinion. Dercum considers the suggestion of the appointment of experts by the courts as unwise and impracticable.

3. **Expert Testimony.**—White considers that the attitude of the public against expert testimony has been created and fostered by newspaper reports of trials. The reason why experts can be found for either side is because practically every case that goes into court has two sides. This is especially the case in will contests. White discusses the usual legal test of insanity, the "right and wrong test," or test of knowledge, which he considers should be erased from the statutes. The idea of a jury passing on a highly technical matter, such as insanity, is ridiculous. The fundamental defect of the criminal law is that it so often deals with the crime and not with the criminal. The real question at issue

is not whether the offender stole \$34 or \$36 (and is, therefore, to be indicted for petit or grand larceny, respectively), but what manner of man is he? To answer this, it is necessary to make an analysis of the individual and the causes leading up to the offence. White approves of the method practiced in St. Louis, of committing the accused criminal insane for observation at the state hospital for insane.

4. Abstracted in *THE JOURNAL*, July 4, 1908, p. 70.

6. **Conjugal Diabetes.**—Croftan discusses the statistics of conjugal diabetes, and insists that it is clear in most cases that one is dealing with more than a coincidence. He insists that whenever diabetes is found in a patient it should be looked for in the mate.

7. **The Doctor as Educator.**—Van Fleet discusses the medical practice laws, which he considers defective, in that they fail to protect the public against irregular practitioners and nostrum sellers, and at the same time are raising the standard of qualification so high that only persons of more or less independent means can wisely enter on the practice of medicine. The physical defects of school children, the prevention of tuberculosis, animal experimentation, etc., are also considered as matters in which the educative influence of the physician should be exercised.

#### Boston Medical and Surgical Journal.

July 23.

- 8 \*Diagnostic and Therapeutic Use of Tuberculin. L. Brown, Saranac Lake, N. Y.
- 9 Permanent Stenosis of Common Duct from Inflammation or Duodenal Ulcer. H. Packard, Boston.
- 10 \*Melano-Sarcoma of the Orbit. G. McConnell and R. Burman, St. Louis.

8. **Tuberculin.**—Brown discusses the diagnostic use of tuberculin by the cutaneous, the conjunctival and the subcutaneous methods; also the contraindications to its diagnostic use. He then considers its therapeutic use, discusses the varieties of tuberculin, the methods of administration, dosage, and interval, and says that the present status of tuberculin therapy may be expressed in a few words as follows: Tuberculin, when properly given, does no harm, may produce no apparent immediate results, but may markedly benefit an individual patient who can follow at the same time the hygienic-dietetic treatment while in a health resort or at home and at rest. It may even prove of benefit to those who must continue at work. Small doses and careful increases are most important, and by following these very closely some patients, even in advanced stages, reap great benefit. The immediate and ultimate results of treatment are that the patients are often improved, fewer relapses occur, and more patients lose the tubercle bacilli in their sputum.

10. **Melano-Sarcoma of Orbit.**—McConnell and Burman report a case of melano-sarcoma of the orbit, showing the unusual interval of nearly eight years between the first indication of trouble and the death of the patient. A point of pathologic interest was the great enlargement of the liver, due mainly to extreme hyperplasia of bile ducts. There were no secondary growths.

#### Medical Record, New York.

July 25.

- 11 History of Medicine in Province of Quebec, from 1535 to 1838. H. S. Birkett, Montreal.
- 12 \*Pathogenesis of Pernicious Malaria. W. H. Deaderick, Marianna, Ark.
- 13 \*Improved Treatment of Gonorrheal Arthritis. E. C. Titus, New York.
- 14 Unusual Cardiac Murmurs. R. Ellis, New York.
- 15 \*Magnesium Sulphate in Tetanus. W. H. Powers, Ocala, Fla.

12. **Pernicious Malaria.**—Deaderick describes the evolution of our modern knowledge concerning the pathogenesis of pernicious malaria, and regards the following as the most important pathogenic factors exciting perniciousness and as being approximately of relatively equal importance: 1. An excessive number of parasites. 2. Localization of parasites. 3. Toxins. 4. Individual predisposition and external etiologic influences. He discusses each of these causes in detail.

13. **Electrotherapy of Gonorrheal Arthritis.**—Titus has been led by experiments extending over a series of years to the conviction that static currents exercise a potent curative influence on infective conditions, both local and general. In this



paper he deals with their effect on gonorrheal arthritis. He has for some years been treating non-gonorrheal prostatitis and seminal vesiculitis with the static wave current, by means of a metal electrode placed against the gland and vesicles through the rectum. Its action he believes explainable as follows: The oscillations of the static wave current, surging through the tissues at each discharge between the positive and negative poles (the patient is connected to the positive pole, while the negative side is grounded) produce deep, painless, rhythmical, wave-like contractions, or physiologic tissue gymnastics, even in the ultimate protoplasmic cell, thereby relieving the local stasis, inducing a circulatory drainage and restoration to normal metabolism.

From this experience he was led to treat gonorrheal arthritis and seminal vesiculitis by means of an insulated vacuum electrode. He found that cases hitherto refractory were cured, which result he explains as follows: The actinic action of the vacuum tube discharge exerts a direct bactericidal effect on deep-seated gonococci. In addition, there are generated on the surface of the vacuum electrode, when in contact with parts or tissues of the body, nascent nitrous acid and ozone, as a result of the dissolution of the air between the surface of the tube and the lining membrane of the part or cavity; these, together with the actinic discharge of the vacuum tube, are carried into the tissues to a depth of from 2 to 6 mm. by the action of the high potential currents.

He thus came to try it in the treatment of systemic gonorrheal infections after the following method: The rectum having been emptied and the patient being in the Sims position on an insulated platform, the vacuum tube is passed into the rectum and pressed on the prostate gland or seminal vesicles, and connected with the negative pole of the static machine. It is essential to begin with a small spark-gap. Treatment should never be painful; each treatment should last about twenty minutes, be repeated daily for two weeks, then on alternate days, until the secretions from the prostate and vesicles are free from gonococci, as shown by stripping the glands. When the secretions no longer contain gonococci, indirect static sparks can be daily applied to the joints.

**15. Magnesium Sulphate in Tetanus.**—Powers reports a case of tetanus, following a gun-shot wound, successfully treated by intraspinal injections of a 25 per cent. solution of sterilized magnesium sulphate. This process paralyzes the muscles and prevents fatal exhaustion before antitoxin has time to act.

#### Virginia Medical Semi-Monthly, Richmond.

June 26.

- 16 Psychotherapy. P. C. Hunt, Washington, D. C.
- 17 Nature and Treatment of Fever. W. S. Gordon, Richmond.
- 18 Value of Morphin Derivatives in Ocular Therapeutics. W. Fox, Philadelphia.
- 19 Intraocular Complications of Otitic and Nasal Origin. C. M. Miller, Richmond.
- 20 Puerperal Eclampsia. J. E. Walsh, Washington, D. C.
- 21 Treatment of Placenta Previa. M. D. Delaney, Alexandria.
- 22 Treatment of Inguinal Adenitis. R. T. McNair, Emporia.

July 10.

- 23 Technic of Operation for Neoplasms of the Neck. J. S. Horsley, Richmond.
- 24 \*Cerebral Concussion. L. W. Glazebrook, Washington, D. C.
- 25 Uses of the Stomach. M. O. Burke, Richmond.
- 26 Recent Developments in the Study of Cancer. H. B. Stone, Charlottesville.
- 27 Vesical Calculi. R. L. Raiford, Conley.
- 28 Modern Treatment of Pulmonary Hemorrhage. M. Junger, Ironville.
- 29 The Future of Medicine. E. L. Hergert, Brooklyn.
- 30 Avulsion of Ankle-Joint. E. P. Tompkins, Roanoke.
- 31 Principles of Surgery. S. McGuire, Richmond.

**24. Brain Concussion.**—Glazebrook discusses the views held by different authorities as to the pathology of "concussion of the brain." He asks the question, "Is it possible for a person to receive a direct or indirect injury to the head sufficient to cause death, without presenting at the autopsy table evidence of fracture, edema, hemorrhage, contusion or laceration; or is it possible for a person to die from brain shock, pure and simple, as from other forms of so-called shock?" Since 1900 he has performed 500 autopsies in 161 deaths, being the result of injuries to the head. He answers "Yes" to both questions and records six cases in which death occurred from certain head injury in which no fracture, hemorrhage, edema, contusion or laceration could be detected.

#### California State Journal of Medicine, San Francisco.

June.

- 32 Anatomy of Thyroid and Parathyroid. A. F. Gillman, Berkeley.
- 33 \*Medical Treatment of Goiter. D. Fulton, Los Angeles.
- 34 \*Surgical Treatment of Goiter. W. I. Terry, San Francisco.
- 35 Relation of the Thyroid to Mental Disease. J. W. Robertson, Livermore.
- 36 \*Early Symptoms of Dementia Praecox. C. L. Allen, Los Angeles.
- 37 Fungus Coccidioides. H. A. L. Ryfkogel, San Francisco.
- 38 Smallpox. C. H. Walker, San Jose.
- 39 Experiences of a Health Officer. H. J. B. Wright, San Jose.
- 40 Common Gastric Disorders Among School Children. A. W. Perry, San Francisco.
- 41 Progress of Preventive Medicine. E. L. Blackmun, Stockton.
- 42 Appendicitis Diagnosis. S. Hyman, San Francisco.

**33. Medical Treatment of Goiter.**—Fulton points to the multiplicity of theories, many of the most contradictory nature, on which as many opposing methods of treatment have been based. The percentage of cures is smaller by medical than by surgical treatment, but medical treatment is not, therefore, useless. In a large majority of cases, Graves' disease tends toward recovery, and spontaneous cure often takes place. Medical treatment will relieve the most distressing symptoms at a time when these contraindicate operation, or pending natural improvement. The principal measures are rest, balneotherapy and dieting. These, with the symptomatic use of drugs, for there is no specific, will often cure incipient cases and relieve the most advanced cases of aggravating symptoms. Electrotherapy probably belongs to suggestive therapeutics. Roentgen rays have not fulfilled expectations; neither has serum treatment as regards end-results, though it may be hoped that the serum of Rogers and Beebe may live up to its promise. His conclusion, however, is that, until sufficient clinical proof of the value of this treatment is submitted, it is the duty of the internist to give his patients who are not improving under medical treatment the advantage of the truly brilliant curative results obtained by surgery. Both surgeon and internist advise medicinal treatment; this failing, surgery is indicated.

**34. Surgical Treatment of Goiter.**—Terry says that surgical treatment of a goiter may be demanded, first, on account of its size; second, because of pressure symptoms affecting the trachea, larynx, esophagus or other important structures in the neck or upper portion of the thorax; third, when the growth is rapid, giving rise to the suspicion of malignancy; fourth, because of infection of the goiter; fifth, when the Basedow symptoms are present. He discusses these indications in detail. Operative treatment of exophthalmic goiter is indicated when after rational internal medication for a period not longer than three months the patient is not materially improved or cured.

Terry discusses the various measures—excision, enucleation, resection, exenteration of goiters, ligation of thyroid arteries, division of the isthmus, and resection of the sympathetic ganglia—that have been recommended. He points out the dangers—operative myxedema, removal of the parathyroids, injury to the recurrent laryngeal, and the presence of a so-called goiter heart, as a contraindication to thyroidectomy. He discusses the question of anesthesia.

**36. Dementia Praecox.**—Allen concludes his paper with the following statement: The symptoms of dementia praecox are fairly characteristic and should be sought for in any young person who shows unaccountable change in habits and disposition. In this connection the scientific study of the mental and physical characteristics of the pupils in our schools and colleges should put at our disposal valuable information, and this work should command the support of all physicians.

#### University of Pennsylvania Medical Bulletin, Philadelphia.

June.

- 43 \*Gynecologic Instruction. J. G. Clark, Philadelphia.
- 44 The Omentum: Its Anatomy, Histology and Physiology in Health and Disease. C. C. Norris, Philadelphia.
- 45 Chorionepithelioma of the Uterus. B. M. Anspach, Philadelphia.
- 46 \*Office Gynecology. W. B. Small, Philadelphia.
- 47 The Gould Stitch. J. G. Clark, Philadelphia.
- 48 Buried Catgut and Intercutaneous Suture in Plastic Operations on Perineum. B. M. Anspach, Philadelphia.
- 49 Nine Cases of Dysmenorrhea. C. C. Norris, Philadelphia.
- 50 \*Surgical Phases of Enteroptosis. J. G. Clark, Philadelphia.

**43. Gynecologic Instruction.**—Clark describes a method of instruction, designed to obviate the difficulties arising from



the dread entertained by patients of being used as clinical material. Though not complete, it has proved so far satisfactory. Its essential feature is the appointment of six senior students as assistants, one being acting family physician, and five consultant assistants. He describes the working of the system and reproduces the report of a case taken under this method by a senior student as acting family physician. The article is illustrated with halftones of a series of clay models made during an operation by a student or instructor to illustrate methods of repair of cervical and perineal injuries.

46. **Office Gynecology.**—Small considers that the general practitioner will not give office gynecology the time or attention it deserves, while the gynecologist with difficulty restrains himself from at once performing a brilliant operation. Nervous influences are often overlooked. A more frequent routine of local applications would greatly reduce the number of operations. In recent cases of displacement he endorses the use of the pessary. He describes the method of dealing with many conditions proper for office gynecology.

50. Published in *Surgery, Gynecology and Obstetrics*, April, 1908, and abstracted in *THE JOURNAL*, May 23, 1908, p. 1755.

#### American Journal of Obstetrics, New York.

June.

- 51 Pyelitis in Pregnancy. H. N. Vineberg, New York.
- 52 \*Placental Transmission of Bacillus Typhosus. B. A. Cohoe, Baltimore.
- 53 \*Indications for Cesarean Section. J. Halpenny, Winnipeg.
- 54 Extrauterine Pregnancy at Term. W. R. Nicholson, Philadelphia.
- 55 Diagnosis of Extrauterine Pregnancy. G. R. Holden, Jacksonville, Fla.
- 56 Therapy in Convalescence from Abdominal Operations. E. H. Grandin, New York.
- 57 \*Neglect of Plastic Surgery About the Pelvic Outlet. W. D. Ward, Rochester, N. Y.
- 58 Chondrodystrophia Fœtalis. G. C. Weiss, Chicago.

†Department of Pediatrics.

- 59 \*Pyloric Stenosis in Infancy. J. F. Moran, Washington, D. C.
- 60 \*Hereditary Syphilis. J. S. Wall, Washington, D. C.
- 61 \*School-Age. G. D. Scott, New York.
- 62 Diagnosis of Common Skin Diseases of Childhood. W. B. Brown, New York.
- 63 Pertussis. H. B. Sheffield, New York.
- 64 \*New Treatment of Pertussis. A. M. Fendler, New York.

†Attention is called to this new department of the *American Journal of Obstetrics*, which, like the original portion of that journal, consists of original contributions and abstracts. It also contains the Transactions of the Section on Pediatrics of the New York Academy of Medicine.

52. **Placental Transmission of Bacillus Typhosus.**—Cohoe reports a case in which, abortion occurring at about fifteen weeks during typhoid fever, the fetus was sent to the bacteriologic laboratory with the membranes intact. This made it possible to take cultures from the amniotic fluid and fetal viscera without contamination. The *Bacillus typhosus* was grown therefrom in pure culture. "It is now generally conceded," says the author, "that an infection of the fetus takes place only through the medium of an injured placenta, and that such injury may exist prior to the disease, or may result during the course of the disease from the action of the toxins in the circulating blood of the mother."

53. **Cesarean Section and Sterilization.**—Halpenny reports a case of a primipara, aged 30, with a conjugata vera 6.75 centimeters, in which the question arose as to whether it would be desirable to sterilize at the time of Cesarean section. He submitted the question as a general proposition to thirteen well-known surgeons, with the result that five answered affirmatively, in four cases, however, a reservation being made in favor of the patient's choice; seven in the negative, five, however, leaving the final determination with the patient, and two considering it a question entirely for the mother. Halpenny sums up his paper as follows: Cesarean section should be done (a) in all cases of pelvic contraction in which the conjugata vera is below 5.5 centimeters; (b) in cases in which the conjugata vera is between 7 or 7.5 centimeters and 5.5 centimeters, and the patient has not been infected, is not unduly reduced, and the child is alive; (c) in cancer of the cervix where dilatation will not take place.

Craniotomy or embryotomy should be done in cases of pelvic contraction in which the conjugata vera is not below 5.5 cen-

timeters and the child is not alive. (d) In cases of pelvic tumors which can not be displaced from the pelvis under an anesthetic. (e) In all cases of sudden death of the mother. (f) Possibly in central implantation, placenta prævia. (g) Possibly in dystocia due to ventrofixation or ventro-suspension. Vaginal Cesarean section should probably be done in cases of severe eclampsia with very rigid os. Pubiotomy or symphyseotomy should be done if the conjunctiva vera is not less than 7 centimeters, if the fetus is still alive.

57. **Plastic Surgery of Pelvic Outlet.**—Ward remarks that all over the country everyone seems interested in abdominal surgery, but he insists that not enough attention is paid to injuries to the pelvic floor and cervix. There is a tendency to think danger over when the head is delivered, but, in fact, the shoulders may tear a floor. If a tear occurs, it should be sutured at once. The diagnosis of a laceration of the pelvic floor is not difficult. "If you prick the vulva of an uninjured woman with a needle, a reflex muscular action is excited; the anus is drawn upward and forward, the perineum shortened, and the mouth of the vagina more tightly closed by the action of the perineal muscles. If these muscles are injured, this reflex action will be absent; the woman will simply draw away when pricked." He urges that there is a field for some of our great men in plastic surgery.

59. **Pyloric Stenosis in Infancy.**—Moran concludes as follows: 1. Pyloric stenosis in infancy is due to the following conditions, either of which may exist alone, but are frequently associated: (a) hyperplasia of the tissues of the pylorus, particularly of the muscular coat; (b) simple spasm of the pylorus. 2. The evidence would seem to indicate that the hyperplasia is congenital, and that the pyloric spasm originates after birth. 3. Cases in which the symptom-complex does not develop until some time after birth are probably instances of partial stenosis with secondary spasm or pyloric spasm alone. 4. The pyloric spasm may be due to a neurosis, erosion of the mucous membrane of the stomach or pylorus, or acute or subacute gastritis. 5. Since it is tenable that either hyperplastic or spastic stenosis may be present alone, or that the two may coexist, both medical and surgical treatment are of value, but the sphere of each must be determined by the exigencies of the individual case.

60. **Hereditary Syphilis.**—Wall discusses the question whether a healthy mother can give birth to a syphilitic child, and concludes in the negative, even though the mother appear healthy. As to treatment, he says that there is a rule which is now gaining an ever-increasing number of followers that a syphilitic should be treated one month out of every twelve—that is, after the usual two years' continued treatment. In the syphilitic child this rule finds special application, nor is it difficult to secure the cooperation of the mother in such persistent treatment if we elicit her aid through a rational explanation of the malign influence a lack of such care will exercise on her offspring.

61. **School Age.**—Scott describes the evolution of mentality in the infant, and discusses the nursery, the requirements of the kindergarten, etc. Six years of age he considers early enough to begin kindergarten; eight or nine, primary school.

64. **Pertussis.**—Fendler reports cases of pertussis in which fifteen drops of a 2 per cent. solution of antipyrin were injected into the larynx. "with phenomenal success," by means of a special pipette devised by Dr. Yankauer.

#### The Philippine Journal of Science, Manila.

April.

- 65 \*Influence of Symbiosis on the Pathogenicity of Microorganisms. W. E. Musgrave.
- 66 \*Cause of Frequent Reappearance of Cholera in the Philippines (with Statistics from 1902 to 1908.) V. G. Heiser.
- 67 Studies of Cholera. H. T. Marshall, Manila.
- 68 Biologic Study of the Water Supply of the Philippines, with Description of a New Pathogenic Organism. R. T. Edwards, Manila.
- 69 \*Typhus Fever in Indo-China. A. Yersin and J. J. Vassal, Annam.
- 70 "Habu" Venom and its Serum Therapy. T. Kitajima, Tokyo, Japan.
- 71 Filtration Experiments with Virus of Cattle Plague. E. H. Ruediger.

65. **Symbiosis and Pathogenicity of Micro-organisms.**—Musgrave discusses bacterial symbiosis and animal and bacterial



symbiosis, and concludes, among other things, that the evidence is fairly conclusive in favor of a more or less definite symbiosis; for example, between amebas or other micro-organisms, whether they be found in a saprophytic existence or in pathologic lesions. The most promising field for laboratory research in the future, he says, will be the study of cause and effect, in the complex relations in which they occur in Nature, of the interrelation and interaction of micro-organisms with each other, and in their environment of complex symbiosis and the everchanging and multiple conditions found in hosts.

66. **Cholera in Manila.**—Heiser believes cholera to be endemic in the city of Manila, infesting the sewers, and causing the outbreaks outside as a result of communication. He recommends the thorough disinfection of the sewer system of Manila.

69. **Typhus Fever.**—Yersin and Vassal have been investigating in Indo-China an epidemic that appeared among Tongking coolies. Their conclusions are as follows: 1. Typhus fever has been observed in Annam in natives who recently arrived from Tongking. 2. It manifested itself in accordance with the classic description, except that the eruption was wanting. 3. The direct inoculation of blood from man to man has reproduced the disease after an incubation period of from 14 to 21 days. 4. Typhus fever seems to be a blood disease transmitted to man by bites of insects.

*Journal of Nervous and Mental Disease, New York.*

*June.*

- 72 \*Mental State in Chorea. C. W. Burr, Philadelphia.  
73 Symptom-Complex of Occlusion of Posterior Inferior Cerebellar Artery. W. G. Spiller, Philadelphia.

72. Abstracted in THE JOURNAL, June 20, 1908, p. 2104.

*Illinois Medical Journal, Springfield.*

*June.*

- 74 Opioids and Vaccines in Tuberculosis. G. B. Webb, Colorado Springs, Colo.  
75 Present Status of the Treatment of Tuberculosis in Illinois. J. W. Pettit, Ottawa, Ill.  
76 General Aspects of Psychotherapy. J. Grinker, Chicago.  
77 \*Experimental Studies on Round Ulcer of Stomach and Duodenum. F. B. Turck.  
78 Analysis and Modification of Mother's Milk. T. W. Gillespie, Peoria, Ill.  
79 Prevention of Childbed Infections. H. LeSaultier, Red Bud, Ill.  
80 Should Druggists Manufacture and Dispense and Should Doctors Dispense? H. E. Irish, Chicago.  
81 \*Removal of Patella for Ununited Comminuted Fracture. C. C. Rogers, Chicago.  
82 Three Cases of Cesarean Section. V. J. Baccus, Chicago.  
83 \*Exudative Diathesis. C. G. Grulee, Chicago.

77. Published in the *Journal of Medical Research*, February, 1908, and abstracted in THE JOURNAL, April 4, 1908, p. 1149.

81. **Removal of Patella.**—Rogers reports a case in which he removed the patella for ununited comminuted fracture, and describes the method adopted, which differs from Murphy's operation (*Surgery, Gynecology and Obstetrics*, March 1908; abstracted in THE JOURNAL, May 2, 1908, p. 1458) in that Rogers unites only the anterior half of the quadriceps extensor, instead of a lateral half, including some of the muscle to the patellar tendon. He does not suture the muscles together. The flap is made flat, smooth, and broad enough to cover the space left by the removal of the patella, instead of circular and narrower.

Rogers gives the following conclusions: 1. The patella is unessential for a flexible knee-joint. 2. The patella can be removed when ununited and perfect flexion and extension procured. 3. The patella should be removed when ununited or when repeated fracturing occurs. 4. When there is cartilaginous union and extension is lost, function can be restored by removing the patella and joining the quadriceps tendon to the patellar tendon. 5. By removing the patella the patient is confined to bed but a short time compared to the time required after strapping with adhesive or after wiring. Rogers acknowledges his indebtedness to Murphy for the idea.

83. **The Exudative Diathesis.**—Grulee discusses the condition described by Czerny of Breslau as the exudative diathesis. It may show its earliest manifestations in the first weeks of life, and usually continues until puberty or after. It occurs in the poorer classes, those who have removed from country

to city, in both thin and frail and apparently robust babies. In spite of insufficient breast milk, the child does not obtain its initial weight until from two to four weeks after birth; it then gains rapidly, but never becomes normal. The geographical tongue is a certain indication if present. The skin manifestations include the "cradle cap," a yellowish-gray desquamation in the region of the large fontanel, milk eczema intertrigo, the respiratory symptoms—viz., repeatedly recurring asthma, which Czerny regards as acute bronchitis, its severity dependent on the nervous irritability of the child. The most important point is lymphatic enlargement of the pharynx, the result of repeated irritation due to recurrent infections of the mucous membrane, and not in themselves predisposing to infection. The cervical glands are enlarged. Pseudocroup may occur, especially in fat children. Treatment consists in regulation of diet, avoidance of infection, and training of the nervous system, avoidance of overfeeding, reduction of fat to a minimum (but the children stand carbohydrates well), largely vegetarian diet after the first year, open air life. Drugs are worse than useless. As regards the indiscriminate removal of tonsils and adenoids, Grulee considers it unnecessary: on which point he considers the opinion of the general practitioner, who sees the after-effects, as of more value than that of the specialist.

*Southern California Practitioner, Los Angeles.*

*June.*

- 84 \*The Negro Consumptive. C. R. Grandy, Norfolk, Va.  
85 \*The Negro's Outlook for Health. B. Warner, New Orleans.  
86 The Nation's Outlook for Health. W. Lindley, Los Angeles.  
87 \*Accouchement Forcé. E. M. Lazard, Los Angeles.  
88 \*Treatment of Gonorrhea in Females. A. J. Downs, Los Angeles.  
89 Dermatitis Exfoliativa Neonatorum. U. G. Miller, Los Angeles.  
90 Hydrotherapeutics. J. B. Cook, Los Angeles.  
91 Ventral Hernia. H. G. Marxmiller, Los Angeles.

84. **The Negro Consumptive.**—Grandy asks: Is there a physical predisposition or lack of resistance to tuberculosis in the negro? Or is the predisposition rather a mental one, in that he is unable to rise up to meet the conditions which face him? Or are these adverse conditions forced on him on account of racial prejudice? He answers that, while there are physical peculiarities that act against the negro in his fight against tuberculosis, these factors are not so certain as poor housing, overcrowding, lack of ventilation, and insufficient nourishment, and back of these poverty, ignorance, thriftlessness, and vice. These, when applying to the greater part of a race, must be due either to a mental unfitness to combat the existing situation, or to its being forced into them through the prejudices of another race. He discusses this question and concludes that there is a mental predisposition in the negro which renders the tuberculosis problem more difficult with him than with the white. He does not believe that the tremendous consumption mortality is due to racial prejudice. He urges a return to country life, the provision of day nurseries and kindergartens, and proper tenement-house laws.

85. **The Negro's Health.**—Warner quotes a leading negro educator for the statement that health conditions among the negroes show a decided improvement on what the conditions were for some period after the war. He himself, however, considers that the outlook for the future of the negro is ill, and, in addition to the factors mentioned by Grandy in the preceding abstract, he singles out the use of cocaine, the prevalence of immorality which is not affected by education, and the results of miscegenation as factors.

87. **Accouchement Forcé.**—Lazard believes that in the presence of conditions necessitating rapid delivery, metallic dilatation, properly and carefully done, can with advantage replace both manual dilatation and deep surgical incision. It takes less time, absolute asepsis is easier, and it is not so exacting as regards technical skill, while it results in less trauma to the tissues. Placenta previa cases are excepted.

88. **Gonorrhea in Females.**—Downs recommends filling the vagina with some antiseptic solution by means of a hand syringe such as is used on the male, the patient being on her back. The ureter is cocaineized and the canal touched with the silver nitrate solution from 3 per cent. up. Skene's glands



are probed, if necessary, with silver nitrate. The labia are separated and the solution is absorbed with cotton. Ten per cent. silver nitrate on cotton is applied to the cervix externally and as far as the internal os. The glands of Bartholin must be treated like Skene's glands, if necessary. For infection of the uterus and tubes, rest in bed, large hot douches, heat to the lower abdomen; morphin for pain and saline cathartics to relieve pelvic congestion. An operation may be necessary.

#### St. Louis Medical Review.

June.

- 92 \*Bacteriologic Study of Acute Articular Rheumatism. J. W. Marchildon, St. Louis.
- 93 Physical Treatment of Constipation. O. Juettner, Cincinnati.
- 94 Diphtheritic Paralysis. J. V. Shoemaker, Philadelphia.
- 95 Incorrect Phraseology in Medical Writings. A. L. Benedict, Buffalo.
- 96 Surgery of the Ureter. B. M. Ricketts, Cincinnati.

92. **Acute Articular Rheumatism.**—Marchildon discusses the bacteriology of this condition in general and the literature thereon, and gives the findings in five cases under his own observation. He concludes: My results are in accordance with those of many observers who believe that streptococci can not be isolated from the blood or joint fluid in cases that recover. More work and especially new methods may explain the failures of the present time.

#### Denver Medical Times.

June.

- 97 Treatment of Tabetic Ataxia by Frenkel Method. E. W. Lazell, Denver.
- 98 \*Anatomy of the Hymen. E. S. McKee, Cincinnati.
- 99 Infection in the Right Upper Abdominal Quadrant. C. E. Tennant, Denver.
- 100 Three Interesting Cases of Morphineism. J. H. McKay, Denver.
- 101 Recent Advances in Diagnosing, Treating and Combating Epidemic Meningitis. V. Thompson, Littleton, Colo.

98. Practically the same article appeared in the *Lancet-Clinic*, March 7, 1908, and in the *American Journal of Obstetrics*, March, 1908, and was abstracted in *THE JOURNAL*, March 28, 1908, p. 1077.

#### Utah Medical Journal, Denver.

June.

- 102 The Physician as a Teacher. J. C. Cutler, Governor of Utah.
- 103 Instruction in Hygiene—a Necessity for Both Teachers and Scholars. J. W. Aird, Provo, Utah.

#### Pennsylvania Medical Journal, Athens.

June.

- 104 Progressive Pernicious Anemia. Diagnosis and Treatment. D. S. Funk, Harrisburg.
- 105 \*Relation of Pernicious Anemia to Digestive Tract. J. D. Steele, Philadelphia.
- 106 Pernicious Anemia. A. S. Harshberger, Lewistown.
- 107 Diseases of Gall Bladder and Ducts. J. B. Deaver, Philadelphia.
- 108 \*Imbecility and Crime and Legal Restraint of Imbeciles. C. W. Burr, Philadelphia.
- 109 Cosmetic Eye Surgery. W. C. Posey, Philadelphia.
- 110 \*Referred Pain. W. L. Estes, South Bethlehem.
- 111 \*Postoperative Femoral Phlebitis. G. W. Guthrie, Wilkes-Barre.
- 112 \*Suppurative Parotitis Following Abdominal Operations. W. E. Parke, Philadelphia.
- 113 Total Extirpation of Diseased Tonsils; Importance and Method. G. M. Marshall, Philadelphia.
- 114 Injuries of the Eye by Foreign Bodies. W. M. Sweet, Philadelphia.
- 115 The Pennsylvania State Medical Society To-day. C. A. R. McClain, Mt. Union.

105. **Relation of Pernicious Anemia to the Digestive Tract.**—Steele discusses the confusion of progressive pernicious anemia proper with the severe anemias of gastric cancer, atrophy of the gastric and intestinal mucous membrane, parasitic anemias, the products of intestinal putrefaction, lowered gastric secretion, and infection having its origin in sepsis of the mouth, stomach and intestine. He concludes that the relations between disorders of the digestive tract and progressive pernicious anemia are complex and obscure. There is no proof that there is any causal relation between them. On the other hand, the connection that seems to exist between certain conditions in the digestive tract and severe anemia suggests that toxemia or other disturbances arising in the digestive tract may play a more important part in the etiology of progressive pernicious anemia than we think at present. The discrepancies and lapses in the chain of evidence as to the cause of the

disease are best explained by the theory of individual predisposition.

108. **Imbecility and Crime.**—Burr says that imbeciles of criminal instincts are incorrigible, and they should be kept under the restraint of institutional life and not act as an incubus, not to say contamination, to the other children of the family. The removal from institutions of imbeciles of all types, criminal or not, should be made more difficult, and the imbecile with criminal instincts should receive no purely intellectual training and should be kept in an institution for life. The ideal method would be to segregate them on state farms, large in extent, far from great cities, and isolated from the world, from the time that they begin to show vicious tendencies.

110. Abstracted in *THE JOURNAL*, Nov. 2, 1907, p. 1549.

111 and 112. Abstracted in *THE JOURNAL*, Oct. 26, 1907, p. 1465.

#### Northwest Medicine, Seattle, Wash.

June.

- 116 Arteriosclerosis. H. W. Howard, Prosser, Wash.
- 117 Ectopic Gestation. S. H. Johnson, Bellingham, Wash.
- 118 A Plea for More Care in the Early Diagnosis of Uterine Cancer. J. B. Eagleson, Seattle, Wash.
- 119 \*Therapeutics. L. R. Markley, Bellingham, Wash.

119. Abstracted in *THE JOURNAL*, Oct. 12, 1907, p. 1304.

#### Journal of the Arkansas Medical Society, Little Rock.

May.

- 120 Use of Laboratory Methods by the General Practitioner. F. B. Young, Springdale.
- 121 Uncinariasis. A. G. McGill, Chidester, Ark.

#### Journal of Ophthalmology and Laryngology, Chicago.

June.

- 122 Migratory Ophthalmia in its Relation to Injuries of the Globe. H. W. Woodruff, Joliet, Ill.
- 123 Sub-Pterygial Cysts. H. Truc and A. Bonnet, Montpellier, France. Translated by B. F. Andrews, Chicago.
- 124 Treatment of Hemorrhage After Operations on the Nose, Naso-Pharynx and Tonsils. O. Wilkinson, Washington, D. C.
- 125 Case of Xanthoma, with Exhibition of Patient. J. E. Rhodes, Chicago.

#### West Virginia Medical Journal, Wheeling.

June.

- 126 Diabetes Considered from a Surgical Standpoint. N. Jacobson, Syracuse, N. Y.
- 127 \*Mission of the Physician. G. D. Lind, New Richmond, Va.
- 128 Appendicitis—its Clinical Aspect. W. W. Golden, Elkins.
- 129 Sunshine and Bacteria. F. Howell, Clarksburg.
- 130 \*Protection from Malpractice Suits. H. G. Nicholson, Charleston.
- 131 Treatment of Diarrhea. R. H. Edmondson, Morgantown.

127 and 130. Abstracted in *THE JOURNAL*, June 6, 1908, p. 1933 and 1934.

#### Yale Medical Journal, New Haven.

June.

- 132 Nature of Shock. C. H. Lemon, Milwaukee.
- 133 Surgical Treatment of Cystitis. E. L. Keves, Jr., New York.
- 134 Tuberculosis Situation in Connecticut. D. R. Lyman, Wallingford, Conn.

#### Alabama Medical Journal, Birmingham.

June.

- 135 Psychotherapy. C. Lull, Birmingham.
- 136 Forms of Dystocia. J. E. Jenkins, Piper, Ala.
- 137 Pathology of the Summer Diarrheas of Infancy and Childhood. W. R. Ward, Birmingham.
- 138 Prophylaxis and Treatment of Diarrheas of Children in Summer, and Gastric Disturbances. H. Johnston, Birmingham.
- 139 Treatment of Chronic Prostatitis. C. W. Shropshire, Birmingham.

#### Montreal Medical Journal.

June.

- 140 The Treatment of Infective Diseases by Bacterial Vaccines. F. G. Bushnell, Brighton, Eng.
- 141 "Hepatic Toxemia."—"Fatal Acetonemia." E. J. Williams, Sherbrooke.
- 142 Ambroise Paré—Man and Surgeon. W. G. Turner.
- 143 Medicine in Canada. M. Charlton. (To be continued.)
- 144 Duodenal Ulcer: its Diagnosis and Surgical Treatment. A. E. Garrow, Montreal.

#### Bulletin Johns Hopkins Hospital, Baltimore.

June.

- 145 Avicenna and Arabian Medicine. J. A. Chatard, Baltimore.
- 146 The Kern-Plasma Relation Theory. W. T. Howard, Cleveland, Ohio.
- 147 Fritz Schandinn. O. T. Schultz, Cleveland, Ohio.
- 148 Methods of the Henry Phipps Institute for Tuberculosis. J. Walsh, Philadelphia.



## Journal Cutaneous Diseases, New York.

June.

- 149 X-Ray Baths and Dermametropathism. H. Lawrence, Melbourne, Australia.  
150 Experience with the White and Blue Light of the Quartz Lamp. E. Kromayer, Berlin.  
151 Acquired Ichthyosis. J. P. Kanoky, Kansas City, Mo.

## FOREIGN.

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

## The Lancet, London.

July 11.

- 1 \*Inborn Errors of Metabolism. A. E. Garrod.  
2 \*Necessity for Appendectomy After Perityphlitic Abscess. W. H. Battle.  
3 Sarcomatosis of Lymphatic Glands. W. K. Hunter.  
4 The Premonitory Signs of Arteriosclerosis. A. S. Gubb.  
5 \*The State of the Autonomous Nervous System in Acute Surgical Conditions. A. J. Walton.  
6 \*Method of Facilitating Intralaryngeal Operations. C. Horsford.  
7 The Child in School Medical Examination. A. D. Edwards.  
8 A Visit to Professor Wertheim's Clinic in Vienna. A. H. N. Lowers.

1. **Metabolism.**—In the second Croonian lecture Garrod discusses alkaptonuria at length, and states that the error of metabolism which is at the back of alkaptonuria is a failure to deal with the aromatic fractions of proteins in the ordinary way, and that both the proteins of the food and those of the tissues are implicated in the error. It is necessary to consider, therefore, what is known as to the ordinary way of dealing with these fractions. So far as the available evidence goes, it tends to show that there is only one degree of alkaptonuria, and that from a given quantity of a certain protein all subjects of the anomaly tend to form and to excrete the same amount of homogentisic acid, and it is probable that that quantity is a maximal one, seeing that Falta has shown that the output of homogentisic acid corresponds roughly to the estimated amounts of the aromatic fraction in the proteins broken down. Two explanations are possible of the fact that alkaptonurics excrete homogentisic acids, whereas normal persons do not: either the alkapton acid is a strictly abnormal product formed by a perverted metabolism of tyrosin and phenyl-alanin, in virtue of which these protein fractions experience a wholly different fate from that which overtakes them in the normal organism, or it is an intermediate product of normal metabolism, which is usually completely destroyed and does not come to excretion, but which in alkaptonuria escapes destruction. He discusses these explanations, and holds that at present the evidence in favor of the theory of it being an intermediate product far outweighs that which can be brought against it.

2. **Perityphlitic Abscess.**—Battle holds that the treatment of perityphlitic abscess is most safely carried out in two stages: First stage, evacuation of pus and drainage; second stage, removal of the appendix. He insists on this last because, he says, the statements of those who held that the appendix was obliterated by suppuration around it were erroneous; it is never obliterated, but remains the subject of gross disease, which in many instances (20 out of 70) gives rise to a return of symptoms within a short period after the closure of the abscess.

5. **The Autonomous Nervous System in Surgical Conditions.**—Walton, in an article begun in the *Lancet* of July 4, aims at decreasing the present high mortality existing in cases of acute surgical lesions necessitating immediate operations. Two main conditions are considered: 1, alterations in the vasomotor centers, with subsequent vascular changes; 2, changes in the local nervous system of the intestines after abdominal operations. In the first category he groups the conditions of shock and collapse, the active factor in both being lowered blood pressure. He discusses at length the recent work on the subject, paying special attention to the length of the operation, anesthetics, ether, chloroform, spinal anesthesia, and the loss of blood and other fluids. The treatment he divides into preventive and curative. He summarizes the treatment into perfecting the patient's general condition, the use of Crile's pneumatic suit, the prohibition of any form of stimulant, either previous to or during the course of any operation, the administration of 15 minims (1 c.c.) of B. P. hypodermic injection of ergot,

which may be repeated after its effects begin to fail (probably in about twenty minutes), the injection of a 2 to 4 per cent solution of cocaine into any large nerve before division, and avoidance of unnecessary exposure or handling of deep-seated organs, especially the abdominal viscera. The operating room should be warm, but not too hot. After the operation is completed a tight abdominal binder should be applied to contract the splanchnic area. When the patient has been returned to bed the following method may be carried out by routine, provided none of its steps has had to be undertaken during the course of the operation: The patient is immediately given a quarter of a grain of morphin, so that on recovering from the effects of the anesthetic the pain will not be appreciated by the controlling centers. At the same time the foot of the bed is raised about 1½ to 2 feet higher than the head end. Fifteen minims of ergot are now injected subcutaneously while the saline solution and suprarenal extract for continuous irrigation of the rectum are being prepared. As soon as possible this is commenced and allowed to run continuously at the rate of one pint an hour until either the fluid is rejected or five to six pints have been administered. If the case is one of septic peritonitis, the foot of the bed is lowered after two or three hours, and after a further two or three hours the head is raised. Under the second head he says that just as multiple afferent impulses to the centers governing the muscular apparatus of the vessels cause their exhaustion, with loss of tone to the vessels and consequent dilatation, so also multiple impulses from the intestines cause exhaustion of that apparatus governing the muscular movements of their walls, with consequent paralysis of these walls and apparent obstruction.

He discusses the physiology of peristalsis, and summarizes the treatment of the second class as follows: In cases of acute paralysis, due to some toxic condition present within the peritoneum, the intestines should be drained as freely as possible during the course of the operation undertaken for the relief of the local condition. In all other conditions no operation is called for, and, since the state of the intestines depends on the exhaustion of the centers, any form of stimulation is only likely to do harm. Immediately after operation, injection of 1/100th of a grain of eserine salicylate should be given, which may be continued four-hourly until six doses have been taken. If no action of the bowels occurs next day, a turpentine enema may be given. This line of treatment, of course, applies only to those cases in which it is considered beneficial to keep the bowels open. The effect of any severe operation on the autonomous nervous system consists of exhaustion of its centers, both central and local, and treatment must aim to rest them. Since in man exhaustion always occurs first in the nervous system, treatment of the symptoms should aim at stimulating the local organs to act alone until the centers are again able to undertake control.

6. **Intralaryngeal Operations.**—Horsford advocates passing a suture through the epiglottis, the ends of the suture being brought over the center of the tongue and gripped by a Spencer-Wells forceps, the weight of which pulls the epiglottis forward against the root of the tongue and usually quite out of the way. The patient holds the tongue in the ordinary manner. Horsford has had an instrument made for the purpose, and describes the method of its use in three cases.

## British Medical Journal, London.

July 11.

- 9 \*Etiology of Pulmonary Tuberculosis. Sir. W. Whitla.  
10 \*Congenital Stenosis of Pylorus in the Adult. W. Russell.  
11 \*Congenital Narrowness of the Pylorus, a Cause of Chronic Gastric Disease in Adult. A. E. Maynard.  
12 Gastroenterostomy for Non-Malignant Disease. C. M. Moulin.  
13 Tetany in the Adult. J. A. Gibb.  
14 \*Mucous Colitis and its Relationship to Appendicitis and Pericolicitis. A. Mantle.

9. **Tuberculosis.**—In the Cavendish lecture Whitla discusses, first, the relation between human and bovine tuberculosis, of which he considers the identity practically proved (commented on editorially in *THE JOURNAL*, August 1, p. 410), and, second, the portal of entrance of the tubercle bacillus, which, he says, the experiments of Calmette and Guérin have shifted from the site of the pulmonary alveoli to that of the intestinal epithelium. Whitla describes a series of experiments undertaken by Professor Symmers and himself to put



this conclusion to the test. In the first experiment China ink in suspension was injected into the large vein of the ear of a rabbit. On killing the rabbit an hour later the ink was found extensively deposited through the lungs. In the second, a guinea-pig was fed with a similar emulsion, a tube being used to avoid contamination by the nasal and oral cavities, and was then killed. The lungs were found to be engorged with carbon. In the third, similar injections into the peritoneal cavity in the adult guinea-pig produced a similar carbon infiltration of the lungs, although the abdominal lymphatic glands were free from pigment. The particles, therefore, must have passed through the mesenteric glands, becoming arrested in the pulmonary capillaries. Vansteenberghe and Grysez, however, in similar experiments with young guinea-pigs, found that the particles "entered the lymph paths, as in the case of the adult animals, but were at once filtered out by the mesenteric glands, so that the lungs remained free from pigment, while the glands were deeply infiltrated. Vansteenberghe and Grysez also submitted rabbits and guinea-pigs to the inhalation of carbon particles by confining them in glass boxes containing a burning turpentine lamp. But while, on killing the animals, the upper air passages—and, when the experiment was of long duration, even a few of the pulmonary alveoli—were found laden with pigment, in no case was carbon found in the parenchyma of the lung. An important experiment consisted in leaving the digestive tract open, doing a low tracheotomy, and blocking up one lung completely with cotton wool. The animals were then exposed to prolonged inhalation of carbon, as in the foregoing experiment. On killing them and examining the lungs, while the free lung showed carbon deposits in the bronchi and external portions of the alveoli, as well as in the parenchyma, the blocked lung showed only intraparenchymatous deposits, the bronchi and alveoli being free from pigment, thus indicating the route of parenchymatous infiltration to be through the blood stream. Guérin and Breton injected a fine emulsion of living bacilli through the esophageal tube into the stomachs of guinea-pigs and produced extensive tuberculous deposit in the mesenteric glands, lungs, and other viscera. When the animals lived for thirty days the lungs were always tuberculous; when for sixty days the deep cervical glands also. Examination of guinea-pigs thus treated and killed within ten days showed the entire lymphatic system already affected. In view of the facts that the great majority of the cases in which bovine bacilli have been found in the human have occurred in children, and that it is in abdominal tuberculosis that bovine bacilli have generally been found, the obvious conclusion is that the bovine bacilli gained an entrance to the stomach through the milk of tuberculous cows. Symmers and Whitla, in another experiment, combined two methods by rubbing up large doses of a living culture of bovine bacilli with powdered China ink, olive oil and water, to the consistence of thin cream. This was introduced through a catheter into the stomachs of adult guinea-pigs, which were killed at periods from four to twenty-four hours later, and the lungs and viscera examined. In six out of eight cases a smear from different parts of the lungs showed tubercle bacilli, though always sparse, lying among abundant carbon particles. The mesenteric and ileocolic lymphatic glands contained numerous tubercle bacilli with carbon particles, obviously on their way to the lungs. The histologic differences between the mesenteric glands of the young and the adult animal readily explain these results and those of Vansteenberghe and Grysez.

Whitla finally relates a series of outbreaks of cervical adenitis that occurred among school children in an isolated rural community, and were traced to the milk supply. Each series contained also cases of other forms of tuberculosis, including phthisis. Finally, he lays stress on the important part played by lowered vital resistance, and concludes that probably at no distant date the contention of Calmette will be accepted, that in the immense majority of cases pulmonary tuberculosis is not contracted by inhalation, but, as taught by von Behring, the germs enter through the intestinal tract. "Further research," he adds, "may explain how in China, where the consumption of the milk of bovines is practically nil, tuberculosis is everywhere present among the natives."

10. **Congenital Stenosis of Pylorus.**—Russell first summarizes our knowledge as to pyloric stenosis in general, discussing the causes, the relation to it of pyloric spasm, and the effects of pyloric stenosis. He approaches the consideration of congenital stenosis as an additional cause of pyloric obstruction in the adult by discussing it from the historical side. He refers to the recognition of hypertrophic pyloric stenosis in infants as a pathologic fact and a clinical entity, and concludes that there are degrees of stenosis and that a pyloric stenosis is not incompatible with infant life; that, in spite of its presence, life may be continued into childhood, and even onward. It seems inexplicable to him that there is no recognition in infancy of what Maier calls simple stenosis, and the fact that this condition is recorded on the operating table in children as young as 6 indicates a clinical hiatus that should not be difficult to fill. He discusses the literature of the present medical and surgical position, and holds that the occurrence of congenital stenosis in the adult must be accepted as an established fact. He reports three cases, and discusses the diagnosis, treatment and clinical pathology.

11. **Idem.**—Maylard adds to his cases published in the *British Medical Journal*, volume i, 1904, page 417, twelve additional cases substantiating the views formerly advanced by him, and concludes that: 1. There exists an abnormal condition of the pyloric aperture, of probably congenital origin, which consists in an undue narrowing of the orifice, varying anything between 2 or 12 mm. 2. The condition is more frequently met with in women than in men, and that the age at which the symptoms first appear depends on the narrowness of the aperture and the general physical or constitutional condition of the patient. 3. The narrowness leads to a more or less chronic condition of indigestion, manifested in various forms, and often mistaken for chronic ulceration of chronic gastric catarrh; that in the early stages relief is afforded by careful and strict attention to diet, but that any attempt to return to normal feeding causes a recrudescence of indigestion. The attacks of gastric discomfort are at first separated by considerable intervals, but these lessen in length as time goes on. 4. When the patient is advanced in life and shows marked general debility, operation will prove of doubtful value. 5. Barring such considerations as those mentioned in paragraph 3, pyloroplasty or Finney's operation—preferably the former—should be practiced.

14. **Mucous Colitis.**—Mantle discusses mucous colitis and refers especially to the arthritic symptoms, to mucous colitis simulating appendicitis, appendicitis following mucous colitis, and also as a cause of it, and to mucous colitis as a cause of pericolicitis. He describes the irrigation method of treatment in use for several years in France, and at Harrogate, in England, and states that the treatment has been most successful, as well as educational to the patient.

#### Medical Press and Circular, London.

July 8.

- 15 Abdominal Injuries. W. H. Clayton-Greene.
- 16 \*The Etiology of Pulmonary Tuberculosis. Sir W. Whitla.
- 17 The Austrian Tyrol as a Health Resort. D. Walsh.
- 18 Intermittent Claudication (Angina Cruris). B. Bramwell.

16. See abstract No. 9.

#### Clinical Journal, London.

July 8.

- 19 Acute Tuberculous Peritonitis in Adults. W. P. Herringham.
- 20 General Suppurative Peritonitis. L. McGavin.

#### British Journal of Children's Diseases, London.

July 1908.

- 21 Cases of Intussusception. H. S. Clogg.
- 22 \*Erythrodermia Desquamativa (Universal Dermatitis of Children at the Breast). C. Leiner.
- 23 Acute Affections of the Lungs in Children. T. Fisher.
- 24 Unusual Case of Acute Leucocytic Pleuropneumonia, with Extensive Fibrinous Plugs Visible to the Naked Eye in Enlarged Lymphatics. G. Carpenter.

22. **Erythrodermia Desquamativa.**—Leiner draws attention to a skin disease spreading all over the body, presenting a special type, of which he has observed 43 cases at the Carolinen Children's Hospital, Vienna, of which 41 were breast



nourished and 2 bottle fed. Of these, 28 were cured, 15 died. The disease consists of a slight inflammation of the whole cutis, a desquamation of the epidermis and a seborrhea of the scalp. It is a real inflammation of the skin and rarely attacks others than infants. The etiology is not clear, but Leiner suggests that it is probably an autotoxic erythema, occurring in connection with intestinal troubles. It must be carefully distinguished from the dermatitis exfoliativa of Ritter.

#### Annals of Tropical Medicine and Parasitology, Liverpool.

June 9.

- 25 Reports of the "Sleeping Sickness" Expedition to the Zambesi for the Years 1907-1908. A. Kinghorn and R. E. Montgomery.
- 26 Incidence and Prophylaxis of Human Trypanosomiasis in Northeastern Rhodesia. A. Kinghorn and R. E. Montgomery.
- 27 Trypanosomiasis of Domestic Stock in Northwestern Rhodesia. R. E. Montgomery and A. Kinghorn.
- 28 Work of the Greek Antimalaria League During the Year 1907. M. Hadjimichalis and J. P. Cardamatis.

#### Dublin Journal of Medical Science.

July.

- 29 Generalized Vaccinia and its Pathology. R. S. Oldham.
- 30 Calmette's Ocular Reaction to Tuberculin. G. B. McHutchison.
- 31 Pathology and Treatment of Epulis. C. G. Cumston, Boston.

#### Journal of Laryngology, Rhinology and Otology, London.

July.

- 32 Clinical Pathology of Aural Discharges. W. Wingrave.
- 33 Noise Apparatus for Detection of Unilateral Deafness. R. Bárány.
- 34 Fatal Case of Cavernous Sinus Thrombosis Following Chronic Purulent Otitis. H. Hanna.
- 35 Laryngostomy and Tracheo-Laryngostomy for Stenosis of Larynx or Trachea, Especially Cicatricial. Sargnon and Barlatier.

#### Bulletin de l'Académie de Médecine, Paris.

June 30, LXXII, No. 26, pp. 745-799.

- 36 \*Local Anesthesia. (L'Anesthésie locale et les nouveaux anesthésiques locaux.) P. Reclus.
- 37 Preventive Antitoxin Treatment of Tetanus. L. Labbé.
- 38 \*Precautions before Descending into Wells, etc. (Précautions à prendre avant de laisser pénétrer des ouvriers dans des fosses ou des puits.) N. Gréhan.
- 39 \*Aneurism of Aorta compressing the Heart and Vessels at its Base. E. Boinet.

36. **Local Anesthesia.**—Reclus is an ardent advocate of local rather than general or spinal anesthesia, and states that with it he has performed ten thousand operations without a fatality—with scarcely any disturbance in the physiologic balance. He prefers a mixture of 25 per cent. cocaine and 75 per cent. stovain for the local anesthesia, and recently amputated an arm with this technique without any complaints on the part of the patient. Local anesthesia, he declares, should be the rule for operations on the fingers and toes, anal and external genital regions, for gastrostomy, herniotomy and kelotomy, and whenever the condition of heart, kidneys or lungs contraindicates general anesthesia. Analysis of the fatalities from spinal anesthesia on record shows that the operations might have been done under local anesthesia just as well. The reason the latter is unpopular is, he believes, because the technique of local anesthesia differs so widely in the individual cases, with the region, the tissues and the condition of tissues, so that each operation requires, as it were, a special technique. Another reason is that the surgeon must attend to the local anesthesia himself, instead of turning it over to an assistant, and that he is inclined to shirk this task.

38. **Precautions Before Descending Into Wells, Pits, Etc.**—Gréhan reiterates his former assertions in regard to the necessity for letting down some small animal in a cage before allowing workmen to descend into a suspicious pit or well. If the animal is breathing normally when drawn up again after half an hour, the workmen can descend without fear. If not, the fire department should be called on to apply their ventilating apparatus which soon renovates the air. He relates a number of experiments showing the effect on guinea-pigs of various dilutions of gases.

39. **Aneurisms of the Aorta Compressing the Heart and Vessels of the Base.**—Boinet gives an illustrated description of two cases of multiple aneurisms in the intrapericardial part

of the aorta, emphasizing the contrast between the lack of sufficient physical signs and the predominance of functional disturbances from compression of the vessels and cavities of the base of the heart.

#### Presse Médicale, Paris.

July 1, XVI, No. 53, pp. 417-424.

- 40 \*Necessity for Early Electric Treatment in Reflex Atrophies. A. Zimmern.
- 41 \*Salt and the Gastric Secretion. A. Martinet.

July 4, No. 54, pp. 425-432.

- 42 \*Revised Conceptions of Hysteria. (Revision de l'hystérie à la Société de Neurologie de Paris.) H. Meige.

July 8, No. 55, pp. 433-440.

- 43 Resistance of Tubercle Bacilli to Acids and Alcohol. J. Anglart.
- 44 The Question of Diabetes Produced by Adrenalin. G. Makaroff.
- 45 Empyema of Maxillary Sinus of Dental Origin. G. Mahé.
- 46 \*Management of Transverse Presentation. (Présentations de l'épaule.) J. Rouvier.
- 47 Diminution of Vesicular Murmur at Right Apex. (Diminution du murmure vésiculaire au sommet droit.) Montélli and Cornillot.

40. **Necessity for Early Electric Treatment of Reflex Atrophies.**—Zimmern declares that an atrophied muscle, as, for example, in atrophy of the extensor muscles of the knee with hydrarthrosis, is unable to stand any strain. Even the weight of the leg is too much for the frail muscle which has lost much of its tonicity. There is danger of injuring the still vulnerable synovial membrane and of the return of the effusion. Application of electricity is the only means by which this functional inertia can be combated without harm. This applies especially to the reflex atrophy of the posterior bundles of the deltoid in lesions of the shoulder. Isolated contraction of the deltoid can be obtained only by localized electrization, as is also the case with the peroneus longus. Any treatment which defers the return of functional activity to the muscle exposes to the danger of consecutive atrophy; it should resume its work with the minimum of energy, which is the contraction induced by electric stimulus alone.

41. **Salt and the Gastric Secretion.**—Martinet relates some experiences which show that salt favors gastric secretion in man. The local action of salt on the gastric secretion is inhibiting or stimulating according to the habits (carnivora or herbivora), according to the anomalies of the gastric secretion, and according as the salt is given alone or mixed with the food. In his experiments he tested the action of salt by L. Meunier's technique. This is the swallowing of a capsule containing ether, the capsule tied with catgut in a square of thin rubber. As the catgut is digested the little bag opens, the capsule becomes dissolved and the ether escapes, causing an eructation with the odor of ether. The activity of the gastric juice is evidently in inverse proportion to the length of time required for the digestion of the catgut. It is a familiar fact that the addition of salt to the food at the beginning of a meal stimulates the appetite—physiology confirms the precepts of instinct. It has been shown that prolonged suppression of salt in the diet reduces the pain and the vomiting in hyperchlorhydria, while salt given in abundance stimulates secretion of hydrochloric acid. A healthy man tested by the Meunier technique had the ether eructation at the same time with milk and meat—in from 80 to 85 minutes—with and without salt, while the digestion with soft-boiled eggs and with boiled rice was delayed from 10 to 20 minutes when no salt was eaten with them. Repetitions of the test gave the same results each time.

42. **Revised Conceptions of Hysteria.**—Meige states that the work done in this line at the latest French and international neurologic congresses has been inconclusive, but the matter has been recently illuminated at a symposium of the Paris Neurologic Society. The objective facts presented confirm the assumption that the alleged stigmata of hysteria have no pathognomonic value and are merely the results of suggestion, generally of medical origin. Also that modifications of the tendon and pupil reflexes do not belong to the symptomatology of hysteria. Babinski has reconstructed out of the ruins of the old conceptions of hysteria his new definition of it as a special psychic state manifesting itself in disturbances



distinguished by the fact that it is possible to reproduce them by suggestion in certain persons and to cause them to disappear under the exclusive influence of persuasion. He would exclude from the conception of hysteria the so-called hysteric fever, hemorrhages, etc., their alleged hysteric origin being non-proven to date.

**46. Technic for Management of Transverse Presentation.**—Rouvier calls attention to the necessity for substituting the breech for the shoulder in formulating the indications in shoulder presentation. He gives two simple rules to facilitate artificial delivery in transverse presentation: With the obstetric patient in the dorsal or lateral position, lying on the same side as the fetal breech, if the breech is on the right, the physician should be on the right side of the patient and use his right hand for podalic version. If the breech is on the left side, he should be on the left side and use his left hand. In exceptional cases, as of occipito-posterior position in a uterus with pronounced anteversion, if the above technic fails, he turns the patient on her other side and uses his other hand, without changing his position.

**Revue de Médecine, Paris.**

June XXVIII, No. 6, pp. 505-584.

- 48 \*Myoclonia in a Case of Meningo-encephalomyelitis. (Myoclonie chez un vieillard.) J. Paviot and L. Nové-Josserand.  
49 Pathologic Anatomy of Solar Plexus in the Tuberculous. Laignel-Lavastine.  
50 \*Symmetrical Lipomatosis. Roch.  
51 \*Autosuggestion in Neurasthenia. P. Hartenberg.

**48. Pathologic-Anatomic Findings in Myoclonia.**—The autopsy findings in the case reported seem to be identical with those characteristic of chronic chorea, and the authors say that it is the first anatomic demonstration of the close relationship between myoclonia and chorea. The chronic meningo-encephalomyelitis showed interstitial and pericellular infiltration of round cells. The reflexes were normal or exaggerated and the mind did not seem to be affected. The patient was a man of 66 who had died from an intercurrent affection.

**50. Symmetrical Lipomatosis.**—Roch discusses the various forms and summarizes twenty-seven cases on record, dwelling especially on the form in which multiple circumscribed and painless lipomata occur on the forearms, thighs and waist. There seems to be a familial and hereditary tendency in this form, suggesting that it is a manifestation of defective development. He points out the features which distinguish it from symmetrical pseudolipomatosis, cervical adenolipomatosis, diffuse symmetrical lipomatosis and adiposis dolorosa. In a case personally observed the patient was a man of 65 with chronic nephritis. In all the cases on record the tumors were noted in childhood or first after some infectious disease; there was never any causal local trauma or nervous affection.

**51. Autosuggestion in Neurasthenia.**—Hartenberg presents evidence to disprove the assumption that the symptoms in neurasthenia are the results of autosuggestion. Those who believe this assumption have failed to differentiate neurasthenia from various neuropathies. The term neurasthenia, he says, should be reserved for the syndrome of nervous depression, and in this autosuggestion plays a subordinate rôle.

**Semaine Médicale, Paris.**

July 8, XXVIII, No. 28, pp. 325-336.

- 52 \*Fatal Asystole in Exophthalmic Goiter. (Asystole mortelle dans la maladie de Basedow.) G. Mouriquand and L. Bouchut.

**52. Fatal Asystole in Exophthalmic Goiter.**—Mouriquand has attempted to determine whether the tachycardia of exophthalmic goiter is able alone to induce fatal asystole, as many maintain. He has analyzed 260 cases of exophthalmic goiter in the literature, and has found 30 in which death occurred from asystole, but closer study of the history showed aortic lesions in 5, mitral lesions in 12 and combined lesions in 3. In a personal case described, the exophthalmic goiter developed during convalescence from acute articular rheumatism, with fatal asystole in less than three months. In the majority of cases the fatal asystole in exophthalmic goiter is the result of the aggravation of a pre-existing cardiopathy by the disease. In another group the heart may be apparently sound, and the asystole due to chronic nephritis, severe pleurisy or

compression in the mediastinum. In a third group of cases the tachycardia seems to be the only factor of the fatal asystole, but such cases prove nothing in the absence of histologic examination of the myocardium. In these cases the course is generally rapid, progressive, without remissions, and the asystole develops only a few weeks after the first symptoms of the exophthalmic goiter. As a rule, it is possible to trace to some infection—generally quite recent—the thyroid lesion which determined the exophthalmic goiter, and also the heart lesion which precipitated the asystole. Ordinarily these cases are due to acute rheumatism, producing at the same time both the thyroid and the cardiac lesions. The cardiac lesion consists in a fresh inflammatory process in the endocardium or myocardium, primary or developing on old lesions. This association is of all the most dangerous, since the rheumatismal infection creates simultaneously the two causes most favorable for the production of fatal asystole: the Basedow tachycardia and the inflammatory cardiopathy.

**Beiträge zur Geburtshilfe und Gynaekologie, Leipsic.**

XII, No. 3, pp. 339-506. Last indexed Dec. 14, 1907, p. 2044, and April 11, p. 1229.

- 53 Treatment of Suppurative Affections of the Adnexa. H. Fehling.  
54 Clinical Study of Hypoplasia and Infantilism of the Genitals. A. Mayer.  
55 Publotomy in Six Cases. (Hebosteotomie.) J. Karaki.  
56 Two Cases of Ovarian Embryoma. Y. Iwase.  
57 Causes, Symptoms and Treatment of Tardy Hemorrhage in the Puerperium. (Spätblutungen im Wochenbett.) T. Vogelsanger.  
58 Histogenesis and Diagnosis of Ovarian Carcinoma. G. Jung. XIII, No. 1, pp. 1-172.  
59 Comparative Size of Japanese Female Pelvis. (Beckenmessungen an lebenden Japanerinnen.) M. Ogata.  
60 Influence of Castration on Development of Pelvis in Lambs. (Entwicklung des knöchernen Beckens nach der Geburt.) K. Franz.  
61 Anatomic Research on Nulliparous Uteri with Special Regard to Development of Isthmus. K. Hegar.  
62 \*Appendicitis in Women and its Importance in Gynecology. (Appendicitis beim Weibe.) Pankow.  
63 Shape of Ureters, especially in the Fetus and the New-born. (Form der Ureteren.) L. Seitz.  
64 \*Childbirth with Contracted Pelvis. (Geburtsverlauf beim engen Becken.) F. Jacobi.  
65 The So-called Myoma Capsule. R. Stern.

**62. Appendicitis in Women and Its Importance in Gynecology.**—Pankow found the appendix sound in less than 25 per cent. of 150 removed in the course of gynecologic operations. Nearly three-fourths of the women had signs of past or present inflammation in the appendix, and he is convinced that there is a close connection between appendicitis and subsequent gynecologic affections. Whenever the female abdomen is opened for any cause, he urges the removal of the appendix as a routine procedure. When macroscopically sound its removal is such a simple matter that it scarcely complicates the operation at all, while it removes one source of gynecologic affections. As appendicectomy is possible only by the abdominal route, this is a decisive argument against vaginal operations. He adds that Pfannenstiel's transverse incision of the fascia has banished all danger of postoperative hernia. He relates a number of typical examples from Krönig's clinic at Freiburg, including some in which the inflammation spread from the appendix to the adnexa or vice versa, of sterility, neurasthenia, retroflexion, etc., for which appendicitis, possibly in childhood, was responsible. He also discusses chronic recurring appendicitis as a cause of abdominal disturbances, and the differentiation of abdominal pain with coexisting hystero-neurasthenia, illustrated by examples of each type. He cites the grave prognosis of appendicitis in pregnancy as another argument in favor of its prophylactic removal.

**64. Course of Childbirth with Contracted Pelvis.**—Jacobi writes from Fehling's clinic at Strasburg to analyze the experiences with 302 childbirths with shallow or contracted pelvis, and discusses the mechanism of delivery. The mortality of the children with operative delivery was 24 per cent. The maternal mortality was 1.32 per cent. The principles followed are to wait with primiparae; in case intervention becomes necessary, high forceps, enlargement of the pelvis or Cesarean section. Multiparae must decide for themselves beforehand whether treatment shall be expectant or prophylactic. At term, expectant treatment at first, with high forceps later, and if this fails operative intervention.



## Berliner klinische Wochenschrift.

June 29, XLV, No. 26, pp. 1213-1256.

- 66 \*Consequences of Syphilis. (Folgen der Lues.) Waldvogel and Sussenguth.  
67 \*Eczema and Asthma. L. Langstein.  
68 \*Cirrhosis of Liver Following Lymphatic Leukemia. M. Mosse.  
69 \*Antagonistic Action of Adrenalin and Lymphagogs. Z. Tomaszewski and G. G. Wilenko.  
70 \*Histology and Classification of Acute Ascending Spinal Paralysis. (Landry'sche Paralyse.) A. Münzer.  
71 \*Physiology of the Heart Contractions. (Herzbewegung und Herzkontraktion.) E. Rehfisch.  
72 Yellow Atrophy in Syphilis. P. Bendig.  
73 \*Improved Technique for Making Diphtheria Antitoxin. P. Blumenthal.  
74 Isolated Paralysis of External Rectus with Otitis Media. (Isolierte Lähmung des Musculus rectus externus bei gleichseitiger eitriger Mittelohrentzündung.) A. Peyser.  
75 Artificially Induced Hyperemia in Treatment of Flatfoot. (Stauungshyperämie bei fixiertem Plattfusse.) G. Muskat.

66. Consequences of Syphilis.—In this communication from the medical clinic at Göttingen, the after-history of 486 patients treated for syphilis, from 1873 to 1882, is reviewed. Accurate information was obtained in regard to 297, including 108 women and 6 children. This information was obtained from insane asylums and hospitals, village authorities and general practitioners throughout the country, mostly in southern Hannover. The results show, it is said, that the picture is generally painted too black, as a rule. The life expectancy proved to average only two years less than the normal standard. Tabes developed in 2.5 per cent. and progressive paralysis was responsible for 9.3 per cent. of the deaths among the syphilitics. The interval between infection and the paralysis ranged from 8 to 27 years. This material is tabulated under different headings. Of the 491 living children born, 19.4 per cent. succumbed during the first year of life, a figure which corresponds with the average of 20.5 per cent. mortality of infants under 1 year in Prussia during those years. The families have an average of 2.42 living and healthy children.

67. Eczema and Asthma.—Langstein discusses the connection between eczema and asthma, relating four case-histories to confirm the assumption of the "exudative diathesis" as the basis for the two affections. He calls attention anew to the value of a salt-free diet in the treatment of eczema, although it has no action on the asthma. The latter is best treated by change of air. The deprivation of salt by Finkelstein's method proved rapidly effectual in curing the eczema; the child's food contains the standard proportions of fat, albumin and sugar to the quart of whole milk, but only one-fifth part of the salt.

68. Metalympheic Cirrhosis of Liver.—Mosse reports a case of lymphatic leukemia in a man of 55 in which the blood picture was restored to normal by Roentgen treatment. About one year later signs of cirrhosis of the liver and chronic peritonitis developed, fatal in eight months. He ascribes the liver affection to injury of the parenchyma cells by the lymphocytes destroyed by the Roentgen treatment, similarly to the injurious action of alcohol on the red corpuscles, to which Kretz and others ascribe the cirrhosis of the liver in "gin liver." He says that this is the first case on record of lymphatic leukemia with histologic findings after prolonged Roentgen exposures.

69. Antagonistic Action of Adrenalin and the Lymphagogs.—This communication from Senator's laboratory suggests that mechanical factors may predominate in the effects of adrenalin on the sugar metabolism. The adrenalin retards the lymph current, and the blood thus contains less of the substances which are normally contained in the blood and which are needed for the oxidation of the carbohydrates.

70. Histology and Classification of Landry's Paralysis.—Münzer presents evidence to show that acute ascending spinal paralysis is the result of acute poliomyelitis, which possibly may have been caused by some intoxication of the organism.

71. Physiology of the Heart Contractions. Rehfisch describes experiments on 50 dogs undertaken to determine the relations between the difference between the maximal and minimal blood pressure and the amplitude of the heart's contractions.

73. Production of Diphtheria Antitoxin.—Blumenthal treats the horses by injection of the toxin directly into the lungs

through the intercostal spaces. The spongy structure of the lungs allows injection of large amounts of the toxin, while the specific activity of the lung cells leads to the production of exceptionally large amounts of antitoxin. He gives the details of inoculation of two horses showing the exceptionally large amounts of antitoxin units in their serum under this intrapulmonary technique. He thinks that this method yields a very powerful serum in the briefest time, with less harm to the animal and with the least signs of reaction. Experiments with intratracheal inoculation showed that by this route the toxin is absorbed too rapidly into the blood before it is able to induce the local specific reaction.

## Deutsche medizinische Wochenschrift, Berlin.

July 2, XXXIV, No. 27, pp. 1169-1216.

- 76 \*Treatment of Exophthalmic Goiter. (Basedowsche Krankheit.) M. Bernhardt.  
77 \*Operative Treatment of Embolism of Pulmonary Artery. (Operation der Embolie der Lungenarterie.) F. Trendelenburg.  
78 Differential Diagnosis of Inflammation of Appendix and Adnexa. Rinne.  
79 Binding of Complement in Relapsing Fever. (Komplementbindung bei Recurrenserkrankungen des Menschen und experimenteller Recurrens-Spirochätose der Mäuse und Ratten.) W. Kofle and P. Schatilloff.  
80 Resistance of Trypanosomes to Atoxyl. (Atoxylfestigkeit der Trypanosomen.) A. Breinl and M. Nierenstein.  
81 Serum Treatment in Eye Affections. (Serumtherapie bei Erkrankungen des Auges.) A. v. Hippel.  
82 Chancre at Point of Experimental Inoculation. (Syphilitischer Initialaffekt der Haut an der Einstichstelle nach Impfung in die Hoden von Affen und Kaninchen.) E. Hoffmann, H. Löhe and P. Mulzer.  
83 \*Sarcoma of Lymph Glands Simulating Granuloma. (Granulomartiges Sarkom der Lymphdrüsen.) Dietrich.  
84 Indifferent Results with Finkelstein's Salt-free Diet in Treatment of Eczema, etc., in Infants. (Salzarme Kost beim Säuglingssekzem, beim Strophulus und Pruritus infantum.) B. Spiethoff.  
85 \*Sawdust Bread in Treatment of Habitual Constipation. K. Blümel and H. Ulrich.  
86 \*Ultimate Results of Tracheotomy. F. Lehnerdt.

76. Treatment of Exophthalmic Goiter.—Bernhardt does not advise an operation until all other measures have failed, unless the goiter had preceded the other symptoms. The remarkably fine results of operative treatment in the hands of Kocher are undoubtedly due to the fact that in Switzerland the thyroid gland is almost universally abnormal. It is probable that when good results are obtained from operative measures the exophthalmic goiter was a secondary rather than a primary affection. He advocates galvanic treatment as sure to do no harm, while it may help the patient. In a certain number of cases it has proved of great benefit. Rest is the main requirement in treatment. In case of excessive heart action or with much weakness and anemia the patient should be kept permanently in bed. The good results of a sojourn in the mountains have been established again and again. Hydrotherapy is also useful avoiding cold procedures, except that an ice or cold water bag may be applied to the heart region to relieve severe symptoms. Iron, arsenic and quinin make a good tonic, with bromids when there is much agitation, and heart tonics when indicated. The majority of exophthalmic goiter patients have a neuropathic inheritance; the affection displays a hereditary and familial tendency and other severe neuroses are often to be found in the family history. These facts, he says, open a wide field for prophylactic action on the part of the physician.

77. Operative Treatment of Embolism of the Pulmonary Artery.—Trendelenburg gives an illustration of the emboli removed from the pulmonary artery of a man of 45. One embolus measured about 12 inches. The patient succumbed the next day and autopsy showed that he had overlooked another large embolus which proved responsible for the fatal termination—a mistake which could be avoided in other cases. The emboli can be extracted through a very small incision in the elastic wall of the artery. He hopes that the two experiences on record (see Siever's report, summarized in THE JOURNAL, July 25, page 358) will convince the doubters that operative treatment of embolism of the pulmonary artery is not a flashy example of surgical daring, but a well-justified procedure, adapted to its purpose, with which it will be possible, under favorable circumstances, to save from certain death otherwise doomed individuals.



83. **Sarcoma of Lymph Glands Simulating Granuloma.**—Dietrich warns of the possible latent sarcomatous nature of progressive enlargement of lymph glands diagnosed clinically as pseudoleukemia. Even when an excised scrap shows the structure of a granuloma, this does not exclude sarcoma. In examining such a case the connective tissue around the lesion should also be investigated for signs of sarcoma. He relates four cases; no signs of tuberculosis could be discovered, but granulomatous sarcomatous degeneration of glands in the abdomen or thorax was evident. The patients were men, one was quite young. The sarcoma had invaded the veins in some of the cases.

85. **Sawdust Bread for Habitual Constipation.**—Blümel says that an ounce of finely sifted beech wood sawdust can be worked into a pound of wheat bread dough without affecting the taste. He has used this "cellulose bread" in eighty cases and found it effectual in curing even old, rebellious constipation. The patients ate this bread exclusively after a preliminary course of castor oil or injections. The only failures were in severe cases of hysteria or neurasthenia, chlorosis or enteroptosis. He warns that the trees must be felled late in the fall or the sawdust will have an unpleasant taste.

86. **Ultimate Results of Tracheotomy.**—No after-effects were discovered in examining, at a later date, 173 children out of the 264 discharged from the Leipsic Surgical Clinic out of 404 on whom tracheotomy was performed in the twelve years before 1905. Lehmerdt, however, found 16 cases of stenosis in examining the remote results of the 1,539 tracheotomies performed at the Children's Hospital at Leipsic between 1892 and 1905. More than half of the operations in this latter group were done on children under 3, and the mortality was twice as high as among the older children. Of the 16 cases of stenosis, 14 developed between 1902 and 1905, while only two instances of stenosis were recorded in the ten preceding or the following years.

#### Münchener medizinische Wochenschrift.

June 30, LV, No. 26, pp. 1369-1416.

87 \*Chyluria. H. Lüdke.

88 \*Ocular Tuberculin Reaction. (Ophthalmoreaktion der Tuberkulose in ihrer Beziehung zum Sektionsergebnis und zur Tuberkulininjektion.) G. Felsenfeld. Id. (Konjunktivalreaktion bei Genitaltuberkulose.) A. Hörrmann.

89 \*Ocular Typhoid Toxin Reaction. (Ophthalmoreaktion bei Typhus abdominalis.) A. Meroni.

90 \*Ocular Tuberculin Reaction. (Ist die konjunktivale Tuberkulinreaktion ungefährlich?) M. Goerlich.

91 \*Cutaneous Tuberculin Reaction in Infants. (Die kutane Tuberkulinimpfung nach v. Pirquet bei Kindern des 1. Lebensjahres.) Morgenroth.

92 \*Use of Gum Arabic in Spinal Anesthesia. (Verwendung von Gummi als Zusatz zum Anästhetikum bei Lumbalanästhesie.) E. Erhardt.

87. **Chyluria.**—Lüdke reports a case of chyluria in a maid servant in Germany, 46 years old, who had never lived in the tropics. No filaria could be discovered; the chyluria developed after an attack of cholecystitis. The colon bacillus could be cultivated repeatedly from the urine in almost pure cultures. He thinks that the inflammation in the bladder had probably led to the flow of lymph. There did not seem to be any chylemia, but the urine contained a larger proportion of fat than mere admixture with chyle would produce. Another remarkable feature of the case was that the total amount of urine was not increased, as it would be if there was actual lymphorrhagia. The general health did not seem to be impaired, although the patient eliminated from 60 to 130 grains of fat in the urine daily. This elimination proceeded regularly and was accompanied by about 0.1 per cent. of dextrose. On a diet of much fat or no fat the elimination of fat in the urine did not fluctuate, and the urine has been persistently milky since February, 1908.

88. **Ocular Tuberculin Reaction.**—Felsenfeld compares the conjunctival response with the autopsy findings or the results of tuberculin injection. His experience includes 168 cases, with autopsy in 25. His conclusions are that the ocular test is useful as corroborative evidence, but that it has no decisive importance in diagnosis. Hörrmann discusses its differential value in genital tuberculosis, remarking that a positive response is generally obtained in clinically certain cases, with the exception of those with cachexia. The response is thus

important for the prognosis. A negative response in an adult is presumptive of freedom from tuberculosis, but comparison of long series of autopsy findings is needed to decide this question definitely. Goerlich has had some disagreeable experiences with conjunctival instillation of tuberculin which show that the 1 per cent. solution can not be applied indiscriminately. Infants and scrofulous children should be excluded from the test, as also persons with the slightest tendency to irritation of the eyes or even of the nasopharynx, and to hysteria and hypochondria.

89. **Ocular Reaction in Typhoid.**—Meroni has been testing the instillation of typhoid toxin in the eye as a means of early diagnosis, according to Chantemesse's technic mentioned in THE JOURNAL, April 25, page 1344. He found in an experience with 55 patients that the reaction may be positive even after six hours, not only with typhoid patients, but also with others suffering from other maladies, as he tabulates in detail. After twenty-four hours the absence of reaction speaks against typhoid. The test has thus considerable practical value. Some individuals with exceptionally sensitive conjunctiva respond with a strong reaction to instillation of even an indifferent substance, such as sterile bouillon. No deleterious by-effects were noted in any instance, and the efficiency of the typhoid toxin was not impaired by heating to 60 C. He is now engaged in research to compare the sensitiveness of the conjunctiva in health and in typhoid fever to typhoid and colon bacillus toxin.

90. See abstract No. 88 above.

91. **Cutaneous Tuberculin Reaction in Infants.**—Morgenroth expatiates on the convenience of the Pirquet technic for infants and its reliability. Even in the doctor's office, without any special preparation, the test can be made with diluted "old" tuberculin without the slightest inconvenience for the child. Whenever a child gives a positive response his home environment should be investigated. Invariably in his experience some one with open tuberculosis was found in the family. The infection in infants is generally the result of inhalation, he thinks. Positive findings were obtained in 5 per cent. of the 200 infants under a year old thus tested at the Cologne children's clinic last winter.

92. **Addition of Mucilage to Anesthetic for Spinal Anesthesia.**—Erhardt relates further successful experiences with this technic. He thinks that the addition of a little gum arabic to the anesthetic materially prevents its absorption by the higher centers while not interfering with its anesthetic action, thus minimizing the dangers. He is enthusiastic over the prospects of spinal anesthesia when the surgeon once becomes accustomed to the idea that the patient can hear all he says, and when the patients learn that operations by this technic are absolutely painless and free from the after-effects of general anesthesia. One great advantage is that the surgeon can take his time, confident that the analgesia will last for hours.

#### Therapie der Gegenwart, Berlin.

July, XLIX, No. 7, pp. 289-336.

93 \*Local Measures to Enhance Efficacy of Diphtheria Antitoxin. (Die natürlichen Grenzen der Wirksamkeit einer Heilserum-Behandlung bei der Diphtheria faucium und ihre gelegentliche notwendige Ergänzung durch bestimmte lokale Massnahmen.) G. Krönig.

94 Soluble Sedatives of the Veronal Group. (Therapeutische Verwendung leicht löslicher Schlafmittel aus der Veronalgruppe.) E. Steinitz.

95 \*Action and Elimination of Drugs Injected Intravenously. (Wirkung und Ausscheidung intravenös injizierter Medikamente.) F. Mendel.

96 \*Manual-Mechanical and Gymnastic Treatment of Emphysema of Lungs and Bronchial Asthma. F. Kirchberg.

97 \*The General Practitioner and Roentgen Treatment. (Der praktische Arzt und die Röntgenbehandlung.) M. Levy-Dorn.

93. **To Enhance the Efficacy of Diphtheria Antitoxin.**—Krönig discusses the natural limitations of antitoxin treatment of diphtheria. The results depend on the proportion between the amount of the toxins circulating in the blood and the amount of antibodies introduced in the curative serum and whether the antibodies can obtain access to the toxins. He expresses amazement that so little attention has been paid hitherto to the distention of the swollen tissue with its stoppage of the capillaries, preventing the circulating of blood and



lymph through the region. This principle is recognized and applied everywhere else, the physician relieving conditions in infiltrates in which the circulation has been more or less arrested by one or more incisions. The circulation is generally at once re-established and necrosis and gangrene are warded off. This measure is particularly needed in diphtheria on account of its pronounced tendency to induce gangrene. In the diphtheric local process the toxin in the blood and the antibodies in the injected serum are unable to come into contact, and consequently the serum fails of its effect, while the products of the gangrenous process are absorbed and keep up the vicious circle. He makes a practice now of incising the diphtheric process in the throat when the fever does not subside after the injection of antitoxin and the diphtheric lesion in the throat remains hard and swollen. The incision generally bleeds very little; the more it bleeds the less obstruction in the capillaries. To promote the bleeding he applies warm compresses outside, and has the mouth rinsed with warm water to which a little mild antiseptic has been added. The procedure is but slightly painful, but the relief induced is frequently surprising, the temperature dropping at once, even although it had persisted high after one or two large injections. Since he has been systematically thus incising the hard swollen local process he has had much better results with antitoxin treatment. The number of gangrenous cases has been reduced to the minimum. These experiences confirm anew the necessity for injecting the serum at the earliest possible moment, while the vascular passages in the region of the local process are still open and unobstructed.

95. **Intravenous Medication.**—Mendel is a warm advocate of intravenous medication, and here describes further experiences with it and research on the action and elimination of drugs injected into the veins. For this research sodium salicylate and iodid, each in a 20 per cent. solution, are particularly instructive as they are taken up entirely by the circulation and their elimination can be easily and completely traced. The desired concentration of the drug in the blood can be obtained with smaller doses by intravenous injection, and the elimination is much slower than by other routes, which still further enhances the effect. This renders the danger of toxic cumulation more imminent in intravenous administration of such drugs as strophanthin and digitalis.

96. **Mechanical Treatment of Emphysema and Asthma.**—Kirelberg gives an illustrated description of a method of manual-mechanical massage of the chest in case of emphysema and bronchial asthma, supplemented by exercises in breathing. The aim is to expel the residual air, and for this he trains the patient to inhale sharply and then make the expiration as long and deep as possible. He claims that great relief can be obtained by these deep, prolonged expirations. He thinks that this aim is not realized by mobilizing the chest by chondrotomy, the Freund technic, as this does not affect expiration. The ribs do not move with deep expiration; only the diaphragm is drawn up more and more into the thorax. He applies vigorous massage treatment every day for three or four weeks at first, in the morning, with occasional rests, the total sitting being about twenty minutes long. The hyperemia induced by the massage aids in the relief experienced, while the general health improves.

97. **Roentgen Treatment.**—Levy-Dorn gives several examples of conditions indicating Roentgen treatment, as a guide to the general practitioner. Leukemia, sarcoma, lupus, syeosis, favus, rebellious psoriasis, pruritus and eczema are liable to be much benefited, he declares, as also are chronic joint affections, enlarged prostate and goiter, chronic rheumatism, exophthalmic goiter and certain neuralgias.

#### Wiener klinische Wochenschrift.

July 2, XXI, No. 27, pp. 970-1004.

- 98 Murmurs in the Pulmonary Area. (Im Gebiete der lungenarterie entstehende Geräusche.) L. v. Schrötter.  
99 Fate of Spermatozoa. (Schicksal der Spermatozoen, welche nicht zur Befruchtung gelangen.) H. Königstein.  
100 Bacteriologic Findings in Suppurative Bronchitis. R. Pollak.  
101 Injection of Pneumococcus Cultures and Antiserum for Corneal Ulcers. (Das Römische Immunisierungsverfahren in Fällen von Ulcus serpens corneae.) W. Reis.

- 102 \*Tardy Rachitis. (Späte Rachitis.) E. Miesowicz.  
103 Cutaneous Tuberculin Reaction in Children. (Kutane Tuberkulinreaktion im Kindesalter.) O. Gräner.  
104 Pigment of Pneumonic Sputum. (Farbstoff des pneumonischen Sputums.) L. Pollak.  
105 "Blood Dust." (Ultrateilchen des Blutplasmas.) A. Neumann.

102. **Tardy Rachitis.**—Miesowicz reports a case and reviews the literature. The distinguishing features are the development of the affection after the tenth year, the malformation of the long bones with distinct enlargement of the epiphyses of these bones, the influence of treatment and the characteristic Roentgen pictures of the junction of the epiphysis and the shaft. His patient was a girl of 17. The trouble began with pains in the ankles and their enlargement.

#### Zentralblatt für Chirurgie, Leipsic.

July 4, XXXV, No. 27, pp. 809-840.

- 106 Operation for Cleft Palate. (Technik der Gaumenspaltenoperation.) C. Hebling.  
107 Suggestion for Operation on Low Diverticulum in Esophagus. (Zur Operation tiefsitzender Oesophagusdivertikel.) Lotheissen.

#### Zentralblatt für Gynäkologie, Leipsic.

July 4, XXXII, No. 27, pp. 873-904.

- 108 \*"Lightning" Treatment of Cancer. (Behandlung des Karzinoms mittels Fulguration durch Dr. Keating Hart.) G. Leopold.  
109 Delivery by Müller's Technic. (Extraktion nach Müller.) E. Kaufmann.  
110 Two Cases of Spontaneous Rupture of Uterus. K. Eisenstein.

108. **"Lightning" Treatment of Cancer.**—Leopold describes a visit to Keating Hart at Marseilles to investigate the results of "fulguration" or "lightning" treatment of cancer, described in THE JOURNAL, March 21, 1908, page 1001. He says that the written descriptions of the method give very little idea of the technic which Hart has worked out in the course of several years. He regards the fulguration as merely a preliminary or adjuvant to the knife. The improvement realized even in advanced cases is remarkable, relieving the patient of hemorrhage, pains and ichorous discharge for a time at least. Disseminated nodules of recurring mammary carcinoma are fulgurated each for five or ten minutes. This softens the nodules and prepares them for excision, after which he fulgurates for twenty or thirty minutes. The fulguration does not lead to the formation of an eschar; the tissue merely turns brownish and edematous, with free exudation of lymph.

#### Hygiea, Stockholm.

May, LXX, No. 5, pp. 401-479.

- 111 \*Syphilis in Registered Prostitutes, Especially Tertiary Manifestations. (Syfilis hos reglementerade kvinnor särskildt med afseende på tertiärismen.) H. I. Schlasberg.  
112 \*Detection of Tubercle Bacilli in Urine. E. Key.

June, No. 6, pp. 481-591.

- 113 \*Operations on Hemophiliacs. (Om hämofili och kirurgiska ingrepp hos hämofila personer.) K. Dahlgren.  
114 \*Surgery of Brain Tumors, with a Case. (Om hjärntumörernas kirurgi.) G. Naumann.  
115 Cervical Ribs. (Om halsrefben.) A. Reuterskiöld.  
116 \*Enzyme Reactions of Cow's Milk and Their Importance for Hygienic Control of Milk Supply. (Kmjölkens enzymreaktioner.) C. Barthel.

111. **Tertiary Syphilis After Thorough Mercurial Treatment.**—Schlasberg records the pathologic history of 1,500 registered prostitutes at Stockholm who presented symptoms of syphilis between 1885 and 1906. All were given thorough specific treatment, but tertiary symptoms developed in 137. The percentage of those who had taken from one to nine courses of treatment was about the same in the tertiary and the non-tertiary cases: 21.6 per cent. of 116 tertiary and 18.1 per cent. of 855 non-tertiary—all under observation for more than five years—who had taken one course; 25.9 and 27.3 per cent. with two courses; 18.1 and 22.2 per cent. with three courses; 13.8 and 15.2 per cent. with four courses, and from 5 to 6.9 per cent. with seven to nine courses. The extent and severity of the secondary manifestations did not seem to have any connection with the prognosis, except possibly that the secondary manifestations had been comparatively milder in the cases in which tertiary symptoms developed later. Recurrence of the tertiary manifestations was observed in 34.3 per cent., mostly between the ages of 20 and 30; the interval



between infection and their development ranged from one to twenty-six years, but averaged from four to eleven years.

**112. Determination of Tubercle Bacilli in Urine.**—Key relates a few instructive cases of urogenital tuberculosis and dwells on the differentiation of tubercle from smegma bacilli, which is frequently a difficult matter, as he shows by several case histories. He comments further on the danger of carrying tubercle bacilli up into the kidney from the bladder or prostate when catheterizing the ureters. To avoid this the catheter must not be pushed too far in while the cystoscope is being introduced into the bladder. The tip of the catheter should be kept an inch or so back from the mouth of its tunnel in the cystoscope. He advocates connecting the catheter with an irrigator and sending a constant stream of salt solution through it during the entire procedure. No antiseptic must be used, as it would interfere with the cultivation of bacilli from the urine. He has done this in several cases, flushing the parts constantly as the cystoscope was being introduced and thereafter. In case of tuberculous processes in the bladder or prostate it might be wiser to expose the ureter and, through a small slit in it, introduce the catheter into the kidney. This seems to be the only way to avoid erroneous conclusions from transportation of bacilli from below, when conditions are such that there is little prospect of being able to rinse the bladder and prostate entirely free of germs before introducing the catheter. He thinks inoculation of guinea-pigs is indispensable to decide the question of the presence or absence of tuberculosis, adding that Block's method of crushing the glands near the point of inoculation hastens the development of the tuberculous lesion.

**113. Surgery on Hemophiliacs.**—Dahlgren had to operate in two cases of threatening appendicitis in men of 19 and 40. Both were "bleeders" and the operation was done only as the last resort and under every precaution. Neither patient survived the excessive loss of blood. Dahlgren believes that marriage should be forbidden to persons liable to beget bleeders, especially the women in a hemophiliac family, whether they are themselves bleeders or not. This prohibition need not extend to the male members of the family if they are free themselves from the tendency to hemophilia. The general health of a hemophiliac child should be kept constantly at its highest point, and the attendants, teachers and mates of the child should be instructed to ward off trauma of all kinds. No surgical measures should ever be attempted except in case of vital necessity. Preventive treatment with serum, lime salts or other hemostatic might be tried in this case. In the two cases reported the appendicitis was not responsible for the fatal outcome, but merely the loss of blood which oozed constantly from the wound, uninfluenced by lime salts and other hemostatic measures. The hemophiliac tendency was known beforehand in the younger man.

**114. Brain Tumors.**—Naumann's patient was a woman of 22 with symptoms indicating a tumor in the arm and leg motor center, and one was found at this point. It was encapsulated, about 4 or 5 cm. (1½ to 2 in.) in diameter and weighed 60 gm. (nearly two ounces). The main symptoms subsided completely; vision returned, and there have been no convulsions, headaches, vomiting or vertigo since the operation and no signs of recurrence during the interval of more than a year to date. The first symptoms had been observed nearly two years before the operation.

**116. Enzyme Reaction as Test for Milk Supply.**—Barthel reports a number of tests which showed, among other things, that milk kept on ice for several days, while its acidity did not increase, yet showed a constant multiplication of bacteria from about 10,000 or 220,000 to 49,000,000 or more per c.c. He advocates the methylene blue test (5 c.c. of a saturated alcoholic solution of methylene blue plus 190 c.c. of water—no formalin). He adds 0.5 c.c. of this solution to 10 c.c. of milk, pouring a few c.c. of fluid paraffin on top to keep out the air. The test-tube is then placed on the water bath at a temperature of 40 or 45 C. (104 or 113 F.). If the fluid loses its color in a few minutes, there are certainly more than 100,000,000 bacteria to the c.c. Pure milk takes more than three hours to destroy the tint.

## Books Received

**BREEDING GROUNDS OF CULICIDAE.** By C. W. Daniels, M.B., Camb., M.R.C.S., Eng., Director of the Institute for Medical Research, Federated Malay States. **THE CULICIDAE OF MALAYA.** By G. F. Leicester, M.P., C.M., Edin., Assistant in the Institute for Medical Research, Federated Malay States. Studies from the Institute for Medical Research, Federated Malay States. Vol. 3, Part 3. Paper. Pp. 269. Singapore: Kelley & Walsh, 1908.

**DIAGNOSIS BY THE URINE.** By Allard Memminger, M.D., Professor of Chemistry and Hygiene and Clinical Professor of Urinary Diagnosis in the Medical College of South Carolina. Third edition. Cloth. Pp. 116, with illustrations. Price, \$1.00. Philadelphia: P. Blakiston's Son & Co., 1908.

**THE BABY: ITS CARE AND DEVELOPMENT.** By Le Grand Kerr, Professor of the Diseases of Children in the Brooklyn Postgraduate Medical School. Cloth. Pp. 150, with illustrations. Price, \$1.00. Brooklyn: Albert T. Huntington, 1908.

**MANUAL OF INSANITY.** By H. C. Rutter, Columbus, Ohio, Medical Director Mental and Nervous Department of the Ohio Sanatorium Columbus, Ohio. Cloth. Pp. 295. Price, \$2.50. Columbus: The Midland Pub. Co., 1905.

**INFLUENCE OF FOOD PRESERVATIVES AND ARTIFICIAL COLORS ON DIGESTION AND HEALTH. IV.—Benzoic Acid and Benzoates.** By H. W. Wiley, M.D. Paper. Washington: Government Printing Office, 1908.

**THE SPHERE OF THE TRAINED NURSE.** By W. A. Newman Dorland, A.M., M.D., Assistant Instructor in Obstetrics in the University of Pennsylvania. Paper. Pp. 32. Philadelphia School for Nurses, 1908.

**ERNÄHRUNG UND KÖRPERBESCHAFFENHEIT.** (Beiträge zum Konstitutionsbegriff). Von Kreisarzt Dr. Bachmann, zu Harburg a. E. Paper. Pp. 29. Munich: Verlag der Aerztlichen Rundschau (Otto Gmelin).

**GRUNDZÜGE EINER SEXUELLEN PÄDAGOGIK IN DER HÄUSLICHEN ERZIEHUNG.** Von Dr. med. Julian Marcuse. Paper. Pp. 45. Price, 30 cents. Munich: Verlag der Aerztlichen Rundschau (Otto Gmelin).

**THIRTEENTH ANNUAL REPORT of the Board of Health of the City of Lawrence, Massachusetts.** For the Year Ending Dec. 31, 1907. Paper. Pp. 57. Lawrence, Mass.: W. T. Reardon, 1908.

**THE NATURAL HISTORY OF CANCER.** By W. Roger Williams, Fellow of the Royal College of Surgeons. Cloth. Pp. 519. Price, \$5.00. New York: William Wood and Co., 1908.

**WOMEN IN INDUSTRY.** By Louis D. Brandeis. Paper. Pp. 113. New York: National Consumers' League.

## NEW PATENTS.

Recent patents of interest to physicians:

- 891758. Sterilizing cabinet. J. M. Allspaw, Michell, Ind.
- 891678. Operating and fracture table. J. H. Downey, Gainesville, Ga.
- 891679. Operating table. J. H. Downey, Gainesville, Ga.
- 891533. Pneumatic knee-pad. P. P. Gibbs, Gordon, Texas.
- 891776. Vibrator for movement-cure purposes. J. B. Kirby, Cleveland, Ohio.
- 891577. Ice-cream cooler and soda-fountain. W. H. Wallace, Indianapolis.
- 892022. Preparing hemostatic dressing. A. W. Ball, London, Eng.
- 891911. Atomizer. J. Cooperider, Madison, Ind.
- 892249. Electrical vibrator. M. K. Golden, San Francisco.
- 892047. Hospital-bed sheet. A. C. Halferman, Buckhannon, W. Va.
- 891956. Indicating bottle. W. C. Schmidt, Richmond, Va.
- 892341. Massage appliance. A. Weintraud, London, Eng.
- 892703. Combined atomizer and powder-distributor. W. J. Barber, Honeoye Falls, N. Y.
- 892580. Sterilizing water, etc. R. A. Cambier, Tixier, and C. E. Adnet, Paris, France.
- 892717. Inhaler. G. Ermold, Elizabeth, N. J.
- 892817. Invalid bed with commode attachment. W. C. Freely, New York.
- 892842. Manufacture of peroxid of potassium. G. F. Jaubert, Paris, France.
- 892441. Electrotherapeutic generator. S. N. Metzler, Indianapolis.
- 892560. Appliance for removing facial defects. M. B. Smith, Syracuse, N. Y.
- 893146. Truss. W. Crombie, Lincoln, Neb.
- 893459. Sanitary belt. L. J. Davis, Battle Creek, Mich.
- 893464. Obstetrical forceps. W. B. Dewees, Salina, Kans.
- 893064. Ankle supporter. C. H. Ferris, Brooklyn.
- 892332. Optical testing instrument. J. F. Forth, Syracuse, N. Y.
- 893244. X-ray meter. G. C. Johnston, Pittsburg, Pa.
- 893354. Nebulizer. R. R. McGregor, Waco, Texas.
- 893021. Cup or head for massage devices. C. M. Siebert, Jr., Columbus, Ohio.
- 893208. Disinfecting apparatus. J. R. Van Dyne, Sedalia, Mo.
- 893213. Respirator. W. T. Whiteway, Cambridge, Mass.
- 894095. Truss. J. A. Anderson, Council Bluffs, Iowa.
- 893603. Water-purifier. J. Bowey, Jr., London, Ont., Canada.
- 892995. Nasal douche. E. W. Grove, St. Louis.
- 893843. Dropper-bottle. G. A. Hamman, Lawrence, Kans.
- 893868. Vibrator. G. B. Pickop, New Britain, Conn.
- 894166. Means for producing and utilizing rays of light for therapeutic purposes. C. E. Rogers, Seattle, Wash.
- 893755. Mirror for optical instruments and making same. G. N. Saegmuller, Rochester, N. Y.
- 894066. Surgical appliance. L. G. Searpa, Turin, Italy.
- 894068. Construction and arrangement of sitting and bed-rooms in mansions of all kinds, especially hotels, sanitariums, and the like. B. Scherl, Erfurt, Germany.
- 893816. Starting device for mercury vapor apparatus. G. Schwarz and J. Amon, New York, N. Y.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOLUME LI

CHICAGO, ILLINOIS, AUGUST 15, 1908

NUMBER 7

## Original Articles

### ACUTE DIVERTICULITIS OF THE SIGMOID, WITH OPERATION BEFORE RUPTURE.\*

GEORGE EMERSON BREWER, M.D.

NEW YORK.

In an earlier paper<sup>1</sup> I reported the histories of six patients operated on for intra-abdominal suppuration. In each case I believed the infection to have been caused by inflammation of an acquired diverticulum of the left colon.

In two of these cases I was able at operation to demonstrate a gangrenous rupture of the diverticulum of the sigmoid, in each of which an oval concretion was found which had acted as a predisposing cause of the infection.

Since the publication of that paper one of the patients reported, in whose case an acute diverticulitis was demonstrated, experienced a second attack and was successfully operated on by my assistant, Dr. Carleton P. Flint.

As this is the only recorded instance in which an individual has recovered from two operations for this condition, and as it is the first case of acute diverticulitis of the colon in which diagnosis has been made and operation performed before rupture had taken place, I felt that it was of sufficient interest to warrant my presenting it.

*Patient.*—This was a man 45 years of age. He had always enjoyed good health; had never suffered from digestive disturbances, suggesting appendicitis, gallstone colic, or peritonitis.

*First Attack.*—In August, 1902, while at dinner he was suddenly seized with an attack of abdominal pain, nausea and faintness, which necessitated his leaving the table and retiring to his room. The attack soon passed off and he was able to join his friends later in the evening. The following night proved a restless one, as he had more or less constant pain in the lower portion of the abdomen, which prevented sleep, and at times was accompanied by nausea and general bodily weakness. The following day he continued to feel badly, but kept up and about for the reason that he was a guest at a country house, and did not wish to inconvenience his host. Later in the day he went for a drive and suffered acutely from the jolting of the vehicle. In the evening he was obliged to call a physician, who, after examination, pronounced the case one of colitis. He returned to the city the following day, and as the symptoms continued, he remained in bed. During five days he continued to suffer with pain in the lower left quadrant of the abdomen, fever, and general malaise.

*Examination.*—When first seen by me the temperature was 103; pulse, 110; leucocytes, 17,000. There was marked rigidity

of the left rectus muscle and a tender mass in the iliac fossa.

*Operation.*—He was immediately removed to the Roosevelt Hospital, and under ether anesthesia, an incision was made over the most prominent portion of the tumor. After dividing the tissues of the abdominal wall, a large abscess cavity was entered, which contained about 120 c.c. of foul pus, and an oblong, fecal concretion. On washing out the abscess cavity a small ulceration was seen in the wall of the sigmoid, through which escaped a small amount of fecal matter. The cavity was packed with sterile gauze, the wound partly united, and a dressing applied.

*Course of the First Operation.*—After operation the temperature and pulse rapidly declined to the normal, the pain ceased, and the appetite returned. The discharge from the abscess cavity gradually diminished, until a cathartic was administered on the fourth or fifth day. This gave rise to a very abundant fecal discharge, which continued for several days. It gradually diminished after this period, and the sinus finally closed in about six weeks from the time of operation. The patient remained in perfect health for a period of five years and four months.

*Second Attack.*—In January of this year he experienced an acute pain in the abdomen, accompanied by nausea and general malaise. The pain at first was more or less generalized over the entire abdomen, but later became localized in the left iliac region, and was so similar to his previous attack as to at once suggest to the patient's mind a repetition of his former illness. The temperature was moderately elevated, and the pulse accelerated. As I was unable on account of illness to respond to his summons, I asked Dr. Flint to see him.

*Second Examination.*—At the time of Dr. Flint's first visit the pulse was 80; temperature, 101; leucocytes, 15,800; 80 per cent. polynuclears. The abdomen was not distended. On palpation there was felt a well marked muscular rigidity in the left inguinal and lumbar regions, more particularly to the outer side of the left rectus muscles. This region was sensitive to the touch, the point of greatest tenderness being midway between the anterior superior spine of the ilium and the umbilicus. On deeper palpation a distinct mass could be felt about the size of a small orange, near the anterior spine. This mass was exquisitely sensitive to the touch, and seemed to lie directly beneath the scar of the old operation. Examination of the lungs and heart was negative. The free border of the liver could be palpated about one inch below the costal margin. The spleen was not felt. There was no costovertebral tenderness. The urine was turbid, acid, 1031, contained no albumin, sugar, pus or blood.

An ice-bag was placed over the tender area and the patient passed a restless night. On the following morning the temperature was 100; pulse, 82; tenderness and muscular rigidity about the same. There was, however, rather more spontaneous pain, which was of an aching character. Later in the day the temperature rose to 102.5; the pulse-rate was increased, and the patient complained of more pain and tenderness. On examination the mass seemed somewhat larger, but this was difficult to appreciate on account of the fact that the muscular rigidity was considerably increased, and now involved the lower two-thirds of the rectus muscle. As it was evident that the condition was a progressive one, Dr. Flint made the diagnosis of acute diverticulitis, and ordered the patient's removal to the Roosevelt Hospital for operation.

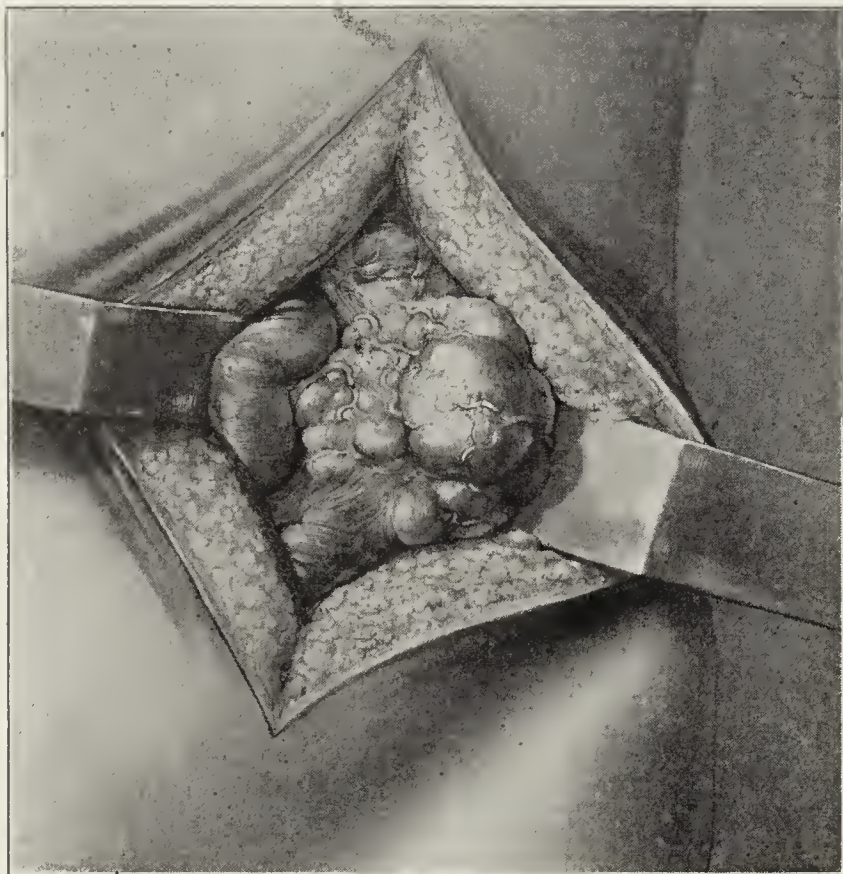
*Second Operation.*—After the usual preparation, under ether anesthesia, an incision was made directly over the mass, which

\* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Etiology of Certain Cases of Left-sided Intra-abdominal Suppuration, read before the American Surgical Association, May, 1907.



excised the scar of the previous operation. Incision was deepened until the peritoneal coat was reached. An attempt was then made to expose the sigmoid on its outer aspect, which was the seat of the previous abscess. This was, however, abandoned on account of the dense adhesions, which existed as the result of the previous infection. The peritoneum was next opened somewhat nearer the midline, and a small amount of turbid serum escaped. The intestines lying in the left iliac fossa were moderately injected, and in places glued together by a fibrinous exudate. On exposing the upper part of the sigmoid it was found to be deeply injected and edematous. On the median side of the gut near its mesenteric border, and extending well on to the median leaflet of the mesosigmoid was an oval inflammatory mass 8 or 10 cm. in its longest diameter (Fig. 1). This mass was apparently made up of an acutely inflamed diverticulum covered by edematous peritoneum, to which there were attached a number of greatly swollen appendices epiploicæ. The inflamed area was acutely red, very edematous and covered with a number of enlarged and tortuous blood vessels. On gentle palpation the tumor was found to be fluctuating; it evidently contained a quantity of pus. The colon was exposed and examined for some distance above and below the inflamed lesion to detect the presence or absence of other diverticula. As none were found, an attempt was



Acute diverticulitis of sigmoid.

made to draw the loop of sigmoid through the abdominal wound with a view to treating the lesion by the extraperitoneal method. This was found to be impossible on account of the dense adhesions from the previous operation. The parietal peritoneum was then drawn tightly around the inflamed diverticulum, and held snugly in place by a few catgut sutures at its upper and lower angles. The exposed diverticulum was then surrounded by several layers of sterile gauze, which served also to press the parietal peritoneum snugly against the loop of sigmoid and its mesentery. The wound was then drawn together at its upper and lower angles and united with silk wormgut sutures. In this manner the peritoneal cavity was completely closed, leaving only the enlarged and inflamed diverticulum exposed in the bottom of the wound.

*Course After Second Operation.*—The patient made a satisfactory recovery from the anesthetic, and with aid of a moderate amount of morphin passed a comfortable night. In the morning the temperature was 101, the pulse 88. The patient passed a fairly comfortable day, there being practically no reaction from the operation. On dressing the wound at the end of forty-eight hours, it was found that two small perforations had formed, through which there exuded a moderate

amount of foul-smelling pus. Later the diverticulum was freely opened, and a minute opening found, which communicated with the lumen of the bowel. From this time on the treatment consisted in daily dressing with irrigation of the wound and subsequent packing with sterile gauze. The temperature rapidly fell to the normal, the pain ceased, the appetite returned, and the bowels moved. The amount of fecal discharge from the intestinal wound varied from day to day, but was never large. The fistula finally closed about three weeks after the operation.

*Last Stage of Operation.*—On the twenty-seventh day, as the necrotic walls of the diverticulum had entirely separated, and as the wound was well covered with healthy granulations, an attempt was made to replace the exposed portion of the intestine and to close the wound. Ether was administered, and after a thorough cleansing of the tissues, the parietal peritoneum was partly separated from its adhesion to the margin of the bowel and mesentery. The presenting structures were then pressed inward and the separated muscles drawn together by silk wormgut sutures. The peritoneal cavity was not opened. A small drain was left in the center of the wound on account of the possibility of a reopening of the intestinal fistula. No reaction followed the operation. Wound united by first intention, and the small central opening for the drain quickly filled with granulations.

*Postoperative History.*—As the patient was rather a stout individual, and as the abdominal muscles were somewhat flabby, he was not allowed to sit up until three weeks after the second operation. A few days later he was discharged from the hospital in excellent physical condition.

From my experience, acute diverticulitis, like appendicitis, may be divided into four clinical groups:

Group 1, in which there is a mild inflammation of a diverticulum, which subsides like a catarrhal appendicitis under rest and appropriate medication.

Group 2, in which the inflammation is more severe and progressive, in which the diagnosis is made and operation performed before rupture takes place. As the opening connecting a given diverticulum with the intestine may be small, the acute inflammatory process may serve to completely occlude it, and empyema of the diverticulum with or without the presence of a concretion may develop. The last attack of the patient reported in this paper would be an example of this type of the infection.

Group 3 would comprise those cases in which there has been a rupture of the diverticulum, with the formation of a localized abscess, either intraperitoneal, or, if the diverticulum is situated in a portion of the intestine not covered by the peritoneum, the entire process may be without the peritoneal cavity. The history of the first attack of the patient reported would correspond with this type of the disease.

Group 4 would include all cases in which a rupture of the inflamed diverticulum into the free peritoneal cavity had taken place, with a resulting spreading or generalized peritonitis. I reported an example of this type of the disease in my previous paper.

In general, it may be stated that the symptoms and signs of acute diverticulitis are practically identical with those of acute appendicitis in its various forms, the only difference being that the former occurs as a rule on the left rather than on the right side of the abdomen.

Sufficient data are not available to enable one to determine what percentage of inflamed diverticula actually perforate, and it is therefore not possible to state dogmatically whether a given case of acute diverticulitis with comparatively mild symptoms should be subjected



to immediate operation or should be treated more conservatively. In my opinion, however, the clinical course of the disease is so similar to the various forms of acute appendicitis that the treatment should be the same. Certainly in all acute cases, with severe and progressive symptoms, safety lies in early operation. Had operation in the case reported been delayed, rupture would undoubtedly have taken place within twenty-four hours, and in all probability would have resulted in a rapidly spreading peritonitis.

Regarding the operative technic of the treatment of an inflamed or gangrenous diverticulum, my experience has been far too limited to lay down any hard and fast rules. In my judgment, however, if the diverticulum is small or attached to the bowel by a narrow pedicle, removal, with closure of the intestinal wound by a purse-string or several Lembert sutures, would be indicated, providing the surrounding intestinal wall was not too much infiltrated. In the event of the diverticulum being large, attached by a broad base, or covered by a plexus of enlarged vessels, the safest method, in my opinion, would be the one employed in the case reported, that is, extraperitoneal drainage. If the situation of the lesion is such that extraperitoneal treatment can not be carried out, I suggest packing with gauze, from the abdominal wound to the lesion, leaving this packing in place from forty-eight to seventy-two hours, or until firm adhesions have formed about the gauze column: then removal of the gauze and free opening of the abscess, allowing it to drain through the channel thus formed.

If rupture has already occurred the intestinal wound should be united by suture, if this is possible; if not, adequate drainage should be provided.

61 West Forty-eighth Street.

#### DISCUSSION.

DR. D. N. EISENDRATH, Chicago: This left-sided affection of the abdomen is one that must be considered in the future differential diagnosis of abdominal conditions, and it is necessary to have a clear conception not only of the acute forms of this disease, but of the chronic forms as well. Up to the present time there have been comparatively few cases of diverticulitis reported, either acute or chronic. In a recent number of the London *Lancet* one of the most thorough articles on the subject appeared by Cullen, who collected reports of 105 cases of all clinical varieties of this disease. I believe that in a few years we shall find that it is a comparatively frequent affection of the abdomen.

I had almost forgotten up to the time of seeing Dr. Brewer's first paper a case of my own which has never been published. The patient was a clerk, about 42 years of age, whom I did not see until symptoms of peritonitis were well advanced. My first thought was of appendicitis as the cause, but when the abdomen was opened the appendix was found to be normal. On the left side we found in the sigmoid region a perforated appendix epiploica, undoubtedly the cause of the trouble. Eighteen such cases of peritonitis following ruptured diverticulitis have been reported.

The chronic forms of the disease are beginning to explain many hitherto obscure abdominal lesions. One form is due to connective tissue formation, a chronic proliferative inflammation in the submucous and serous coats producing intestinal stenosis. This may give rise to symptoms of chronic or acute obstruction whose pathology would never be clear unless we understood the subject of diverticulitis. A second way in which the symptoms differ from those of chronic appendicitis is in the formation of enteroliths simultaneously in large numbers of these diverticula. For example, a man 78 years of age had a herniotomy. In the sac lay the sigmoid, which was filled with a large number of enteroliths, each in a diverticulum.

The adhesions formed in the chronic diverticula result in a series of pathologic changes, such as obstruction of the intestines due to changes in these diverticula. The etiology of these so-called vesico-enteric fistulæ was very obscure until it was found that they were caused by adhesions of these diverticula to the bladder, with subsequent perforation. With the information thus gained we have been able to operate on a very large number of cases. The interesting feature in these chronic forms of diverticula is the resemblance of these proliferative forms to carcinoma. There is no doubt that many cases in which a diagnosis of carcinoma of the sigmoid was made were in reality cases of chronic diverticulitis with stenosis.

DR. P. E. TRUESDALE, Fall River, Mass.: I present a few cases to suggest the use of the colon bacillus vaccine in abdominal operations when this organism is or may become a factor in an infectious process. In operations on the large bowel, as you know, the best results are attained by first emptying the colon, then allowing it to remain in a condition of absolute rest for at least twelve hours before operative intervention is done; this with a view to eliminating the number and activity of the colon bacilli. In addition an immunizing dose of stock vaccine should be given.

A woman, aged 24, was operated on for a tumor in the lower abdomen. A multilocular cyst was found. Everywhere adherent to the omentum were the large and small intestines, and an examination of the under side of the tumor revealed a papilliferous degeneration in union with the sigmoid. For an area involving one-half of the tumor circumference and about four inches of its length all the layers of the intestinal wall had sloughed away. Liquid feces escaped into the field of operation.

In the midst of this infected area it was deemed unsafe to make an anastomosis, so that a muscle-splitting incision was made in the left side, the ruptured sigmoid was clamped at either end, drawn through this incision and sutured to the skin. The main tumor was then removed, the peritoneal cavity wiped out and the incision closed, leaving a drain in the pelvis. On the following day it was early apparent that there was an active infection in the median incision and the colostomy wound and that no ordinary means of local treatment could control the infectious process. The case seemed hopeless and the vaccines were tried as a last resort. I believe that they turned the tide in favor of recovery.

The second case was that of a school teacher, aged 21, with symptoms of pelvic disease. At the operation a large tuberculous pelvic abscess was discovered and removed. No opening of the rectum was discovered at this time, but after operation, when the patient was given salt solution, it came through the drain on the abdominal dressing, mixed with fecal matter. The wound soon showed evidence of infection and began to break down. The vaccine was administered, 0.25 c.c. for the first dose. Soon after the appearance of the wound changed and a cleaner process of healing was evident. The culture from the discharge showed *Bacillus coli* and *Staphylococcus aureus*.

The third patient, also a school teacher, aged 51 was operated on for peritonitis believed to be due to a ruptured appendix. At the operation general peritonitis was discovered. The appendix was normal. There were a few adhesions around the gall bladder; a small gallstone had escaped; the gall bladder was perforated near its base, and mucopus was escaping. The gall bladder was extirpated, a drain placed in the wound and in the pelvis, the patient put to bed and given 0.25 c.c. of colon bacillus vaccine. A culture was taken from the gall bladder and from the fluid, which proved to be a pure culture of colon bacilli. Convalescence progressed uneventfully and all symptoms of peritonitis disappeared in the subsequent twenty-four hours. There was then a slight rise in the temperature. The vaccine was administered, 0.5 c.c., and the course of the temperature changed.

The results in these cases are encouraging. If we accept the opsonic theory on which the vaccine therapy has been laid down by Wright and others, and we find that a specific organism is the common cause of infection in the bile ducts and pancreas, we are thereby in a position to treat these cases on



more scientific principles. The acute infectious cases may, at least, be given trial doses of vaccine, for this does no harm, and if by its action we can control the acute process these patients may be operated on during the interval. So, too, in operations on the large intestine, where the colon bacillus is ever present, by immunizing the patient before operation, the scope of the surgeon may be greatly increased and his results as greatly enhanced.

Dr. L. L. McARTHUR, Chicago: The *Staphylococcus aureus* and the colon bacillus are the two organisms which show a very pronounced effect when used as a vaccine, and Dr. Truesdale's suggestion to use them is excellent.

## INTESTINAL ANASTOMOSIS; PRESENTATION OF A NEW, SIMPLE AND ASEPTIC METHOD.\*

FRANK B. WALKER, M.D.  
DETROIT.

Ever since the memorable pioneer work of the late Dr. Nicholas Senn, intestinal surgery has been an attractive and fruitful field. During this brief period there have been proposed many ingenious methods of anastomosis and devices for their performance. Some of them have already become obsolete, while others are gradually being superseded by simpler means. The methods in vogue are serviceable in skilled hands, but are complicated and liable to sepsis or are incomplete. None has been stamped with unqualified approval. All except the McGraw elastic ligature are done on a wide-open gut and are essentially septic operations. The ligature method—the simplest and cleanest of all—does not complete the anastomosis for three or more days and is, therefore, incompetent for those cases in which another communication does not exist.

With the development of definite sutural methods there has arisen a disposition to discard contrivances as unnecessary if not also complicated. The Connell suture—the best representative of them—I have used in preference to all other methods, both sutural and instrumental, and taught to about six hundred graduate students. Although I have been able to adapt it readily to any form of anastomosis I observed that it was difficult for many to learn and for all to remember unless they were in constant practice. Except for the danger of sepsis from the open gut and the somewhat intricate suturing of the last part and tying of the last knot, I should regard it as ideal.

Ideal or physiologic anastomosis has been little sought. The possibility of doing the operation with safety and the advantage of this or that special technic have been reported and discussed frequently, but seldom have the principles of intestinal anastomosis been given adequate consideration. In my opinion, too much has been taken for granted. For instance, the conception of anastomosis not uncommonly held is the making of a communication merely between two attached viscera. It is true that result is accomplished, but that alone will not always fulfill the requirements. Intestinal anastomosis is purely a drainage operation, but to be of any value it must first of all be needed and in the second place unobstructed drainage must be obtained.

The conclusion jumped at, that gastrojejunostomy would cure atonic dilatation and prolapse of the stomach, because it would drain, and gastric or duodenal

ulcer, because it would rest those parts, applied only to the result and not to the cause of disease, and it is, therefore, questionable whether gastroenterostomy be a curative or a palliative measure. This doubt is strengthened by reason of the facts that not only have the symptoms attendant on dilatation returned and ulcers reappeared lower down after apparent temporary relief, but it has been found in some cases that the anastomotic openings had healed shut. In other words, intestinal anastomosis, although inapplicable in some cases, had been employed as a makeshift instead of other more rational modes of treatment.

From the viewpoints of anatomy and physiology, the normal outlet of the stomach is by way of the pylorus. The stomach contents are propelled not by gravity, but by an inherent mechanism. If drainage be interfered with by some benign abnormality at or near the pylorus, the adoption of Nicoll's or Finney's or other possible pyloroplasty in preference to gastroenterostomy would conserve the normal mechanism of drainage and give promise of permanent relief. If, however, that passageway be permanently barred and another exit must be provided, gravity would come into play and indicate that the outlet should be situated, if possible, in the lowest convexity of the stomach and, on account of the to-and-fro movement, on the posterior rather than on the anterior surface. The exact point on the stomach longitudinally will depend somewhat on the case. It should be remembered, however, that, notwithstanding the change in shape and position of the organ in the empty and full conditions, the lowest convexity remains near the junction of the middle and right thirds of the greater curvature.

In cases in which anastomosis is performed without resection, it is essential that the communication between the afferent and efferent viscera be direct, and, therefore, that there be no kinking of the distal bowel either at the opening or lower down. Violation of this rule is doubtless responsible for the occurrence of the so-called vicious circle.

In the performance of posterior gastrojejunostomy it is a wise precaution to attach the jejunum firmly to the edges of the opening made in the transverse mesocolon. Failure to do so has been followed by a hernia into the lesser peritoneal cavity and intestinal obstruction.

If the intestine be resected and lateral anastomosis be performed, the stumps should be reasonably short and so attached, each to the other communicating bowel, as to preclude their intussusception. I have observed a long loose stump telescoped through itself into the intestine so far as to make a valvular closure of the anastomotic opening.

Besides promoting free drainage, the ideal method must be safe from sepsis and hemorrhage, simple of understanding and performance, complete in itself and applicable to all forms of anastomosis.

Sepsis is the most important factor to be contended with in intestinal anastomosis. The introduction of it from without can be controlled in this as well as in any other abdominal operation, but the possibility of infection from the open gut and of postoperative leakage is a constant menace. The danger from these sources can be minimized during the operation by walling off all the other structures with abundant sterile pads placed under and around the parts to be handled. Preoperative stomach washing, milking the intestine and the use of tapes and clamps to hold back the visceral con-

\* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



tents serve their purposes, but an open bowel is unavoidable in carrying out any of the methods in vogue, except the elastic ligature, and is a serious defect.

Postoperative leakage is usually due to the following three conditions: (1) imperfect serous apposition at the mesenteric space, (2) sutures too tightly drawn, (3) knotting a through suture on the serous surface.

Serous apposition of the viscera produces valvular approximation of the edges and effectually prevents the escape of bowel contents. This procedure has been adopted in all the methods that have proved successful. In end-to-end anastomosis especial care must be used to

from the inside (Gregory Connell) or from the outside (Hayward Cushing). In simplicity and cleanliness the latter excels. A suture that is to be tied on the outer surface, however, should not be carried deeper than the submucous layer on account of the tendency to capillary action and seeping. No suture should be tied or drawn more tightly than is necessary to secure serous apposition. Otherwise the swelling of the tissues following operation may result in necrosis.

From a theoretical viewpoint, catgut would seem to be ideal suture material, but experience has taught that it softens and separates in the intestinal tissues too



Fig. 1.—L, ligature; PS, purse-string suture; K, slip knot. The left side of Fig. 1 represents purse-string suture and ligature placed and ready for tying; the right side represents them tied and the gut cut across. In the upper right corner the slip knot is represented on a large scale.

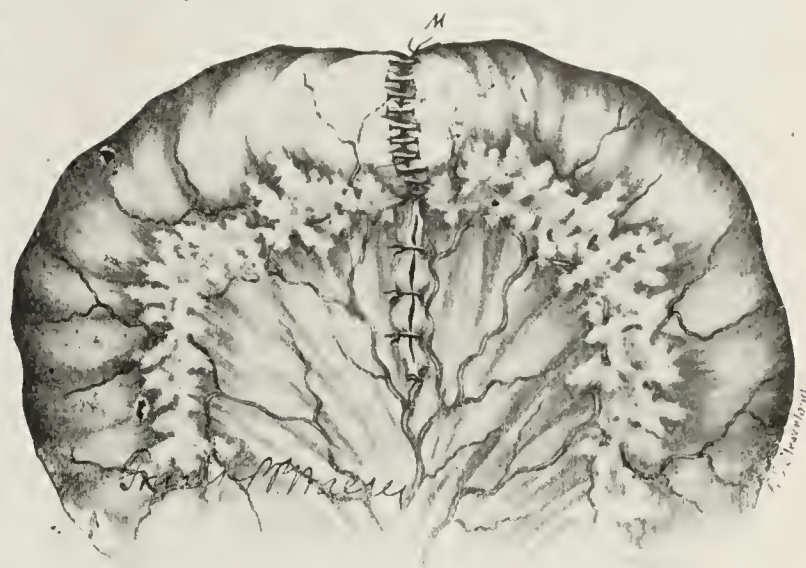


Fig. 3.—This represents the continuous mattress suture (M) placed but not drawn taut. The purse-string sutures have been withdrawn. The mesenteric gap has been closed by three sutures.

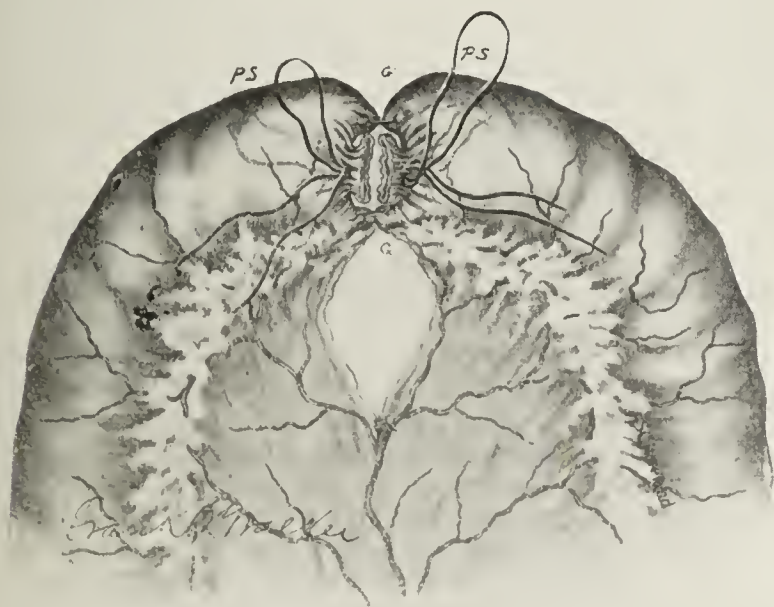


Fig. 2.—This represents the stumps closed by purse-string sutures tied with slip knots and held together by two guy mattress sutures (G).

invert the mesentery with the intestine at the mesenteric space.

A continuous through mattress suture is preferable to the interrupted form, because it prevents overdistention of the bowel and separation of the edges during the period of healing, and it is more certain than the Lembert suture to close the cut ends of bleeding vessels and to control hemorrhage. It may be introduced and tied



Fig. 4.—This represents two portions of intestine apposed and connected by a continuous mattress suture (C) through a short distance. In the lower gut a purse-string suture has been placed and the wall incised. In the upper gut the purse-string suture has been tied with a slip knot.

quickly to be reliable. Fine twisted silk and linen are safe and answer every purpose.

Almost any method becomes easy through practice, but no method will win universal favor that involves complicated technic or instruments or numerous assistants. A generally acceptable method must also be sur-



gically complete without the mediation of an uncertain hidden contrivance and must be adaptable in any emergency requiring anastomosis.

The method which I present here is not presumed to be a substitute for ignorance of surgical principles or carelessness in their practice, but it can be carried out by one pair of hands with scissors, needle and thread, and combines the advantages of other procedures without their defects. It is based on the closure of the gut during the operation by means of a removable purse-string suture, on serous apposition by a continuous through mattress suture inserted from the outside of the gut, and on the withdrawal of the purse-string suture after the suturing is completed, leaving an open lumen. The technic is shown in Figure 1, and is as follows:

For resection of intestine and mesentery as at R (Fig. 1), and end-to-end anastomosis, place ligatures (L) on healthy bowel proximally and distally beyond the part to be removed. Insert purse-string sutures (P. S.) about bowel one-half inch proximally and distally from ligatures (L) and tie with slip-knot (K), made by drawing only a part of one end of purse-string suture through knot. Ligate mesenteric vessels. With scissors cut across intestine close to purse-strings and divide mesentery as on dotted lines.

Bring the stumps of resected intestine together so that they shall correspond at mesenteric borders (Fig. 2). Place two or three guy mattress sutures (G) about one-eighth inch above purse-string sutures (P. S.) to hold the stumps temporarily in proper relation.

Begin continuous mattress suture (Fig. 3, M) at any point, except at mesenteric border, and with it encircle the bowel about one-quarter inch above purse-string sutures, passing from side to side six or seven times to the linear inch. The anastomotic suture should include the submucosa and may include the mucosa also, as a through suture does, except in that part of it which contains a knot. Extra care is necessary in placing the sutures evenly and in inverting the mesentery at mesenteric borders. The loops and ends of purse-strings project between the passes of the encircling suture until withdrawn. After the encircling suture has been placed around the bowel, drawn sufficiently taut and tied, the purse-strings are untied and withdrawn by pulling gently on their loose ends. The gap in the resected mesentery is closed by sutures or ligatures.

Theoretically, end-to-end anastomosis would seem to be more nearly ideal than the lateral form. It provides a more direct communication and conserves the function of the muscular mechanism of the intestine. It is impossible of adoption, however, in certain pyloric conditions as mentioned previously, and whenever the intestine is so small that inversion of the edges would make a diaphragm and closure of the lumen. In such cases, the lateral method has proved to be an excellent substitute. Moreover, it avoids the disadvantages of the mesenteric space. It is performed by the purse-string method as follows:

For lateral intestinal or gastrointestinal anastomosis bring the two viscera into the desired relation and place a continuous mattress suture (Fig. 4, C), connecting them through a length of from two to three inches, oval-shaped. Insert purse-string suture (P. S.) into each viscus one-quarter inch distant from and parallel to the continuous mattress suture (C). The purse-string su-

tures should be one-half inch shorter than the surrounding suture. With scissors or knife incise visceral wall within purse-string, trimming out strip of mucosa if desired, tie purse-string suture with slip-knot and, after both viscera have been thus treated, complete surrounding suture (C). After the latter has been placed, drawn sufficiently taut and tied, the purse-string sutures are untied and withdrawn by pulling gently on their loose ends.

#### DISCUSSION.

DR. F. GREGORY CONNELL, Oshkosh, Wis.: Improvements on the present attempts at aseptic intestinal technic are demanded. Dr. Walker's method and those of Muskowicz, E. Wyllys Andrews and Parker and Kerr are similar in principle to that of an Italian, Parlavecchio, which was published in 1897. They allow of a comparative asepsis, and will emphasize the necessity of the greatest care in an effort to avoid unnecessary soiling of the peritoneum by intestinal contents. Practical methods of union may now be performed in a comparatively aseptic manner; but when not to do enterorrhaphy has not been emphasized. Breaks of continuity of the intestinal wall do not unequivocally demand immediate enterorrhaphy. The self-evident truth that a live patient with a fecal fistula is a more satisfactory result than is a corpse with a successful intestinal union, has occasionally been overlooked. Many points will have to be decided in the diagnosis before, during and after the operation, that if not judged correctly will render valueless a technically perfect enterorrhaphy, such as: When (in strangulation) to leave the bowel alone, or to perform enterectomy; when (in wounds) to perform simple enterorrhaphy, or resection; when (after enterectomy) to perform enterorrhaphy by end-to-end, end-to-side, or side-to-side union, or to establish an enterostomy; when (with stenosis) to do a resection, an anastomosis or an exclusion. To procure normal tissue, of which the blood supply is perfect, at the cut ends for suturing, it is sometimes necessary to remove apparently formidable lengths of intestine. Failure to secure such tissue is undoubtedly responsible for a large percentage of unsatisfactory results. To accomplish intestinal union the method of choice is that with needle and thread alone. A prime requirement of the suture is a secure stitch, holding the cut ends in sero-serous apposition, or apposition continuously around the entire line of union, to secure which caution must be exercised at the mesenteric junction, because of the triangular space between serosa and muscularis formed by the anatomic arrangement of the peritoneum which allows a longitudinal strip of the intestine at this point to be devoid of serosa. The perforating, or through-and-through suture has been generally adopted as the important, security-giving stitch. The use of a second row of stitches, including only the serosa and the muscularis, is at present looked on as merely a precautionary measure for the purpose of causing a broader sero-serous apposition and not to resist tension. Any stitch that enters the bowel lumen or comes into contact with the intestinal mucosa should be of non-absorbable material. This will remain in place until its usefulness is past, after which it will be eliminated into the intestinal current. Catgut, on the other hand, may be absorbed too rapidly. The secondary reinforcing sero-muscular stitch does not communicate with the lumen, and, therefore, may be of catgut. The time-saving feature and the hemostatic properties are perhaps the most important reasons why the continuous suture is employed more often than is the interrupted. Drainage will sometimes be necessary after enterorrhaphy, but not as often as in the past. The drain is to be placed adjacent to but not in contact with the line of visceral suturing.

DR. A. J. OCHSNER, Chicago: Dr. Walker's beautiful and ingenious operation must not mislead us into the idea that patients ordinarily die after intestinal operations because of the operation. They die because of the condition in which they are at the time they are operated on, or because of faulty surgical judgment. In intestinal operations, if the infection is still within the intestine, then death results from an unrecognized condition of the blood vessels. There is a thrombosis somewhere which results in a slough and kills the



patient. Either the surgeon has not gone far enough beyond the seat of the disease or has traumatized the intestine, or has made the gross blunder of infecting the patient himself, which is practically a thing of the past among those who do intestinal surgery.

## CARDIOSPASM,

WITH A REPORT OF FORTY CASES.

H. S. PLUMMER, M.D.

Physician to St. Mary's Hospital.  
ROCHESTER, MINN.

The first series of cases of so-called idiopathic dilatation of the esophagus was collected by von Ziemssen and Zenker in 1878. The report was based mostly on postmortem findings, little being known of the history of the cases. For our knowledge of the symptomatology of the disease we are indebted to the writings of Lichenstein, von Strumpell, Meltzer, Rumpel, Kraus, Rosenheim, Fleiner, Ewald, Netter, Kelling, Einhorn, Martin, Oppler, Gottstein, Dauber, Zausch, Strauss, Losen, Sippey, and others.

In 1904 Mikulicz estimated that 100 cases could be collected from literature. Since that time a number of cases have been reported, notably in German literature, and by Sippey, Lerche and Erdmann in this country. Gottstein, in Keene's "Surgery," states that 140 cases have so far been reported, and himself adds 25 more. This paper is based on 40 cases which have come under my observation. Eleven cases of this series were reported in a paper<sup>1</sup> read before the Minnesota State Medical Society in June, 1906.

The disease has been attributed to the following causes: first, primary cardiospasm (Meltzer); second, primary atony of the musculature of the esophagus (Rosenheim); third, simultaneous presence of cardiospasm and paralysis of the circular fibers of the esophagus, brought about by paralysis of the vagus (Kraus); fourth, congenital disposition (Fleiner, Zenker, Luschka and Sievers); fifth, primary esophagitis (Martin), and, sixth, kinking at the hiatus esophagi.

The unsatisfactory condition of our knowledge of the etiology of this disease is indicated by the variety of the titles under which the cases have been reported—idiopathic, fusiform, diffuse dilatation; dilatation without anatomical stenosis, etc.

Gottstein classifies motor disturbances of the esophagus as follows:

1. Hyperkinetic, in which spastic contractions of the muscle exceed the physiological normal.
2. Hypokinetic, in which there is an impairment of the normal muscular tone.

While it is probable that primary atony of the esophageal muscle rarely occurs, I doubt very much its being a frequent factor in the cases which have been reported under the headings, idiopathic dilatation of the esophagus, cardiospasm, etc. In the study of a considerable number of cases the almost invariable history of spasm at the onset, followed at a later period by the evidence of dilatation—that is, retention of food in the esophagus—is most convincing evidence that the spasm precedes the dilatation and that primary atony is relatively a rare condition. This conclusion is further borne out by the evidence of early muscular hypertrophy in nearly all cases which have come to postmortem: by the frequent observation of severe cardiospasm unaccom-

panied by dilatation of the esophagus, and by the good results which have followed forcible dilatation. The occasional case in which spasm can not be demonstrated does not exclude its being the primary factor. The spasm is in many cases periodic, and after dilatation takes place little if any more than the normal tone of the cardiac muscle is required to produce evidence of stenosis. Rosenheim, in support of the theory of primary atony, reports cases in which the food passed slowly through the esophagus, causing discomfort or pain, but he fails to show that these cases ever develop spasm at the cardia or dilatation of the esophagus.

The history, as given in Cases 11 and 24, suggests the possibility of dilatation almost from the onset. These histories date back eighteen and twenty-six years, and it is very probable that the more striking symptoms that came on with the dilatation overshadowed the early symptoms of spasm in the patient's memory. Severe spasm was present at the time these cases came under observation. Atony of the musculature of the entire gastrointestinal tract, without obstruction, is frequently observed, but it is almost invariably associated with other neurotic manifestations. There is no reason why spasm should exist in primary atony unless we accept Kraus' theory of a simultaneous atony and spasm from degenerative changes in the vagus. His theory rests on the finding of degenerated fibers in the vagus in one case which came to postmortem. His observations have not been confirmed.

The theory of congenital disposition is interesting but not susceptible of demonstration. That anlage may be a factor in some instances is suggested by the few rare cases reported as occurring congenitally or in early childhood (Luschka, Fleiner, Zenker, Gottstein). In six cases of this series sufficient angulation at the cardia was present to prevent the passage of a sound by the usual method. Whether this exaggeration of the normal obliquity of the insertion of the esophagus through the diaphragm is the cause of the spasm, or is a result, I am unable to state.

The cause of the spasm is largely speculative. A few cases have been reported associated with gross lesions of the esophagus, such as ulcers, fissures and small carcinoma in the cardia, carcinoma of the stomach, etc. We have seen three cases of carcinoma complicated by cardiospasm, and one case of hour-glass stomach due to syphilis with secondary cardiospasm. Esophagitis and ulcer of the esophageal wall not in close proximity to the cardia are to be looked on as secondary to cardiospasm and dilatation, not as primary factors. In the majority of cases, however, no such possible etiologic factors are to be found. Cardiospasm is not often present in inflammatory conditions of the esophagus which come under observation. Evidence of esophagitis previous to the onset of the cardiospasm could not be elicited from any of the cases. With three exceptions, none of the forty cases reported had neurasthenic symptoms. The age and sex of the patients may be seen by referring to the accompanying table. The average age at the onset is 29 years; twenty-two patients are females, eighteen males.

Deglutition is a complicated, reflex act in which many muscles cooperate. Without entering into a discussion of the exact part played by each, it may be stated that food is carried from the mouth into the esophagus by the omohyoids, hyoglossi, pharyngeal and associated muscles. In the upper portion of the tube the bolus is rapidly carried down by the cross striated muscles of its

1. Northwestern Lancet, September, 1906.



walls; in the lower portion it is moved more slowly by the peristalsis of the smooth muscle fibers. The cardia is supplied through the vagus with both dilating and contracting fibers, presided over and controlled by the medulla (von Operchowski). The normal action of this mechanism is but imperfectly understood, and even less is known of its disturbances in cardiospasm. The cardia is normally closed by contraction of its sphincter muscle, and is opened by its dilator nerves, and the bolus of food is pushed into the stomach by the peristalsis of the esophagus. Authors differ as to the way in which liquid food is carried along the esophagus. According to Cannon, Meltzer and Moser, liquids are carried deep into the esophagus or to the cardia by the forcible contraction of the omohyoids and associated muscles. Schrieber says that liquids are moved down the esophagus by peristalsis. Be this as it may, the esophagus is unable to force liquids and solids past an obstructed cardia with equal facility. After dilatation takes place the bolus of solid food is carried forward in a normal manner as far as the upper end of the dilatation. At this point the peristaltic contraction ring ceases to exert any direct force on the bolus, but sweeps around it.

Food is propelled from the dilated esophagus into the stomach by two forces, gravity and increased esophageal pressure. The force exerted by gravity equals the height of the column of liquid food in the esophagus. The intraesophageal pressure is raised above the normal by those forces which raise intrathoracic pressure, and by crowding more food into the partially filled dilatation. At each act of deglutition sufficient food is ejected into the stomach to lower the intraesophageal pressure to a point where it is no longer sufficient to overcome the resistance offered by the spastic cardia. Little, if any, more than the normal cardiac tone is required to cause the retention of food in the esophagus. These points are well illustrated by Cases 35 and 37. Each patient had learned to take sufficient food to maintain a fair state of nutrition, by first swallowing solid food to the point where he was conscious that more would be regurgitated; then at the end of inspiration several swallows of fluid were rapidly and forcibly thrown into the esophagus, thus using the pharynx and upper portion of the esophagus much like the pump of a hydraulic press. The patient in Case 37 has acquired to a nicety the ability to practice this act. She stated that very rarely, if ever, during the last few years of her trouble had any food been regurgitated. During the period in which she was under examination, previous to dilating the cardia, from four to twelve ounces of food could be withdrawn from the dilated esophagus five hours after eating.

In the development of cardiospasm three stages, more or less clearly defined, may be recognized in the clinical histories.

1. In this stage the peristaltic contraction of the esophagus is sufficient to force the food through the spastic cardia. This is characterized clinically by the complaint of discomfort, pain, choking sensation, etc.

2. The peristaltic force of the esophageal muscle is no longer able to overcome the resistance of the contracted cardia, and the food is immediately regurgitated. This may result from an actual or relative increase in the obstruction at the cardia: that is, the spasm may become accentuated or the esophageal muscle may tire under the unusual load. In some cases the spasm is sufficiently severe from the onset to cause the immediate regurgitation of food. As a rule the spasm is, during

the early part of the history, periodic; but as the condition develops mild spasm becomes more continuous or constant. Marked exacerbations in the spasm characterize the entire course of the disease. The increased work of forcing the food past the contracted cardia results in an early hypertrophy of the esophageal musculature. As the spasm increases in severity the esophagus becomes less and less able to overcome the obstruction, and atony and dilatation result.

3. Once the esophagus begins to give way the dilatation is rapid. This stage is characterized clinically by the retention of food in the esophagus and its regurgitation at irregular intervals after ingestion. If the spasm is mild for a sufficient length of time from the onset, the hypertrophy may become extreme and dilatation not take place or be delayed for years. The hypertrophy, after becoming well developed, may overcome a most marked resistance at the cardia. Relatively frequent severe spasm at the onset may lead to early dilatation before hypertrophy of the esophagus has time to develop. An impaired tone in the esophageal muscle at the onset of the trouble may also have something to do with the rapid early dilatation that takes place in some cases.

The symptom-complex in cardiospasm is as a rule almost pathognomonic. It may be divided into the three stages noted in considering its development: first, cardiospasm without food regurgitation; second, cardiospasm with immediate food regurgitation; third, cardiospasm with dilated esophagus, the retention of food in the dilated portion and its regurgitation at irregular intervals after taking. In the majority of cases the first attack of spasm occurs suddenly and unexpectedly when the patient is at the table. A spasmodic, choking sensation is felt at some point in the course of the esophagus, generally located at the cardia and radiating to the back or neck. It is rarely described as a pain. Some patients locate the discomfort entirely in the epigastrium, left hypochondrium or in the upper portion of the esophagus. It may occur for months independent of the taking of food. In Case 40 many physicians had, during the course of twenty years, agreed with the patient in attributing the obstruction to an adenoma of the thyroid. The spasm is often described as a slight delay in the passage of food or the food "seems to stick beneath the lower sternum."

In the second stage the food is, after swallowing, immediately regurgitated. During the early portion of the history the attacks occur periodically, or mild spasm is continuous, with periods of marked exacerbation which are characteristic of the entire course of the disease. The patient in Case 9, in which the esophagus was not dilated, had periods of three to seven days in which all solid food was immediately regurgitated, alternating with periods of days or weeks of absolute freedom from dysphagia. In Cases 6, 27 and 28 the first attack of spasm was severe enough to cause immediate food regurgitation.

After dilatation of the esophagus takes place the spasmodic, choking sensation may be absent. The first portion of each meal is retained. After filling the sac, further food is regurgitated or forces the preceding portion into the stomach. Of the contents of the esophagus at the completion of a meal the more fluid portion may slowly seep through the cardia; the solid food with much mucus is either regurgitated at irregular intervals or remains in the sac until the next meal. Solid food, like meat, may be delayed at the cardia for several days.



softer food in the meantime passing into the stomach. The sac is never completely emptied, several ounces of solid food often being present in the dilated esophagus when the patient states that it is going through all right. On many occasions I have withdrawn from two to sixteen ounces of food after twenty-four to thirty-six hours of fasting. That there is a sense of weight or discomfort in the chest, and that the food is not sour, are statements common to all cases. The vomiting is painless and but rarely accompanied by nausea. Some insist that the food enters the stomach but will not stay. The majority state that it lodges beneath the lower sternum. Ten cases of this series complained of waking at night to find the nasal passages filled with food.

Of this series, seven cases came under observation during the second stage and thirty-three during the third stage. Four cases of secondary cardiospasm are not included. Loss of weight was notable in the majority of the cases. A few maintained a fair degree of nutrition in spite of the dysphagia. Two of the cases in the second stage and ten of the cases in the third stage were markedly emaciated. The patients in Cases 10 and 41 could not walk without assistance, and the patients in Cases 22 and 42 were brought in on cots.



Fig. 1. Whalebone staff with olive drilled for silk thread.

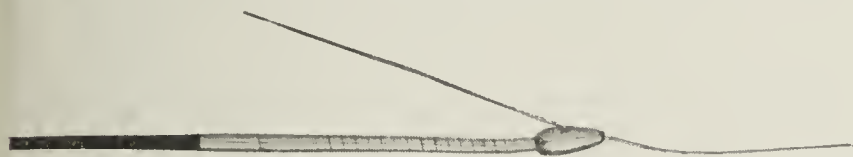


Fig. 2. Whalebone staff, spiral tip and olive.



Fig. 3. Dilator.

In the diagnosis and study of a case of cardiospasm the following points should be demonstrated:

1. The food is regurgitated from the esophagus and not from the stomach.
2. The existence and character of obstruction at the cardia.
3. The presence or absence of esophageal dilatation and its shape, size, etc.
4. The presence or absence of gross lesions in the esophagus or neighboring organs which might excite the cardiospasm.

In the demonstration of these points the following measures have been resorted to:

1. The various stomach-tube tests, including the methods proposed by Rumpel, Kelling and Einhorn.
2. Passage of a bulbous sound on a whalebone staff.
3. The passage of the sound which I have devised.
4. Radiographing a bismuth mixture in the dilated esophagus.
5. Determination of the size of the dilatation, by means of a rubber balloon distended within the esophagus.
6. Esophagoscopy examination.

Each case is given a test meal. If sufficient obstruction exists to prevent the food from entering the stomach, it is given with a tube; a second portion of the meal is given in the usual way. At the end of an hour the tube is again introduced and the stomach contents obtained. The tube is now withdrawn into the esophagus, the contents obtained, and the two portions are analyzed. The esophageal contents in all cases were alkaline or neutral in reaction. In the analysis of the stomach contents no marked variations from the normal were noted. The average acidity was below normal; a high acid content was present in a few cases. In all except Cases 7, 13, 17, 18, 30, 39 and 43 (second stage) food was present in the esophagus. On many occasions several ounces of food were withdrawn from the sac after

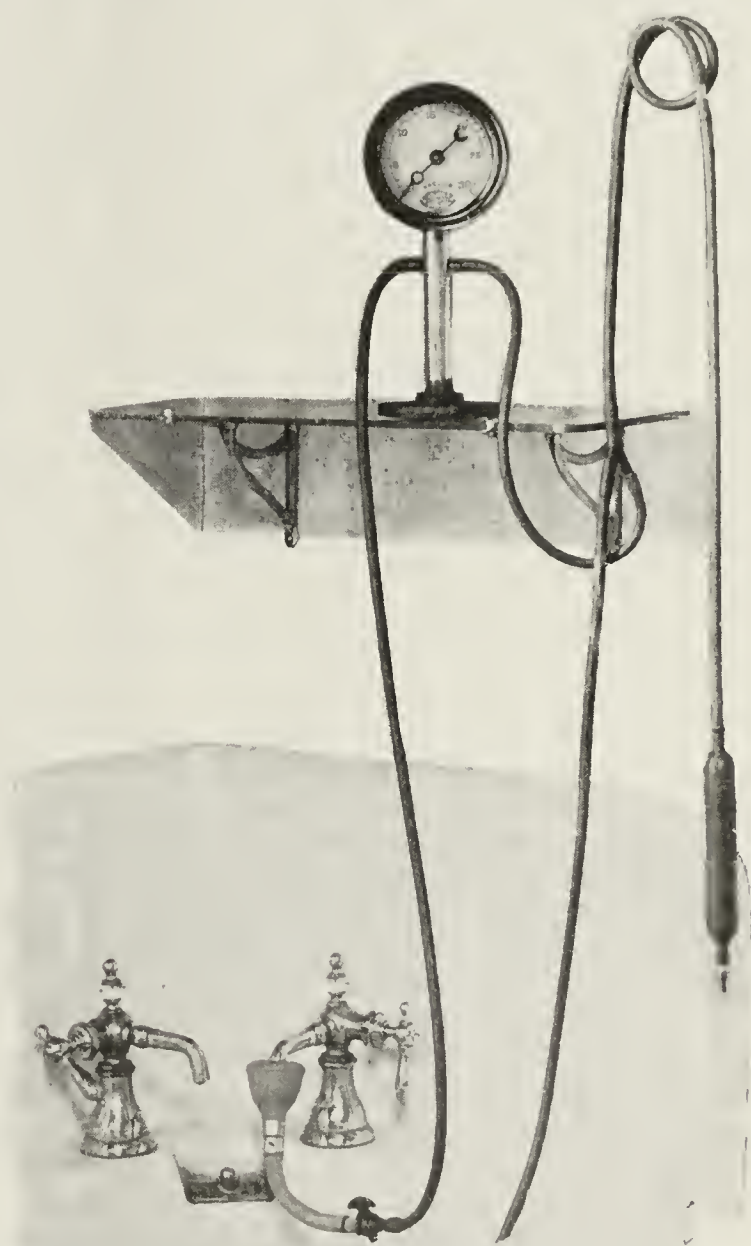


Fig. 4. Dilator, showing arrangement of tubing.

twenty-four hours of fasting. In nearly every instance when a tube was passed during a remission in the complaint, and the patient stated that the food was going through all right, small or even large amounts of food were found in the esophagus. The simple introduction of a tube usually causes the regurgitation of non-acid food, which comes up in a manner that leaves little doubt of its source. In eight cases it was possible to pass a tube in the ordinary manner; in sixteen cases, with a wire stylet or a staff and olive; in ten cases by means of a silk thread and a whalebone staff; in six cases by means of a silk thread, staff and spiral tip referred to later. The more complicated tests of Rumpel,



Einhorn and Kelling were frequently resorted to, but are unnecessary and often unsatisfactory.

The failure to pass a stomach tube when an olive readily passes the cardia is at once suggestive of cardiospasm. In thirty cases the passage of a 15 mm. olive was possible without encountering any marked obstruction. In ten cases it was impossible to pass the bulb, at least without using greater force than I considered safe. In these cases the sound was passed on a silk thread as a guide. The patient slowly swallows six yards of silk thread. This passes down through a sufficient number of coils of intestine to prevent its withdrawal on being pulled taut. It is advisable to have the patient swallow three yards in the afternoon and the remaining three yards on the following morning. In this manner the first portion forms a snarl in the esophagus or stomach, which passes out into the intestine during the night, the remaining portion passing without snarling. The olives are drilled for threading from the tip to one side of the base. With five exceptions, no difficulty was experienced in passing a 15 mm. olive when using the silk thread as a guide. As a rule a slight increase in the resistance was encountered at the cardia, but frequently the olive passed without its detection. Rarely was that slow giving way at the cardia, frequently described by authors, encountered when the sound was passed on the thread. It can at least be stated that marked resistance to the passage of a sound in cardiospasm does not often exist, provided it enters the cardia directly. Obstruction sufficient to prevent the passage of a sound is due to its being caught by contact with the bottom of the sac; and the sense of the slow giving way of the cardia under gentle pressure is due to the resistance encountered in sliding the olive along the flaring wall of the esophagus or the straightening out of some fold just as it is about to enter the cardia. The character of the resistance met at the cardia with the knowledge obtainable only by passing the sound on a thread, that the sound is directly entering the cardiac orifice is of the utmost importance in the differential diagnosis of organic and spasmodic stricture at the cardia. In six cases, using a whalebone staff 3 mm. in diameter, I found it impossible to pass the sound. The patient in the first case encountered could take sufficient food to make it seem improbable that sufficient narrowing at the cardia could exist, either from cicatricial or spasmodic stricture, to prevent the passage of a 3 mm. olive. Only one conclusion was tenable, namely, that there must be some angulation or tortuosity present. I had the flexible tip shown in Fig. 2. made to screw on to the end of the whalebone staff. It is very flexible, but will not double on itself when subjected to a force that can be safely used in sounding. With this tip the 15 mm. olive readily passed the cardia in the six cases referred to.

Radiographs were made in all except Cases 1, 2, 3 and 4. Exposures were generally made after giving the patient two ounces of bismuth mixed with kumiss, mucilage of acacia, or starchy food. The greatest contrast was obtained by radiographing a rubber dam balloon, distended with the bismuth mixture, within the dilated esophagus. The dilated esophagus is most clearly shown by placing the tube and plate so that the rays penetrate in an oblique direction from the right anterior to the left posterior, thus throwing the shadow to the left of the spine on the plate. However, this distorts the shadow more than a picture taken directly antero-posteriorly. The shadows in all except Cases 7, 13, 17,

18, 20, 30 and 43 indicated dilatations which would hold from six to twenty ounces, and corresponded in size with the measurements obtained with my sound and by filling with water. In all but three cases the dilated esophagus was clearly shown and the position of the shadows and their shapes and relations to the surrounding parts were such that it would be almost impossible to mistake them. Radiographs showed the dilatation to be spindle-shape in 18 cases, cylindrical in 12 cases and pyriform in 3 cases.

The dilatations which were spindle-shaped had an S-like curve, the lower convexity being to the left and the upper convexity to the right. The dilatation almost uniformly extended as high as the third dorsal vertebra. In Case 5 the shadow extended from the cardia to the upper margin of the sternum and had an almost uniform diameter of two and three-fourths inches.

In Cases 7 to 40 the radiographic findings were confirmed by a method of sounding to which I first resorted in Case 7 to demonstrate the absence of dilatation. This sound is constructed the same as the Russell bag used for dilating the cardia. A rubber dam balloon is attached to the lower end of a stomach tube in such a manner that the tube is closed, and holes are punched in the tube so that its caliber communicates with the interior of the balloon. A spherical or oval silk bag 22 mm. in diameter is drawn over the balloon and fastened to the tube. This is introduced into the stomach with a whalebone staff and distended with water under sufficient pressure to make the stylet, tube and balloon form a solid sound. The sound is drawn up to locate the cardia, collapsed, drawn into the esophagus and distended. If, under distension, the sound can be moved freely up and down, it is withdrawn and the silk bag replaced by a larger one. In this way, by using a series of sounds of increasing size, the diameter of the esophagus at any point, and an approximate idea of the shape and size of an existing dilatation, may be obtained. The demonstration of a sac by this method is also proof that the sac is a dilatation and not a diverticulum, provided the sound is first introduced sufficiently far to give assurance that it has entered the stomach.

Strauss' method of measuring the capacity of the esophagus is more accurate and should be carried out in all cases for the purpose of determining the fate of the dilated esophagus after the cure of the cardiospasm. A rubber balloon is distended within the esophagus with air, and the amount of air measured as it is introduced.

To complete the diagnosis an esophagoscopy examination should be made. In addition to the catarrhal changes, evidence of muscular hypertrophy, ulcerations, scars, papillary excrescences, etc., may be noted. The cardia appears funnel-shaped or like a rosette. Fissures and ulcers at the cardia should be carefully watched for, as they may be looked upon as exciters of the spasm and require either preliminary treatment or additional care when dilating the cardia. The occlusion at the cardia is in many cases sufficient to prevent the passage of the instrument. This is due not so much to the strength of the spasm as to the impossibility of presenting the esophagoscope perpendicularly to the plane of the cardia. This difficulty may be overcome either by an esophagoscopic obturator, or, in some cases, by painting the cardia with a cocaine solution.

The obturator is made of steel and tapered so that the flexible tip gradually merges into the rigid tube of the esophagoscope. The olive and cylindrical portion of the obturator are drilled so as to permit of passing it



on a silk thread. This obturator in many cases very much facilitates the introduction of the instrument at the introitus.

Until recently the treatment of cardiospasm has consisted in such ineffectual measures as attention to the patient's general condition; fluid, non-irritating diet; effervescent drinks; bromids; the frequent passage of large sounds; and, as a last resort, gastrostomy. In the first four cases of our series gastrostomy was done. Three of the cases were operated on at St. Mary's Hospital for stenosis of the cardia. Its cause was unrecognized at the time, but in each instance the condition of the patient warranted a gastrostomy. After the operation, periods of feeding by the mouth alternated with periods of introducing food through the gastrostomy opening. In one case the patient completely recovered; two were finally lost sight of. Case 4 was afforded much relief for several years by the frequent passage of a large bougie. These cases are introduced into the series for future reference.

Mikulicz<sup>2</sup> reported that he had operated in four cases with apparent perfect success. A gastrostomy was done and under the control of two fingers a long, curved forceps, the blades covered with rubber, was worked into the cardia. The forceps was gradually opened until the maximum distance between the blades reached six or seven centimeters. Erdmann<sup>3</sup> reports one case entirely cured by this method, after an interval of twenty months. Case 8 of this series was completely relieved for four months by this operation. This major operation only is warranted provided the condition is serious and that equally good results can not be obtained by simpler means. Russell<sup>4</sup> was the first to report a sufficient series of cases to demonstrate the efficacy of dilating the cardia with a silk-covered rubber balloon. Four cases were completely cured, one was much improved, and one was not improved. About thirty cases have been reported as cured by this method.

The construction of the dilator as used in the cases here reported is readily seen from Figures 3 and 4. It is made by cementing a rubber dam balloon to one end of a piece of non-elastic rubber tubing in such a manner that the tube just passes through the balloon. A number of holes are so punched in the tubing that its lumen connects with the interior of the balloon. A sausage-shaped silk bag is drawn over the balloon to preserve its shape on distention. Several sizes, 10 cm. long and from 20 mm. to 40 mm. in diameter, are provided. A second rubber balloon is drawn over the instrument to facilitate its introduction. If the dilator is slightly constricted in its middle third, the tendency for it to slip into the stomach is lessened. Provision is made, for removing the staff to prevent its maceration when not in use. To avoid the annoyance incident to exchanging silk bags, it is well to have several dilators, only one staff being necessary. The metal tip of the staff is threaded for the set of olives used in sounding and for the spiral steel tip previously referred to. The dilator is connected by rubber tubing with a water-tap or pump. Into this tubing two hard-rubber T joints are inserted, one for an altitude gage or manometer, and the other for a piece of tubing to permit draining the instrument without disconnecting at the tap, and for controlling the pressure. The position of the cardia having been previ-

ously determined, the dilator is introduced sufficiently far for the cardia to engage the balloon at its middle third. The instrument is firmly held with the right hand, the index finger resting against the teeth, to prevent the dilator being drawn into the stomach. The tap is now opened enough to fill the instrument and deliver a good stream through the tubing for drawing the instrument, but not to indicate any pressure. The pressure is now slowly raised by pinching the tube between the thumb and index finger of the left hand. Various pressure regulators have been used, but none give the absolute control which is possible with this simple device. The pressure is, up to a certain point, determined by the tolerance of the patient, as indicated by the pain caused at the moment of distention. It must be sufficient to paralyze the sphincter. If a pressure of 500 mm. will not accomplish this, the pain is discarded as a guide, and dilatation is carried out by the use of dilators of gradually increasing size, sufficient pressure being used to assure each size being distended to its maximum diameter at the cardia. The safety of this method of forcible dilatation is based on the assumption that there is a certain latitude in the size to which the cardia may be dilated between the points at which paralysis of the sphincter and rupture of the esophagus will occur.

Many of the cases are relieved by a pressure of from 50 mm. to 100 mm. The number of dilatations has ranged from one to five, with a few exceptions. In two cases, 7 and 13, in which dilatation of the esophagus was not present, the treatments were repeated respectively seven and eleven times. The cases in which angulation at the cardia was present required more forcible and a greater number of dilatations. Within four or five days after the first dilatation, some food begins to lodge in the esophagus. The first two or three treatments are repeated at intervals of three to four days. The case is not discharged until the esophagus is found free of food remnants at the end of ten days. In the early cases which recurred, this rule was not carried out.

If a fissure is known to exist at the cardia, or if the patient is greatly emaciated, or if severe pain is caused by dilating, an attempt to carry the dilatation hurriedly to the point of giving relief should be avoided, and a pressure of only five or six feet of water employed. This will give relief for a few days at a time, and allow the healing of a fissure or ulcer. Later, the dilatation can be carried to the point of producing sufficient paralysis to effect a permanent cure.

In those cases in which the olive can be passed through the cardia, the dilator enters with equal facility. In those cases in which difficulty was encountered, it was overcome by the same methods which were used in passing the bulbous sound. In the recent cases I have invariably used the silk thread, as it makes the passage of the instrument more rapid, safe and certain.

In two cases of long standing cardiospasm without dilatation, it was some time before I succeeded in dilating the esophagus or recognizing the cause of failure. In these cases the upper portion of the dilator can not fully expand, and hence the portion within the stomach acts as an expanding wedge, drawing the instrument down. If the staff is firmly held against the incisor teeth, the diaphragm is drawn up to its limit and the cardia then dilated.

The immediate results are most striking. The patients are almost invariably able to take any kind of food at the following meal. There is often a complaint

2. Deutsch. med. Wchenschr., January and February, 1904.

3. Ann. Surg., February, 1906.

4. Brit. Med. Jour., June 4, 1898.



of soreness for the first twenty-four hours. The gain in weight and strength is rapid: even in those cases which were apparently well nourished there has been a gain in weight from ten to forty pounds. Attention is called to the tabulated history in which the number of treatments and recurrences may be noted. In 29 cases there has been no recurrence. Marked return of the symptoms has not occurred in any case as all were cautioned to return on the slightest evidence of trouble. That the disturbance has recurred in so few cases has been a constant source of surprise. Among those more recently treated there will undoubtedly be some recurrence, but I think that recurrences will be rare in the cases which have remained free from trouble for two years or more. The cases which I have had opportunity to examine at some time after treatment show that there is a tendency for the dilated esophagus to return to its normal size. As far as possible these cases will be followed up and the ultimate results reported.

TABULATED REPORT OF FORTY CASES OF CARDIOSPASM.

Case Number.	Sex.	Age.	Stage.	Duration, Years.	Date First Treatment.	Number Treatments.	Date, Recur. and Treat.	Number Treatments.	Second Recurrence.
5	F.	58	3	5	2- 6-06	3	0	..	..
6	M.	18	3	1½	1-20-06	6	7- 6-06	4	0
7	M.	29	3	3	1- 9-06	6	7- 8-06	3	0
8	F.	21	3	3	2-28-06	3	8- 1-06	2	3
9	F.	30	3	3	5-12-06	3	0	..	..
10	M.	40	3	5½	6-30-06	3	0	..	..
11	M.	30	3	18	6-30-06	10	10-27-06	3	0
12	M.	32	3	5	8- 2-06	6	0	0	0
13	M.	33	3	3	8-17-06	10	0	0	0
14	F.	41	3	20	9-20-06	3	0	..	..
15	M.	37	3	5	11- 1-06	7	0	..	..
16	F.	24	3	8	11- 3-06	6	0	..	..
17	F.	40	2	2	2-20-07	4	6- 3-06	2	..
18	F.	42	2	¾	2-27-07	2	0	..	..
19	M.	27	3	7	3- 4-07	10	0	..	..
20	F.	25	3	1½	3- 9-07	3	0	..	..
21	F.	57	3	12	3-18-07	5	0	..	..
22	F.	38	3	3	3-20-07	2	0	..	..
23	F.	34	3	2	3-29-07	4	0	..	..
24	F.	41	3	26	4-20-07	4	7- 3-07	3	0
25	M.	38	3	7	4-25-07	6	0	..	..
26	M.	29	3	15	4-28-07	8	10-27-07	3	0
27	M.	29	3	2	5-15-07	7	8- 3-07	3	0
28	M.	21	3	6	5-15-07	5	11-11-07	3	..
29	F.	31	3	4	6- 5-07	10	0	..	..
30	M.	38	2	2	6- 8-07	6	0	..	..
31	M.	33	3	1½	7-19-07	5	0	..	..
32	F.	18	3	3	9- 6-07	10	1- 8-08	4	..
33	M.	46	3	12	9-10-07	6	0	..	..
34	F.	38	3	12	10-13-07	6	1- 3-08	3	..
35	F.	32	3	7	10-13-07	3	0	..	..
36	F.	34	3	9	10-19-07	5	0	..	..
37	F.	21	3	3	10-26-07	2	0	..	..
38	M.	47	3	2	12-23-07	3	0	..	..
39	F.	17	2	1	1- 3-08	4	0	..	..
40	F.	62	3	20	1- 6-08	4	0	..	..
41	F.	38	3	6	2- 2-08	5	0	..	..
42	M.	59	3	15	2- 5-08	2	0	..	..
43	M.	19	2	4	2-10-08	3	0	..	..
44	F.	38	3	3	3- 6-08	2	0	..	..

Negri Cell Inclusions in the Salivary Glands.—Hoen, in the *Bulletin of the University College of Medicine*, Richmond, Va., July, calls attention to the demonstration of the Negri cell inclusions in the secreting cells of the salivary glands (parotid) by a special combination stain of hematoxylin, fuchsin, ammonium picrate and gram. While priority of discovery is always of interest, as indicating the investigative trend of any laboratory, it is of minor importance when compared to the significance of the finding of structures, in the organs furnishing the infectious fluid, which are identical, morphologically, with those found in the brains of rabid animals. This discovery practically validates the assumption of Dr. Negri that these bodies, named after him, are the etiologic factor of rabies.

A NEW TECHNIC FOR NEPHROPEXY.

ALEXANDER HUGH FERGUSON, M.D.  
CHICAGO.

The purport of this short paper is to describe in as few words as possible the technic of a nephropexy which has satisfactorily suited my cases for more than three years. In the multiplicity of procedures practiced by surgeons and in the many relapses that occur some prominent internists find reasons to discontinue altogether operations for the relief of floating kidney. It is safe to assert that there is no drug or external support that cures a case of this order, while even the simplest fixation by operation relieves many of them. Since applying the technic here described there have been no recurrences.

Floating kidney is no longer a border line disease: it belongs to the field of surgery. A brief survey of its pathology is overwhelmingly convincing of the demands on surgery for its treatment.

Let me make it clear that a kidney should not be insulted by an operation simply because it is extensively floating. I have in mind a case of twenty-five years standing in which the kidneys can be easily made to cross the spinal column, but no operation has been advised for two reasons: 1, No distress is occasioned, and 2, no important urinary changes have arisen.

INDICATIONS FOR OPERATION.

- A few of the pathologic indications for operations are:
1. Transitory hydronephrosis due to kinking or folding of a ureter and characterized by intermittent renal colic and other less prominent symptoms, such as an irregularity in the quantity and quality of the urine voided.
  2. Chronic hydronephrosis with more or less atrophy of kidney tissue, following a more or less permanent obstruction to the urinary flow through the ureter. The kidney may now become fixed away from its normal site.
  3. Unilateral interstitial nephritis not infrequently is caused by the kidney floating. The classic symptoms and signs are present, with constant aching and occasionally colic in the region of the wandering organ.
  4. Acute torsion of the ureter, giving rise to great and constant pain with, of course, enlargement and tenderness of the floating kidney.
  5. Acute infection of a hydronephrosis—inflammatory symptoms constitutionally, chill, rapid pulse, fever, colic, pyuria, etc.
  6. Suppression of urine in a floating kidney with Dietl's crisis bespeaks a condition that should be relieved by operation.

The above mentioned conditions give rise to many local and remote disturbances. In addition to abnormal findings in the urine, e. g., albumin, bile, blood, casts and pus, we often find the patient suffering with painful and frequent micturition; or headache and symptoms of uremia; or gastrointestinal disturbances, dyspepsia, vomiting, abdominal distress, constipation, and even diarrhea.

AN ILLUSTRATIVE CASE.

The nervous condition known as neurasthenia is certainly not benefited by the presence of a floating kidney as a factor, if not in producing, certainly in perpetuating the nervousness when renal colic, etc., is present. Two years ago I fixed the right kidney in a neurasthenic young woman, spare, small and emaciated. In the region of the right kidney there was constant pain, magnified the moment her attention was drawn to it. The



kidney was tender to the touch all the time whether her mind was on that region or not, and I could not push it into its normal fossa. There was albumin in the urine at all times, sometimes blood and casts. Indican in abnormal quantities was voided with it. Headache, vomiting, constipation, hyperesthesia of the skin over the abdomen, increased reflexes, suspicious mind and constant fault-finding were a few of her symptoms. Many of her symptoms fled irregularly and senselessly, but above all there were (with the floating kidney) three distinct permanent findings: 1, Marked tenderness over the appendix; 2, constant tenderness over the kidney, and 3, abnormal urine. On exposing the kidney and finding it in a position of semi-rotation, its pedicle twisted and the little fat around it firmly adherent to its surface, and its parenchyma in a condition of chronic interstitial nephritis, I was convinced that one etiologic factor of her neurasthenia was in our hands. Through

intercostal nerves, which brings into sight the perirenal fatty capsule. Expose the kidney by vertically severing this fat. Deliver the kidney into the wound by the traction afforded by several artery forceps clamped on to the fatty capsule. This procedure is facilitated by ventral pressure. Place as much of the fatty capsule below the organ as is easily done where it may act as a support and a normal protection. Reform the normal bed of the kidney if it has been obliterated by fibrous adhesions. This is best accomplished by means of a gauze pledget, grasped by a long curved forceps, and forcibly separate the encroachments of the liver and diaphragm on the normal renal fossa. Posterior and lateral adhesions are cut if necessary. I consider the re-establishment of the renal fossa a technical advance and materially desirable to ensure a successful nephropexy.

To prepare the kidney for fixation, split the fibrous capsule over its convexity to within an inch or so of its

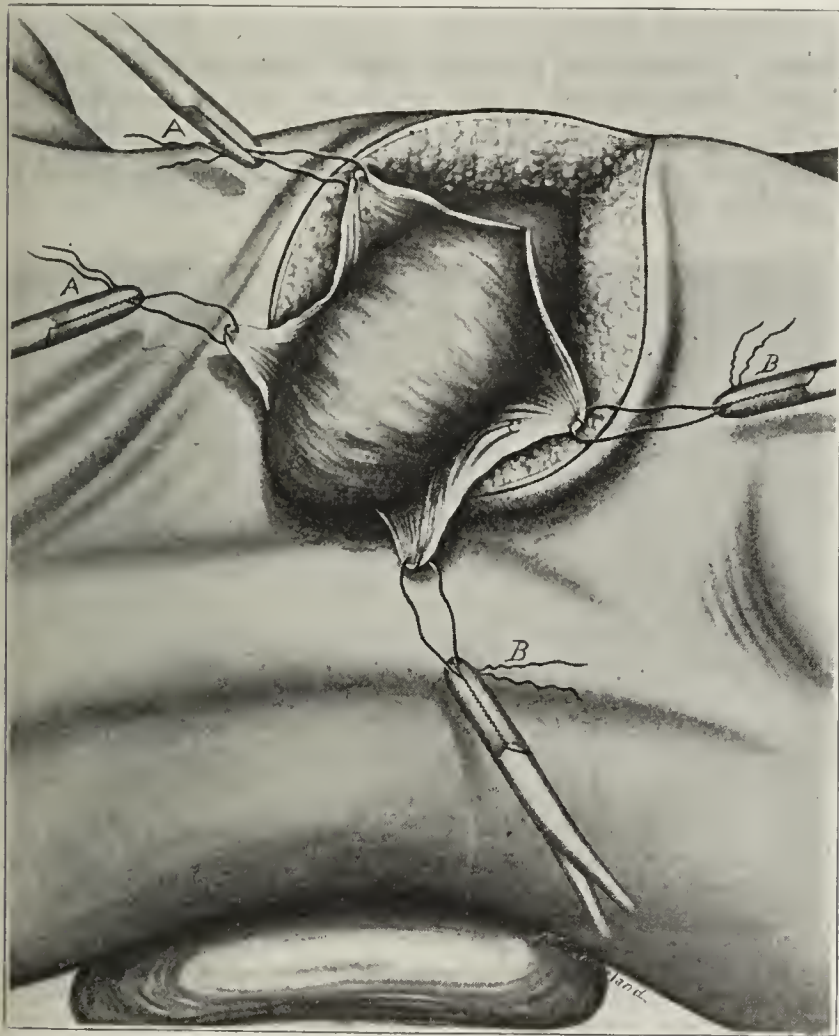


Fig. 1.—Preparing the kidney for fixation. Fibrous capsule (C) split and sutures inserted into the anterior half (A, A) and posterior half (B, B).

the same incision I opened the peritoneal cavity and found and removed another cause of her neurasthenia in the shape of an appendix constricted at its base, dilated distally and full of foul material. She suffers no longer with her side or abdomen.

#### OPERATIVE TECHNIC.

Prepare the patient for the operation by means of diaphoretics, diuretics and purgatives, and at the same time repleting the body with diluents. Anesthetize the subject, preferably with chloroform; elevate the lumbar region to be operated on, and clean the site of operation afresh with Harrington's solution; incise the skin, subcutaneous fat, and the muscles of this region down to the lumbar fascia, beginning the incision one inch below the tip of the twelfth rib and extending it the full length of the rib and parallel with it. Now, cut the presenting lumbar fascia obliquely below the twelfth

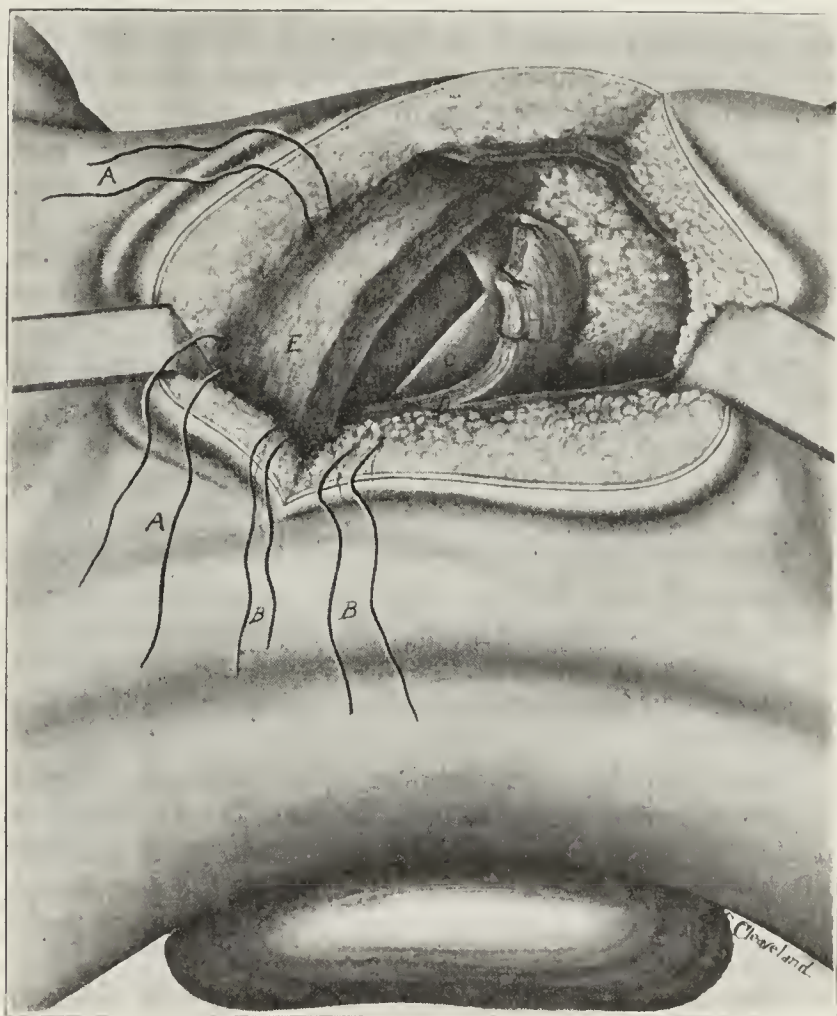


Fig. 2.—Broad thin flap raised from the anterior surface of the quadratus lumborum (D) sutured to the lower end of the kidney. A, A, anterior sutures; B, B, posterior sutures; C, C, capsule of kidney; E, twelfth rib; F, fatty capsule.

lower pole and then peel it off the parenchyma of the organ, except at the lower end. Insert four catgut (No. 1, chromic) sutures, two to the anterior half (Fig. 1, A) and two to the posterior half (Fig. 1, B) of the capsule (Fig. 1, C). With a long, round, curved needle the anterior sutures are passed subcutaneously from within outward and above the twelfth rib, while the posterior sutures are made to penetrate all the structures posteriorly at the upper angle of the wound except the skin. Often two retention sutures are enough. Gently push the kidney into the bed prepared for it and pull on the sutures. The kidney must rest *in situ* without any tendency to displacement after these sutures are tied. Otherwise adhesions in the renal fossa have been overlooked or the fatty capsule has not been properly dealt with. When there is plenty of room the anterior suture or sutures may be fastened to the diaphragm.



In order to deepen the renal fossa and at the same time to support and fasten the lower end of the kidney, raise a broad thin flap from the anterior surface of the quadratus lumborum muscle and suture it to the lower end of the kidney (Fig. 2). The two nerves, iliohypogastric and ilioinguinal, are guarded from injury. Close the wound in the usual manner and leave room for a small cigarette drain at the upper angle of the wound.

4619 Grand Boulevard.

## ULCER OF THE DUODENUM,

WITH REPORT OF TWO HUNDRED AND SEVENTY-TWO OPERATIONS.\*

WILLIAM J. MAYO, M.D.  
Surgeon to St. Mary's Hospital.  
ROCHESTER, MINN.

The surgical invasion of the upper abdominal region has gradually enabled us to replace theory with facts, and fallacious clinical observations have given way before actual demonstration of diseased conditions.

One of the most striking illustrations of this newer knowledge is the discovery that three-fifths of all gastric and duodenal ulcers are situated in the duodenum. Until within recent years gastric ulcer has been considered the chief lesion, while reference to a duodenal location has been infrequent.

In a paper read before the American Surgical Association, May, 1904, I was able to report 58 operations for duodenal ulcer, which at that time was 27 per cent. of all the ulcers of the stomach and duodenum on which we had operated.

Two years later, in a paper read before the Surgical Section of the British Medical Association, August, 1906, on "Duodenal Ulcers," our statistics showed about 40 per cent. of ulcers in the duodenum. Since that time more careful investigation places the proportion at above 60 per cent.

In 1906-7 the total number of gastric and duodenal ulcers operated on by us (C. H. and W. J. Mayo) was 193. Of these, 119, or 61.7 per cent., were duodenal, 60, or 31 per cent., gastric, and 14, or 7.3 per cent. of the patients had a separate ulcer on the stomach and on the duodenum.

This does not prove that duodenal ulcers are more frequent now than in the past, but rather that they have been confused with gastric ulcer. In other words, we have in the majority of instances been talking about gastric ulcer, writing about gastric ulcer, and treating patients for gastric ulcer, when the trouble was primarily in the duodenum and not in the stomach.

There are several reasons why the facts in regard to the relative frequency of gastric and duodenal ulcer have not been brought to light. Until of late our most important source of information was derived from post-mortem examinations, but such data are often misleading, since by the time the lesion had caused death terminal infections and secondary complications had so obscured the field that the situation of the ulcer could not be accurately determined and it was taken for granted that its location was in the stomach.

The greater number of patients with ulcer of the stomach and duodenum do not die from the disorder it-

self, but become a prey to intercurrent disease to which their underfeeding and consequent anemia renders them peculiarly liable.

In our earlier work even surgical exploration did not always reveal the truth, and often the location of the ulcer was not accurately established at the time of operation. This is accounted for by the fact that nearly all duodenal ulcers exist in the first inch and a half (ascending part) of the duodenum and more than one-half extend up to or within three-fourths of an inch of the pylorus, while 20 per cent. of them involve the margin of the stomach at the pyloric ring. Many duodenal ulcers, therefore, were formerly put down as pyloric and consequently classed with the gastric.

Differential diagnosis at the operating table between ulcers of the duodenum and those of the stomach near the pylorus may be difficult, but if careful search is made for the pyloric veins (Fig. 1), their exact location can be quickly detected.

Multiple ulcers of the stomach and duodenum are rare. In only 8.2 per cent. were there separate and distinct ulcers of each organ, although on the mucous membrane opposite an ulcer a second ulcer is often found at the point of contact, which we have, therefore, called the *contact ulcer*.



Fig. 1.—The anatomy of the duodenum with special reference (1) to the pyloric veins which accurately locate the pylorus; (2) note the light colored spot on the duodenum just below the pylorus, which may be mistaken for an ulcer when rendered anemic by traction; (3) crossing of the third portion of the duodenum by the superior mesenteric vessels.

The total number of operations for duodenal ulcer is 272, made on 261 patients. Of these 77 per cent. were males and 23 per cent. females. The preponderance of male over female is hard to explain and is somewhat greater in duodenal than of gastric ulcers.

During 1906-7 60 patients with gastric ulcers were operated on, of whom 36, or 61 per cent., were males, and 24, or 39 per cent., females. In this connection it is worthy of note that, while nearly four patients out of five with duodenal ulcer were men, the opposite was true in gallstone disease, in which more than four out of five patients were women.

A somewhat careful examination of the living subject leads us to believe that, so far as duodenal ulcer is concerned, mechanics may play a part. The first, or ascending, portion of the duodenum in man seems to ascend a little higher than the average first portion in woman; consequently the alkaline, biliary and pan-

\* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



creatic secretions may rise higher and more readily neutralize the acid chyme in the first portion of the duodenum in women than in men.

In an early state of fetal existence the duodenum above the common duct is a part of the pyloric end of the stomach. Coming from the primitive foregut, it is associated with the stomach in its physiology and pathology and is not a part of the small intestine, which comes from the midgut. The embryonic stomach is rotated on its right side, and its original posterior wall becomes the greater curvature. The primitive anterior wall, which has become the lesser curvature, retains its normal shape, but a pouch is formed by an expansion or dilation of the primitive posterior wall (greater curvature), and this becomes the fundus or storage end of the stomach. The pyloric end retains its intestine-like appearance but develops a high muscular potentiality. The embryonic duodenum is rotated about the head of the pancreas and becomes more or less fixed by the loss of some of its posterior peritoneum in the lower portion. The duodenum is U-shaped, with its concavity directed toward the left and upward. Its outlet is within an inch and a half of its pyloric entrance. The large caliber-fixed position and trap-like shape of the duodenum make it an admirable mixing receptacle, and syphonage

Physiologically the acid chyme in the pyloric end of the stomach stimulates the gastric motor and secretory functions. In the upper duodenum it controls the pyloric apparatus, and the rate of the gastric outflow is regulated by the rapidity with which this acidity is neutralized by the alkaline, biliary and pancreatic secretions.

Pathologically the acid stomach juices, either because of perverted secretion or through lack of local resistance, or both, become the most important factor in the development of ulcers, and largely confines their ravages to these two embryologically associated structures, the duodenum and the pyloric end of the stomach.

The first notable contribution to the subject of duodenal ulcer and its surgical treatment was the presidential address before the American Surgical Association in 1900 by Dr. Robert F. Weir. The total number of cases reported at that time was small, and nearly all of them were acute perforations into the free peritoneal cavity.

Perforation is comparatively common, but fortunately the contents of the duodenum are relatively sterile and small in amount, which favors plastic protection. In the 272 operations (up to June 1, 1908) perforation was found 66 times: 16 acute, with three deaths; 13 subacute, with abscess, no deaths, and 37 chronic protected, with one death.

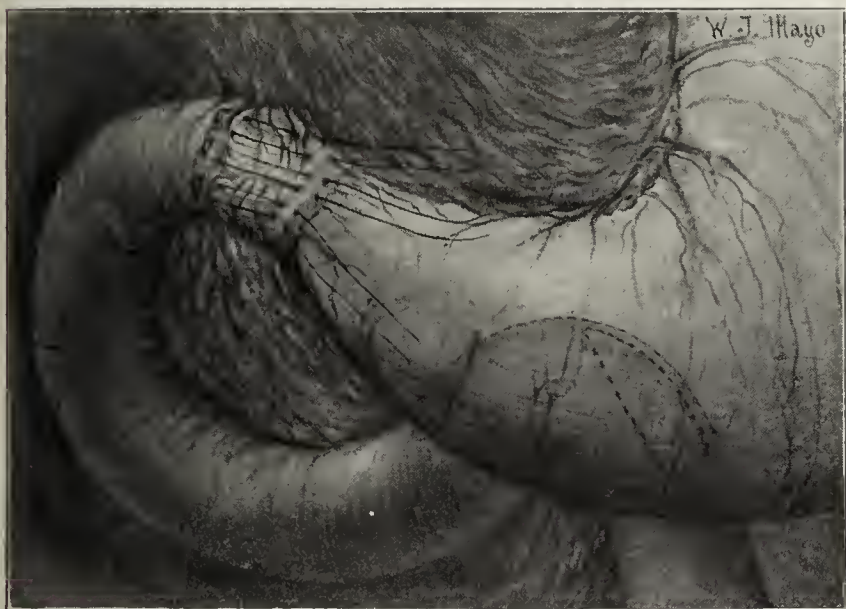


Fig. 2.—Ulcer of the duodenum with sutures in place for the purpose of enfoldment. Posterior no-loop gastroenterostomy indicated.

plays almost as important a part as muscular action in emptying it.

In many animals the entrance to the pyloric end of the stomach is controlled by a true sphincter which does not exist in man, although physiologic contraction graphically marks its situation. The terminal three-fourths of an inch of the pyloric end of the stomach, the so-called "pyloric canal of Jonnesco," may be considered a part of the sphincter apparatus of the pylorus, serving as a passageway only. It is not subjected in the same manner to the traumatism and contact with acid gastric secretions which constitute so potent a factor in the production of ulcer both in the pyloric end of the stomach and the upper duodenum; therefore, primary ulcers in the pylorus and pyloric canal are rare.

Ninety per cent. of gastric ulcers are to be found in the pyloric end, which contains but one-sixth of the gastric mucosa, while the beginning of most duodenal ulcers will be detected at the point of impact where the acid chyme is forcibly ejected through the pylorus against the duodenal wall.

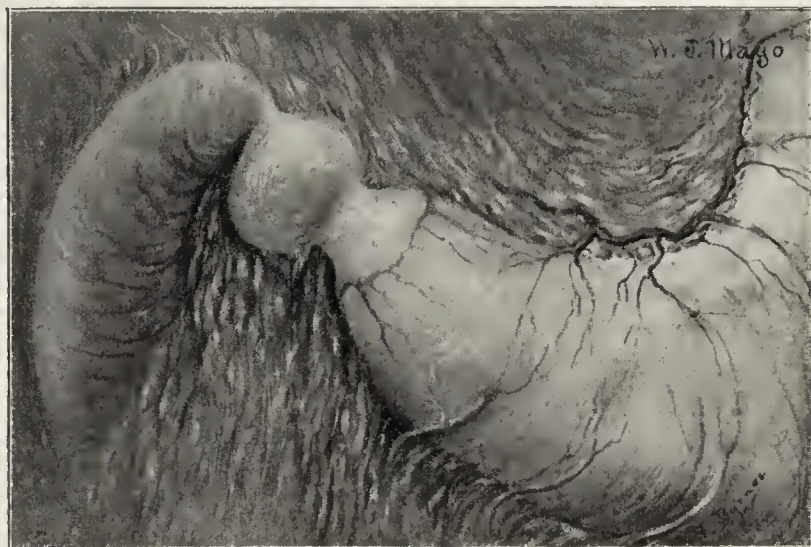


Fig. 3.—Hour-glass duodenum which was treated by excision with end-to-end union between the duodenum and the stomach.

Acute perforation of the duodenum is sometimes diagnosticated as perforative appendicitis, and, as remarked by Codman, it is probable that a number of such acute perforations are not differentiated even at the operating table, and a careful examination of the appendix in some cases of septic peritonitis from supposed appendiceal perforation would show that its peritoneal surface only was involved and that the lesion was in the duodenum.

Out of 27 cases of acute perforation of the stomach and duodenum in which we have operated, 16 were duodenal. In 3 suture of the opening and gastrojejunostomy was done, in 13 suture without gastrojejunostomy, and of these only one required secondary gastrojejunostomy. In addition, 12 subacute perforations were walled off with encapsulation of infected material which had escaped from the perforation and caused a secondary abscess to form, such as described by Lund. All but one of the patients with acute and subacute perforations have remained well, the perforation having seemingly put an end to the disease. In this one exception, although the ulcer was healed, a second-



any obstruction rendered gastrojejunostomy necessary at a later period.

Acting on this observation, we have four times produced the condition of perforation by cutting out the crater of the ulcer and closing the defect by suture. The results have been good, but sufficient time has not elapsed to know if it will be permanent; but it is a much easier and safer operation than the excision of the entire indurated and cicatricial area about the ulcer which we have heretofore practiced. The extensive operation, however, would be indicated if there was any evidence of malignancy, which, as we have already pointed out, is less liable to take place in ulcer of the duodenum than in ulcer of the stomach.

Chronic protected perforation occurred 37 times. In the chronic form, unlike the acute form, incomplete perforations with adhesions protecting the base of the ulcer seemed to act as an aggravation to the condition, and recurring attacks of local peritonitis were the rule, often producing symptoms resembling those of gallstone disease, for which the manifestations were sometimes mistaken.

A marked peculiarity of duodenal ulcer is the periodicity of the attack, beginning as a rule in early adult life. The subject, usually a male, has an attack of stomach trouble, of which acidity is a prominent feature. This lasts a few days or weeks and is followed by an "almost well" periods of weeks or months. These symptoms recur with increasing frequency, the patient finding some relief from a restricted diet. In the later stages mechanical obstruction often appears. Hemorrhage occurs in about one-half of the cases.

A differential diagnosis between gastric and duodenal ulcer can usually be made. In duodenal ulcer the pain and tenderness, as a rule, extends from the mid-line to the right; aggravation induced by food comes on several hours after a meal, and the patients suffer from a peculiar "hunger pain" when fasting.

Unlike gastric ulcer, duodenal ulcer rarely undergoes carcinomatous degeneration. We have seen but four apparently primary carcinomas of the duodenum. In two of these the origin was uncertain, and in but one did it seem probable that the cancer had developed on ulcer. In five cases, however, we have known gastric cancer to develop on the edge of a duodenal ulcer which involved the stomach at the pyloric ring.

The surgical treatment of chronic duodenal ulcer will usually consist of gastrojejunostomy, preferably by the "no loop" method.

We have made 311 gastrojejunostomies for ulcer of the stomach and duodenum by this particular method, with a mortality of less than 1 per cent., and but three patients have required a secondary operation on the stomach or duodenum for any cause.

If the ulcer has caused hemorrhages we tie the blood vessels leading into it, and with sutures cover with sound tissue (Fig. 2). Should there appear to be any danger of perforation, the site of the ulcer is covered in the same manner as recommended by Mr. Moynihan, who calls attention to the possibility of secondary perforation.

In four cases we have excised the ulcer with direct union to the stomach. This did not prove a very satisfactory procedure, as in two of them we were compelled to do gastrojejunostomy later. In several of the cases, however, we were able to excise the ulcer and close by plastic repair after the Finney plan with good results.

In one case an obstructing ulcer of the duodenum an

inch and a half below the pylorus so angulated the duodenum on itself that it was comparatively easy to do duodeno-duodenostomy between the first and second portions of the duodenum. Figure 3 is from a drawing of an hour-glass duodenum, the result of ulcer, which was cured by resection with end-to-end union.

In this connection I wish to again call attention to Figure 1. The arrangement of the blood vessels of the duodenum just below the pylorus are such that if the pyloric end of the stomach is pulled upward rather firmly, as one must often do to obtain a view of the parts, an anemic spot will appear in the duodenum just below the pyloric ring. This appearance is at times very striking and may closely resemble an ulcer. On one or two occasions we were obliged to incise the duodenum at this point before we could be certain that no ulcer existed. The tissues apparently involved are normal to the feel and do not have the milky appearance of the peritoneum of true ulcer, and there are neither adhesions nor other abnormality. If the traction is taken off, it will be seen at once that no ulcer exists.

There has been much discussion as to the curative value of operation for ulcer. From our own experience we can say that the surgical treatment has been most satisfactory. The small esteem in which surgery of the stomach and duodenum is held by many professional men, and the bad results reported, have been largely due to mistakes in diagnosis and unnecessary operations performed where no ulcer existed.

We have, as far as possible, traced our patients with duodenal ulcers operated on in 1906-7. These two years were chosen because this choice eliminated some of the early operations in which the diagnosis was doubtful and the technic imperfect, and it prevented the inclusion of the recent cases that the shortness of time since operation would render valueless to statistics from the standpoint of cure.

Of the 119 patients operated on in 1906-7, we have information of 106. Of these 87, or 82 per cent., were cured; 10, or 9.5 per cent., improved; and 6, or 5.7 per cent., unimproved, making cured and improved 91.5 per cent. The operative mortality in the whole number of cases was 2.8 per cent.

## THE DIAGNOSIS AT OPERATION BETWEEN CHRONIC ULCER AND CANCER OF THE STOMACH.\*

F. B. LUND, M.D.

BOSTON.

In my experience with gastric surgery, although not extensive, I have been confronted with difficulty in deciding in certain cases between the presence of benign and malignant disease, a decision so important and at the same time so difficult that the subject seemed to me worthy of consideration.

The past decade has been one of great activity in the surgery of the stomach. The work has been prosecuted with marked interest and zeal, and, on the whole, with commendable sanity and judgment. Nevertheless, it can not be denied that, as has been inevitable in any new department of surgical endeavor, we have had to feel our way by constant experiment and modification. Mistaken methods have been tried and found wanting; ex-

\* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



cellent procedures have been misapplied, and it is only recently that we have reached firm ground in such important points as the best method of gastroenterostomy and the technic of resection in cancer. There can be no doubt in the minds of those who have followed the work in this field closely that in the early days many operations were done which in the riper experience of the present day would not be deemed good judgment, that gastroenterostomy was done with poor results in such conditions as neurasthenia accompanying gastropnoia, in hemorrhage from medical (acute) ulcer, and other conditions, which experience has taught us to-day, are best not operated on. Medical or acute ulcer, with or without hemorrhage, ptosis attended by neurasthenia, and all non-obstructive lesions of the stomach, except chronic ulcer and cancer, have been practically eliminated from the surgery of that organ. Hour-glass stomach due to contraction of the scar of a chronic ulcer, or to adhesions, is, of course, classed among the obstructive lesions.

British and American surgeons have contributed in no small degree to the rapid advancement of our knowledge of this subject, and among those who by example and precept have been foremost in this field I need only mention such names as those of Robson and Moynihan<sup>1</sup> in England, and the Mayos, Rodman, Finney<sup>2</sup> and Munro<sup>3</sup> in this country.

In regard to cancer of the stomach, there can be no doubt that in operable cases, which means those cases in which the growth with a fair margin of stomach and the involved glands can be removed, the only treatment which gives any promise of relief is in excision, and from my own experience, though small, I am glad to be able to corroborate the statement of Mayo that cancer of the stomach is as amenable to treatment as is cancer of the breast. It is not, however, with the plain unmistakable cancers of the stomach that I wish to deal in this paper, but with those cases—and they are not rare—in which even after all preliminary methods of diagnosis have been exhausted and with the abdomen opened and the ulcer under the eye and touch, we can not distinguish between a chronic ulcer and a cancer. If the treatment justified were in both conditions the same, the fact could make no difference. In fact, no less an authority than Finney makes the statement that in all operable chronic ulcers gastrectomy should be performed, owing to the fact that they are indistinguishable from cancers, and gastrectomy rather than local excision is the best treatment for chronic ulcer.<sup>4</sup>

Perhaps we may come to accede to this statement, in so far as it is applied to nonadherent ulcers so situated as to be easily excised, such, for instance, as saddle ulcers on the lesser curvature; but there is another class of cases, in chronic ulcers on the posterior surface and at the pylorus and extending into the duodenum, when the determination of malignancy is of greater importance. In fact, it seems to me that these cases fall into two distinct classes, namely, (a) saddle ulcers of the lesser

curvature; and (b) ulcers at the pylorus extending onto or from the duodenum and adherent to liver or pancreas.

Cases of the second class are not inoperable, by which Dr. Finney evidently means incapable of excision, but their excision is difficult and attended by a risk which we should be willing to accept in cases of malignant disease but not in the treatment of simple ulcer, especially when we consider the many reported cases of simple ulcers in this situation cured by gastroenterostomy. Robson goes so far as to say that in adherent ulcers at the pylorus, even when they are greatly thickened and there is a suspicion of malignancy, gastroenterostomy should be performed, and he refers to a number of cases in his experience in which this procedure has proved curative. His experience is confirmed by many others.

Anatomic as well as clinical evidence of the cure of these patients is not wanting, from second laparotomies and occasionally from autopsy, as in Hoffmann's patient who died of strychnin poisoning two years after a gastroenterostomy for indurated ulcer at the pylorus, in which the autopsy showed a smooth scar, the ulcer having completely healed.

Hoffmann,<sup>5</sup> however, while presenting the well-known advantages of gastroenterostomy over excision in most cases, states that if appearances at operation strongly suggest malignancy, resection should be done. He applies this statement to indurated ulcers, both at the pylorus and on the lesser curvature. He reports 52 cases of benign disease of the stomach from the Graz clinic.

Von Eiselsberg,<sup>6</sup> speaking of stenosis of the pylorus, advises gastroenterostomy, but admits that in many cases it is difficult to decide whether an ulcer or a carcinoma is present, and states that under these circumstances, if the patient is strong enough, excision should be done. He reports in this paper thirty-nine gastroenterostomies for benign pyloric stenosis with one death, and eleven resections for benign disease with two deaths.

Hochenegg (Schulz<sup>7</sup>) performed gastroenterostomy in two cases in case of doubt, one because the patient was in poor condition, the other because of adhesions. Both patients did well at first, but died within twelve months after operation, and in one an autopsy showed cancer developing on an ulcer base.

On two occasions, however, I have subjected patients with chronic ulcers at the pylorus and extending onto the duodenum to a difficult and tedious excision, only to find that the ulcers were non-malignant. Although both patients recovered, one died four months later from contraction of the new stoma, which, owing to the length and difficulty of the operation, had been made by a Murphy button; this length of the operation was partly due to the fact that the common duct was accidentally divided and had to be reimplanted in the duodenum. It is in this class of cases that laboratory studies are of greatest importance and therefore should always be made before operation. In these cases of adherent ulcer, in which the question of excision is a delicate one, the presence and amount of free hydrochloric acid may aid in the decision, and so far in my cases has proved a good guide.

1. Moynihan, B. G. A.: A Review of 59 Cases of Cancer of the Stomach Treated by Operation, *Tr. Clin. Soc. Lond.*, 1906, xxxix, 84-95.

2. Finney, J. M. T., and Friedenwald, I.: Unusual Case of Ulcer of the Stomach, *Boston Med. and Surg. Jour.*, 1907, clvii, 393-395.

3. End Results in Benign Lesions of the Stomach Surgically Treated, *Am. Surg.*, 1907, xiv, 818-826.

4. A parallel example of the induration due to chronic subperitoneal inflammation simulating malignancy may be found in those tumors of the cecum which by their stony hardness and appearance so simulate carcinomata, and which disappear so quickly after an inflamed appendix has been removed from among their adherent coils.

5. Haben wir in Zukunft günstigere Resultate von der chirurgischen Behandlung des Magencarcinomes zu erwarten, und besteht ein Zusammenhang zwischen klinischer Krankheitsdauer, und Radikal operabilität? *Mitt. a. d. Grenzgeb. d. Med. u. Chir., Gedenkbund, v. Mikulicz*, 1907, pp. 879-892.

6. Die chirurgische Therapie des Magenulcus. *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1906, xvi, 1-18.

7. Zur Statistik der Gastroenterostomien bei benignen Magen-erkrankungen, *Deutsch. Ztschr. f. Chir.*, 1906, lxxxviii, 494-552.



In regard to cases of the first class, the saddle ulcers of the lesser curvature, my experience has been different.

A gastroenterostomy for a supposedly benign saddle ulcer of the lesser curvature failed to cure one of my patients, who gradually failed and died in a few months, probably from extension of a gastric cancer; and an excision in a similar case of a supposedly benign ulcer, which was subjected to an immediate microscopic examination, showed the presence of cancer and enabled a more extensive excision to be performed at once, with the gratifying recovery of the patient. An excision of a saddle ulcer of the lesser curvature with a wide margin of stomach with enlarged glands thought to be a cancer and therefore dealt with radically, resulted also favorably to the patient. Another patient, in the hands of a colleague, who came under my observation, and on whom a gastroenterostomy was performed for a supposedly benign ulcer of the lesser curvature, had a recurrence of symptoms a year or two later, and a second laparotomy disclosed a cancerous peritonitis.

Recently a patient on whom I performed a gastroenterostomy for a chronic saddle ulcer of the lesser curvature three years ago, excision being impracticable on account of adhesions to the liver, came to autopsy, and examination showed a cancer. In this case, undoubtedly, a cancer developed on an ulcer base, a condition to the frequency of which attention has been so often called in recent years by Mayo, Graham and others, and one which is a further argument for excision whenever possible. In these cases the presence or absence of hydrochloric acid has been an unsafe guide, and I believe these ulcers should all be excised, regardless of laboratory findings.

It is useless further to multiply examples which might demonstrate our inability to distinguish cancer from chronic ulcer. The practical questions for us are: First, how near can we come to a diagnosis and what aids can we summon before and during operation? Second, the aids failing us, how are we to proceed under the variable and deceptive conditions met with during operations? Partly on one's own experience, guided, of course, by the written and spoken advice of others of perhaps greater experience than one's self, but after all chiefly by one's own personal opinion, must the question in each case be settled. An attempt to formulate the principles which should guide us may well be prefaced by a brief statement of the clinical pathology of the disease.

With the superficial medical ulcer which involves the mucous membrane only, frequently bleeds and often is the cause of pain, but is curable under judicious rest and feeding, we have not to deal. Whether such an ulcer heals under medical treatment or becomes chronic, i. e., surgical, depends on whether sufficient rest can be given the ulcer without starving the patient and leaving the general nutrition so poor that the tissues can not heal. I may remark in passing that now that the long periods of rectal alimentation (essentially absolute starvation) in the treatment of this disease have been given up, a practice which often exhausted the patient to a point where the tissues were so devitalized that healing could hardly be expected, and feeding almost from the first has been adopted, we shall probably find fewer chronic or relapsing ulcers to operate on. Food which gives the maximum of nutrition with the minimum of work to the stomach we have learned may be given almost from the first, and with careful diet and supervision after the acute symptoms have disappeared and the patient dis-

charged from the hospital, I believe we shall have less chronic ulcers develop. This is only one of the many beneficial results from the success in prescribing dietetic regimens which medical men are attaining, as the result of special attention and study, and which have already given such remarkable results in obesity, diabetes, etc.

To return, however, to the subject, the relapsing, chronic, or surgical ulcer invades the muscular layer of the stomach until a definite patch of varying size becomes converted into scar tissue, white, of stony hardness, and of varying thickness, according to the time it has existed. Such a scar has elevated indurated edges where the infiltrated, ulcerated mucous membrane surrounds it, the edges may be excavated, so that any one may be defied to tell by touch or inspection whether they are cancerous or not, and glands may be involved and also indurated, so as still further to simulate malignancy.

Of the two large saddle ulcers above referred to, which I excised and which looked almost exactly alike, one being simple and the other carcinomatous, the cancerous ulcer was the least indurated and least malignant looking of the two. Excision of a portion of the ulcer for pathologic examination is undesirable, because it complicates the technic, because of the time wasted in waiting for a report, and because of the danger in case of malignancy, of infecting the open wound with cancer cells.

Excision of the entire ulcer and immediate examination of the specimen may help, and, in fact, in my second case the report of cancer enabled a more extensive resection, with the happiest results. However, even this method may fail, for the pathologist may have to cut and examine several portions of ulcer before he arrives at a malignant part and the delay may be too great.

In doubtful cases two facts may help us: one, that cancer rarely starts from the duodenum, so that if the duodenum seems primarily involved the induration probably is benign; and second, that benign ulcer perforates early as compared with cancer. So that subacute perforation with adhesions to the liver or pancreas in a case early enough to be a doubtful one points toward benign disease. The very induration attending subacute perforation may be the reason for the simulation of malignancy, or, to put it differently, the very conditions which render excision difficult may point to its being unnecessary.

In the second group of cases mentioned above, in which I excised two moderately adherent ulcers of the pylorus and first part of the duodenum, the situation was as follows: The clinical evidence and laboratory tests, hyperacidity, presence of free hydrochloric acid, etc., pointed in both cases to chronic ulcer. The induration and thickening of the pylorus and first part of the duodenum was of such a character as to suggest malignancy. In one I had previously (four weeks before) performed a gastroenterostomy without relief and the growth had increased in size. I felt that both lesions were probably malignant and performed resections, made difficult and dangerous by pancreatic adhesions, only to have both reported benign. In the first case I should have allowed the facts that the clinical and laboratory tests pointed to a benign condition and that carcinoma of the stomach rarely arises from the duodenum influence me; and in the second case the same factors, plus the knowledge that the inefficiency of the gastroenterostomy was in part, because the lumen was too small or, in other words, a technical error. I performed Rodman's ideal



operation, excision of the ulcer area, but in the presence of adhesions which made excision rather dangerous, and in the face of the fact that the very ulcers which are most amenable to healing under gastroenterostomy are those of the pylorus. I think under ordinary circumstances a gastroenterostomy is to be preferred in such situations.

I have performed seventeen gastroenterostomies for indurated thickened ulcer at the pylorus, some of which were bleeding freely at the time of operation, with one death and with uniformly good results in sixteen cases; and also on three ulcers at the lesser curvature adherent to the liver (perforated chronic ulcers), with permanent cure.

Of seven cancers of the stomach in which I have performed partial gastrectomy, two patients died as the result of the operation, one of the deaths occurring many years ago before I was acquainted with modern technic, and the other in a case in which an excision was undertaken in the presence of too great glandular involvement, after gastrectomy and enucleation of large masses of glands around the common duct and pylorus, accompanied by considerable hemorrhage. All the other patients were benefited by the operation. The most extensive lesion was in an old man of 68, in whom two-thirds of the stomach was removed; he gained twenty pounds and lived in comfort for a year. The least extensive lesion was a cancer of the lesser curvature; the patient was only slightly relieved and died in seven months. One patient is alive and perfectly well two years after the operation and has gained forty pounds; one is alive and perfectly well eight months after the operation and has gained forty-six pounds. My colleague, Dr. Nichols, has a patient in whom two-thirds of the stomach was removed, and who is well two years later.

If I may add my three cases of partial gastrectomy for benign disease, we have nine cases with two deaths, and considering the reasons for those two deaths I feel that the operative risks are not great. If I can keep from taking desperate chances in inoperable cases I feel that my mortality rate ought to be good.

The comfort of the convalescence from the gastrectomy cases, both benign and malignant, has been remarkable. Both the Billroth No. 11 and the Koehler method have been followed, but the finer points of technic have been, in the main, those advocated by Mayo<sup>8</sup> in 1906, which is, I think, a classic and for which we owe him a very great debt.

Such success as we have had in cancer cases emphasizes the importance of making an accurate decision in early cases, which are the very ones in which we can hope for most and perhaps may justify the writing of this paper. I am aware that I have suggested no certain method which will accurately decide for us in doubtful cases. No harm can be done by an attempt to set forth the principles which should guide us in making these very important decisions, and for this reason, and in the hope that the discussion may throw more light on the situation than I have done, I am emboldened to present this paper.

#### CONCLUSIONS.

In certain cases of indurated ulcer of the stomach the diagnosis between benign and malignant disease may be impossible, even with the abdomen opened. These are

the early cases, in which the diagnosis of early cancer is important, as enabling thorough removal.

These cases, broadly speaking, fall into two classes:

1. Indurated ulcers (usually of the lesser curvature), which are movable and free and may be benign or malignant. Here, even if the tumor is benign, gastroenterostomy is often unavailing, and partial gastrectomy should be performed. Excision here is easy and safe.

2. Indurated ulcers of the pylorus often extending from the duodenum and adherent to the pancreas or left lobe of the liver. These are usually benign; excision is difficult and gastroenterostomy is safe and should usually be performed rather than excision.

In Class 1 excision should be done regardless of laboratory findings. In Class 2 the laboratory findings are important and usually reliable.

The responsibility of leaving a tumor which may be malignant is so great, however, that all diagnostic aids should be invoked, and in case of doubt excision, though at some risk, may be performed. The surgeon must decide in each case whether the risk lies in performing excision or leaving a tumor which may be malignant.

529 Beacon Street.

#### DISCUSSION.

##### ON PAPERS OF DRS. MAYO AND LUND.

DR. ALEXANDER HUGH FERGUSON, Chicago: I think there is no prominent surgeon in America to-day who would even dream of asserting that he never errs in making a diagnosis between carcinoma and chronic ulcer of the stomach. There are certain things, however, that we see and feel at the time of operation, irrespective of the history of the case before the patient comes to the operating table, which lead the surgeon to lean on one side or the other in his diagnosis of the border-line cases. For instance, one opens the abdomen and finds at once a large amount of straw colored fluid coming through the incision. It evidently is a case of neglected carcinoma, a very far advanced case. We do not very often open up the abdomen in such cases to-day, but we have in the past. If we see extensive adhesions and if we pass in the hand and feel them without feeling a tumor, the diagnosis is rather of inflammation that has disseminated itself and caused these adhesions to form. If, however, we find thick, continuous, friable adhesions between one viscus and another, between the stomach and the transverse bowel, between the stomach and the parietes or liver, then we may be sure that points to carcinoma. This, too, would be a very late and inoperable case. Often in the early case in which the tumor mass is movable we can not make a diagnosis even when the ulcer is seen and felt, for malignancy may be just beginning.

There are certain ways, however, in which we may proceed to determine what we have in hand, and that is to pass the entire hand into the abdomen, exploring the lymphatics and organs. The anterior surface of the stomach can be palpated with one hand, but when the posterior surface is to be palpated both hands must be used. By careful palpation we may be able to determine a tumor mass where we did not suspect it, located at some place in the stomach wall, that gave but meager symptoms or signs of such an advanced condition. When, however, it is in the pylorus, obstructive symptoms and signs tell whether it is carcinomatous or due to ulceration in a much earlier stage.

What does all this teach? It teaches that patients who suffer with gastric symptoms during the carcinomatous age ought to be explored early, because only by such early explorations can the pathologic condition be removed, and it is only of temporary use to do a gastroenterostomy.

DR. VAN BUREN KNOTT, Sioux City, Iowa: I take it that the differential diagnosis is not so important in these extremely late cases referred to by Dr. Ferguson as it is in the earlier cases, in which there is a large infiltrated area at or near the pyloric end of the stomach. It is well known that the preoperative diagnosis between carcinoma and ulcer of the

8. Technic of Gastrojejunostomy, Ann. of Surg., April, 1906.



stomach is extremely difficult; in fact, it is one which we very frequently fail to make. Men of experience are equally well acquainted with the fact that the diagnosis at operation, with the abdomen open, is, in many instances, practically impossible. Finney last month reported two cases before the American Surgical Association, in which at operation, with the abdomen open, he was unable to decide whether he was dealing with a carcinoma or an ulcer at the pylorus. Frozen sections also often fail to determine whether the growth is benign or malignant. This is a striking instance of making a differential diagnosis under great difficulties. If it be true, as Dr. Mayo told us, in accordance with the statistics of many observers, that implantation of carcinoma on ulcer is found to occur in over half of the cases of ulcer of the stomach, it would seem that the differential diagnosis at operation between large infiltrated inflammatory growths at the pylorus, between benign and malignant growths so situated, is not important, because in cases amenable to radical operation we should be conserving the best interests of the patient by doing a pylorotomy or partial gastrectomy and cutting out the growth, thus doing away with the possibility of implantation of carcinoma or ulcer or a recurrence of the growth and troublesome symptoms.

The statistics of pylorotomy to-day are very much worse than those of gastroenterostomy. Every one has done a pylorotomy in cases in which a growth suspected of malignancy was removed and found to be benign, and every one has also had the experience of doing a Rodman operation for ulcer and finding that the mass removed was a tumor of a malignant character.

DR. PARKER SYMS, New York: Gastric and duodenal ulcers are so closely allied clinically and surgically that they may practically be considered to be identical. The pyloric part of the stomach is a common seat of ulcer, and the upper one and a half inch of the duodenum is the common and usual seat of duodenal ulcer. Of course, in this discussion we may leave out of consideration the superficial acute ulcers common in young women, and which may be treated properly by dietetic and hygienic means. We are considering the chronic, deeply-situated ulcers, the indurated ones that do not tend to get well; it is these ulcers that present the greatest immediate and remote dangers.

Every case of gastric and duodenal ulcer should be recognized and cured. Attempts to effect a cure by hygienic and dietetic means should be limited to a brief space of time, and in all cases in which symptoms persist and a recurrence takes place operative procedures should be resorted to because the results will be much better than if a so-called expectant or conservative treatment is employed, and because the dangers of an uncured ulcer in this region are too grave to be neglected. Cancer of the stomach is a disease which can hardly be cured when it can not be recognized without opening the abdomen; therefore, our only means of curing this disease is to operate at a time so early that the diagnosis could not be made by the usual method.

Other dangers of duodenal ulcer are perforation and hemorrhage. There is no question that the vast majority of cases of ulcer of the duodenum and stomach may be cured by gastroenterostomy, and the preferable method of performing the operation is the one described by Dr. Mayo. We must not, however, neglect the fact that the end results are yet to be determined, and the argument put forth by Rodman calling for pylorotomy and removal of the tissue which may later become cancerous is too strong to be neglected.

DR. N. B. LEGGETT, New York: I shall confine my discussion to the question of the function of the stomach in the presence of an open pylorus. The details which I am going to present are elaborated from the result of a series of experiments carried on at the Surgical Research Laboratory of Columbia University during the past winter. A gastroenterostomy was done on seventeen dogs, and by means of a simple probang devised by the laboratory student assistant, Mr. A. G. Sullivan, a "B. B." shot, after being attached to a strong linen thread, was introduced into the stomach of each. The probang consisted of a heavy piece of wire strong enough to reach from mouth to stomach and twisted at one end. The

other end was cast into a handle of lead. In use the string was threaded through the eye and the attached shot is brought up against the metal. The dog was then anesthetized, its mouth held widely extended and its neck straight. The probang and shot thus passed readily through the cardia. At this moment the handle, which was purposely made heavy and of lead, was sharply struck with a heavy metal instrument. The blow was transmitted to the shot, which flew off into the stomach, carrying the string with it. The probang was then withdrawn, a needle threaded to the string, passed through a fold in the base of the pharynx and there knotted. Two days later the dogs were killed with ether. Clamps were placed on the cardia, the pylorus and the intestine aboral to the stoma to prevent the string from slipping during the removal of the specimen. After hardening, the specimens were dissected, so as to show the position of the string as indicating the path taken by the bullet, and mounted.

There are obviously four ways in which the shot may travel, namely: first, through the pylorus and on down into the intestine past the stoma; second, through the pylorus and into the stomach by way of the stoma, namely, a direct cycle; third, through the stoma and into the intestine, the supposed normal course; fourth, through the stoma and back into the stomach, a retrograde cycle. All the stomata were made on the anterior aspect of the stomach. Of seventeen specimens studied, twelve were found to have the stoma within an average of 5 c.cm. of the pylorus, while in five the stoma was located at the most dependent portion of the stomach. On account of the variation in size of the animals operated on, the actual distance from stoma to pylorus would not create a correct impression. Of the twelve stomata placed near the pylorus, in five, or 41 per cent., the linen thread passed through the stoma. In seven, or 59 per cent., it passed through the pylorus; in one of these, two strings were fed, one passing through the pylorus and the other through the stoma. The string passing through the stoma made two complete cycles. In two cases in which the string passed from the stomach through the pylorus and again into the stomach through the stoma, the cycle was complete, and in one case a string making an exit from the stomach via the pylorus made three complete cycles. In this case the stomach was greatly dilated. Of the five specimens in which the stoma was located at the most dependent point of the stomach, the position of seven strings was to be studied, because in one case three strings were fed. In this case two strings were found to have passed through the stoma, one making a complete retrograde cycle twice. The third string had passed through the pylorus, making one direct cycle. In the five cases, four strings were found to have passed from the stomach by way of the pylorus and three by way of the stoma.

A point of interest, because it suggested a possibility of obstruction from spur formation at the point of the stoma, was the fact that when the cycle was direct, namely, through the pylorus and back again into the stomach through the stoma, the stomach was found to be uniformly dilated. In an anterior gastroenterostomy the stoma is used almost as frequently if placed at the dependent point of stomach as if near to the pylorus. Roughly speaking, the unobstructed pylorus is used to transmit one-half of the shot swallowed, the remaining half passing through the stoma. Whether this proportion holds true for the semi-solid chyme can probably be determined by feeding string without shot.

DR. F. B. LUND, Boston: The problem of distinguishing between an induration due to chronic ulcer and that due to carcinoma is to determine between actual tissue growth and deposit by inflammation, as in appendicitis where the appendix, buried under an inflamed cecum, has given rise to appearances of malignancy and where recovery occurs after removal of the appendix. I have seen such cases of appendicitis where the cecum was excised on account of the simulation of malignancy. Dr. Mayo's statement that many pyloric ulcers are really duodenal ulcers is a help in the decision how to deal with these cases because duodenal ulcers rarely become malignant, while resection of movable ulcers anywhere in the stomach is simple and safe if one follows the technic he so well demonstrated for cancer of the stomach.



In perforating ulcers of the duodenum the tenderness is often over the appendix and not over the site of the perforating ulcer. I attribute it to the fact that the greatest tenderness is at the edge of the inflammation. Cases in which a perforating ulcer of the duodenum was mistaken for appendicitis are the cases in which the starvation treatment never produces a cure, so that the operator who waits for the case to quiet down before operating will be disappointed.

DR. WILLIAM J. MAYO, Rochester, Minn.: There are a few points to which I wish to call attention. First, duodenal ulcer is more frequent than gastric ulcer; second, although we are told in the text-books of the past that 60 per cent. of gastric and duodenal ulcers occur in women, that the contrary is true; third, if one does a gastroenterostomy for ulcer without proving at the operating table that the ulcer actually exists the operation will probably do the patient harm.

I think that the surgical cure of duodenal and gastric ulcers is certain in at least 80 per cent. of cases, and in 10 per cent. more the patient will be so much benefited as to be well satisfied with the result. Finally, I plead for earlier recognition of cancer of the stomach, and I would emphasize again the fact that a very considerable percentage of cases of cancer of the stomach begin in ulcer. There should be two classes of patients turned over to the surgeon promptly—those with tumor of the stomach and those with obstruction. Why is it that in the great hospitals, cases of cancer of the stomach are found in the medical wards? Can one do any more medicinally in this disease than can be done in cancer of the breast, lip or uterus? A suspicion of cancer makes the case a surgical not a medical one, and the patient should be sent to the surgical side at once.

Again, if a tumor is present, what difference does it make whether that tumor is due to inflammation surrounding a thickened chronic ulcer that is liable to undergo carcinomatous degeneration, or whether cancer actually exists at this time? You will be surprised in some instances at the length of time patients are worked over for a diagnosis with a palpable tumor that, perhaps, they have discovered themselves. Let me say, too, that the moment you make a diagnosis of tumor, no matter what its nature may be, you must consider the case a surgical one, and the surgeon should be called in consultation. I have yet to see the case of mechanical obstruction that can be cured by medical means when it is caused by chronic ulcer. Chronic ulcer producing obstruction can be carried along in various ways, but it can not be cured. When mechanical obstruction is present it is easy to tell by means of the stomach tube. Give the patient raisin cake or some raisins at bedtime. Pass the stomach tube in the morning and see if you can find the skins.

## STATE RECIPROCITY IN DENTAL PRACTICE LICENSING.\*

A. H. PECK, M.D., D.D.S.  
CHICAGO.

Some wise man has said that no question is ever finally settled until it is settled right. The fight over human slavery went on for generations and even centuries; but the civilized world has come at last to realize that every man is born free and has certain inalienable rights to "life, liberty and the pursuit of happiness." The innate love of fair play which persists in the human heart, even when oppressed and abused, will sooner or later assert itself, and society will come, though by devious ways, to do justice. It is faith in the final righteous verdict of society that inspires confidence in the ultimate success of the effort to secure uniform state laws governing the practice of the dental profession.

In order to reach a clear understanding of the difficulties which confront any attempt to secure that for which so many of the dental profession are striving, it is necessary to consider the historical development of our form of government. When the thirteen feeble colonies emerged from the exhausting struggle for independence, they were indeed free and independent, not only of foreign powers but also of each other. There was no central head provided by the articles of confederation under which the war for independence was carried on. When peace had come it was seen that there was nobody to regulate commerce with foreign powers, or to make levies on the several states to maintain the credit of the nation. It was because of the absence of this central authority that the constitutional convention was called, issuing in one of the most remarkable documents which the world knows—the Constitution of the United States.

But man is not infallible, and the instrument created by our fathers could not make provision for every contingency that might arise in the development and progress of a people. So it has come to pass that the real union of the states has been an evolution rather than a creation. Just what right inheres in the individual state must be settled as the unfolding life of the nation brings forward one question after another for consideration and settlement. Massachusetts at an early day, and the southern states later on, claimed the right to withdraw from the union, a claim that was only settled at last and forever at the cost of untold sacrifice in money and human lives.

And even now the task of unifying independent states is going on. It is not yet decided what power, state or national, shall be exercised in the final control of our railways. The nation is to-day in a state of transition, but every step that is being taken leads toward the centralization of power. It is this amalgamation of state sovereignty with national control which renders difficult the task of securing uniformity in laws governing the practice of our profession. The states, very justly, are jealous of their rights. They cherish most fondly the right to say what may or may not be done within the confines of the particular commonwealth. They have the authority and purpose to exercise it. Possibly in this tendency an expression of fundamental human nature may be recognized and therefore escape severe blame.

In the discussion of any subject it is necessary, first of all, to state clearly that which is to be considered. The investigator may arrive at this in the present case by asking himself what conditions in the practice of the dental profession need to be remedied, so far as this practice is affected by the division of this country into states. We have long since come to be a nation, but our nationality has not extended its sway over all the activities of all citizens.

A dentist who has practiced successfully for ten years in Illinois may not move into the neighboring state of Wisconsin and continue the practice of his profession without being compelled to undergo an examination before the board of the latter state. His skill, his experience, the reputation which he has established, although it be world-wide, go for nothing. The fact that the examining board in Illinois has testified to his fitness to practice does not count. Perhaps such a state of affairs finds one of its most ridiculous illustrations in the methods which once obtained (and may yet, for all I know to the contrary) in the matter of teachers' certificates in the different counties of a given state. A teacher was

\* Read in the Section on Stomatology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



examined by the county superintendent of one county, passed most creditably, was granted a first-grade certificate, and then was engaged as teacher by a school in a neighboring county. Was the certificate honored? Sometimes, by some large-minded man. But as a rule the teacher was compelled to undergo another examination before being permitted to instruct the youth of this county how to read, write and cipher.

There are two reasons why the prevailing method is unsatisfactory. First, it involves an unnecessary humiliation. For a man in middle life, who has been in active practice for twenty or twenty-five years, to be brought before a board and compelled to answer questions concerning his profession as though he were suspected of being an impostor, trying to palm himself off as something he is not, is to subject him to uncalled-for indignity. In the next place, it is quite probable that the examination will not serve to reveal the real knowledge and ability of the one examined. The phraseology of the text-book, the terminology of the lecturer, do not remain distinct in the mind of the busy professional man for any great length of time; but the latter has gained instead that which is of far greater worth than accurate definition, and that is the ability to do. Many a man in every profession, who would be vastly troubled to describe in fitting terms the best way of doing a given task, can roll up his sleeves and do the task to perfection. The fact that a man is a parrot and can glibly repeat what he has heard does not constitute overwhelming proof that he is competent to practice his profession. The present custom largely discounts practical ability and puts a premium on memory.

There is a profession the members of which undertake to care for the most important interests of man. Surely no profession should be more carefully safeguarded than that of the Christian minister who deals with moral and spiritual issues. If the state is called on to protect the interests of its citizens at any point, it certainly should be in the teaching which goes to make or mar manhood and womanhood. But the minister who is ordained and commissioned to his work in a New England state may go anywhere in all the length and breadth of our land and be sure of recognition of the standing which has been given him. I imagine that if our preachers were compelled to undergo an examination in theology every time they remove from one state to another, pastoral changes would be far less frequent than they are at present.

There is a very general feeling that the present state of affairs as regards the right of interstate practice in our profession is far from satisfactory. What can be done to remedy existing conditions? Three possible lines of action suggest themselves. If each state would recognize the validity of the licenses granted in every other state the present difficulty would disappear. An objection to this, in the minds of many, lies in the fact that the conditions to the granting of a license are so dissimilar in the different states. It is said that a man could pass the examination in a state where the requirements are not sufficient to insure competency, and then proceed to another state where the standard of the profession is high and enter at once on the practice of his profession. In this way incompetents and even charlatans would be given standing in states that have passed through severe struggle in bringing the profession to the high position that it now occupies. On its face that seems to be a serious and valid objection; but its force will depend on the extent to which insufficient require-

ments obtain in various states. That can be determined only by collating the laws bearing on this subject, and such an examination will go far toward allaying our fears. While it is true that some states have more stringent requirements than others, it is also true that few, if any, states put a premium on inefficiency. It stands to reason that each commonwealth desires to conserve the interests of her citizens. She is not willing to hand even the man with a toothache over to the tender mercies of an ignoramus. She also has a measure of state pride which forbids that she should allow a free course to ignorance while her sister states are insisting on capability. But this unlikeness in state laws, be it greater or less, suggests a second course of procedure.

Uniform laws should be secured in the different states of the union, so far as these laws bear on the practice of dentistry. Were this to be done, the only objection to the recognition of licenses granted by a sister state would disappear. There is absolutely no reason for having as many different dental laws as there are different states, except it be the American mania for legislation. It is said that when an Englishman has a spare hour he says to his comrade, "Let's go out and kill something." When the average American has a bit of leisure he says to his friends, "Let's go out and legislate." Americans have a passion for making laws, and each state seems to have a consuming desire to make laws unlike those of any and every other state. But what is there about the teeth of a Californian that differentiates him from a Georgian? Why should the man who lives in Minnesota need a different set of laws from the man in Kentucky to protect him from the ignorance or the laziness of the dentist? Why should not one standard prevail from the Atlantic to the Pacific and from the great lakes to the gulf? There is no reason why this should not be, except the stupendous difficulty of securing the necessary legislation. It might be brought about in half a dozen or even twenty states after prolonged endeavor, but it would be a herculean task to induce all the forty-six free and independent commonwealths to consent to such legislation.

This leads up to the consideration of a third possibility—that of securing federal legislation. At the risk of seeming to trench on the honored doctrine of "state's rights," I shall venture to say that this seems to me the most feasible plan of procedure. It would be vastly easier to secure legislation from the Congress of the United States, one body, than from the many bodies exercising legislative functions in the different states. The law-making body for the nation could deal with the whole matter in a comprehensive manner impossible for the legislatures of the separate states. By the appointment of a federal commission having general supervision of all matters pertaining to the preparation for and practice of the dental profession, not only could uniformity be secured, but the profession could be placed on a secure and honored basis. Such a commission could prescribe the standards for admission to and graduation from all dental colleges and formulate the conditions to practice in every place in all the land. Does any one doubt the effect of such a provision? It would dignify our profession, it would do away with present embarrassment, it would beget needed *esprit de corps*.

With reference to any such proposition as this which I am discussing, two questions may fittingly be asked. First, would any person or any interest be injuriously affected by that which is proposed? Would uniform laws for the profession operate to the detriment of any men-



ber? Certainly it would not work injury to the profession as a whole, but it is more than possible that practitioners here and there have the feeling that their particular chance for making a livelihood would be affected. It is difficult, if not impossible, to see how this could really be. Such laws as are proposed would not make entrance on the practice of the profession any easier than it is now. The bars would not be thrown down for incompetents to enter. As a matter of fact, it seems very likely that such a federal commission as is proposed would remove from the profession some of the weeds which are now allowed to grow untroubled. How often does it happen that an unethical member of our profession is brought up short and debarred from practicing? Do we not all know of men whom the honorable members of our profession refuse to recognize as brother practitioners, who live by bamboozling a credulous public, whose advertising and self-puffing is nauseating to every decent dentist, but who go on their way fleecing the public year in and year out, undisturbed? It is as certain as anything can be that a national commission would not tolerate that which is the shame of our profession to-day. For this, if for no other reason, I long for the day when the chaotic conditions which now obtain shall be supplanted by the order which would come with a federal commission.

But there are certain sections of the country in which the members of our profession seem to be panic-stricken whenever uniform laws are mentioned, lest their communities should be overrun by a horde of "one-lung" dentists. It is well known that persons who have reason to believe that they either have or are threatened with tuberculosis frequently betake themselves to those sections of the country offering the most favorable climatic conditions. The assumption is that if Arizona and California and New Mexico and Texas do not guard their borders against the incursion of consumptive dentists, there will pour in on them a mighty stream of expectorating practitioners. The vision which is conjured up by the riotous fancy of the brethren in some of these states is indeed appalling—but it is only a dream. Their fears multiply the numbers of tuberculous dentists, and if uniform laws should be enacted to-morrow it is doubtful if Phoenix and San Antonio and Pasadena would know the difference, at least through any abnormal growth of their consumptive population. And if it did give a chance to some poor fellow to find health, would that wrench the heart of any manly man who is practicing in any of these salubrious cities? Have we come to such a state of petrified selfishness that we are unwilling that our brother man, to say nothing of a brother practitioner, shall have a chance to win back his strength because his presence in our community might mean increased competition in our business? For one, I refuse to think so meanly of my professional brethren, even though this argument has found expression by isolated individuals.

A second question which needs to be asked and answered is this: Would the proposed legislation serve to better conditions? I have already indicated the answer; but the action taken last year by the National Association of Dental Faculties, the National Dental Association and the National Association of Examiners furnishes an emphatic affirmative. Why should these bodies, as they did, appoint committees to consider this matter jointly, with a view to inducing effective endeavor to secure uniform legislation, if, in their opinion, such legislation would not inure to the distinct benefit of the

dental profession? I doubt if there is one intelligent member of our profession who distrusts the effect of the proposed legislation in enhancing the interests of the cause to which we have devoted our lives.

What, then, stands in the way of accomplishing this desirable end? Is it the theory of "state's rights"? To some extent. Is it the force of inertia, by virtue of which it is difficult to set in motion a stationary body? To some extent. There are many reasons why this movement, so warmly sanctioned by many and so ardently urged by some, makes slow progress. What is the one great obstacle? To act on the dictum of Emerson, "Let there be truth between us two forevermore," it must be said that the chief hindrance lies in our selfishness. When the members of the profession are united in support of this undertaking nothing can prevent its accomplishment. Laymen are not interested in keeping things as they are. They have little interest in the matter one way or another. They are not blocking the wheels. It is the fear in the hearts of members of our profession that somehow their individual incomes will be injuriously affected by the change, that halts the on-going of a movement fraught with untold good to our profession. When the dentists of this country, as one man, ask for uniform laws, then those laws will be enacted. And when we have grown to sufficient stature in manhood to forget personal and selfish interests in remembering the larger good, then we shall ask, and, asking, receive.

92 State Street.

#### DISCUSSION.

DR. VIDA A. LATHAM, Chicago: A prominent member of the profession, sick from overwork, was advised to change climate. He removed to another state, passed the state board, paying \$50 as the examination fee, and worked in that state for some time. His wife became ill and he was advised by eminent physicians again to change climate. At great inconvenience and expense he paid another \$50, took the examination and failed. Is it right, when you have conformed to the state (or states) laws at the time your diploma or state license is received, with the understanding that the laws of that county and state are in force, that your license should not be recognized in every state? If a man has won a state board license, why must he pass in another state, provided he is a graduate of a properly-equipped and well-known college? We are ourselves to blame for this condition. Another great difficulty is that of regulation of colleges. If we arrange that all our schools shall agree with all other schools as to the requirements, with adequate equipment and proper educational facilities, we shall have less trouble about reciprocity and equality.

DR. E. A. BOGUE, New York: Perhaps Dr. Peck can tell us if he has carefully inquired of those competent to judge as to whether or not federal legislation on the subject would be efficient. If he has and we were to devote all our energies toward getting this federal legislation, then he has struck the nail on the head. If he has not, then perhaps he can tell us what steps to pursue.

DR. THOMAS L. GILMER, Chicago: It seems to me that there is but one way under existing conditions by which we can bring about reciprocity which is so desirable both in dentistry and in medicine, and that is to procure uniform laws. As to the federal government taking charge of this matter, it seems to me quite impracticable unless the Constitution of the United States is changed by amendment, which would be a long and difficult, if not impossible, method. If we continue to make proper efforts in the right direction we shall eventually succeed in getting uniformity of laws in all of the states which will give one the right, which is his right, to practice in any state if he is licensed to practice in any other state.

DR. FREDERICK B. MOOREHEAD, Chicago: We must never forget that the integrity, the safety and the longevity of the



nation depend on the rights of the individual states. If these rights should be disturbed in any sense the whole country would collapse. I believe that federal control is utterly impossible. The only feasible plan is for the states to act. This has come about in the practice of medicine, and it must come in the practice of dentistry in precisely the same manner. In the beginning of reciprocity in state license of various state boards of health one state suggested that it make a combination with another state, that with a third state, and so on; and these states have set up a standard which is compelling other states to come in under the same standard. The safety of reciprocity rests absolutely on that fact. If in our own profession two or three of the strong states can make a standard, other states will be compelled to come into line. It is a good thing that the matter does progress slowly, because if it went rapidly it would fail, and failure puts every movement back many years.

DR. A. H. PECK: There are thirty-two states at the present time which grant reciprocity.

DR. EDMUND NOYES, Chicago: There is great need of far more reciprocity in laws between states than we now have. We need it throughout the United States in regard to divorce laws, and I am under the impression that teachers are subjected to re-examinations in absurd ways. There are many such reforms that need to come, and will come. What has been said about medical reciprocity has the very greatest encouragement in it. There is no reason in the world why we can not accomplish the same thing, and much more rapidly than the medical men have accomplished it, because we have the precedent that they have established. We have only to travel the road which they have pioneered, and it is a matter of such reasonableness that there should be practical uniformity of standards and consequent reciprocity in privileges that it seems to me impossible that it should be very long delayed.

DR. T. E. CARMODY, Denver: A great many members of the dental and medical professions come to Colorado because they have lost their health in the east, and a few from Colorado go east and take examinations. Those who come to Colorado for their health are usually the ones who have been educated up to a high standard; they are able to pass the examination. The health of drones seldom fails. The people who fail in examinations are those who come there thinking to evade the high standards of the east.

DR. ADELBERT H. PECK: It is immaterial to me whether each individual state or the central government acts—it is results that we want. If it were possible for the federal government to control these matters, that would, in my opinion, be the ideal way. There are many matters with which states have to do individually, that are now being controlled by the federal government, and this is coming to be the case more and more each year. I do not, therefore, understand why it could not act in this matter as well as in the others. A federal commission has been advocated for the regulation of state water supplies, for controlling epidemics, for carrying on the fight against tuberculosis, etc. Why is it impossible for us to have a little federalism in connection with dentistry? However, there are thirty-two states at the present time in which the medical profession has reciprocity, and others will probably come into line in the near future. Reciprocity in dentistry is now being agitated with very favorable indications in six or seven of our states, and no doubt that number will soon accept the doctrine, and in fifteen, twenty or thirty years hence all of them may have adopted it, we hope. But it is a slow process, and we will, I think, find that it will be a longer time than many anticipate before all the states accept the doctrine. I wish it could be to-morrow, because I believe that we ought to have reciprocity in the licensing of dental practitioners in all the states.

## MEDICAL EDUCATION IN THE UNITED STATES; THE NEED OF A UNIFORM STANDARD.

ARTHUR DEAN BEVAN, M.D.

Chairman of the Council on Medical Education of the American Medical Association.

CHICAGO.

The methods of medical education in this country have been largely drawn from those of Great Britain and Germany. Our first medical schools, those of Pennsylvania, Columbia and Harvard, were modeled largely after those of Edinburgh and London. For a short period about 1850 the influence of the great French medical teachers was felt, but later, especially since 1870, German influence has predominated. I do not mean that in medicine America has merely adopted and imitated English and German methods; for as we all know the men who took an active part in the creation of our republic were noted as fertile in invention in all fields of thought and action and especially so in medicine, as shown by such American discoveries as ovariotomy and anesthesia. Naturally, however, in the establishment of the first medical schools in our new country the best existing types in the countries from which our people came, i. e., Great Britain and Germany, were adopted as models.

### REASONS FOR PROPRIETARY MEDICAL SCHOOLS.

Unfortunately, however, after the war of the Revolution there sprang into existence a peculiar American type of medical school. With the enormous and rapid development of our country, which in a little more than a hundred years has grown in population from three to eighty millions and in extent from a narrow strip on the Atlantic seaboard to the enormous sweep of land extending from the Atlantic to the Pacific, there came an enormous demand for physicians from the thousands of cities and towns which sprang into existence.

This legitimate demand led to the establishment of a great number of medical schools all over the country. Unfortunately, this demand was so urgent that the medical school often preceded the high school, college and university and marched with the church in the vanguard of the wave of population, which spread over the land. Most of the medical schools developed independently of any university and were owned and controlled by small groups of medical men, who, in many instances, conducted the schools as business enterprises for what money and reputation they could make out of them, and for a time teaching medicine in this country was a profitable business. It must not be supposed, however, that these schools were necessarily all bad. Many were controlled by men of high ideals, by men who became great teachers and left an impress on the medicine of their day—such men as Gross and Flint, Van Buren, Davis, Gunn, and many others. Some of the better type of these schools, like Bellevue, Jefferson, Rush and others, did an invaluable service in furnishing thousands of men well trained in the medicine of their time who in war and in peace served their country well.

### A WRONG PRINCIPLE AND THE RESULTS.

But the principle of conducting medical schools as commercial enterprises was, of course, wrong and indefensible, because it led to competition for students and resulted in the reduction of fees and the time of study.

---

**Unusual Mortality Rate in Autopsies.**—A writer in the *Virginia Medical Semi-Monthly*, July 10, says: "During the time since 1900 I have performed 500 autopsies. Of this number 161 resulted in death (italics ours) as a result of injuries to the head."



in the accepting of men without preliminary education and in the graduation of unfit men. The result has been, that in the United States to-day we have more medical men per capita and more medical schools than any other country in the world. In fact, we have almost as many medical schools as all other countries combined—161 to 174 for the rest of the civilized world.

At the present time, of course, we have a considerable number of schools which furnish thorough training and a few schools which are equal to any in Great Britain or on the continent. The average medical school in this country, however, is unfortunately low. In the investigation made by personal inspections last year by the Council on Medical Education, graded on a civil service basis<sup>1</sup> and on a very liberal and lenient marking, only 82 of the 161 medical colleges could be listed as acceptable; 47 were classified as doubtful, while 32 were found to be unsatisfactory. It is fair to say that not more than 80 out of the 161 schools teaching medicine have any claim to recognition. I wish that every member of the American Medical Association could have made the inspection of the medical schools of this country with our committee last year and seen the farce of attempting to teach modern medicine, as it is being taught in many schools, without laboratories, without trained and salaried men, without dispensaries and without hospitals. Schools were found which were mere quiz classes, where students were given just enough text-book knowledge to attempt state board examinations, and where the teacher looked for his compensation in consultations sent him by his illy-qualified pupils.

#### NO LONGER AN EXCUSE FOR LOW STANDARDS.

But the wave of settlement and civilization has finally spread until there is no longer a frontier. Again, the supply of physicians far exceeds the demand. From the standpoint of demand, therefore, the excuse for low standards of medical education and of medical colleges operated for profit no longer exists. Medicine, too, has changed. The known facts of medicine thirty years ago might have been taught in a two years' course of didactic lectures by a few men. To-day the known facts in medicine, which must be mastered before a student becomes a qualified practitioner, require much more time, require a thorough preliminary preparation, and a thorough laboratory and hospital training.

#### MODERN DEMANDS IN MEDICAL EDUCATION.

To meet the demands of modern medicine, the medical graduate hereafter should be one whose preliminary training, besides a high school course, has included at least a year's work in college physics, chemistry and biology. His medical training should have been in a medical college fully equipped with all the extensive apparatus so necessary for the teaching of modern anatomy, physiology, pharmacology, bacteriology and pathology; in a college which has experts paid to devote their entire time in charge of these laboratories; in a college which has hospital and dispensary facilities in such abundance as to allow of a carefully graded course even in clinical instruction, and in a college which offers thorough laboratory courses in clinical diagnosis in connection with the study of hospital and dispensary patients. Finally, the medical student should receive the training and experience of at least a year's intern-

ship in a hospital. These requirements would not be unreasonable.

The time has certainly arrived, when in this country of great wealth, great intelligence and wide opportunities to acquire an education, the medical profession and the public should unite to demand a reasonably thorough training of its medical men. We should insist that medical standards be as high and medical training as thorough as in other civilized countries.

No physician should under any circumstances retain or accept a connection with a school not capable of teaching modern medicine. State boards should inspect the schools and refuse recognition of those not teaching or not capable of teaching modern medicine.

#### PROBLEMS IN MEDICAL EDUCATION; LACK OF TRAINED TEACHERS.

Next to the requirement of a higher standard of preliminary education, probably the most important problem confronting medical education in this country is the securing of trained teachers, especially for the laboratory courses. It is difficult to secure and keep bright men in the laboratory years, especially men who have graduated in medicine and who have had a taste of clinical work as hospital internes. The result has been that the laboratory positions, except in the best schools, have been filled largely either by men without sufficient training or by general practitioners who devote but a small part of their time to the work. Again, what is undesirable, in some of our schools these positions have been filled by men who have not had a complete medical training and do not have the best conception of practical medicine. This tendency impresses me as unfortunate and in my opinion a definite stand against it should be taken. It is evident that a teacher of anatomy, or physiology, or pharmacology or bacteriology, who has not had a complete medical training is seriously handicapped and is not apt to be the best man to teach these subjects in the medical school. Without the medical point of view obtained from a complete medical course, the teacher in these subjects is liable to be an inefficient or biased instructor.

Modern clinical medicine is fully as scientific as the work of the laboratory years. The teacher in the laboratory years of a medical school who is not in close touch with modern clinical medicine, is sometimes firm in his belief that he, alone, is teaching the science of medicine and that his colleagues in the clinical years are teaching a handicraft. That this feeling exists not only here but also in Germany, is shown by a statement made by Friedrich Mueller, the great German internist, in a recent lecture,<sup>2</sup> in which he says:

As a professor of clinical medicine I hold the opinion that an observation made at the bedside is as well to be considered scientific as an observation made on an animal, nor do I think that because it is unable to speak that the rabbit is a more scientific animal than man.

#### NEED OF PRACTICAL MEDICAL TRAINING.

In a notable address by Sir Felix Semon,<sup>3</sup> on English and German Education, we find the following:

No doubt the learning of science for science' sake is a most lovable thing and one which every scientific worker would instinctively encourage as much as he can, but the stern fact intervenes that life is short and art is long and there is much

1. THE JOURNAL A. M. A., May 18, 1907, p.1702

2. Archives of Internal Medicine, Jan. 15, 1908.

3. British Medical Journal, Nov. 2, 1907.



to learn. The claims of individual sciences, which are only accessories toward the making of a doctor must of necessity be subordinated to higher purposes and the highest purpose in the education of the medical man is to make him fit for the exercise of his future duties. The work of the teacher is to make the pupil familiar with those results of the science he teaches, which will be practically useful in the doctor's future career.

I am fully convinced that as a medical man through inclination and circumstance is drawn to do work in a certain line his preparation should be private and individual, and that the whole medical community should not be compelled to spend a disproportionate amount of time and energy on subjects which will be of real use to only a very few, while subjects of the greatest importance have to suffer in proportion to the amount of time devoted to purely scientific purposes.

This statement from one who has worked in both pure physiology and in clinical medicine carries great weight and should be pondered by some of our men in the laboratory years, who may not care to see the practical application of their work.

#### COOPERATION OF LABORATORY AND CLINICAL TEACHERS.

I should make this further observation in connection with this subject, that not only should we require a medical training for all of our instructors in the medical departments, but we should insist upon a close association and cooperation between the departments of the laboratory and clinical years. I know that the clinical years would be greatly benefited by keeping in close touch with the laboratory work and I feel equally confident that the men in anatomy, physiology, pathology and pharmacology would be better instructors and much more apt to develop research work of value if they kept in touch with the problems and advances in clinical work. That such association is compatible with the highest development of their own scientific departments is clearly shown by the work of such men as Waldeyer, Virchow, Cunningham, Koch, Horsley, Welch and others.

I believe I see in such cooperation also a means of providing the best instructors for both laboratory and clinical departments. If the plan was generally adopted of filling the positions in the clinical departments by men who had devoted a certain amount of time to teaching in the laboratory years, it would induce the best brains that graduate in medicine to take up laboratory teaching. A few of these would remain permanently in these departments fascinated by the work, while such as were later appointed to clinical positions would have the best possible foundation for their clinical work.

#### THE BEST CLINICAL TEACHERS.

The man who teaches clinical medicine or surgery, therefore, should have a good laboratory training and a great fund of experience gained from the handling of a large amount of clinical material. If he is to teach his students to become both scientific and successful practitioners, this material must represent all classes of society. It goes without saying that the clinical teacher must devote much of his time to teaching and research and that his college work must have the first call on his time.

The best clinical teacher is necessarily a successful clinician; he must be both a teacher and a clinician. The suggestion, which has been repeatedly made that in the development of the modern medical school the teacher in the clinical departments should be a salaried man devoting his entire time to teaching and research is

easily shown on analysis to be fallacious. The clinical teacher who devotes one-half his day to his teaching and clinical cases and the other half to a lucrative, private practice, will make a much better teacher than the clinical teacher who devotes his entire day to his clinical work and draws a salary on which he lives. Such great teachers as Billroth, Kocher, Fenger and Senn are evidence of this fact.

It is difficult to keep a twenty-five-thousand-dollar man in a twenty-five-hundred-dollar position. I know that it is easy to find theoretical arguments in support of the salaried clinical teacher devoting his entire time to teaching. I simply present the fact, however, that the greatest clinical teachers always have been and probably always will be the men whose skill has been recognized and sought by both rich and poor, by both the profession and the laity.

Even if a medical department had sufficient money to pay enormous salaries to their clinical teachers, the money would be much better used in paying larger salaries to the laboratory men, who are notoriously underpaid and in providing living salaries for the younger men in the clinical departments who are doing the routine teaching and devoting much time to research work.

#### DEVELOPMENT OF CLINICAL TEACHERS.

Few of the schools of this country have the well-established system which exists in Germany for the development of well-trained clinical teachers. Each clinical chief should choose his assistants from men, who, after their hospital internship, had served for several years in either anatomy, pathology, physiology or pharmacology as instructors and in research work and demonstrated their capacity. These men should be promoted, as they become more and more competent, from the lowest position to that of first assistant, which place might be reached in from five to ten years, by which time a man as first assistant should have so mastered his subject that in the absence of the chief he could take charge of the service and conduct the clinic. By this time, too, in the event of the retirement or death of his chief, or the occurrence of a vacancy in another school, he could offer himself as thoroughly qualified for the place.

In order that we may better estimate the needs of medical education in America let us note the requirements of medical education in Great Britain and Germany.

#### REQUIREMENTS IN GREAT BRITAIN.

In Great Britain there are 36 medical schools, 21 in England, 6 in Ireland and 9 in Scotland. The control of medical education is in the hands of the General Medical Council, which has the power to create a register of qualified practitioners, and which determines the amount of preliminary education, the character of the medical curriculum and in a general way the examination for licensure, which last, however, is in the hands of a number of separate bodies.

The English boy who eventually studies medicine, beginning at 6 years of age, has about twelve years of preliminary education. He leaves the secondary school at 18 or 19 and after passing an examination on English mathematics, Latin and either Greek or a modern language, matriculates in medicine. He can legally begin as early as 16. It is interesting to note that the



very strong British educational committee with Victor Horsley at its head has not been able to increase this even to 17 years.

The medical course covers a minimum of five years, but as a matter of fact the average time spent by the medical student is more than six years. In 1906 the average time of those who were licensed was six years and eleven months. Of the five required years, the first year is devoted to physics, chemistry and biology, i. e. botany and zoology; the second to anatomy, physiology, organic chemistry, histology and pharmacy; the third to anatomy, physiology and pharmacology; the fourth to medicine, surgery, pathology, obstetrics, therapeutics and hospital work, and the fifth year to medicine, surgery, hygiene and the specialties. The student spends part of the fifth year in a hospital as clinical clerk and dresser. On the completion of his course, he presents himself for examination before one of several bodies in order to secure a license to practice. This examination is rigid and tests the ability of the student thoroughly; about 30 per cent. fail so that, as already stated, the average time devoted to study before securing the license to practice is between six and seven years.

The schools are fairly uniform in character, they are occasionally inspected by the medical council and are required to do acceptable work. There are no very poor or worthless schools corresponding to the poorer schools found in this country. On the other hand, there are no medical schools with a degree requirement for admission.

#### REQUIREMENTS IN GERMANY.

In Germany the boy who eventually studies medicine, begins at 6 in a public school and later enters a gymnasium from which, after twelve years of study, he graduates at 18 or 19 years of age. He is then entitled to matriculate at any of the German universities.

There are three types of secondary schools in Germany corresponding to the different groups of studies offered in the best high schools in this country. The gymnasium may be likened to the classical group, the *Realgymnasium* to the Latin-scientific group, and the *Ober-realschule* to the English and modern language group. I am inclined to believe that a higher value has been given to the work of the German gymnasium by some of our German friends and some of our own college professors than it is fairly entitled to in comparison with some of our best high schools. Some even state that the work of the gymnasium is equal to our four-year college course, while others say it corresponds to the first two years of our college course.

Muensterberg, for instance, would have us believe that the German boy leaving the gymnasium is about as well qualified to begin professional studies as an American boy who graduates from Harvard. Muensterberg probably believes that the German navy sustains about the same superior relation to the American Navy.

It may be true that in this country the high schools are not as uniform as are the gymnasia in Germany and that on the average the instructors in the gymnasia are better qualified than our high school teachers. Nevertheless, I feel confident, that the American boy, who graduates from one of our best high schools at 18 after twelve years of study is quite as capable of beginning the study of medicine as the German boy, who gradu-

ates from the average gymnasium at 18 after twelve years of study.

We should keep in mind, also, that our elementary and high schools are making marvelous advances just as are our medical schools and that we can confidently look forward to the time, when, throughout the entire country, and not excepting the south, twelve years of education in America will mean as thorough preparation as will twelve years of education in any other country.

#### A SIX-YEAR MEDICAL COURSE.

Graduation from the German gymnasium admits to the six-year medical course. Physics, chemistry and biology are taken in the first two and one-half or three years of the medical course along with anatomy, physiology, pharmacology and pathology. The fourth and fifth years are devoted to medicine, surgery and the specialties, and since 1904 a sixth year has been required which the student spends as an interne in a hospital.

Germany has twenty medical schools, all being medical departments of universities. They are conducted on such uniform lines that a student can pass freely from one university to another, the work of one being recognized by all. The result of this scheme of education, is to turn out a high average of medical men. The German scheme of medical education, however, is not entirely perfect. There is a serious lack of supervision because of which a student may do little or no work, but may loaf and drink away his time.

#### CONTROL OF MEDICAL EDUCATION IN THE UNITED STATES.

Unfortunately, in the United States with its 161 medical schools there is no national control of medical education. Medical legislation is in the hands of fifty state governments and each state makes its own medical laws and executes them as it sees fit, with the result that there are fifty different standards of control.

The reorganization of the American Medical Association, however, has developed a body of 80,000 medical men, which organization represents the best element of the medical profession and it is within the power of the profession thus organized to demand and secure proper medical legislation in each state and to see that it is properly enforced. Without question the securing of more reasonable standards of medical education is at present the most important function of the American Medical Association and of the state medical societies. In the interest of public health and for the prevention of disease, no movement is of greater importance than that which will secure for a country thoroughly qualified medical men. Therefore, every qualified physician in each state should take an active interest in bettering the quality of the future graduates in medicine.

#### NEED OF AN AMERICAN STANDARD.

Again, there has been no American standard generally accepted, although several organizations are working toward that end. Our medical schools represent the best and the worst in the world. Some demand a college degree, which means three or four more years of preliminary work than is required abroad, while others demand no preliminary education whatever. Neither of these extremes should be taken as the standard. While no student should begin the study



of medicine without a high school training and a thorough understanding of chemistry, physics and biology, on the other hand the requirements of a college degree should not be made mandatory. If we were to present to the medical faculties of the universities of Berlin, Vienna, Edinburgh or London, the suggestion that they should demand in addition to their high school education a four-year course in a college of arts they would probably ridicule the suggestion and not consider it seriously at all. A limited number of men will secure a college degree before entering the medical school and such men should be encouraged, but in the framing of a broad university scheme of medical education, the requirement of a college degree, of all medical students should not be seriously considered by us in America any more than it has been in Great Britain and Germany.

#### THE AMERICAN STANDARD.

To my mind the minimum American standard should eventually include the following requirements:

A. The completion of a course in a high school such as outlined by the committee of ten of the National Educational Association,<sup>4</sup> or, in other words, a high school having a four-year course and which requires for admission the work of eight years in the elementary grades. This standard has been adopted by the Carnegie Foundation for admission to colleges of liberal arts.

B. A thorough training in physics, chemistry, biology and one modern language, preferably German, which would mean the equivalent of at least one year's work in our leading colleges of liberal arts. Many of the schools will require two years of this work, which may probably be the better plan.

C. A four-year course in medicine, which should include:

(a) Two years of study, consisting largely of laboratory work, in anatomy (including histology and embryology), physiology, chemistry (including physiologic chemistry), pharmacology, bacteriology and pathology, and

(b) Two years of clinical work largely in dispensaries and hospitals, including thorough courses in the practice of medicine (including physical diagnosis, pediatrics and nervous and mental diseases), surgery (including surgical anatomy and operative surgery on the cadaver), obstetrics, gynecology, materia medica, therapeutics, laryngology, rhinology, ophthalmology, otology, dermatology, hygiene and medical jurisprudence. There should also be a course in clinical microscopy, including hematology.

D. A year as an interne in a hospital. This last practical year is one of the most important in the course and should be made compulsory.

Such a scheme of medical education is practical and efficient and it is possible for all medical schools which have any good reason for existence to come up within a reasonable time to this standard as their minimum requirement.

It certainly would add strength to the movement to secure a high and uniform standard if our best institutions would adopt some such standard as I have outlined, which is practically the standard of Germany. I believe that by so doing they would fulfil their duty to the public much better than by adopting a degree requirement which is so time-consuming that other institutions of the country and the world can not agree to it.

One of the important functions of our great universities is to educate thoroughly competent medical men, and each one should turn out a large number of such men, not a limited number. Each should hold the same place in its community that is held by the great German

universities and should provide largely the medical men needed in the section of the country in which it is located. Our better universities should not be put on a basis that will seriously limit the number of competent medical men, thus leaving the duty of supplying the great bulk of physicians to the poorer, illy qualified schools.

#### A HIGH, PRACTICAL AND UNIFORM STANDARD DESIRED.

What we need is a practical and high uniform standard for all schools. Dr. N. P. Colwell, the secretary of the Council on Education, made a careful investigation of the medical courses in the twenty most important countries and found that no country required more than two years of higher preliminary education and that the earliest age of graduation was 24 to 25 years.<sup>5</sup> If a college degree was required for admission as at some of our university medical schools the age would be 27 to 28. Already, however, there is sweeping over the country a strong movement for a standard of medical education which is high and yet practical. More than fifty schools—about two-thirds of the acceptable schools of the country—have agreed to adopt by 1910 as a preliminary requirement a four-year high school education plus a training in physics, chemistry and biology and one modern language. The practical year as a hospital interne is largely taking care of itself. Already in our better schools the majority of the graduates secure hospital positions. The desirability of this practical year is recognized also by the medical graduates and hospital positions are eagerly sought.

The general adoption of the standard above outlined is sure to come within the next few years. This will mean a great reduction in the number of medical schools and a decided improvement in the 60 or 80 schools, which will remain.

In order to obtain this high standard the better elements in the profession must unite and work for this common purpose. In this country in order to teach modern medicine we need state aid in private endowment. We must appeal to the public to provide such aid and educate them in the possibilities for good in providing well trained physicians.

#### RECOGNITION OF THE GOOD AT HOME.

Chauvinism should have no place in medicine and yet it is well for each nation to have a proper pride in and cultivate a patriotism for its own medical profession and its own medical achievements. We have not done this in America as we should. We have been rather prone to belittle our own medical men and our own medical work and to exalt those of Germany, Austria, England and France. We have too often given important positions to foreigners, who have sometimes unfortunately shown no loyalty to our country or to our ideals and in some of these cases it has become evident that the position and opportunity would have developed a much better man out of our own home material.

Let us remember first, that we are Americans and let us not be ashamed to cultivate a patriotism for American medicine. In spite of its shortcomings, many of which I have just mentioned, American medicine, even to-day is from the standpoint of productiveness

4. THE JOURNAL A. M. A., July 6, 1907, p. 65.

5. Report of Council on Medical Education, THE JOURNAL A. M. A., May 16, 1908, p. 1641.



of both laboratory and clinic superior to that of any other country, except possibly Germany, and in some matters, as in the immediate care of individual cases in clinical medicine, the purely operative side of clinical surgery and in surgical technique, America leads the world. American medicine and American Medical Education have been advancing in the last twenty years by leaps and bounds and we can look forward to the future confident that in the coming great development of modern medicine our country will contribute fully its part.

100 State Street.

## THERAPEUTIC IMMUNIZATION IN MIXED INFECTION.\*

A. P. OHLMACHER, M.D.

DETROIT.

Among the many problems that confront the physician who would apply in practice Wright's method of therapeutic bacterial immunization is the one of mixed infection. What should be the course in case of a mixed infection? Here, as elsewhere in the practice of bacterial therapy, judgment as to the relative importance to attach to the various factors must decide the question; and it is to give the results of my quite extensive personal experience that the present communication<sup>1</sup> is offered. In a general way it may be said that a mixed infection offers a less promising outlook than that by a single bacterial species, and still some brilliantly successful results have been obtained by inoculations in very complicated and long-standing infections.

Given two, or even three bacterial species, well known as pathogenic agents, and their simultaneous appearance in the secretion of a certain lesion, it is entirely proper to inoculate a mixed vaccine containing proper doses of the offending bacteria. Or when the urgency is not too great inoculation with the predominating and most likely pathogenic agent is to be first performed, and in case of an unsatisfactory issue, a vaccine from the other bacterial species can be added in subsequent injections. Say, for instance, that *Staphylococcus aureus*, or a streptococcus, is found associated with *Bacillus coli* in the discharge from fistulas of abdominal origin, a mixed vaccine would be in order. Again, especially in old suppurative lesions, a putrefactive organism (of the proteus group generally) is found largely exceeding the underlying and presumably original pyogenic agent like staphylococcus or streptococcus. Here the pyogenic microbe might first be tried, but to it should be added a vaccine from the secondary organism in event of a failure to bring a good result. I have been surprised several times to find success seemingly hinging on the use, in conjunction with the vaccine of a well-known pathogenic species, of that prepared from the secondary invader belonging to the proteus-like or colon-like, or

pseudodiphtheria bacillus group, for some of these secondary organisms were clearly of saprophytic origin and one would ordinarily not assign to them any greater importance than that of accidental invasion into an already prepared soil. For example, in an extensive draining thoracic empyema which had been abandoned from the standpoint of further operative interference, and where the discharge had recently become exceedingly foul, I recovered a streptococcus and a bacillus of the proteus group. Inoculations of the streptococcus failed to effect a marked therapeutic response, but when a vaccine of the proteus was added, clinical betterment promptly began and continued until the final complete cessation of suppuration and closure of the fistula.

In dealing with the mixed infections of a pyogenic nature, it is necessary to follow the events in the more chronic suppurations by bacteriologic analyses from time to time, and to modify the inoculations to correspond with the changes in the bacterial flora of the pus in case the therapeutic response is not satisfactory.

Certain combinations of bacterial species seem particularly obstinate in their reaction to therapeutic inoculations. It has appeared to me that chronic infection in which *Bacillus pyocyaneus* becomes associated with other pyogenic species is especially stubborn, for I have utterly failed to obtain a sustained improvement in one case of infected breast wound, and another of cystitis and possibly pyelitis in each of which the pyocyaneus was associated with the streptococcus, notwithstanding most patient trial by inoculations variously spaced and dosed, and employed both with and without the guidance of the opsonic index. Such a state of affairs is in keeping with the well-known proclivity of wounds with pyocyaneus infection to be obstinate in healing. But on the other hand, I have just passed through an experience with a recently infected phlebotomy wound with extensive cellulitis and suppuration of the arm, due primarily to streptococcus in which the widely incised suppurating tissues took on a pyocyaneus infection after a week, followed by a metastatic arthritis of the ankle due to the streptococcus alone. Here a speedy, favorable reaction followed mixed inoculations of the autogenous streptococcus and pyocyaneus, with diminution and disappearance of the blue pus in the course of two weeks and satisfactory healing of the infected incisions, including the infected joint.

In dealing with tuberculous diseases in which a mixed infection is demonstrable by the culture test it is proper to combine the inoculations of tuberculin with vaccines of one or more of the complicating bacterial species. That this procedure is conducive to good results in treating the suppurations following tuberculous urinary infection, adenitis, synovitis, or osteitis, I can add my testimony to that of other workers. It also appears to be good practice occasionally to include an inoculation of a staphylococcus vaccine with tuberculin in treating such diseases as pulmonary, glandular, joint or bone tuberculosis, even though a mixed infection is not demonstrable. In how far the use of pneumococcus, streptococcus, or staphylococcus vaccines with tuberculin for handling the corresponding forms of mixed infection in phthisis is valuable, is a point on which my personal experience does not yet allow me to pronounce definitely.

Syphilis and a concurrent or a secondary infection with pyogenic bacteria is another condition in which therapeutic bacterial immunization finds useful appli-

\* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. This condensed paper is a supplement to several previous reports which I have made dealing with the theory of opsonins and the practice of therapeutic immunization, as: A Series of Medical and Surgical Affections Treated by Artificial Autoinoculation According to Wright's Theory of Opsonins, THE JOURNAL A. M. A., Feb. 16, 1907; Practical Bacterial Therapy and the Theory of Opsonins, Ohio State Med. Jour., May, 1907; The Enlarging Field of Opsonic or Bacterial Therapy, Ohio State Med. Jour., September, 1907; and the article, Opsonic Therapy, in the forthcoming supplemental volume of the Reference Handbook of the Medical Sciences.



cation. Some of the earlier English workers in opsonic therapy found that the pus microbe infections of late secondary or tertiary syphilitic ulcers of the skin were more easily handled when inoculations of the causative bacteria were added to the specific medication. The results which I have witnessed in a rupeoid complication of a very extensive cutaneous syphilitic ulceration when inoculations of the patient's *Staphylococcus aureus* were used to reinforce the medicinal agents were such as to emphasize the value of the accessory biologic therapy. In a case in which an acute yellow pus microbe infection of a finger tip appeared as part of an unrecognized syphilitic infection of a wound received during a surgical operation, there was, aside from the ulcerating and suppurating initial lesion, a large neoplastic cellulitis of the corresponding arm, together with the constitutional symptoms of a severe septic state. I was able to control the septic condition and to effect a rapid reduction in the indurated mass by properly spaced inoculations of the autogenous staphylococcus. But healing of the ulcer of the infected finger did not occur until the advent of secondary syphilitic symptoms disclosed the nature of the underlying morbid conditions, and the proper specific medication had been instituted.

### Clinical Notes

#### THE APPLICATION OF THE BIER CUP IN THE TREATMENT OF RECENT EMPYEMAS.

CHAUNCEY E. TENNANT, M.D.

DENVER.

The many methods which have been proposed for the surgical treatment of empyema and the physical wrecks we find after this lesion, bear witness to the need for more effective treatment of pyothorax. The chest being a cavity under negative pressure, the normal equilibrium is upset the moment an incision is made for the relief of pus. This condition continues so long as drainage is maintained. A space remains and the lung is slow to expand. This consequently embarrasses Nature's effort at repair, for so long as pneumothorax exists, just so long may we expect a certain lack of lung expansion. The introduction and the presence of the drainage tube into the space also prevents free pulmonary expansion.

To overcome this embarrassment various suction and vacuum devices have been proposed and used, among these being the Van Hook vacuum bottle, which is attached to the patient by a long rubber tube. Bryant has recently proposed and used the Politzer bag deflated and attached to the end of the drainage tube, with the margins of the wound sealed with rubber dam.

Some twelve months ago I proposed and used a ball-valve air check attached to the end of the drainage tube, this device permitting free outward flow of pus, with but little ingress of air. But to use this method successfully the contents of the pus cavity must be free from fibrin and other solid matter, and, as in all these methods, there must be no communication with a bronchus.

Murphy<sup>1</sup> reports the use of a 2 per cent. solution of formaldehyd (40 per cent.) in glycerin in cases of post-pneumonic empyema "without pulmonary gangrene or abscess, and which have no communication with a bronchus." A simple aspiration is first performed, followed

immediately by the injection of one or two ounces of the formalin and glycerin solution. He especially emphasizes the necessity of having the solution stand for at least twenty-four hours before being used, and states that it may be repeated several times if necessary. This method seems nearer being the ideal treatment, since it does not produce a pneumothorax nor introduce drainage tubes into the chest cavity.

There are cases, however, which will not respond to this method, as has recently occurred in my own practice. Having had one of these cases in which the latter method failed me, I resected a rib and introduced a double rubber drainage tube, which was left in the cavity for five days. To the ends of this tube I inserted twice daily a strong glass syringe and aspirated the pus and fibrinous debris which had not escaped into the dressings during the interval. After this I covered the opening and the entire incision with a large Bier cup which fitted snugly over the incision. Then producing reasonably strong suction and leaving the cup in position for a period of thirty minutes, the pus and debris would quickly be drawn into the cup. At first the cup required frequent emptying, but after three days there was very little discharge. The pyogenic space soon became obliterated and the lung promptly expanded.

After all discharge had ceased and the incision almost closed, there developed some three inches below the site of the first pyogenic space a tender area associated with a rise in temperature. As this site was some distance from the first single rib resection, it seemed as though it might be necessary either to enlarge the first incision or to make another immediately over the site of the new pocket. A long uterine probe, however, introduced into the old opening and carefully passed down between the two pleuræ, reached and opened this pocket, and the application of the cup soon drained it. Convalescence has, therefore, been secured in four weeks in a case which usually requires as many months.

612 Empire Building.

#### METHOD OF REMOVING PLUNGER FROM A LUER GLASS HYPODERMIC SYRINGE.

ARTHUR S. HILL, M.D.

LOS ANGELES.

Much annoyance is caused when one attempts to use a glass hypodermic syringe and finds that one failed to wash out the syringe after the last using, that the medicament has recrystallized around the plunger, and that no amount of force short of breaking will loosen it.

To overcome this, remove the metal finger rests and carefully drop the syringe into a test-tube two-thirds full of a 20 per cent. solution of glycerin and water. Boil for a minute or two over a spirit lamp; then remove, and holding in a towel while still hot, give a firm twist and the trick is done.

**Prehistoric Retrospective Diagnoses.**—Probably the most remarkable example of retrospective diagnosis is that afforded by the localized red discoloration of the skull which Smith and Jones have found on the skull of a number of Egyptian mummies more than 5,000 years old. Chemical and other tests have shown that it is the postmortem evidence of a wound inflicted during life. It is thus the retrospective medicolegal testimony to an accidental or criminal traumatism more than fifty centuries ago. The splints found on the fractured limbs of the mummies were mentioned in these columns April 25.

1. Practical Medicine Series, 1908, vol. 11, p. 260.



## Therapeutics

### TROPICAL DYSENTERY.

Dr. R. J. Blackham, in the *Lancet*, Dec. 1, 1906, discusses the nature and treatment of this disease. He defines dysentery as: "An inflammation of the large bowel, associated with pain, tenesmus, some slight pyrexia, and a large number of stools, consisting of mucus or mucopus, with micro-organisms but with or without blood. Blackham thinks that it is important to remember that dysentery may be present without any blood in the stools. Predisposing causes to dysentery seem to be age, occupation, condition and environment. Young children and old people seem to be especially liable to contract dysentery. This is probably because they are less sturdy and less able to throw off the infection. It has been asserted that farmers are more likely to contract the disease than those who work indoors, while workers over furnaces, or in high temperatures, such as stokers and cooks, are likely to contract it. As to the "condition" being a cause, certain it is that anything that diminishes the vitality of the patient, and especially unhygienic surroundings tending to debilitate the patient, predispose to the disease. Overfed or underfed individuals are predisposed, in certain localities, to dysentery, and, of course, diseased or putrid or unripe articles of food may form the culture ground for dysenteric bacteria. A sudden chilling of the body may be an exciting cause.

The two forms of dysentery are amebic, generally a slow chronic condition, although there may be acute attacks, and bacillary dysentery, or the dysentery caused by a specific bacillus. This latter occurs generally as an epidemic, and the specific bacillus that is its cause has been described by various bacteriologists.

The prevention of dysentery is the improvement of the food, water, sewerage and the prevention of such diseases as malaria and typhoid. Anything that prevents these diseases also prevents the development and propagation of dysentery. Any person becoming debilitated from any disease, or any individual weak from age or other cause, should move from regions in which dysentery is likely to occur. Improvement of the hygienic surroundings of many places in tropical countries has reduced the frequency and severity of dysentery. If a region is visited in which dysentery is known to exist or is epidemic, only boiled or sterilized water should be drunk. Such clothing should be worn as to prevent chilling, especially of the abdomen: excesses of food and drink should be avoided, and alcohol taken not at all. Any simple diarrhea should be treated immediately, and strong cathartics should be avoided. Also, every case of diarrhea in tropical regions should be treated as a possible beginning dysentery, and the stools carefully disinfected lest they carry the bacteria that could cause dysentery in others.

Blackham divides the treatment of this disease into that of the acute and chronic forms. The indications in the treatment of the acute form are, to relieve the pain, to avoid irritating the inflamed intestinal mucous membrane, to promote intestinal antisepsis, and to maintain the patient's strength.

To meet the first indication nothing can compare with opium or morphin. The best method is probably to administer the morphin hypodermatically in dose and frequency to stop the pain and quiet the tenesmus. Some

writers, however, advise the administration of opium as an enema, and Yeo recommends the administration of 1 c.c. (15 minims) of the tincture of opium (laudanum) in 30 c.c. (1 ounce) of cold liquid starch solution.

To meet the second indication, all food should be avoided that leaves a residue which could irritate the inflamed bowels, hence milk is generally not a proper diet for dysenteric patients, although recommended by many writers. Whey, broths, egg albumin, rice water and barley water make useful diets. If milk is used it should be boiled and diluted with an equal part of barley water and rendered alkaline by the addition of 0.30 gram (5 grains) of sodium bicarbonate and 30 c.c. (1 ounce) of lime water to each pint. If undigested curds of milk appear in the stools the milk should be peptonized or other food substituted.

The third indication is to attempt to produce intestinal antisepsis. This is best done, says Blackham, by salient aperients which sweep all foul accumulations and organisms from the intestinal tract; by the administration of certain drugs said to be specific; and by washing out the lower bowel with astringent and antiseptic fluids. In the tropics, he states, castor oil is the best preliminary treatment, and the dysentery may be checked by such immediate purgative treatment if combined with rest and a non-irritating careful diet for a few days. The best subsequent saline laxative is:

R. gm. or c.c.  
Magnesii sulphatis ..... 40 | 3x  
Tincturae zingiberis ..... 10 | or flss  
Acidi sulphurici diluti ..... 3 | m. xlv  
Aque chloroformi ..... ad 150 | ad flv  
M. et Sig.: A tablespoonful, in water, every hour as directed.

Or:  
R. gm. or c.c.  
Sodii sulphatis ..... 40 | or 3x  
Aque fœniculi ..... 150 | flss  
M. et Sig.: A tablespoonful, in water, every hour as directed.

"A tablespoonful of either one of these preparations should be given every hour until the movements of the bowels become fecal, and then every three or four hours for one or two days. If the stools become watery and do not become fecal, the saline treatment should be stopped and ipecac treatment resorted to."

The so-called specific treatment of bacillary dysentery or tropical dysentery is that with ipecac. The method of using ipecac in India is, after withholding all nutriment for three hours, to give opium in some form, perhaps best hypodermatically, as an injection of morphin, and half an hour after to give 2 grams (30 grains) of powdered ipecac.

R. gm.  
Pulveris ipecacuanhæ ..... 10 | or 5iiss  
Fac konseals 10.

Sig.: Take two wafers, with a small amount of water, at time directed.

The patient should then lie perfectly quiet and be cautioned not to swallow his saliva, and not allowed to drink any water, and not allowed even to talk. The hypodermic dose of morphin previously given will generally prevent the patient from vomiting the ipecac, and if it is not vomited in about two hours it will have passed into the intestine and the nausea will have ceased. Blackham neglects to state the frequency with which this ipecac should be repeated, but, as generally advised, it should be given in diminishing doses on succeeding days for at least three or four days.



The lavage treatment of dysentery is really only applicable when the disease is subacute or chronic, although cleansing of the lower bowel with plain warm water or warm boric acid solution (a tablespoonful of the boric acid to a pint of water) is sometimes advisable and good treatment, even in the acute form. The disadvantage is the pain which a rectal tube may cause, but a well-oiled small tube or large catheter may be passed, often, almost painlessly, and the soothing, cleansing solution used with gentle pressure, the reservoir not being held too high, will sometimes relieve the tenesmus and prevent movements of the bowels for hours. Blackham also omits speaking of small injections of ice water into the rectum. These also are sometimes valuable in relieving tenesmus and preventing the frequent small movements.

Blackham speaks of the advisability, in malarial regions, of administering quinin in conjunction with the other treatment for dysentery, and believes that in malarial districts it is advisable to administer considerable quinin before the ipecac treatment is begun. When dysentery patients have been deprived of fresh fruit and vegetables for considerable periods, and perhaps have become scorbutic, lime juice or lemons should be administered.

The most important thing in the treatment of acute dysentery is the maintenance of the patient's strength, and hence there must be the greatest care in the selection of the most nutritious food that furnishes the least bulk to reach the intestine. Blackham does not speak of the advisability of using the expressed juice of beef or strong beef extracts, but many times they are of great advantage and almost a necessity in combating the prostration from this disease.

Warm applications to the bodies of patients who are not feverish and who tend to be cold is an essential factor in preventing collapse. Caffein in the form of black coffee, or as a drug, is spoken of, as:

R. gm.  
Caffeine citrate ..... 2| or 5 ss  
Fac capsulas 20.  
Sig.: One capsule every six hours.

Strychnin is not mentioned by Blackham, and should perhaps be avoided, if possible, as tending to increase peristalsis, but in conditions of collapse must, of course, be administered, as should, perhaps, atropin.

He speaks of spartein being used with success. Spar-tein is, however, rather a doubtful circulatory stimulant.

If alcohol is needed it is best used in the form of brandy or champagne. When the temperature is low and the patient feels cold, small doses of brandy, not sufficient to cause cerebral stimulation nor too much vasodilatation, may dilate the surface blood vessels sufficiently to cause a feeling of warmth to the patient and the relief of internal congestions. While not indicated in collapse, it may prevent collapse from occurring by the action just stated. It also has a food value, although alcohol is by no means always indicated in dysentery.

For the treatment of chronic dysentery Blackham quotes Manson's treatment as advisable, viz.: "The administration of 30, 25, 20, 15, 10 and 5 grain doses of powdered ipecac on successive evenings, with rest in bed and a milk diet. He then gives a short course of small doses of castor oil, with or without opium, three times daily, regulating the dose according to the catharsis produced." If this treatment is not successful, he gives an intestinal antiseptic, such as salol (phenylis salicylas) or betanaphthol. If this treatment fails, the resource

is then local applications to the mucous membrane of the lower bowel, and nitrate of silver injections are considered the best, although solutions of quinin are considered by Osler the best in amebic dysentery. The method of procedure is as follows: A cathartic dose of castor oil having thoroughly operated, the large bowel is washed out with a boric acid solution (a tablespoonful to a pint), and then about 1,500 c.c. (3 pints) of a 1 to 1,000 to 2 to 1,000 solution of nitrate of silver is passed into the colon. The only pressure used should be that of gravity. Blackham advises directing the patient to retain this injection as long as possible. As the action of nitrate of silver is speedy, and prolonged action and absorption are undesirable, it is much better that this liquid be allowed to flow out in a few minutes after the injection, in fact, it has been advised if the nitrate of silver solution does not quickly return that a sodium chlorid solution be injected to precipitate the nitrate of silver as an insoluble chlorid. This is rarely necessary, however, as peristalsis is caused by the nitrate of silver irritation and the liquid is generally quickly evacuated. This injection of nitrate of silver should be repeated once in four days, if it causes improvement.

It should be remembered that dysentery is a preventable, bacterial disease, and that the organisms may live on clothing for at least three weeks and maintain their virulence in damp soil for months. These germs, however, are readily destroyed by heat or by weak solutions of bichlorid of mercury or weak solutions of phenol. Hence it is inexcusable not to prevent the infection of others by proper disinfection of all the excretions, the bed clothing, and the utensils used about the patient. The room of a dysenteric patient should be thoroughly screened from flies. Blackham also well points out the necessity, when dysentery is epidemic, or in regions where dysentery is frequent, or in patients who have possibly acquired dysenteric contamination from travel, that the stools, even in apparently simple diarrheal cases, should be bacteriologically examined, and from the knowledge thus obtained the individual patient will not only be properly treated, but others may be saved from infection.

#### FOR REMOVAL OF SUPERFLUOUS HAIR.

The *Druggists Circular*, February, 1908, suggests the following as an efficient depilatory:

R. gm.  
Strontii sulphidi ..... 8| or 3ii  
Zinci oxidi ..... 12| or 3i  
Amyli ..... 5ss  
M. et Sig.: To be used according to directions.

[These powders should be thoroughly mixed and kept dry. When needed for use a sufficient quantity should be made into a paste with warm water and applied to the surface to be deprived of its hair. It should remain from one to several minutes, according to the nature of the hair and skin, but should not remain longer than five minutes. The preparation should be removed immediately when any burning action is felt by the patient. "After the removal of the paste the skin should be gently but firmly scraped with a blunt-edged knife (as a paper knife) until the hair is removed."] The surface thus treated should then immediately be washed with warm water and dressed with some simple soothing emollient," as:

R. gm.  
Unguenti zinci oxidi ..... 10| or 3iiss  
Unguenti aquæ rosæ ..... 10|  
Sig.: Use externally.



# MEDICAL SCHOOLS OF THE UNITED STATES

Below is given a brief description of the medical colleges in the United States that are legally chartered to confer the degree of doctor of medicine, and whose diplomas are recognized by at least one state licensing board. The list includes the sectarian as well as the regular colleges, as their graduates are physicians in the eyes of the law. The information given is obtained from reports and from other reliable sources. The year when the first class was graduated is given. Unless otherwise stated, classes were graduated in all subsequent years. Colleges which belong to the Association of American Medical Colleges or the Southern Medical College Association or other organization of colleges have requirements for admission of students according to the rules of these associations, unless their requirements are higher, in which case a statement is made to that effect. Colleges belonging to the associations named and extracts from their rules are given at the close of the list of colleges. Population figures are taken from the United States Bureau of Education estimates for 1906.

## ALABAMA.

Alabama, population 2,017,87, has two medical colleges, the Medical Department of the University of Alabama and the Birmingham Medical College, located, respectively, in Mobile and Birmingham. The population of Mobile is 42,903 and of Birmingham 45,869.

### Birmingham.

BIRMINGHAM MEDICAL COLLEGE, Avenue F and Twentieth Street.—Chartered in 1894. The first class graduated in 1895. There are 21 professors and 14 assistants, total 35. The course of instruction embraces four separate sessions of seven months each. The fees are \$75 for each of the first three years and \$100 for the fourth. The Dean is Dr. B. L. Wyman. Registration, 1907-8, 134; graduates, 16. The fifteenth session begins Oct. 5, 1908, and ends May 5, 1909.

### Mobile.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF ALABAMA, St. Anthony and Lawrence Sts.—Organized in 1859 as the Medical College of Alabama. Classes were graduated in 1861 and in all subsequent years except 1862 to 1868, inclusive. It was reorganized as the Medical Department of the University of Alabama in 1897. All property was transferred to the University of Alabama and the present title assumed in 1907. The faculty consists of 8 professors and 13 lecturers and assistants, a total of 21. The course of study covers four years of seven months each. The total fees for each of the first three years is \$100; for the fourth year, \$125. The Dean is Dr. Rhett Goode. The total registration for 1907-8 was 169; graduates, 25. The forty-third session begins Oct. 1, 1908, and ends May 1, 1909.

## ARKANSAS.

Arkansas, population 1,421,574, has two medical colleges, the Medical Department of the University of Arkansas and the College of Physicians and Surgeons, both located in Little Rock, a city of 39,959 people.

### Little Rock.

UNIVERSITY OF ARKANSAS MEDICAL DEPARTMENT, Second and Sherman Streets.—Organized in 1879 as the Arkansas Industrial University. The first class graduated in 1880. It assumed the present title in 1899. The faculty consists of 18 professors and 10 lecturers and assistants, total 28. The course of study covers four years of seven months each. The fees are: Matriculation, \$5, paid but once; tuition, per year, \$60; graduation fee, \$25. The Dean is Dr. James H. Lenow. Total registration, 1907-8, was 177; graduates, 19. The thirtieth session begins Oct. 1, 1908, and ends May 1, 1909.

COLLEGE OF PHYSICIANS AND SURGEONS, Lincoln Avenue, north of the Union Station.—It was organized in 1906. The first class graduated in 1907. The faculty consists of 30 professors and 8 lecturers and assistants, a total of 38. The course of study covers four years of seven months each. The Dean is Dr. J. P. Runyan. The total registration for 1907-8 was 87; graduates, 15. The third session begins Oct. 1, 1908, and ends April 30, 1909.

## CALIFORNIA.

California, population 1,648,049, has eight medical colleges. Four are located in San Francisco, a city having, before the earthquake, 355,919 inhabitants. They are Cooper Medical College, Medical Department of the University of California, Hahnemann Medical College of the Pacific and the College of Physicians and Surgeons. The College of Medicine of the University of Southern California, the College of Physicians and Surgeons and the California Eclectic Medical College are situated in Los Angeles, population 116,420. The Oakland College of Medicine and Surgery is in Oakland, population 73,812.

### Los Angeles.

UNIVERSITY OF SOUTHERN CALIFORNIA, COLLEGE OF MEDICINE, Buena Vista Street, between Ord and Alpine streets.—Organized in 1885. The first class graduated in 1888. It has a faculty of 33 professors and 39 lecturers and assistants, a total of 72. The course covers four years of eight months each. The fees for each year are

\$115. The Dean is Dr. W. Jarvis Barlow. The total registration for 1907-8 was 89; graduates, 26. The twenty-fourth session begins Oct. 1, 1908, and ends June 11, 1909.

COLLEGE OF PHYSICIANS AND SURGEONS, 516 E. Washington Street.—It was organized in 1903. The first class graduated in 1905. The course covers four years of nine months each. The faculty consists of 32 professors and 7 lecturers and instructors, a total of 39. The Dean is Dr. Charles W. Bryson, Delta Building, Los Angeles. The registration for 1907-8 was 37; graduates 10. The sixth session begins Sept. 26, 1908, and ends June 26, 1909.

CALIFORNIA ECLECTIC MEDICAL COLLEGE, 846 Lyon Street.—Organized in 1879 at Oakland as the California Medical College. Removed to San Francisco in 1887. Suspended in 1906. Reorganized at Los Angeles with the present title in 1907. Classes were graduated in 1880, and in all subsequent years except 1907. It has a faculty of 27 professors. The Dean is Dr. J. A. Munk. The registration for 1907-8 was 8, one graduate. The twenty-ninth session begins Sept. 14, 1908, and ends May 24, 1909.

### Oakland.

OAKLAND COLLEGE OF MEDICINE AND SURGERY, Thirty-first and Grove streets.—Organized in 1900, opened in 1902. The first class graduated in 1906. The faculty numbers 30. The course covers four years of nine months each, and the classes are limited to ten students each. The tuition fee is \$150 yearly. The Registrar is Dr. Edward N. Ewer. The total registration for 1907-8 was 10; one graduate. The seventh session begins Aug. 19, 1908, and ends about May 21, 1909.

### San Francisco.

COOPER MEDICAL COLLEGE, Sacramento and Webster streets.—Organized in 1858 as the Medical Department of the University of the Pacific. Discontinued in 1864. Revived in 1870. It became the Medical College of the Pacific, Medical Department of the University College of San Francisco in 1873. The present title was assumed in 1882. Classes were graduated in 1860, and in all subsequent years, except 1865 to 1869, inclusive. Steps have been taken looking toward a union with Leland Stanford Junior University. The faculty consists of 18 professors and 41 lecturers, instructors, etc., 59 in all. The course covers four years of eight and a half months each. Fees: Matriculation, \$5; course fee for each year, \$150; laboratory fee for each year \$10; breakage deposit each year, \$10; graduation fee, \$25; no other charges. The Secretary is Dr. William Fitch Cheney. Total registration for 1907-8 was 97; graduates, 24. The fortieth session begins Aug. 15, 1908, and ends May 6, 1909.

UNIVERSITY OF CALIFORNIA, MEDICAL DEPARTMENT, Second and Parnassus avenues.—Organized in 1863 as the Toland Medical College. The first class graduated in 1865. In 1872 it became the Medical Department of the University of California. The first two years are given at Berkeley. The last two are clinical years at San Francisco. The faculty is composed of 17 professors and 40 associates and assistants, a total of 57. The course covers four years of nine months each. Three full years' college work is required of all applicants for admission. The fees are: Matriculation, \$5; tuition, \$150 each year; laboratory fees extra. The Dean is Dr. Arnold A. D'Ancona. Total registration for 1907-8 was 36; graduates, 16. The thirty-sixth session begins Aug. 17, 1908, and ends May 12, 1909.

HAHNEMANN MEDICAL COLLEGE OF THE PACIFIC, Homeopathic, Sacramento and Maple streets.—Organized in 1881 as the Hahnemann Medical College. The first class graduated in 1884. In 1888 it became the Hahnemann Hospital College of San Francisco. It assumed the present name in 1902. It has a faculty of 19 professors and 13 lecturers, instructors, etc., a total of 32. The course covers four weeks of seven months each. Total fees for the first year are \$155, and \$100 for each of the other three. The Dean is Dr. James W. Ward, 1380 Sutter Street. The total registration for 1907-8 was 33; graduates, 9. The 27th session begins Sept. 9, 1908, and ends May 27, 1909.

COLLEGE OF PHYSICIANS AND SURGEONS, 344 Fourteenth Street.—Organized in 1896. The first class graduated in 1897. The faculty numbers 45. The course covers four years of thirty weeks each. The Dean is Dr. D. A. Hodghead. Registration for 1907-8 was 70; graduates, 16. The thirteenth session begins Sept. 14, 1908, and ends May 12, 1909.

## COLORADO.

Colorado, with a population of 615,570, has three medical colleges. Two of these, Denver and Gross College of Medicine and the Denver College of Physicians and Surgeons, are in Denver, which has a population of 151,920, the other, the Colorado School of Medicine, is at Boulder, population 6,150.



**Boulder.**

UNIVERSITY OF COLORADO SCHOOL OF MEDICINE.—Organized in 1883. Classes were graduated in 1885 and in all subsequent years, except 1898 and 1899. The faculty embraces 23 professors and 16 lecturers and assistants, a total of 39. The work embraces a graded course of four years of nine months each. The tuition is \$50 per year; there are no other fees. The Dean is Dr. William P. Harlow. The total registration for 1907-8 was 62; graduates, 11. The twenty-seventh session begins Sept. 14, 1908, and ends June 4, 1909.

**Denver.**

THE DENVER AND GROSS COLLEGE OF MEDICINE, 1025 Fourteenth Street.—It is the Medical Department of the University of Denver. Organized in 1902 by the union of the Gross Medical College (organized in 1887) with the Denver College of Medicine (organized in 1880). Classes were graduated in 1903 and in all subsequent years. The faculty is made up of 33 professors, 38 assistants and instructors, a total of 71. The course covers four years of eight months. Fees for the first year are \$115. For the second year, \$116. Third year, \$101. Fourth year, \$126. The dean is Dr. Walter A. Jayne, 416 McPhee Building. The total registration for 1907-8 was 79; graduates, 22. The twenty-seventh session begins Sept. 8, 1908, and ends May 13, 1909.

DENVER COLLEGE OF PHYSICIANS AND SURGEONS (Panpathic), 1317 Fourteenth Street.—Organized in 1894 as the Denver Homeopathic College. The name was changed in 1907 to the Westminster University College of Medicine and again in 1908 to the present title. Since 1907 it has offered to teach all systems of medicine. The Dean is Dr. J. B. Kinlev. The total registration for 1907-8 was 46; graduates 6. Next session begins Sept. 7, 1908, and ends May 13, 1909.

**CONNECTICUT.**

Connecticut, with a population of 1,005,716, has only one medical college, located in New Haven, population 121,227.

**New Haven.**

YALE MEDICAL SCHOOL, York and Chapel Streets.—This is the Department of Medicine of Yale University. In 1810 a charter was granted for the establishment of this school, and in 1813 it was organized as the Medical Institution of Yale College. In 1879 the name was changed to the one now used. The first class graduated in 1814. The faculty consists of 12 professors and 44 lecturers and assistants, a total of 56. The course covers four years of nine months each. The fees are \$150 each year; in the first year there are additional fees amounting to \$18, and in the second \$8, and there is a graduation fee of \$10. The Dean is Dr. Herbert E. Smith, New Haven. The total registration for 1907-8 was 136; graduates, 29. The ninety-sixth session begins Sept. 24, 1908, and ends June 25, 1909.

**DISTRICT OF COLUMBIA.**

Washington, population 307,716, has three medical colleges; George Washington University Department of Medicine, Georgetown University School of Medicine and Howard University Medical Department.

**Washington.**

GEORGE WASHINGTON UNIVERSITY, DEPARTMENT OF MEDICINE, 1325 H Street, N. W.—Organized in 1825 as the National Medical College, Medical Department of Columbian College. Classes were graduated in 1826 and in all subsequent years, except 1834 to 1838 and 1861 to 1863, inclusive. The original title was changed to Medical Department of Columbian University in 1873. In 1904, by an act of Congress, it received its present title. The faculty is composed of 43 professors and 33 instructors, demonstrators and assistants, a total of 76. Beginning with the session of 1909-10 matriculants must present credentials of two years' work in a college of liberal arts or its equivalent. The course covers four years of eight months each. The total fees for the first year are \$157; for the second year, \$152; for the third year, \$112, and for the fourth year, \$162. The Dean is Dr. W. F. R. Phillips, 1607 Sixteenth Street, N. W. The total registration for 1907-8 was 198; graduates, 45. The eighty-seventh session begins Sept. 30, 1908, and ends June 9, 1909.

GEORGETOWN UNIVERSITY, SCHOOL OF MEDICINE, 920 H Street, N. W.—Organized in 1851. The first class graduated in 1852. The faculty contains 20 professors, 54 instructors and assistants; total, 74. The course of study covers four terms of eight and one-half months each. The fees are \$150 each year. The Dean is Dr. George M. Kober, 1600 T Street. The registration for 1907-8 was 82; graduates, 27. The fifty-eighth session begins Sept. 27, 1908, and ends June 11, 1909.

HOWARD UNIVERSITY, MEDICAL DEPARTMENT, Fifth and W Streets, N. W.—Chartered in 1867. Organized in 1869. The first class graduated in 1871. Colored students compose a majority of those in attendance. The faculty comprises 20 professors and 18 lecturers and assistants, 38 in all. The course covers four years of eight months each. The fees of each session are \$100, plus \$10 for graduation. The Dean is Dr. Robert Reyburn, 2129 F Street. Registration for 1907-8 was 205; graduates, 28. The forty-first session begins Oct. 1, 1908, and ends May 26, 1909.

**GEORGIA.**

Georgia, population 2,443,719, has four medical colleges; Medical College of Georgia, located in Augusta, population 43,125; Atlanta College of Physicians and Surgeons, Atlanta School of Medicine, and the Georgia College of Eclectic Medicine and Surgery, are in Atlanta, a city of 104,984 population.

**Atlanta.**

ATLANTA COLLEGE OF PHYSICIANS AND SURGEONS, Butler and Armstrong Streets.—Organized in 1898 by union of the Atlanta Medical College, organized in 1855, and Southern Medical College,

organized in 1878. The first class graduated in 1899. It has a faculty of 22 professors and 27 assistants, a total of 49. The course of study covers four years of seven months each. Fees: First and second years, \$75 each; third and fourth, \$100 each. The Dean is Dr. W. S. Elkins, 29 Luckie Street. Total registration of students for 1907-8 was 234; graduates 29. The eleventh session begins Sept. 28, 1908, and ends May 1, 1909.

ATLANTA SCHOOL OF MEDICINE, Luckie, Barton and Calhoun Streets.—Organized in September, 1905. The first class, graduated in 1906. The course covers four years of seven months each. It has a faculty of 13 professors and 27 lecturers and assistants, a total of 40. The Proctor is Dr. Edward G. Jones. The total registration for 1907-8 was 274; graduates, 48. The fourth session begins Sept. 25, 1908, and ends April 23, 1909.

GEORGIA COLLEGE OF ECLECTIC MEDICINE AND SURGERY, Tanner Street, near Edgewood Avenue.—Organized in 1877 as the Georgia Eclectic Medical College. In 1884 it acquired the charter of the College of American Medicine and Surgery. It assumed its present name in 1886. The first class graduated in 1878. The Proctor is Dr. E. B. Thomas. Total registration for 1907-8 was 71; graduates, 23.

**Augusta.**

MEDICAL COLLEGE OF GEORGIA, Sixth and Telfair Streets.—Organized in 1828 as the Medical Academy of Georgia, the name being changed to the Medical College of Georgia in 1829. Since 1873 it has been known as the Medical Department of the University of Georgia. Classes were graduated in 1833 and in all subsequent years, except 1862 and 1863, inclusive. The faculty includes 17 professors and 11 assistants, 28 in all. The course is four years of seven months each. Fees for the first two years are \$75 each; third year, \$100, and \$130 for the last year. The Dean is Dr. Joseph Eve Allen. The total enrollment for 1907-8 was 113; graduates, 32. The seventy-seventh session begins Oct. 1, 1908, and ends May 1, 1909.

**ILLINOIS.**

Illinois, population 5,418,670, has thirteen medical colleges, four of which are night schools, all located in Chicago, a city of 2,049,185 inhabitants, and are as follows: Rush Medical College, Northwestern University Medical School, College of Physicians and Surgeons, Hahnemann Medical College, Bennett College of Eclectic Medicine and Surgery, Hering Medical College, Jenner Medical College, Illinois Medical College, American Medical Missionary College, College of Medicine and Surgery, National Medical University, Chicago College of Medicine and Surgery and Reliance Medical College.

**Chicago.**

RUSH MEDICAL COLLEGE.—This school was founded in 1837, organized in 1843, was the medical department of Lake Forest University from 1887 until 1898, when it became affiliated with the University of Chicago. The first class graduated in 1844. The faculty is composed of 83 professors, 155 associates, instructors, etc., a total of 238. The requirements for admission are a four-year high school education and, in addition thereto, two years of college work, including courses in college chemistry, physics and biology, and a reading knowledge of German or French. The course covers four years of nine months each. An optional fifth year, consisting of a hospital internship or of a fellowship in one of the departments is offered. All freshman and sophomore studies are given at the University of Chicago. The last two years are given in the clinical buildings at the corner of Wood and Harrison Streets. The total fees are \$180 each year. A matriculation fee of \$5 is paid but once, and there are incidentals amounting to from \$2 to \$5 annually. The Deans are Dr. Frank Billings, 100 State Street, and Dr. John M. Dodson, 34 Washington Street. Total registration, 1907-8, was 586; graduates, 70. The sixty-sixth fiscal year begins July 1, 1908.

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL, Dearborn Street, between Twenty-fourth and Twenty-fifth Streets.—Organized in 1859 as the Medical Department of Lind University. In 1864 it became independent as the Chicago Medical College. It united with Northwestern University in 1869, but retained the name of Chicago Medical College until 1891, when the present name was taken. The faculty comprises 150 professors and 83 lecturers and assistants, a total of 233. The requirements for admission are such as will admit to the College of Liberal Arts of Northwestern University plus one year of college work in physics, chemistry, biology and modern languages. The course covers four years of thirty-six weeks each. The fees are \$175 each year. A matriculation fee of \$5 is paid but once. The Secretary is Dr. Charles Louis Mix. The total registration for 1907-8 was 533; graduates, 135. The forty-ninth session begins Oct. 6, 1908, and ends about June 15, 1909.

COLLEGE OF PHYSICIANS AND SURGEONS, Honore and Congress Streets.—Organized in 1882. The first class graduated in 1883. It became the Medical Department of the University of Illinois in 1896. The faculty is composed of 42 professors, 156 assistants and instructors, a total of 198. The fees are \$145 each for the first two years, \$150 for the third, and \$175 for the fourth year. The Dean is Dr. William E. Quine, 103 State Street. Total registration for 1907-8 was 501; graduates, 146. The twenty-seventh session begins Oct. 1, 1908, and ends June 9, 1909.

AMERICAN MEDICAL MISSIONARY COLLEGE, 888 Thirty-fifth Place.—Organized in 1895. The first class graduated in 1899. The faculty numbers 27. The course covers four years of nine months each. Total fees are \$80 for each of the four years. The Secretary is Dr. E. L. Eggleston, Battle Creek, Mich. Total registration for 1907-8 was 42; graduates, 4. The fourteenth session opens Sept. 15, 1908, and closes June 15, 1909.

CHICAGO COLLEGE OF MEDICINE AND SURGERY, 333 South Lincoln Street.—Organized in 1901 as the American College of Medicine and Surgery (Chicago Eclectic Medical College). The latter part of the name was dropped in 1902 when it became the Medical Department of Valparaiso University. Eclecticism was dropped in 1905. The name was changed to the above in 1907. The course covers four years of eight months each. The faculty consists of 52 professors and 18 lecturers and assistants; total of 70. The annual



tuition fee is \$100; matriculation fee, \$5. The total registration for 1907-8 was 325; graduates, 70. The eighth session begins Sept. 29, 1908, and ends May 18, 1909. The Secretary is Dr. J. N. Roe.

**HAHNEMANN MEDICAL COLLEGE AND HOSPITAL OF CHICAGO, 2811 Cottage Grove Avenue.**—Organized in 1859. The first class was graduated in 1861. The Registrar is Dr. W. Henry Wilson. The total registration for 1907-8 was 117; graduates, 43. forty-ninth session begins Sept. 21, 1908, and ends May 15, 1909.

**HERING MEDICAL COLLEGE, Homeopathic, Wood and York Streets.**—Organized in 1892. The first class graduated in 1893. The Dean is Dr. H. C. Allen. The total registration for 1907-8 was 58; graduates, 16.

**ILLINOIS MEDICAL COLLEGE, Corner Washington Boulevard and Halsted Street.**—It was organized in 1894. Classes were graduated in 1895 and in all subsequent years. The faculty consists of 38 professors and 20 lecturers and assistants, a total of 58. The course covers four years of seven months each. The fees are about \$125 each year. The Dean is Dr. B. B. Eads. The total registration for 1907-8 was 53; graduates, 30. The fourteenth session begins Sept. 2, 1908, and ends Apr. 29, 1909.

**BENNETT COLLEGE OF ECLECTIC MEDICINE AND SURGERY, Fulton and Ada Streets.**—Organized in 1868. The first class graduated in 1870. The faculty numbers 52. The course covers four years of thirty weeks each. Fees for each year are \$100, with a matriculation fee, paid once, of \$5. The President is Dr. John D. Robertson. The total registration for 1907-8 was 150; graduates, 28. The next session begins Sept. 22, 1908, and ends May 24, 1909.

**COLLEGE OF MEDICINE AND SURGERY, Physio-Medical, 370 South Wood Street.**—Organized in 1885 as the Chicago Physio-Medical Institute. The first class graduated in 1886. In 1891 the name was changed to the Chicago Physio-Medical College. In 1899 it took its present name. The Secretary is Dr. William F. Schaare. The total registration for 1907-8 was 35; graduates, 3. The next session begins Sept. 23, 1908, and ends May 15, 1909.

**JENNER MEDICAL COLLEGE, a night school, located at 196 East Washington Street.**—Organized in 1892. Classes were graduated in 1896 and in all subsequent years. Registrar, Dr. J. Zabokrtsky. Total registration for 1907-8 was 175; graduates, 32. *The Illinois State Board of Health reports that this college is not in good standing.*

**NATIONAL MEDICAL UNIVERSITY, a night school, located at 531 Wells Street.**—Organized in 1891 as the National Homeopathic Medical College. The first class was graduated in 1902. In 1895 the word "Homeopathic" was dropped. It took the above name in 1900. Registration for 1907-8 was 123. The Dean is Dr. L. D. Rogers. *The Illinois State Board of Health reports that this school is not in good standing.*

**RELiance MEDICAL COLLEGE, A night school, located at Washington Boulevard and Halsted Street.**—Organized in 1907. Registration for 1907-8 was 62. No graduates. The President is Dr. J. F. Burkholder. *The Illinois State Board of Health reports that this school has not been placed in good standing.*

## INDIANA.

Indiana, population 2,710,898, has two medical colleges, the Indiana University School of Medicine, and the Physio-Medical College of Indiana. Both are located at Indianapolis, a city of 219,154 people, except that the work of the first two years of the Indiana University School of Medicine is offered also at Bloomington, population 5,000, the seat of the University.

### Bloomington and Indianapolis.

**INDIANA UNIVERSITY SCHOOL OF MEDICINE.**—Organized in 1890, but gave only a premedical course until 1905, when all the subjects of the first two years were offered. In 1907, by union with the State College of Physicians and Surgeons, the complete course in medicine was offered. In 1908 the Indiana Medical College, which was formed in 1907 by the merger of the Medical College of Indiana (organized in 1869), the Central College of Physicians and Surgeons (organized in 1879) and the Fort Wayne College of Medicine (organized in 1879) merged into it. The faculty consists of 99 professors and 76 lecturers, associates and assistants, a total of 175. In 1910, besides a four-year high school education, one year of collegiate work will be required for admission. The work of the first two years may be taken either at Bloomington or at Indianapolis. The clinical work is all done at Indianapolis. The Secretary at Bloomington is Dr. B. D. Myers; at Indianapolis, Dr. Edmund D. Clark, Newton-Claypool Bldg. The total registration for 1907-8 was 308; graduates, 73. The next session begins Sept. 22, 1908, and ends June 23, 1909.

**PHYSIO-MEDICAL COLLEGE OF INDIANA, Fourteenth Street and College Avenue.**—Organized in 1873. The first class graduated in 1874. The Dean is Dr. C. T. Bedford. The total registration for 1907-8 was 24; graduates, 5. The next session begins Sept. 8, 1908, and ends May 4, 1909.

## IOWA.

Iowa, population 2,205,690, has five medical colleges. The College of Medicine of the State University of Iowa and the College of Homeopathic Medicine of the State University of Iowa are located in Iowa City, population 8,497. In Des Moines, population 78,323, is the College of Medicine of Drake University. In Sioux City, population 42,520, is the Sioux City College of Medicine. In Keokuk, population 14,597, is the Keokuk Medical College, College of Physicians and Surgeons.

### Des Moines.

**DRAKE UNIVERSITY COLLEGE OF MEDICINE.**—First two years given on the University Campus, University Avenue, between Twenty-fifth and Twenty-eighth Streets, the clinical years at Fourth and Center Streets. Organized in 1882 as the Iowa College of Physicians and Surgeons. The first class graduated in 1883. In 1887 it became affiliated with and in 1900 became the Medical Department of Drake University. The faculty consists of 18 professors

and 26 assistants, a total of 44. The work covers four years of nine months each. The total fees for the first two years are \$107 each; for the last two years, \$80 each. The Dean is Dr. D. S. Fairchild. The total registration for 1907-8 was 75; graduates, 18. The twenty-sixth session begins Sept. 14, 1908, and ends June 16, 1909.

### Iowa City.

**STATE UNIVERSITY OF IOWA COLLEGE OF MEDICINE, University Campus.**—Organized in 1869. First session began in 1870. First class graduated in 1871. The faculty is made up of 10 professors, 17 lecturers, demonstrators and assistants, a total of 27. The course of study covers four years of thirty-six weeks each. Total fees for each year are \$50. The Dean is Dr. James R. Guthrie, Dubuque; Vice-Dean, Dr. Walter L. Biering, Iowa City. Total number of students registered for 1907-8 was 266; graduates, 43. The thirty-ninth session begins Sept. 20, 1908, and ends June 18, 1909.

**STATE UNIVERSITY OF IOWA COLLEGE OF HOMEOPATHIC MEDICINE.**—Organized in 1877. The first class graduated in 1878. The faculty is composed of 5 professors and 31 lecturers and assistants, total of 36. The work of the first two years is taken in classes with the students of the College of Medicine of the State University of Iowa. The fees are \$50 each year. The Dean is Dr. George Royal. Total registration for 1907-8 was 43; graduates, 9. The thirty-second session begins Sept. 20, 1908, and ends June 18, 1909.

### Keokuk.

**KEOKUK MEDICAL COLLEGE, COLLEGE OF PHYSICIANS AND SURGEONS, Seventh and Blondeau Streets.**—Organized in 1849 as the College of Physicians and Surgeons. The first class was graduated in 1850. In 1854 it became the Medical Department of the State University of Iowa, but resumed its former name in 1870. In 1899 it merged with the Keokuk Medical College (organized in 1890) and assumed the present title. The faculty is composed of 20 professors and 8 assistants and demonstrators, 28 in all. The course covers four years of eight months each. The total fees for the first year are \$66; for the second, \$61; for the third, \$64, and \$61 for the last year. The Secretary is Dr. W. B. La Force. Total registration for 1907-8 was 115; graduates, 37. The sixtieth session begins about Sept. 15, 1908, and ends about May 15, 1909.

**SIOUX CITY COLLEGE OF MEDICINE, Corner of Fourteenth and Jones Streets.**—Organized in 1891. The first class graduated in 1893. The total registration for 1907-8 was 26; graduates, 9. The Dean is Dr. F. E. Franchère.

## KANSAS.

Population, 1,612,471, has three medical colleges. Kansas Medical College is in Topeka, population 41,880, and the Western Eclectic College of Medicine and Surgery is at Kansas City. The School of Medicine of the University of Kansas gives its first two years in Lawrence, population 12,123, and the last two years in Rosedale, a suburb of the two Kansas Cities, which together have a population of 260,288.

### Kansas City.

**WESTERN ECLECTIC COLLEGE OF MEDICINE AND SURGERY, Central and Simpson Avenues.**—Organized at Kansas City, Mo., in 1898 as the Eclectic Medical University. Moved to Kansas City, Kan., in 1907. Took the present name in 1908. First class graduated in 1900. The faculty numbers 34. Fees, \$90 per year; graduation fee, \$15. Course covers four years of about eight months each. The Secretary is Dr. C. E. Frazier. The total registration for 1907-8 was 41; graduates, 11. The eleventh session begins Sept. 7, 1908, and ends April 30, 1909.

### Lawrence and Kansas City.

**UNIVERSITY OF KANSAS SCHOOL OF MEDICINE.**—Organized in 1880. In 1905 it merged with the Kansas City (Mo.) Medical College, founded in 1869, the College of Physicians and Surgeons, founded in 1894, and the Medico-Chirurgical College, founded in 1897. The faculty, including lecturers and clinical assistants, numbers 79. The course covers four years of about nine months each. The total fees are, for the first two years, \$60 per year (and for non-residents of the state \$70); for the last two years, \$100 per year. The Dean at Lawrence is Dr. Mervin T. Sudler. The Dean at Kansas City is Dr. George Howard Hoxie. The total registration for 1907-8 was 101; graduates, 18. The twenty-ninth session begins Sept. 16, 1908, and ends June 9, 1909.

### Topeka.

**KANSAS MEDICAL COLLEGE, Twelfth and Tyler Streets.**—Organized in 1890. The first class graduated in 1892. It has been the Medical Department of Washburn College since 1893. It has a faculty of 25 professors and 13 lecturers and assistants, a total of 38. The course covers four years of thirty weeks each. Fees, \$75 yearly. The Dean is Dr. William S. Lindsay. Total registration for 1907-8 was 69; graduates, 13. The nineteenth session begins Sept. 8, 1908, and ends April 28, 1909.

## KENTUCKY.

Kentucky, population 2,320,298, has three medical colleges. They are all situated in Louisville, a city of 226,129 inhabitants, and are as follows: University of Louisville Medical Department. Southwestern Homeopathic Medical College and Louisville National Medical College.

### Louisville.

**KENTUCKY SCHOOL OF MEDICINE, Sixth and Center Streets.**—Organized in 1817 at Lexington as the Medical Department of the Transylvania University. A class was graduated in 1818 and in each subsequent year until 1850. It was succeeded by the Kentucky School of Medicine at Louisville in 1850. The first class graduated



in 1851. Total number of students registered for 1907-8 was 270; graduates, 44. It has just been merged into the University of Louisville Medical Department.

**LOUISVILLE AND HOSPITAL MEDICAL COLLEGE.** First and Chestnut Streets.—Organized in 1907 by the union of the Louisville Medical College, organized in 1869, with the Hospital College of Medicine, organized in 1874. Total registration for 1907-8 was 335; graduates, 102. It has just been merged into the University of Louisville Medical Department.

**UNIVERSITY OF LOUISVILLE MEDICAL DEPARTMENT.** Eighth and Chestnut Streets.—Organized in 1837 as the Louisville Medical Institute. The first class graduated in 1838, and a class graduated in each subsequent year except 1863. In 1846 the present name was assumed. In 1907 it absorbed the Kentucky University Medical Department. It has a faculty of 28 professors and 27 lecturers and assistants, a total of 55. The course covers four years of thirty weeks each. The fees are \$75 each year. The Dean is Dr. T. C. Evans. The total registration for 1907-8 was 331; graduates, 100. The next session begins Nov. 1, 1908, and ends May 31, 1909.

**SOUTHWESTERN HOMEOPATHIC COLLEGE.** Floyd and Walnut Streets.—Organized in 1892. The first class graduated in 1894. It has a faculty of 18 professors and 10 lecturers and assistants, 28 in all. The curriculum covers four years of seven months each. Total fees: First and second years, \$80; third, \$70, and \$65 for the fourth. The Dean is Dr. Geo. S. Coon. Total number of students for 1907-8 was 13; graduates, 2. The sixteenth session begins Oct. 6, 1908, and ends May 19, 1909.

**LOUISVILLE NATIONAL MEDICAL COLLEGE.** Colored. 112 West Green Street.—Organized in 1888. The first class graduated in 1889. The faculty numbers 22. The course covers four years of seven months each. The fees are \$58, \$58, \$55 and \$50 for the four years, respectively. The Dean is Dr. E. S. Porter. Total registration for 1907-8 was 36; graduates, 6. The next session begins Oct. 6, 1908, and ends May 21, 1909.

### LOUISIANA.

Louisiana, having a population of 1,539,449, contains two medical colleges: Medical Department of the Tulane University of Louisiana and Flint Medical College of New Orleans University. They are both situated in New Orleans, a city of 314,146 people.

#### New Orleans.

**MEDICAL DEPARTMENT OF THE TULANE UNIVERSITY OF LOUISIANA.** University Campus and 1551 Canal Street.—Organized in 1834 as the Medical College of Louisiana. Classes were graduated in 1835 and in all subsequent years, except 1863-1865, inclusive. It was transferred to Medical Department of the University of Louisiana in 1847 and became the Medical Department of the Tulane University in 1884. The faculty numbers 69. The course covers four years of seven months each. Total fees are \$135, \$135, \$140 and \$170, respectively, for the four years. The Dean is Dr. Isadore Dyer. The total registration for 1907-8 was 535; graduates, 102. The seventy-fifth session begins Oct. 1, 1908, and ends May 19, 1909.

**FLINT MEDICAL COLLEGE OF NEW ORLEANS UNIVERSITY.** Colored. 1566 Canal Street.—Organized in 1889 as the Medical College of New Orleans University. A class was graduated in 1892 and in each subsequent year, except 1896. Took the above name in 1901. The faculty consists of 6 professors, 9 lecturers and instructors, 15 in all. The course covers four years of thirty weeks each. Total fees, \$50 each year. The Dean is Dr. A. D. Rush, 1566 Canal Street. Total registration for 1907-8 was 34; graduates, 8. The nineteenth session begins Sept. 28, 1908, and ends May 5, 1909.

### MAINE.

Maine, population 714,494, has one medical college, located in Portland, population 55,167.

#### Portland.

**MEDICAL SCHOOL OF MAINE.** The medical department of Bowdoin College. The first two years are given at Bowdoin College, Brunswick, the last two at Portland, building located on Chadwick Street.—Organized in 1820. The first class graduated in 1820. The course covers four years of eight months each. The total fees are \$120 for the first year; for the second and third, \$110, and \$110 for the fourth year. The Dean is Dr. Alfred Mitchell, Brunswick. Total number of students in 1907-8 was 93; graduates, 29. The eighty-ninth session begins Oct. 22, 1908, and ends June 23, 1909.

### MARYLAND.

Maryland, with a population of 1,275,434, contains seven medical colleges, all located in Baltimore, a city with 553,659 inhabitants. They are as follows: School of Medicine of the University of Maryland, College of Physicians and Surgeons, Baltimore Medical College, Women's Medical College, Atlantic Medical College, Johns Hopkins Medical School and Maryland Medical College.

#### Baltimore.

**JOHNS HOPKINS MEDICAL SCHOOL.** Washington and Monument Streets.—This is the Medical Department of Johns Hopkins University, and was organized in 1893. The first class was graduated in 1897 and a class was graduated each subsequent year. The faculty consists of 13 professors and 90 clinical professors, etc., a total 103. The requirements for admission demand that the applicant either has (a) completed the chemical-biologic course which leads to the A.B. degree in the university; (b) graduated at an approved college or scientific school and has a knowledge of French and German, physics, chemistry and biology, such as may be obtained from a year's course. The course extends over four years of eight and one-half months each. The charge for tuition is \$200 per annum. The Dean is Dr. William H. Howell, 232 West Lan-

vale Street. Total registration for 1907-8 was 281; graduates, 68. The sixteenth session begins Oct. 6, 1908, and ends June 14, 1909.

**COLLEGE OF PHYSICIANS AND SURGEONS.** Calvert and Saratoga Streets.—Organized in 1872. The first class graduated in 1873. In 1878 it united with Washington University School of Medicine. The faculty numbers 55. The work covers four years of eight months each. Total fees are \$155 and \$185 for the respective years. The Dean is Dr. Charles F. Bevan. The total number of students registered in 1907-8 was 253; graduates, 68. The thirty-seventh session begins Oct. 1, 1908, and ends June 1, 1909.

**UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE.** Lombard and Greene Streets.—Organized in 1807 as the College of Medicine of Maryland. The first class graduated in 1810. In 1812 it became the University of Maryland School of Medicine. The faculty numbers 62. The course covers four years of eight months each. The total fees for the first two years are \$135 each; for the third year \$125, and \$155 for the final year. The Dean is Dr. R. Dorsey Coale. The total number of students registered in 1907-8 was 316; graduates, 73. The one hundred and second session begins Oct. 1, 1908, and ends June 1, 1909.

**BALTIMORE MEDICAL COLLEGE.** Madison Street and Linden Avenue.—Organized in 1881. The first class graduated in 1882. The faculty numbers 69. The course covers four years of eight months each. The Dean is Dr. David Streett. The total number of students registered in 1907-8 was 323; graduates, 82. The twenty-eighth session begins Sept. 21, 1908, and ends May 21, 1909.

**WOMAN'S MEDICAL COLLEGE OF BALTIMORE.** McCulloh and Hoffman Streets.—Organized in 1882. Classes graduated in 1883 and in each subsequent year, except 1898. The faculty numbers 34. The course covers four years of eight months each. The fees for the first three years are \$106 each, and \$111 for the last year. The Dean is Dr. John R. Abercrombie, 827 North Eutaw Street. The total registration for 1907-8 was 28; graduates, 11. The twenty-seventh session begins Oct. 1, 1908, and ends May 31, 1909.

**MARYLAND MEDICAL COLLEGE.** 1114 West Baltimore Street.—Organized in 1898. The first class graduated in 1899. The faculty is composed of 13 professors and 9 lecturers and assistants, a total of 22. The course covers four years of eight months each. Matriculation fee, \$5; total fees first three years, \$75 each; fourth year, \$105. The Dean is Dr. Harry Gross. The total registration for 1907-8 was 100; graduates, 20. The next session begins Oct. 1, 1908, and ends June 1, 1909.

**ATLANTIC MEDICAL COLLEGE.** Mount Street, north of Riggs Avenue.—Organized in 1891 as the Southern Homeopathic Medical College. In 1907 it assumed the above name and became non-sectarian. The Dean is Dr. Eldridge C. Price. The total registration for 1907-8 was 39; graduates, 22. The next session begins Oct. 1, 1908, and ends June 3, 1909.

### MASSACHUSETTS.

Massachusetts, population 3,043,346, has four medical colleges: Medical School for Harvard University, Boston University School of Medicine, College of Physicians and Surgeons and Tufts College Medical School. They are all situated in Boston, a city of 602,278 inhabitants.

#### Boston.

**MEDICAL SCHOOL OF HARVARD UNIVERSITY.** Longwood Avenue.—Organized in 1782. The first class graduated in 1788. It has a faculty of 32 professors and 134 associates, assistants, etc., a total of 166. Candidates for admission "must present a degree in arts, literature, philosophy or science from a recognized college or scientific school, with the exception of such persons as may be admitted by special vote of the faculty." Fees: Matriculation, \$5; \$200 each year. The Dean is Dr. William L. Richardson, 688 Boylston Street. The total registration for 1907-8 was 298; graduates, 70. The 127th session begins Oct. 1, 1908, and ends June 30, 1909.

**BOSTON UNIVERSITY SCHOOL OF MEDICINE.** 80 East Concord Street.—Organized in 1873. In 1874 the New England Female Medical College, founded in 1848, was merged into it. The first class graduated in 1874. The faculty includes 28 professors, 33 associates, etc., a total of 61. The course covers four years of eight months each. Total fees for the first, second and third years, \$127 each, and for the last year \$155. The Dean is Dr. John P. Sutherland, 302 Beacon Street. Total registration for 1907-8 was 102; graduates, 19. The thirty-sixth session begins Oct. 1, 1908, and ends June 2, 1909.

**TUFTS COLLEGE MEDICAL SCHOOL.** 416 Huntington Avenue.—Organized in 1893 as the Medical Department of Tufts College. The first class graduated in 1894. It has a faculty of 34 professors and 67 assistants, lecturers, etc., a total of 101. The course covers four years of eight months each. The total fees are \$150 each year. The Secretary is Dr. Frederic M. Briggs, 31 Massachusetts Avenue. Total number of students for 1907-8 was 371; graduates, 56. The fifteenth session begins Sept. 30, 1908, and ends May 26, 1909.

**COLLEGE OF PHYSICIANS AND SURGEONS.** 517 Shawmut Avenue.—Organized in 1880. The first class graduated in 1882. The Dean is Dr. C. H. Cobb. The total registration for 1907-8 was 162; graduates, 26.

### MICHIGAN.

Michigan, population 2,584,533, has four medical colleges. Two of these, University of Michigan Department of Medicine and Surgery and the Homeopathic College of the University of Michigan, are located at Ann Arbor, a city of 14,645 people. Detroit, a city of 353,535 inhabitants, contains two medical colleges, the Detroit College of Medicine and the Detroit Homeopathic College.

#### Ann Arbor.

**UNIVERSITY OF MICHIGAN DEPARTMENT OF MEDICINE AND SURGERY.**—Organized in 1850. The first class graduated in 1851. It has a faculty composed of 32 professors, 33 associates, instructors, etc., a total of 65. Beginning with the session of 1909-10 the en-



trance requirements will be two years of college work, including a year of chemistry, physics and biology, including laboratory work, and a reading knowledge of one modern language. The curriculum embraces four years of nine months each. The total fees for Michigan students for the entire course of four years is \$350 and for others about \$400. The Dean is Dr. Victor C. Vaughan. The total registration for 1907-8 was 390; graduates, 72. The fifty-ninth session begins Sept. 29, 1908, and ends June 24, 1909.

**UNIVERSITY OF MICHIGAN HOMEOPATHIC COLLEGE.**—Organized in 1875. The first class graduated in 1877. It has a faculty of 8 professors and 4 assistants, total 12, besides a part of the teaching force from the Department of Medicine and Surgery. The total fees for Michigan students are about \$240 for the four years, and for other students about \$295. The Dean is Dr. W. B. Hinsdale. The total registration for 1907-8 was 82; graduates, 15. The thirty-third session begins Sept. 29, 1908, and ends June 24, 1909.

#### Detroit.

**DETROIT COLLEGE OF MEDICINE.** St. Antoine, Catherine and Mullett Streets and Gratiot Avenue.—Organized in 1885 by consolidation of Detroit Medical College, organized in 1868, and the Michigan College of Medicine, organized in 1880. The first class graduated in 1886. The faculty embraces 28 professors, 80 lecturers, instructors, etc., a total of 108. The course covers four years of eight months each. Fees: Matriculation, paid once, \$5; tuition, each term, \$65; hospital and laboratory tickets, each \$10, and diploma fee, \$30. The Registrar is Dr. F. B. Walker. The total registration for 1907-8 was 146; graduates 30. The twenty-fourth session begins Sept. 16, 1908, and ends May 27, 1909.

**DETROIT HOMEOPATHIC COLLEGE.** Lafayette Avenue and Third Street.—Organized in 1899. A class was graduated in 1906 and in each subsequent year. It has a faculty of 36. The course embraces four years of eight months each. Fees: From \$70 to \$90 per year. The Dean is Dr. D. A. MacLachlan; Registrar, J. M. Griffin. Total registration for 1907-8 was 22; graduates, 6. The tenth session begins Sept. 15, 1908, and ends May 15, 1909.

#### MINNESOTA.

Minnesota, population 2,025,615, contains two medical colleges, the College of Medicine and Surgery of the University of Minnesota and the College of Homeopathic Medicine and Surgery of the University of Minnesota. They are situated in Minneapolis. Minneapolis and St. Paul are practically one city, and have a combined population of 477,640.

#### Minneapolis.

**COLLEGE OF MEDICINE AND SURGERY, UNIVERSITY OF MINNESOTA.**—Organized in 1883. Reorganized in 1888 by absorption of St. Paul Medical College and Minnesota Hospital Medical College. The first class graduated in 1889. In 1908 the Minneapolis College of Physicians and Surgeons, organized in 1883, was merged. The faculty includes 45 professors and clinical professors and 69 associate professors, assistants, etc., a total of 114. The curriculum covers four years of nine months each. The entrance requirements are two years of university work in addition to four years of high school work. Total fees for each year, \$100; microscope rental, \$4 to \$7 per annum. The Dean is Dr. F. F. Westbrook. The total registration for 1907-8 was 166; graduates, 32. The twenty-first session begins Sept. 15, 1908, and ends June 5, 1909.

**COLLEGE OF HOMEOPATHIC MEDICINE AND SURGERY, UNIVERSITY OF MINNESOTA.**—Organized in 1886 as the Minnesota Homeopathic Medical College. The first class graduated in 1887. In 1888 it became the Homeopathic Department of the University of Minnesota. The faculty comprises 26 professors and 49 assistants, 75 in all. Instruction in the primary branches is received in common with the students of the College of Medicine and Surgery. The course covers four years of nine months each. The total fees for the first two years are \$100 each and \$80 each for the last two years. The Dean is Dr. Eugene L. Mann. Total registration for 1907-8 was 6; graduates, 3. The next session begins Sept. 15, 1908, and ends June 5, 1909.

#### MISSISSIPPI.

Mississippi, population 1,708,272, has two medical colleges: the Medical Department of the University of Mississippi is located at Oxford, a city of 2,000 inhabitants, and at Vicksburg, population 15,710. The Mississippi Medical College is located at Meridian, population 20,503.

#### Meridian.

**MISSISSIPPI MEDICAL COLLEGE.** Fifth Street and Twenty-fourth Avenue.—Organized in 1906. The first class graduated in 1907. The faculty numbers 16. The Dean is Dr. T. A. Barber. The total registration for 1907-8 was 105; graduates, 11. The third session begins Oct. 1, 1908, and ends May 1, 1909.

#### Oxford and Vicksburg.

**UNIVERSITY OF MISSISSIPPI MEDICAL DEPARTMENT.**—Organized in 1903. Gave only the first two years of the medical course until 1908, when a clinical department was organized at Vicksburg. The course covers four years of eight and a half months each. The work of the first two years are given at Oxford and the last two at Vicksburg. The faculty numbers 9. Dr. W. S. Leathers is the Acting Dean. The total registration for 1907-8 was 28. The sixth session begins Sept. 8, 1908, and ends June 8, 1909.

#### MISSOURI.

Missouri, population 3,363,153, has eleven medical colleges. St. Louis, population 649,320, contains seven of these, viz., St. Louis College of Physicians and Surgeons, American Medical College, Homeopathic Medical College of Missouri, Medical Department St. Louis University, Washington University Med-

ical Department, Barnes Medical College and the Hippocratican College of Medicine. Kansas City, which, with Kansas City, Kan., has a total population of 260,288, has two colleges, namely: University Medical College and the Hahnemann Medical College of Kansas City. Ensworth Medical College is located in St. Joseph, population 118,004. The Department of Medicine of the University of Missouri is at Columbia, a town of 7,800 people.

#### Columbia.

**DEPARTMENT OF MEDICINE OF THE UNIVERSITY OF MISSOURI.**—Organized at St. Louis in 1845; was discontinued in 1859, but was reorganized at Columbia in 1872. The faculty includes 14 professors, 14 assistant professors, lecturers, etc., a total of 28. The course covers four years of nine months each. The candidate for entrance must present, beside the diploma from a recognized four-year high school, credentials of college work as follows: English, 6 hours; German, 6 hours; general zoology, 6 hours; general physics, 6 hours; inorganic chemistry, 6 hours. There is no charge for tuition, the only expenses being a library fee of \$10 each year and small laboratory fees. The Dean is Dr. A. W. McAlester. Total registration of students for 1907-8 was 65; graduates, 8. The next session begins Sept. 14, 1908, and ends June 2, 1909.

#### Kansas City.

**UNIVERSITY MEDICAL COLLEGE OF KANSAS CITY.** 911 East Tenth Street.—Organized in 1881 as the University of Kansas City Medical Department. The first class graduated in 1882. It was reorganized in 1888 under the present title. Its faculty comprises 30 professors and 35 lecturers and assistants, a total of 65. The course of study covers four years of thirty weeks each and the work is graded. The total fees for each year are \$100. The Dean is Dr. J. E. Logan, 1208 Wyandotte Street. The total registration for 1907-8 was 192; graduates, 64. The twenty-seventh session begins Sept. 9, 1908, and ends May 14, 1909.

**KANSAS CITY HAHNEMANN MEDICAL COLLEGE.** 1020 East Tenth Street.—Organized in 1888 as the Kansas City Homeopathic Medical College. The first class graduated in 1899. In 1902 it united with the Hahnemann Medical College of the Kansas City University, taking the present title. It has a faculty of 43. The course covers four years of seven months each. The Dean is Dr. Frank Elliott, 1023 Grand Avenue. Total registration for 1907-8 was 62; graduates, 15. The next session begins Sept. 8, 1908, and ends May 8, 1909.

#### St. Joseph.

**THE ENSWORTH MEDICAL COLLEGE.** Seventh and Jule Streets.—Organized in 1876 as the St. Joseph Hospital Medical College. In 1882 it merged with the College of Physicians and Surgeons to form the St. Joseph Medical College. In 1888 changed name to Ensworth Medical College. In 1905 merged with the Central Medical College, organized in 1894, to form the Ensworth-Central Medical College. In 1907 the present title was resumed. The faculty numbers 34. The course covers four years of eight months each. The fees are \$75 for each of the first three years; the fourth year, \$95. The Secretary is Dr. T. E. Potter. Total registration for 1907-8 was 91; graduates, 25. The next session begins Sept. 7, 1908, and ends May 1, 1909.

#### St. Louis.

**WASHINGTON UNIVERSITY MEDICAL DEPARTMENT.** 1806 Locust Street.—Organized in 1842 as the Medical Department of St. Louis University. In 1855 it was chartered as an independent institution under the name of St. Louis Medical College. The first class graduated in 1843. In 1891 it became the Medical Department of Washington University. In 1899 it absorbed the Missouri Medical College. The faculty comprises 45 professors, 45 lecturers and instructors, a total of 90. The course is four years of eight months each. The total fees are: For the first year, \$132.75; second, \$133.75; third, \$115.25, and for the fourth, \$101.25. The Dean is William H. Warren, Ph.D. The total registration for 1907-8 was 208; graduates, 59. The next session begins Sept. 28, 1908, and ends May 26, 1909.

**ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE.** Grand Avenue and Caroline Street.—Organized in 1901 by union of Marion-Sims Medical College, organized in 1890, and Beaumont Hospital Medical College, organized in 1886. It became the Medical Department of St. Louis University in 1903. The faculty is composed of 38 professors, 67 lecturers and assistants, a total of 105. The curriculum covers four years of seven months each. The total fees for the first year are \$100; for the second, third and fourth, \$95 each. The Dean is Dr. E. P. Lyon. The total registration for 1907-8 was 241; graduates, 68. The next session begins Oct. 1, 1908, and ends May 22, 1909.

**ST. LOUIS COLLEGE OF PHYSICIANS AND SURGEONS.** Jefferson Avenue and Gamble Street.—Organized in 1869. Classes graduated in 1870 and in each subsequent year until 1873, when it suspended. It was reorganized in 1879. Classes graduated in 1880 and subsequent years. It has a faculty of 25 professors, 19 lecturers, instructors, etc., a total of 44. The course covers four years of seven months each. Total fees for the first year are \$80; second and third, \$75 each, and \$85 for the fourth year. The Dean is Dr. Waldo Briggs, 2600 Gamble Street. Total registration for 1907-8 was 164; graduates, 49.

**BARNES MEDICAL COLLEGE.** Garrison and Lawton Avenues.—Organized in 1892. Classes graduated in 1893 and in all subsequent years, except 1899. It has a faculty of 39 professors and 30 lecturers and assistants, a total of 69. The course of study covers four years of eight months each. The total fees are \$100 each year. The Secretary is Dr. C. M. Ament, 1025 Missouri Trust Building. Total registration for 1907-8 was 323; graduates, 78. The seventeenth session begins Sept. 9, 1908, and ends May 9, 1909. *The Missouri State Board of Health reports that this college is not now in good standing.*

**HOMOEOPATHIC MEDICAL COLLEGE OF MISSOURI.** Jefferson Avenue and Howard Street.—Organized in 1859. Classes graduated in 1860 and in all subsequent years, except 1862 to 1864, inclusive.



It has a faculty of 18 professors and 9 assistants, total 27. The curriculum covers four years of seven months each. Fees: First year, \$80; second, \$75; third, \$60, and \$75 for the fourth year. The Dean is Dr. L. C. McElwee, 1221 North Grand Avenue. Total registration for 1907-8 was 27; graduates, 9. The next session begins Sept. 8, 1908, and ends April 23, 1909.

**AMERICAN MEDICAL COLLEGE.** Eclectic. 407 South Jefferson Avenue.—Organized in 1873. Two classes graduated each year from 1874 to 1883, inclusive. Since then one class has graduated each year. The Dean is Dr. P. C. Clayberg. The total registration for 1907-8 was 41; graduates, 8.

**HIPPOCRATEAN COLLEGE OF MEDICINE.** 3412 Morgan Street.—Organized in 1907 as a night school. During 1907-8 it had 34 students. The Dean is Dr. Emory Lanphear. *The Missouri State Board of Health reports that this college is not in good standing.*

## NEBRASKA.

Nebraska, population 1,068,484, has four medical colleges: The University of Nebraska College of Medicine and John A. Creighton Medical College at Omaha, population 124,167, and Lincoln Medical College, and the Nebraska College of Medicine at Lincoln, population 48,232.

### Lincoln and Omaha.

**COLLEGE OF MEDICINE, UNIVERSITY OF NEBRASKA.** Eleventh and R Streets, Lincoln, and Twelfth and Pacific Streets, Omaha.—Organized in 1881 as the Omaha Medical College. The first class graduated in 1882. It became the Medical Department of Omaha University in 1891. In 1902 it affiliated with the University of Nebraska, with the present title. The first two years are given at Lincoln; the last two at Omaha. The faculty is composed of 37 professors and 45 lecturers and instructors, total 82. For admission one full year of college work above the high school course required. The fees are approximately \$100 per annum. The Dean is Henry B. Ward, Ph.D., University of Nebraska, Lincoln. The total registration for 1907-8 was 98; graduates, 24. The next session begins Sept. 16, 1908, and ends May 20, 1909.

### Lincoln.

**LINCOLN MEDICAL COLLEGE.** Eclectic. 121 South Fourteenth Street. It is the Medical Department of Cotner University.—Organized in 1890. The first class graduated in 1891. The faculty numbers 38. The course of study covers four years of thirty weeks each. The total fees for the first year are \$80; second and third, \$75 each, and \$85 for the fourth year, or \$250 for all four years together. The Secretary is Dr. R. H. Spradling, 1315 O Street. The total registration for 1907-8 was 50; graduates, 18. The nineteenth session begins Sept. 7, 1908, and ends June 7, 1909.

**NEBRASKA COLLEGE OF MEDICINE.** 1735 O Street. Affiliated with the Nebraska Wesleyan University.—Organized in 1905. The first class graduated in 1907. The Dean is Dr. James F. Stevens. The total registration for 1907-8 was 34; graduates, 2. The next session begins Sept. 14, 1908, and ends June 9, 1909.

### Omaha.

**JOHN A. CREIGHTON MEDICAL COLLEGE.** Fourteenth and Davenport Streets. It is the Medical Department of Creighton University.—Organized in 1892. The first class graduated in 1895. It has a faculty of 36 professors and 16 associates, lecturers and assistants, a total of 52. Beginning in 1910, two years of work in a college of liberal arts will be required for admission. The course of study embraces four years of eight months each. The total fees for the first two years are \$90 each, and \$85 for each of the last two years. The Dean is Dr. D. C. Bryant, McCague Building. Total number of students registered in 1907-8 was 158; graduates, 41. The seventeenth session begins Sept. 1, 1908, and ends May 1, 1909.

## NEW HAMPSHIRE.

New Hampshire, population 432,624, has one medical college, located at Hanover, population 1,797.

### Hanover.

**DARTMOUTH MEDICAL SCHOOL.**—Organized as New Hampshire Medical Institute in 1797. The first class graduated in 1798. It is the Medical Department of Dartmouth College. The faculty is made up of 18 professors and 4 instructors, a total of 22. The course covers four years of seven and a half months each. The fees are \$100 each year. The Dean is Dr. William T. Smith. The total registration for 1907-8 was 58; graduates, 9. The work of the first and second years begins with that of the academic department Sept. 24, 1908, and ends June 30, 1909; for the advanced classes the course begins Aug. 4, 1908, and ends March 26, 1909.

## NEW YORK.

New York State, population 8,226,990, has eleven medical colleges. Eight of these, College of Physicians and Surgeons (Columbia University), Long Island College Hospital, New York Homeopathic Medical College and Hospital, New York Medical College and Hospital for Women, Eclectic Medical College of the City of New York, Cornell University Medical College, the University and Bellevue Hospital Medical College, and Fordham University School of Medicine, are located in New York City, population 4,113,043. Albany Medical College is located in Albany, a city of 98,537 people. The University of Buffalo Medical Department is situated in Buffalo, population of 381,819. The College of Medicine, Syracuse University, is in Syracuse, a city of 118,880 inhabitants.

### Albany.

**ALBANY MEDICAL COLLEGE.** Lancaster and Jay Streets.—Organized in 1838. The first class graduated in 1839. It became the Medical Department of Union University in 1873. The faculty is composed of 17 professors and 46 lecturers, assistants, etc., a total of 63. The curriculum covers four years of seven and one-half months each. Fees: First year, \$130; second year, \$145; third year, \$120, and fourth year, \$130. The Registrar is Dr. Willis G. Tucker. The total registration for 1907-8 was 180; graduates, 40. The seventy-first session begins Sept. 23, 1908, and ends May 18, 1909.

### Buffalo.

**UNIVERSITY OF BUFFALO MEDICAL DEPARTMENT.** High Street, near Main.—Organized in 1846. The first class graduated in 1847. It absorbed the Medical Department of Niagara University in 1898. The faculty is composed of 39 professors and 50 lecturers, assistants, etc., a total of 89. The course covers four years of eight months each. The tuition is \$125 each year; this does not include laboratory fees. The Dean is Dr. Matthew D. Mann, 37 Allen Street. Total registration for 1907-8 was 176; graduates, 37. The sixty-third session begins Sept. 28, 1908, and ends May 28, 1909.

### New York.

**COLLEGE OF PHYSICIANS AND SURGEONS IN THE CITY OF NEW YORK.** 437 West Fifty-ninth Street.—Organized in 1807 by the regents of the University of the State of New York as their medical department. The first class graduated in 1811. Affiliated with Columbia College in 1814 and was permanently connected in 1860, when it became the Medical Department of Columbia College. That institution became Columbia University in 1891. The faculty is composed of 48 professors and 115 instructors, demonstrators, etc., a total of 163. The work covers four years of eight months each. The Dean is Dr. Samuel W. Lambert. The total fees for the first year are \$225; for the second and third, \$250, and \$275 for the fourth year. Total registration for 1907-8 was 322; graduates, 81. The one hundred and second session begins Sept. 23, 1908, and ends June 6, 1909.

**CORNELL UNIVERSITY MEDICAL COLLEGE.** Ithaca, and First Avenue and Twenty-eighth Street, New York.—Organized in 1898. The first class was graduated in 1889. The work of the first two years may be taken either in Ithaca or New York. The faculty is composed of 48 professors and 133 assistants, lecturers, instructors, etc., a total of 181. In and after 1909 all candidates for admission must have at least such knowledge of physics and inorganic chemistry as may be obtained in college by a year's course in these subjects when accompanied by laboratory work; and in and after 1910 all candidates for admission must also possess a similar knowledge of biology. Fees: First year, \$190; second and third, \$185 each, and \$200 for the fourth year. The Dean is Dr. William M. Polk. Total registration for 1907-8 was 316; graduates, 58. The eleventh session begins Sept. 30, 1908, and ends June 9, 1909.

**ECLECTIC MEDICAL COLLEGE OF THE CITY OF NEW YORK.** 239 East Fourteenth Street.—Organized in 1865. The first class graduated in 1867. It has a faculty of 18 professors and 21 lecturers, demonstrators, etc., 39 in all. The work covers four years of seven months each. The total fees: For each of the first three years, \$125, and \$155 for the fourth year. The Dean is Dr. George W. Boskowitz. Total registration for 1907-8 was 56; graduates, 7. The forty-fourth session begins Sept. 15, 1908, and ends May 15, 1909.

**FORDHAM UNIVERSITY SCHOOL OF MEDICINE.** Third and Pelham Avenues.—Organized in 1905. The faculty consists of 32 professors and 33 lecturers and assistants, a total of 65. The course of instruction covers four years of nine months each. Fees: First year, \$190; second and third years, \$185 each. The Dean is Dr. James J. Walsh. The total registration for 1907-8 was 30. No class has yet been graduated. The fourth session begins Sept. 24, 1908, and ends May 20, 1909.

**LONG ISLAND COLLEGE HOSPITAL.** Henry Street, near Atlantic Avenue, Brooklyn.—Organized in 1858. The first class graduated in 1860. It has a faculty of 9 professors and 90 assistants, instructors, etc., a total of 99. The course covers four years of thirty weeks each. Fees: First year, \$195; second, \$200; third, \$160, and \$195 for the fourth year. The Secretary is Dr. Joseph H. Raymond. Total registration, 1907-8, was 337; graduates, 89. The fifty-first session begins Sept. 28, 1908, and ends May 14, 1909.

**NEW YORK HOMEOPATHIC MEDICAL COLLEGE AND HOSPITAL.** Eastern Boulevard, between Sixty-third and Sixty-fourth Streets.—Organized in 1858. Incorporated in 1860 as the Homeopathic Medical College for the State of New York. The present title was assumed in 1869. The first class graduated in 1861. It has a faculty of 30 professors and 44 lecturers, instructors, etc., 74 in all. The course covers four years of seven months each. Total fees for the first year, \$130; second, \$130; third, \$125, and \$155 for the fourth year. The Secretary is Dr. John W. Dowling, 56 West Fifth Street. Total registration for 1907-8 was 80; graduates, 18. The fifty-first session begins Oct. 6, 1908, and ends May 6, 1909.

**NEW YORK MEDICAL COLLEGE AND HOSPITAL FOR WOMEN.** 17-19 West One Hundred and First Street.—Organized in 1863. The first class graduated in 1864. The Dean is Dr. Helen Cooley Palmer. The total registration for 1907-8 was 20; graduates, 3.

**UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE.** First Avenue and Twenty-sixth Street.—Organized in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. It is the Medical Department of New York University. The faculty is composed of 33 professors and 72 instructors, etc., in all 105. The course covers four years of eighth months each. Fees: First year, \$185; second and third, \$180 each, and \$195 for the fourth year. The Dean is Dr. Egbert Le Fevre. Total registration for 1907-8 was 503; graduates, 88. The eleventh session begins Sept. 30, 1908, and ends June 2, 1909.

### Syracuse.

**SYRACUSE UNIVERSITY COLLEGE OF MEDICINE.** 619 West Genesee Street.—Organized in 1872 as the College of Physicians and Surgeons of Syracuse University. The present title was assumed in 1875. In 1872 Geneva Medical College was merged with it. The first class was graduated in 1873. The faculty is composed of 14 professors and 37 lecturers, instructors, etc., in all 51. The course



covers four years of eight months each. The average total fees for each year are \$167.25. The Dean is Dr. John L. Heffron. The total registration for 1907-8 was 150; graduates, 43. The thirty-seventh session begins Oct. 6, 1908, and ends June 10, 1909.

### NORTH CAROLINA.

North Carolina, population, 2,059,326, has four medical schools, one of which gives only the first two years of the medical course. The Medical Department of the University of North Carolina is located at Chapel Hill, population 1,100, and at Raleigh, population 14,225. The Leonard School of Medicine is at Raleigh. The North Carolina Medical College is at Charlotte, population 22,009. Wake Forest School of Medicine is at Wake Forest, population 823.

#### Chapel Hill and Raleigh.

UNIVERSITY OF NORTH CAROLINA MEDICAL DEPARTMENT.—Organized in 1890. Until 1902 this school gave only the work of the first two years, when the course was extended to four years by the establishment of a department at Raleigh. The first class graduated in 1903. The faculty is composed of 21 professors and 23 lecturers, assistants, etc., a total of 44. It is a member of the Association of American Medical Colleges. Total fees are \$85 per year. Board, room, light and heat may be had for from \$84 to \$102 per college year. The Dean of the Department at Chapel Hill is Dr. G. H. Manning; of the Department at Raleigh, Dr. H. A. Royster. The total registration for 1907-8 was 114; graduates, 12. The nineteenth session begins Sept. 7, 1908, and ends May 29, 1909.

#### Charlotte.

NORTH CAROLINA MEDICAL COLLEGE. Church and Sixth Streets.—Organized in 1887 at Davidson as the Davidson School of Medicine. It was a preparatory school only, not granting any degrees until 1893, when it was chartered under its present name. The first class was graduated in 1893. Removed to Charlotte in 1907. The faculty numbers 24. The course covers four years of eight months each. Fees: First three years, \$85 each, and \$100 for the fourth year. The Dean is Dr. Walter O. Nisbet. The total registration for 1907-8 was 82; graduates, 6. The next session begins Sept. 8, 1908, and ends April 20, 1909.

#### Raleigh.

LEONARD SCHOOL OF MEDICINE.—Colored. This department of Shaw University was established in 1882. Classes were graduated in 1886, 1888 and in all subsequent years. It has a faculty of 10. The course covers four years of seven months each. The total fees for each year are \$75. The dormitory plan is adopted generally, and board and room cost \$2 a week. The Dean is Dr. James McKee. Total registration for 1907-8 was 146; graduates, 43. The 27th session begins Oct. 1, 1908, and ends May 13, 1909.

#### Wake Forest.

WAKE FOREST COLLEGE SCHOOL OF MEDICINE.—This school was organized in 1902. The faculty numbers 10. It only gives the first two years of the medical course, which constitute a part of the course for the B.S. degree. Each annual course extends over nine months. The fees are \$100 each year. The Dean is Dr. Watson S. Rankin. The total registration for 1907-8 was 40. The seventh session begins Sept. 1, 1908, and ends May 25, 1909.

### NORTH DAKOTA.

North Dakota, population 383,226, has one medical college, the College of Medicine of the State University of North Dakota, which is situated at University near Grand Forks.

#### University.

UNIVERSITY OF NORTH DAKOTA COLLEGE OF MEDICINE.—Organized in 1905. The faculty is composed of 5 professors and 13 instructors, a total of 18. The course consists of two years' academic work and two years of medical college subjects, occupying nine months each year. The total fees for each of the medical subject years are \$50. The Dean is M. A. Brannon, A. M. The total registration for 1907-8 was 20. The fourth session begins Sept. 22, 1908, and ends June 17, 1909.

### OHIO.

Ohio, population 4,448,677, has eight medical colleges. Three of these, the Medical Department University of Cincinnati, Eclectic Medical Institute, and Pulte Medical College, are located in Cincinnati, a city of 345,230 inhabitants. Cleveland, population 460,327, contains three medical schools: Western Reserve University Medical College, Cleveland College of Physicians and Surgeons and the Cleveland Homeopathic Medical College. Columbus, population 145,414, contains one medical college, the Starling-Ohio Medical College. Toledo, with 159,980 people, has one medical school, the Toledo Medical College.

#### Cincinnati.

MEDICAL COLLEGE OF OHIO.—This is the Medical Department of the University of Cincinnati, and was organized in 1819. It has a faculty of 28 professors and 33 lecturers and assistants, a total of 61. The course covers four years of eight months each. The lecture fees are \$125 each year; a matriculation fee of \$5, payable but once, and a graduation fee of \$25. Total registration of students for 1907-8 was 117; graduates, 26. The Secretary is Dr. Albert V. Phelps. The next session begins Oct. 1, 1908, and ends June 5, 1909.

MIAMI MEDICAL COLLEGE.—This school was organized in 1852 and has a faculty of 24 professors and 26 lecturers and demonstrators, a total of 50. The curriculum embraces four years of eight months each. The total fees are, for the first year, \$130; for the second and third, \$125, and \$150 for the fourth year. The Dean is Dr. J. C. Oliver, 628 Elm St. The total registration for 1907-8 was 70; graduates, 16. The next session opens Oct. 1, 1908, and closes June 5, 1909.

Note.—The two above colleges have just merged, the new college thus formed to be the Medical Department of the University of Cincinnati. Both colleges will run as co-ordinate schools during 1908-9. The new college will begin operation in the fall of 1909.

ELECTIC MEDICAL INSTITUTE, 1009 Plum Street.—Organized in 1832 at Worthington as the Worthington Medical College. Removed to Cincinnati in 1843. In 1845 it was chartered under its present title. In 1857 the American Medical College, organized in 1839, was merged into it, and in 1859 the Eclectic College of Medicine and Surgery, organized in 1856, merged into it. Classes were graduated in 1833 and in all subsequent years except 1839 to 1843 inclusive. It has a faculty of 15 professors and 10 lecturers and assistants, a total of 25. The course covers four years of thirty-two weeks each. The fees are \$90 for each year. The Dean is Dr. Rolla L. Thomas, 792 East McMillan Street. Total registration for 1907-8 was 91; graduates, 23. The next session begins Sept. 14, 1908, and ends April 28, 1909.

PULTE MEDICAL COLLEGE, Homeopathic, Monnd and Seventh streets.—Organized in 1872. The first class graduated in 1873. The faculty numbers 32. The curriculum covers four years of seven months each. Fees: First year, \$80; for the second and third, \$75 each, and \$100 for the fourth. The Dean is Dr. Charles E. Walton. Total enrolment for 1907-8 was 15; graduates, 1. The 37th session begins Sept. 30, 1908, and ends May 25, 1909.

#### Cleveland.

THE CLEVELAND COLLEGE OF PHYSICIANS AND SURGEONS. Central Avenue and East Fourteenth Street.—Organized in 1863 as Charity Hospital Medical College, became the Medical Department of Wooster University in 1869 and the Medical Department of the Ohio Wesleyan University in 1896, when it assumed its present title. Classes were graduated in 1865 and in all subsequent years except 1881. The faculty is composed of 32 professors, 28 lecturers, assistants, instructors, etc., 60 in all. The total annual fees are \$130. The curriculum covers four years of eight months each. The Dean is Dr. R. E. Skeel, 314 The Osborn. Total registration for 1907-8 was 90; graduates, 20. The next session begins Oct. 1, 1908, and ends May 20, 1909.

CLEVELAND HOMEOPATHIC MEDICAL COLLEGE, Prospect Avenue and Huron Road.—Organized in 1849 as the Western College of Homeopathic Medicine. The first class graduated in 1853. In 1857 it became the Western Homeopathic College and in 1870 it became the Homeopathic Hospital College when the Homeopathic Medical College for Women, organized in 1868, merged into it. In 1894 it became the Cleveland University of Medicine and Surgery, which in 1898 merged with the Cleveland Medical College, organized in 1890, taking the present title. The faculty includes 32 professors and 25 adjuncts, lecturers, etc., 57 in all. The course embraces four years of thirty weeks each. Fees, \$125 per year. The Dean is Dr. George H. Quay. Total number of students registered 1907-8 was 43; graduates, 10. The next session begins Sept. 23, 1908, and ends May 14, 1909.

WESTERN RESERVE UNIVERSITY, MEDICAL DEPARTMENT, St. Clair Avenue and E. Ninth Street.—Organized in 1843 as the Cleveland Medical College. Classes were graduated in 1845 and in all subsequent years excepting 1862 and 1863. It assumed the present title in 1881. The faculty includes 24 professors and 70 lecturers, assistants, etc., a total of 94. The curriculum embraces four years of eight and one-half months each. Three years of college work are required for admission to first year of medical course. The total fees are \$125 for each year. The Dean is Dr. B. L. Millikin, 1110 Euclid Avenue. The total registration for 1907-8 was 104; graduates, 30. The 66th session begins Oct. 1, 1908, and ends June 17, 1909.

#### Columbus.

STARLING-OHIO MEDICAL COLLEGE, Buttles Avenue and Park Street. Organized in 1907 by the union of Starling Medical College (organized 1834) with the Ohio Medical University (organized 1890). The faculty consists of 32 professors and 39 lecturers, demonstrators, etc., a total of 71. The course covers four years of eight months each. Fees, \$100 per year; matriculation fee, \$5; graduation fee \$10. The Dean is Dr. George M. Waters. The total registration for 1907-8 was 209; graduates, 30. The next session begins Sept. 23, 1908, and ends May 18, 1909.

#### Toledo.

TOLEDO MEDICAL COLLEGE, Cherry and Page Streets.—Organized in 1883. The first class graduated in 1883. The curriculum embraces four years of eight months each. The fees are \$75 for each year, with a matriculation fee of \$5, payable once. The Dean is Dr. James Donnelly. The total registration for 1907-8 was 29; graduates, 3. The next session begins Oct. 1, 1908, and ends June 1, 1909.

### OKLAHOMA.

Oklahoma, population 1,109,435, has two medical schools, the School of Medicine of the University of Oklahoma, which is located at Norman, a city of 3,040 inhabitants, and the College of Medicine of Epworth University, located at Oklahoma City, which has a population of 20,990.

#### Norman.

SCHOOL OF MEDICINE, UNIVERSITY OF OKLAHOMA.—Organized in 1903. Gives only the first two years of the medical course and does not grant degrees. The session extends over a period of nine months. The faculty numbers 12. Two courses are offered, one covering two years, at the completion of which a certificate is given; the other a combined course of four years, leading to the degree of B.S. Students are encouraged to take the latter course. The Acting Dean



is Dr. C. S. Bobo. The total registration for 1907-8 was 8. The sixth session begins Sept. 15, 1908, and ends June 10, 1909.

#### Oklahoma City.

COLLEGE OF MEDICINE OF EPWORTH UNIVERSITY.—Organized in 1904. The first class graduated in 1907. The faculty numbers 39. The course of study covers four years of seven and a half months each. The total fees are \$100 each year. The Dean is Dr. A. K. West. The registration for 1907-8 was 21; graduates, 2. The fifth session begins Oct. 2, 1908, and ends May 10, 1909.

#### OREGON.

Oregon, population 474,738, has two medical colleges: The Medical Department of Willamette University, located in Salem, a city of 7,287 people, and the University of Oregon Medical Department, in Portland, a city of 109,884 population.

#### Portland.

UNIVERSITY OF OREGON, MEDICAL DEPARTMENT. Lovejoy and Twenty-third Streets.—Organized in 1887. The first class graduated in 1888. It has a faculty of 14 professors and 25 lecturers, assistants, etc., a total of 39. The course is four years of seven and one-half months each. Fees: First year, \$142.50; second, \$137.50; third, \$107.50, and for the fourth, \$57.50. The Dean is Dr. Simeon E. Joseph. The total registration for 1907-8 was 88; graduates, 20. The 22d session begins Sept. 14, 1908, and ends May 2, 1909.

#### Salem.

MEDICAL DEPARTMENT WILLAMETTE UNIVERSITY.—Organized in 1865 at Salem. Classes were graduated in 1867 and in all subsequent years except 1896. It moved to Portland in 1878, but returned to Salem in 1895. The Dean is Dr. W. H. Byrd. The total registration for 1907-8 was 35; graduates, 10. The next session begins Oct. 5, 1908, and ends May 15, 1909.

#### PENNSYLVANIA.

Pennsylvania, population 6,928,515, has seven medical colleges. Of these Philadelphia, having a population of 1,441,735, contains six, as follows: University of Pennsylvania, Department of Medicine, Jefferson Medical College, Hahnemann Medical College, Woman's Medical College of Pennsylvania, Medico-Chirurgical College of Philadelphia and Temple College Department of Medicine. The other school, the Western Pennsylvania Medical College, is situated in Pittsburg, a city of 375,082 people.

#### Philadelphia.

UNIVERSITY OF PENNSYLVANIA, DEPARTMENT OF MEDICINE. Thirty-sixth Street and Hamilton Walk.—Organized in 1765. Classes were graduated in 1768 and in all subsequent years except 1772-79 inclusive. The original title was the Department of Medicine, College of Philadelphia, which was changed to the present title in 1791. It granted the first medical diploma issued in America. The faculty is made up of 27 professors, 2 associate professors, 4 adjunct professors, 7 assistant professors, 112 demonstrators, lecturers, associates, instructors, etc., a total of 152. The requirements for admission will be increased, beginning with the session of 1908-9, to the equivalent of one year's work in a college of arts. The course embraces study of four years of nine months each. The total fees for each year are \$200, with a matriculation fee of \$5 for the first year. The Dean is Dr. Charles H. Frazier. Total registration for 1907-8 was 604; graduates, 142. The next session begins Sept. 25, 1908, and ends June 16, 1909.

JEFFERSON MEDICAL COLLEGE. Tenth and Walnut streets.—Organized 1825 as the Medical Department of Jefferson College, Canonsburg. The first class graduated in 1826. The present title was assumed in 1838. It has a faculty of 29 professors and 106 lecturers, demonstrators, etc., a total of 135. The course of study covers graded work of four years of eight months each. An optional fifth year is offered. The tuition is \$180 a year, with a matriculation fee of \$5, paid but once. The Dean is Dr. James W. Holland. The total registration for 1907-8 was 693; graduates, 126. The 84th session begins Sept. 24, 1908, and ends June 8, 1909.

MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA. Cherry Street between Seventeenth and Eighteenth Streets.—Organized in 1881. The first class graduated in 1882. The faculty is composed of 31 professors and 64 lecturers, assistants, etc., a total of 95. The work embraces four years of eight months each. An optional preliminary year devoted to physics, chemistry and biology is offered. Fees, \$150 per year; matriculation, \$5, payable once. The Dean is Dr. Seneca Egbert. The total registration for 1907-8 was 419; graduates, 66. The 28th session begins Sept. 23, 1908, and ends June 5, 1909.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA. Twenty-first and N. College Ave.—Organized in 1850. Classes were graduated in 1851 and in all subsequent years except 1861 and 1862. It has a faculty of 10 professors and 40 assistants, lecturers, etc., in all 50. The curriculum covers four years of eight months each. Fees: \$140 each year. The Dean is Dr. Clara Marshall. The total registration for 1907-8 was 138; graduates, 32. The 59th session begins Sept. 23, 1908, and ends May 26, 1909.

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL.—Organized in 1848 as the Homeopathic Medical College of Pennsylvania. In 1869 it united with the Hahnemann Medical College of Philadelphia, taking the present title. The first class graduated in 1849. It has a faculty of 28 professors and 45 lecturers, instructors, etc., in all 73. The work covers four years of eight months each. Fees: For each year, \$150; matriculation, \$5. The Dean is Dr. Herbert L. Northrop. The total registration for 1907-8 was 168; graduates, 37. The sixty-first session begins Sept. 21, 1908, and ends June 2, 1909.

THE TEMPLE COLLEGE, DEPARTMENT OF MEDICINE. Eighteenth and Buttonwood Streets.—Organized in 1901. The first class graduated in 1904. The faculty numbers 64. It gives a four-year day

course and a five-year evening and day course. Three years of evening work will be required to cover the work of the two first years of the day course. All junior and senior work must be done in day classes. The fees are \$150 per year. The Dean is Dr. I. Newton Snively. The total registration for 1907-8 was 134; graduates, 8. The eighth session begins Sept. 14, 1908, and ends June 15, 1909.

#### Pittsburg.

WESTERN PENNSYLVANIA MEDICAL COLLEGE. Brereton Avenue and Thirtieth Street.—Organized in 1886. The first class graduated in 1887. The faculty is composed of 40 professors and 80 associates, assistants, etc., 120 in all. The course of study embraces four years of nine months each. The total fees are \$150 for each year. The Dean is Dr. J. C. Lange. The total registration for 1907-8 was 362; graduates, 57. The Twenty-fifth session begins Oct. 1, 1908, and ends June 15, 1909.

#### PHILIPPINE ISLANDS.

#### Manila.

UNIVERSITY OF ST. THOMAS, MEDICAL DEPARTMENT.—The University was founded by a papal decree in 1587, and the medical school was added in 1771. The faculty consists of 19 professors. The course extends over a period of six years of nine months each. The first year is a preparatory one, devoted to the teaching of physics, chemistry and biology. The degree of licenciado is conferred at the conclusion of the fifth year, and the degree of doctorado at the end of the sixth year, during which only special work is done. This last year is optional, the degree of licenciado entitling the holder to all the rights and privileges of the medical practitioner. The degree is equivalent to the English M.B. The Rector of the university is Dr. Fr. Raymundo Vetasquez; the Secretary of the Medical Department is Lic. Blas C. Alcuaz.

PHILIPPINE MEDICAL COLLEGE.—Organized in 1907 under the support of the Philippine Commission. The requirements for admission conform to the standards in the United States and Great Britain. The Secretary is Dr. Harry T. Marshall.

#### SOUTH CAROLINA.

South Carolina, population 1,453,318, has one medical college, situated in Charleston, a city of 56,317 people.

#### Charleston.

THE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA.—Founded in 1823 as the Medical College of South Carolina. In 1832 it was chartered with the present title. Classes were graduated in 1825 and in all subsequent years except 1861 to 1865 inclusive. It has a faculty of 10 professors and 18 lecturers, instructors, etc., a total of 28. The course covers four years of seven months each. The total fees for each of the first two years are \$100, and \$75 each for the last two. The Dean is Dr. Allard Memminger. Total enrollment for 1907-8 was 153; graduates, 17. The eighty-sixth session begins Oct. 1, 1908, and ends April 10, 1909.

#### SOUTH DAKOTA.

South Dakota, population 465,908, has one medical college, the University of South Dakota, College of Medicine, located at Vermilion, a city of 2,183 people.

#### Vermilion.

UNIVERSITY OF SOUTH DAKOTA, COLLEGE OF MEDICINE.—Organized in 1907. Offers only the first two years of the medical course. Two years of work in a college of liberal arts is required for admission. The faculty numbers 7. The Dean is Christian P. Lomen, B. S. The total registration for 1907-8 was 3. The second session begins Sept. 14, 1908, and ends June 10, 1909.

#### TENNESSEE.

Tennessee, population 2,172,476, has eleven medical colleges. Of these Vanderbilt University Medical Department, the Medical Department of the University of Nashville, University of Tennessee Medical Department and Meharry Medical College are situated in Nashville, a city with a population of 84,703. Knoxville, population 36,051, contains two colleges, Tennessee Medical College and Knoxville Medical College. Chattanooga Medical College is situated in Chattanooga, a city of 34,297 people. Memphis Hospital Medical College, the College of Physicians and Surgeons and the University of West Tennessee are located in Memphis, population 125,235. The other school, the Medical Department of the University of the South, is located at Sewanee, a town of 500 people.

#### Chattanooga.

CHATTANOOGA MEDICAL COLLEGE.—McCallie and Baldwin Streets. Organized in 1889. The first class graduated in 1890. It is the Medical Department of Grant University. The faculty consists of 11 professors and 12 instructors, demonstrators, etc., total 23. The course covers four years of seven months each. The total fees approximate \$55 each session. The Dean is Dr. J. R. Rathmell. The total registration for 1907-8 was 262; graduates, 25. The twentieth session begins Sept. 23, 1908, and ends April 26, 1909.

#### Knoxville.

TENNESSEE MEDICAL COLLEGE. Cleveland Street and Dameron Avenue.—Organized in 1889. The first class graduated in 1890. It has a faculty of 18 professors and 6 assistants, a total of 24. The curriculum covers four years of seven months each. Fees: First and second years, \$50; third and fourth years, \$60; matriculation



fee, \$5; graduation fee, \$25. The Registrar is Dr. E. R. Zamp. The total registration for 1907-8 was 83; graduates, 17. The twentieth session begins Oct. 1, 1908, and ends May 1, 1909.

**KNOXVILLE MEDICAL COLLEGE.** Colored. Clinton and McGhee Streets. Organized in 1900. Classes were graduated in 1900 and in all subsequent years except 1906 and 1907. The Secretary is Dr. H. M. Green, Famous Building. There were 23 students and 4 graduates for the session of 1907-8.

#### Memphis.

**COLLEGE OF PHYSICIANS AND SURGEONS.** Opposite City Hospital. Organized in 1906. The first class graduated in 1907. It has a faculty of 52. The Memphis City Hospital furnishes clinical material. Access will also be had to St. Joseph's, Presbyterian and Lucy Brinkley hospitals. The course covers four years of seven months each. The Dean is Dr. Heber Jones. The total registration for 1907-8 was 69; graduates, 15. The third session begins Oct. 1, 1908, and ends May 1, 1909.

**MEMPHIS HOSPITAL MEDICAL COLLEGE.** Marshall Avenue and Myrtle Street.—Organized in 1880. The first class graduated in 1881. It has a faculty of 11 professors and 21 lecturers, instructors, etc., a total of 32. The course covers four years of seven months each. The total fees for the first three years are \$75; for the fourth \$100. The Dean is Dr. W. B. Rogers. Total registration for 1907-8 was 386; graduates, 83. The twenty-ninth annual session will begin Oct. 1, 1908, and close April 30, 1909.

**MEDICAL DEPARTMENT OF THE UNIVERSITY OF WEST TENNESSEE.** Colored. Orleans Street.—Organized in 1900. It has a faculty of 20. The course is four years of seven months each. The fees are \$40 per year; graduation, \$10 extra. The Dean is Dr. M. V. Lynk. Registration for 1907-8 was 35; graduates, 9. The next session begins Sept. 14, 1908, and ends April 14, 1909.

#### Nashville.

**VANDERBILT UNIVERSITY, MEDICAL DEPARTMENT.** Elm Street and Fifth Avenue.—This school was founded in 1874. The first class graduated in 1875. The present faculty of 39 consists of 19 professors and 20 lecturers. The course covers four years of seven and a half months each. The total fees are \$125 each year. The Dean is Dr. William L. Dudley. The total registration for 1907-8 was 207; graduates, 40. The thirty-fifth session begins Sept. 16, 1908, and ends May 1, 1909.

**UNIVERSITY OF NASHVILLE, MEDICAL DEPARTMENT.** Second Avenue and Elm Street.—Organized in 1850. The first class graduated in 1852. It has a faculty of 10 professors and 20 lecturers, assistants, etc., in all 30. The course of study covers four years of seven and a half months each. The tuition for each of the four years is \$75. The Dean is Dr. William G. Ewing. The total registration for 1907-8 was 302; graduates, 67. The fifty-ninth session begins Sept. 15, 1908, and ends April 30, 1909.

**UNIVERSITY OF TENNESSEE, DEPARTMENT OF MEDICINE.**—Organized in 1876 as the Nashville Medical College. In 1880 it became known by its present title. The first class graduated in 1877. The faculty is composed of 12 professors and 14 lecturers, assistants, etc., 26 in all. The course covers four years of seven and a half months each. The total fees for each of the first three years are \$100 and \$125 for the fourth year. The Dean is Dr. Hilliard Wood. The total registration for 1907-8 was 137; graduates, 40. The thirty-second session begins Sept. 15, 1908, and ends May 1, 1909.

**MEHARRY MEDICAL COLLEGE.** Colored. Maple and Chestnut Streets.—This school was organized in 1876 and is the Medical Department of Walden University. The faculty is made up of 12 professors and 12 instructors, demonstrators, etc., 24 in all. The work embraces four years of seven months each. The total fees are for the first year, \$52; second and third years, \$55 each, and \$60 for the fourth year. The Dean is Dr. G. W. Hubbard. Total registration for 1907-8 was 285; graduates, 78. The thirty-third session begins Sept. 9, 1908, and ends April 6, 1909.

#### Sewanee.

**MEDICAL DEPARTMENT OF THE UNIVERSITY OF THE SOUTH.**—This school was organized in 1892 and has a faculty of 21 members. The curriculum covers four years of seven months each. The Dean is Dr. J. S. Cain. Total registration for 1907 was 99; graduates, 31. The seventeenth session begins April 1, 1909, and ends Oct. 31, 1909.

#### TEXAS.

Texas, population 3,536,618, has five medical colleges. The University of Texas Department of Medicine is located at Galveston, a city of 34,355 inhabitants. The Medical Department of Fort Worth University is at Fort Worth, population 27,096. The Baylor University College of Medicine, the Medical Department of Southwestern University and the College of Physicians are situated in Dallas, population 52,793.

#### Dallas.

**BAYLOR UNIVERSITY COLLEGE OF MEDICINE.** 435-37 South Ervay Street.—Organized in 1900 as the University of Dallas, Medical Department. In 1903 it took its present name and became the Medical Department of Baylor University at Waco. It acquired the charter of Dallas Medical College in 1904. The first class graduated in 1901. The faculty numbers —. The course covers four years of seven months each. The fees are \$75 for each of the four years, with a matriculation fee of \$5, paid once, and a graduation fee of \$25. The Dean is Dr. E. H. Cary. Total registration for 1907-8 was 62; graduates, 11. The ninth session begins Oct. 1, 1908, and ends May 1, 1909.

**SOUTHWESTERN UNIVERSITY MEDICAL COLLEGE.**—Organized in 1903. The first class graduated in 1904. It has a faculty of 15 professors and 13 instructors, total 28. The course of instruction covers four years. The fees are: Matriculation, \$5, paid once; annual tuition, \$75; graduation, \$25. The Dean is Dr. John O. McReynolds. Total registration for 1907-8 was 63; graduates, 9. The sixth session begins Oct. 1, 1908, and ends April 30, 1909.

**COLLEGE OF PHYSICIANS AND SURGEONS.** 108-110 North Ervay Street.—Organized in 1903 as the Bell Medical College. Name

changed to the above in 1906. The first class graduated in 1901. The Dean is Dr. Arthur C. Bell. The Texas State Board of Medical Examiners reports that this college is not in good standing.

#### Fort Worth.

**MEDICAL DEPARTMENT OF FORT WORTH UNIVERSITY.** Calloun and Fifth Streets.—Organized in 1894. The first class graduated in 1895. It has a faculty of 14 professors and 20 lecturers, assistants, etc., in all 34. The course covers four years of seven months each. The total fees for each of the first three years are \$75 and \$100 for the fourth year. The Dean is Dr. W. R. Thompson. The total registration for 1907-8 was 108; graduates, 9. The fifteenth session begins Oct. 6, 1908, and ends May 6, 1909.

#### Galveston.

**UNIVERSITY OF TEXAS, DEPARTMENT OF MEDICINE.** Avenue B and Ninth Street.—Organized in 1891. The first class graduated in 1892. It has a faculty of 10 professors and 19 lecturers. The curriculum embraces four years of eight months each. Fees: First year, \$50; second and third, each \$20, and \$5 for the fourth. The Dean is Dr. William S. Carter. Total registration for 1907-8 was 198; graduates, 25. The eighteenth session begins Oct. 1, 1908, and ends May 29, 1909.

#### UTAH.

Utah, population 316,331, has one medical college, the Medical Department of the University of Utah, situated at Salt Lake City, which has 61,202 people.

#### Salt Lake City.

**UNIVERSITY OF UTAH, DEPARTMENT OF MEDICINE.**—Organized in 1906. Gives only the first two years of the medical course. Each course covers thirty-six weeks. The medical faculty consists of 7 professors and 16 lecturers and assistants, a total of 23. Fees: First year, total \$62.50; second year, \$68.75. The Dean is Byron Cummings, A.M. The third session begins Sept. 14, 1908, and ends June 2, 1909.

#### VERMONT.

Vermont, population 350,373, has one medical school, located at Burlington, a town of 21,070 people.

#### Burlington.

**UNIVERSITY OF VERMONT COLLEGE OF MEDICINE.** Pearl Street, College Park.—Organized with complete course in 1822. Classes graduated in 1823 to 1836, inclusive, when the school was suspended. It was reorganized in 1853 and classes were graduated in 1854 and in all subsequent years. The faculty consists of 31 professors and 15 assistants, instructors, etc., in all 46. The course of study covers four years of seven months each. The total fees for each of the first three years are \$115 and \$140 for the fourth year. The Dean is Dr. H. C. Tinkham; Secretary, H. L. White, A.M. Total registration for 1907-8 was 142; graduates, 33. The next session begins Nov. 11, 1908, and ends June 24, 1909.

#### VIRGINIA.

Virginia, population 1,973,104, has three medical colleges, one the Medical Department of the University of Virginia, situated in Charlottesville, population 6,449, and two, the Medical College of Virginia and the University College of Medicine, in Richmond, population 87,246.

#### Charlottesville.

**UNIVERSITY OF VIRGINIA, DEPARTMENT OF MEDICINE.**—Organized in 1827. Classes were graduated in 1828 and in all subsequent years, except 1865. It has a faculty of 15 professors and 14 lecturers, instructors, assistants, etc., a total of 29. The requirements for admission are the completion of a three years' high school course or its equivalent, and a year of chemistry, physics, and biology. Fees: First year, \$150; second year, \$140; third year, \$120; fourth year, \$100. The Dean is Dr. R. H. Whitehead. The total registration for 1907-8 was 106; graduates, 22. The next session begins Sept. 10, 1908, and ends June 16, 1909.

#### Richmond.

**MEDICAL COLLEGE OF VIRGINIA.** Marshall and College Streets.—Organized in 1838 as the Medical Department of Hampden Sydney College. Present title was taken in 1854. Classes were graduated in 1840 and in all subsequent years. It has a faculty of 16 professors and 36 lecturers, instructors, etc., a total of 52. The requirement for admission is a full four-year high school education. The course embraces four years of eight months each. Fees: \$100 each year; graduation fee, \$30. The Dean is Dr. Christopher Tompkins. Total registration for 1907-8 was 215; graduates, 38. The seventy-first session begins Sept. 15, 1908, and ends May 19, 1909.

**UNIVERSITY COLLEGE OF MEDICINE.** Eleventh and Clay Streets.—Organized in 1893. The first class graduated in 1894. It has a faculty of 19 professors, 43 lecturers, assistants, etc., a total of 62. The curriculum covers four years of eight months each. The total fees are \$100 for each year. The President is Dr. Stuart McGuire; the Dean is Dr. Paulus A. Irving. The total registration for 1907-8 was 158; graduates, 43. The sixteenth session begins Sept. 15, 1908, and ends May 18, 1909.

#### WEST VIRGINIA.

West Virginia, population 1,076,406, has one medical college, College of Medicine of the West Virginia University, located at Morgantown, a city of 3,900 inhabitants.



Morgantown.

WEST VIRGINIA UNIVERSITY COLLEGE OF MEDICINE.—Organized in 1902. Gives only the first two years of the medical course. Each college term extends over nine months. The faculty consists of 6 professors and 5 assistants, 11 in all. Tuition to students residing in the state, \$25; for others, \$50 per year. The Dean is Dr. J. N. Simpson. Total registration for 1907-8 was 43. The seventh session begins Sept. 21, 1908, and ends June 15, 1909.

WISCONSIN.

Wisconsin, population 2,260,930, has three medical colleges, the Medical Department of the University of Wisconsin, which teaches the first two years of the medical course, and is located at Madison, a city having a population of 25,128, and the Milwaukee Medical College and Wisconsin College of Physicians and Surgeons, situated in Milwaukee, a city of 317,903 people.

Madison.

UNIVERSITY OF WISCONSIN COLLEGE OF MEDICINE.—Organized in 1907. Gives only the first two years of the medical course. For matriculation a candidate must have had in addition to a four-year high school course at least two years in a college of arts and science or an equivalent training. Two years of Latin, a reading knowledge of French and German, and at least a year's work in physics, chemistry and biology are specifically required. It has a faculty of 23 professors and 25 lecturers, instructors, etc., a total of 48. The Dean is Dr. Charles R. Bardeen. The registration for 1907-8 was 26. The second session begins Oct. 1, 1908, and ends June 18, 1909.

Milwaukee.

MILWAUKEE MEDICAL COLLEGE. Medical Department of Marquette University. Ninth and Wells Streets.—Organized in 1894. The first class graduated in 1895. It became the Medical Department of Marquette University in 1907. It has a faculty of 31 professors and 22 lecturers, instructors, etc., a total of 53. The course covers four years of eight months each. The total fees are \$130 each for the first three years and \$145 for the fourth year. The Dean is Dr. Warren B. Hill. The total registration for 1907-8 was 147; graduates, 43. The fifteenth session begins Oct. 1, 1908, and ends June 1, 1909.

WISCONSIN COLLEGE OF PHYSICIANS AND SURGEONS. Fourth Street and Reservoir Avenue.—Organized in 1893. The first class graduated in 1894. It has a faculty of 20 professors and 29 lecturers, instructors, etc., a total of 49. The curriculum includes four years of eight months each. Fees: Matriculation, paid once, \$5; general ticket, \$120. The Secretary is Dr. J. C. Phillips. The total registration for 1907-8 was 58; graduates, 9. The seventeenth session begins Sept. 29, 1908, and ends May 27, 1909.

THE AMERICAN MEDICAL ASSOCIATION STANDARDS OF MEDICAL EDUCATION.

The Ideal Standard.

The ideal standard to be aimed at from the present viewpoint should consist of: (A) Preliminary education sufficient to enable the candidate to enter our recognized universities, such qualifications to be passed on by the state authorities. (B) A course of at least one year to be devoted to physics, chemistry and biology, such arrangements to be made that this year could be taken either in a college of liberal arts or in the medical school. (C) Four years in pure medical work, the first two of which should be spent largely in laboratories of anatomy, physiology, pathology, pharmacology, etc., and the last two in close contact with patients in dispensaries and hospitals in the study of medicine, surgery, obstetrics and the specialties. (D) A sixth year as an interne in a hospital or dispensary should then complete the medical course.

Under such a scheme the majority of men would begin the study of medicine between 18 and 19 years of age, and would graduate from the hospital interneship at from 24 to 25. A college education is recognized as a desirable preparation for a limited number of men, but it is thought that it is not and never will be desirable to make such college education a requirement to the study of medicine, as it would make the age of graduation from 27 to 28 years, which is regarded as too old a period at which the young medical man should begin his life's work.

Standard Now Recommended.

The minimum standard now recommended prerequisite to the practice of medicine is as follows:

1. (a) The preliminary requirement to be a four-year high school education or its equivalent, such as would admit the student to one of our recognized universities; (b) and in addition (as soon as conditions warrant), a year of not less than nine months, devoted to the study of physics, chemistry, biology and one modern language, preferably German, to be taken either in a college of liberal arts or in a recognized medical college having a preliminary year devoted exclusively to the subjects mentioned.

2. There should be a requirement that previous to matriculation in a medical college every student must secure from the State Examining Board a "medical student's entrance certificate," which would be issued either on presentation of credentials of preliminary education not less than that laid down by requirement one, or on passing an examination given by the Board and which will satisfy the Board that the student has an equivalent education.

3. A medical training in a medical college, having four years of not less than thirty weeks each year, exclusive of holidays, of thirty hours per week of actual work.

4. Graduation from an approved medical college required to entitle the candidate to an examination before a state examining board.

5. The passing of a satisfactory examination before a state examining board.

A Medical College in Good Standing.

Below is a schedule of the minimum requirements, laboratory equipment and clinical facilities which should obtain in a medical college before it can be considered as giving a satisfactory course or be determined as a medical college in good standing:

I. REQUIREMENTS.

1. *Matriculation.*—For matriculation the medical college should require of each student:

(1) A certificate of good moral character, signed by two reputable physicians of the state in which the applicant resides; and,

(2) As evidence of satisfactory preliminary education, a medical student's matriculation certificate, issued by the state board of medical examiners or its authorized agent, this certificate to be issued on (A) acceptable credentials, or (B) on successfully passing a preliminary examination.

*A. Acceptable Credentials.*—(a) A degree from an accredited university or college of arts or science; or,

(b) A diploma from an accredited four-year high school, normal school or academy which required for admission eight years of study in the primary and intermediate grades and which furnished a preliminary education of at least 15 units (30 points or credits, or 75 counts), as given in the following outline:

STATEMENT OF ACADEMIC OR SECONDARY WORK FOR ADMISSION TO MEDICAL COLLEGE BY CREDENTIALS OR EXAMINATION.

REQUIRED BRANCHES.

	Units.	Points.	Counts.
Rhetoric and composition.....	1	2	5
History of English and American literature	1	2	5
Algebra, through quadratics.....	1	2	5
Geometry, plane .....	1	2	5
Latin, grammar and 4 books of Caesar or equivalent .....	2	4	10
U. S. History and Civics.....	1	2	5
Physics, with laboratory work.....	1	2	5
Total .....	8	16	40

ELECTIVE BRANCHES.

Seven units, 14 points or credits, or 35 counts to be selected from the following subjects. Not more than 2 units, 4 points or credits or 10 counts from any one group:

	Units.	Points.	Counts.
Group 1: English Classics (College Entrance Examining Board list).....	2	4	10
Group 2: Geometry, solid .....	.5	1	2.5
Trigonometry .....	.5	1	2.5
Group 3: Latin, Cicero (7 orations).....	1	2	5
Latin, Virgil (6 books).....	1	2	5
Group 4: German, grammar with 2 years' certified work .....	2	4	10
French, grammar with 2 years' certified work .....	2	4	10
Spanish, grammar with 2 years' certified work .....	2	4	10
Group 5: History, Greece and Rome.....	1	2	5
History, medieval and modern.....	1	2	5
History, England, half year's work.....	.5	1	2.5
History, France, half year's work.....	.5	1	2.5
Group 6: Biology, with laboratory work.....	1	2	5
Botany, with laboratory work.....	.5	1	2.5
Zoology, with laboratory work.....	.5	1	2.5
Physiology and Hygiene, with laboratory work .....	1	2	5
Group 7: Chemistry, with laboratory.....	1	2	5
Total .....	18	36	90



A *unit* is the credit value of 36 weeks' work of 5 recitation periods per week, each recitation period to be of not less than 45 minutes.

A *point* is the credit value of 18 weeks' work of 5 recitation periods per week, each recitation period to be of not less than 45 minutes.

A *count* is the credit value of one recitation period per week of not less than 45 minutes through 36 weeks.

It is urged that within a reasonable time the minimum requirements as given in paragraph (b) will be enlarged to include an additional year in university physics, chemistry, biology and a reading knowledge of at least one modern language, preferably German or French.

**B. Preliminary Examination.**—The preliminary examination should be taken before the board of medical examiners or its authorized agent, and should represent the work of 15 units (30 points or credits or 75 counts) in accordance with the above outline. Under no circumstances must this examination be given by any one connected with the medical college.

Later, when the requirement is considered reasonable, university courses in physics, chemistry, biology and modern languages should be required in this examination.

**2. Medical Education.**—The medical college should give a strictly graded course covering four years of not less than thirty weeks each year, exclusive of holidays. Each year should cover not less than thirty hours per week of scheduled classroom work in lectures, recitations, laboratory and clinical work. At least forty-two calendar months should elapse between the dates of matriculation and graduation. The complete course should approximate 3,600 hours and include:

(a) Two years of study, consisting largely of laboratory work in anatomy, histology, embryology, physiology, chemistry, pharmacology, physiologic chemistry, bacteriology and pathology.

(b) Two years of clinical work largely in hospitals and dispensaries, with thorough courses in internal medicine (including physical diagnosis, pediatrics, nervous and mental diseases), surgery (including surgical anatomy and operative surgery on the cadaver), obstetrics, gynecology, materia medica, pharmacology, laryngology, rhinology, ophthalmology, otology, dermatology, hygiene and medical jurisprudence. There should also be a laboratory course in clinical microscopy, including hematology, and the hospital courses should be accompanied by work in properly equipped clinical laboratories.

**3. Advanced Standing.**—(a) Advanced standing may be granted to the extent of three years of work taken at other recognized colleges.

(b) In giving advanced standing the college should not discriminate against its own full-course students. It is meant by this that students should not be given full standing when they come from colleges not giving equivalent courses.

(c) Before granting any advanced standing the dean or secretary of the school to which the student seeks admission should obtain from the corresponding officer of the school from which the student comes a full statement of his credentials, so far as preliminary and medical education is concerned, together with the standing of the student in each course he has taken.

**4. Graduation.**—The medical college should require of each student before graduation:

(a) Compliance with the above given requirements of preliminary and medical education.

(b) An attendance of at least 80 per cent. on each course of instruction above mentioned.

(c) The passing of a final examination in each course of instruction above mentioned with a percentage of at least 75.

(d) The individual dissection of at least one lateral half of a human cadaver.

(e) The individual attendance on and management of at least two maternity cases.

(f) The work of at least the fourth or senior year must be taken in the medical college granting the degree.

## II. EQUIPMENT AND FACILITIES.

**1. Buildings.**—The medical college buildings should be well lighted, sanitary and commodious, with ample space for laboratories, amphitheaters, examining, lecture, recitation and special research rooms, as well as storage rooms and a suitable place for such animals as are used in experimental work.

**2. Laboratories.**—There should be well-equipped laboratories for practical anatomy, histology, embryology, physiology, chemistry, physiologic chemistry, pharmacology, bacteriology and pathology, and these laboratories should be officered by trained instructors paid to devote their entire time to the preparation of materials used in instruction and to teaching

and research. By a well-equipped laboratory is understood a laboratory provided with all the microscopes and other apparatus necessary to enable each student to carry on the work of that department intelligently and successfully.

**3. Hospitals, Dispensaries and Clinical Facilities.**—(a) The main hospital and dispensary should be in close proximity to the college building, of easy access to the students, and should be under the control of the college at least so far as clinical material is concerned.

(b) The hospital material available for clinical purposes should be in proportion to a daily average of at least 200 patients to 100 students in the senior class.

(c) The dispensary material should be carefully classified and properly used.

**4. Library, Museum, Charts, Etc.**—(a) Library: The medical college should have a working medical library, including the more recent text and reference books, as well as ten or more of the chief medical periodicals. This library room should be easily accessible to the students, should be provided with suitable tables and chairs, and should have an attendant in charge.

(b) Museum: There should be a medical museum having its various anatomic, embryologic, pathologic and other specimens carefully prepared, labeled and indexed in order that any specimen may be easily found and employed for teaching purposes. The value of the pathologic collection could be greatly augmented by having slides showing the microscopic findings in each case carefully prepared, labeled, indexed and kept easily accessible. Clinical records of these cases should also be drawn up, indexed and filed for easy reference.

(c) Charts, Models, Stereopticons, Etc.—The medical college should have a supply of anatomic charts, embryologic models and other apparatus, such as a stereopticon or a reflectoscope, as well as microphotographic, Roentgen ray or other apparatus, which would be of service in the teaching of medicine.

## III. CONDUCT OF THE COLLEGE.

1. The medical college should literally observe its published requirements for admission, tuition, time of attendance on the sessions and graduation, which it should definitely set forth, together with complete lists of its matriculates and annual graduates, in regular annual catalogues or announcements.

2. New medical colleges may be recognized on application if on examination they are found to comply with the above requirements.

## THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

The requirements for admission to and graduation from colleges holding membership are as follows:

**Preliminary Education:** (a) A bachelor's degree from an approved college or university. (b) A diploma from an accredited high school, normal school or academy requiring for admission evidence of the completion of an eight-year course in primary and intermediate grades, and for graduation not less than four years of study embracing not less than two years (4 points) of English, two years (4 points) of mathematics, two years (4 points) of Latin, one year (2 points) of history, one year (2 points) of physics, and six years (12 points) of further credit in language, literature, history or science. (c) An examination in the following branches, totaling 30 points: A. Required (16 points): Mathematics (4 points), English (4 points), History (2 points), Latin (4 points), Physics (2 points).

B. Elective (14 points): English language and literature, 4 points; language, German, French, Spanish or Greek, in each not less than 2 points; solid geometry and trigonometry ( $\frac{1}{2}$  year each), 2 points; biology (one year) or botany and zoology ( $\frac{1}{2}$  year each), 2 points; chemistry (1 year), 2 points; physical geography and geology ( $\frac{1}{2}$  year each), 1 point; physiology and hygiene ( $\frac{1}{2}$  year each), 1 point; astronomy ( $\frac{1}{2}$  year), 1 point; drawing ( $\frac{1}{2}$  year), 1 point. One point in any subject in a high school or academic course demands not less than five periods of forty-five minutes each for eighteen weeks. (d) Certificates from reputable instructors recognized by any state board of medical examiners duly authorized by law or by the superintendents of public instruction in states having no board of examiners, may be accepted in lieu of any part of this examination. This examination must be conducted by or under the authority of the board of examiners or of the superintendent of public instruction of the city or state in which the college is located. In no case shall it be conducted by any person connected with the faculty, medical or otherwise, of the institution to which the student is seeking admission.

A student may be allowed to enter on his medical work conditioned in not more than six points, and these conditions must be removed by satisfactory examination before he is allowed to enter on the second year of his medical course.

**Advanced Standing:** Colleges in membership in this Association may honor the official credentials presented by students from other colleges having the standard requirements maintained by members of this Association, excepting for the fourth year of their course, but no member shall admit a student to advanced standing without first communicating with the college from which such student desires to withdraw, and receiving from the dean of such college a

(Continued on page 590.)



NAME AND LOCATION OF COLLEGE.	Population of city in which college is located. (Census Bureau estimate, 1906.)	Number of students registered, session of 1907-8		Graduates 1908.		Total number of teachers.	Weeks in college year.	Total students in all colleges in state, 1907-8.	Total graduates all colleges in state, 1908.
		Men.	Women	Men.	Women				
<b>ALABAMA</b>								303	41
Birmingham Medical College, Birmingham.—R.	45,869	134		16		35	28		
Medical College of Alabama, Mobile.—R.	42,903	169		25		21	28		
<b>ARKANSAS</b>								264	34
Arkansas University, Little Rock.—R.	39,959	175	2	19	0	28	28		
College of Physicians and Surgeons, Little Rock.—R.	39,959	86	1	15	0	38	28		
<b>CALIFORNIA</b>								380	103
Cooper Med. Coll., San Francisco.—R.	364,677	94	3	22	2	59	35		
University of California, San Francisco.—R.	364,677	31	5	15	1	57	35		
Hahnemann Medical College, San Francisco.—H.	364,677	26	7	7	2	32	32		
College of P. and S., San Francisco.—R.	364,677	65	5	13	3	45	32		
Oakland Coll. of Med. and Surg., Oakland.—R.	73,812	9	1	0	1	30	36		
University of Southern California, Los Angeles.—R.	102,479	80	9	25	1	72	33		
College of P. and S., Los Angeles.—R.	102,479	33	4	10	0	39	36		
California Eclectic Medical College, Los Angeles.—E.	102,479	8		1		27	32		
<b>COLORADO</b>								177	39
Denver and Gross Coll. of Med., Denver.—R.	151,920	75	4	20	2	71	32		
Denver College of Physicians and Surgeons, Denver.—P.	151,920	44	2	5	1	37	29		
University of Colorado, School of Medicine, Boulder.—R.	6,150	46	6	9	2	39	34		
<b>CONNECTICUT</b>								136	29
Yale University Medical Department, New Haven.—R.	121,227	136		29		58	36		
<b>DISTRICT OF COLUMBIA</b>								485	96
George Washington University, Washington.—R.	307,716	195	3	45	0	76	33		
Georgetown University, Washington.—R.	307,716	82		27		74	33		
Howard University Medical Department, Washington.—R.	307,716	196	9	22	2	38	33		
<b>GEORGIA</b>								697	136
Atlanta College of P. and S., Atlanta.—R.	104,984	234		29		49	28		
Atlanta School of Medicine, Atlanta.—R.	104,984	270	4	48	0	40	28		
Georgia Coll. of Eclectic Med. and Surg., Atlanta.—E.	104,984	71		23		14	23		
International Medical Missionary College, Atlanta.—R.	104,984	3	2	3	1	18			
University of Georgia Medical Department, Augusta.—R.	43,125	113		32		28	28		
<b>ILLINOIS</b>								2,715	581
American Medical Missionary College, Chicago.—R.	2,049,185	26	13	1	3	25	36		
Bennett Coll. of Eclectic Med. and Surg., Chicago.—E.	2,049,185	135	15	24	4	52	32		
College of Medicine and Surgery, Chicago.—Ph.M.	2,049,185	16	12		3	42	31		
College of Physicians and Surgeons, Chicago.—R.	2,049,185	434	29	139	11	149	33		
Hahnemann Medical College, Chicago.—H.	2,049,185	107	10	39	4	86	31		
Hering Medical College, Chicago.—H.	2,049,185	48	10	13	3		31		
Illinois Medical College, Chicago.—R.	2,049,185	50	3	27	3	50	30		
Jenner Medical College, Chicago.—R.	2,019,185	157	18	29	3	53	38		
Northwestern University, Chicago.—R.	2,049,185	533		135		233	32		
Rush Medical College, Chicago.—R.	2,049,185	549	37	67	3	248	34		
National Medical University, Chicago.—P.	2,049,185	111	12						
Chicago College of Medicine and Surgery, Chicago.—R.	2,049,185	308	17	63	7	70	30		
Reliance Medical College, Chicago.—R.	2,049,185	58	4			30	38		
<b>INDIANA</b>								344	84
Eclectic Med. Coll. of Indiana, Indianapolis.—E.	219,154	12		5			28		
Indiana Univ. Sch. of Med., Bloomington and Indianapolis.—R.	219,154	302	6	73	1	175	36		
Physio-Med. Coll. of Indiana, Indianapolis.—Ph.M.	219,154	24		5		47	31		
<b>IOWA</b>								525	115
Drake University College of Medicine, Des Moines.—R.	78,323	66	9	18	0	44	36		
Keokuk Medical College of Phys. and Surg., Keokuk.—R.	14,597	109	6	35	2	28	32		
Sioux City College of Medicine, Sioux City.—R.	42,520	26		9		26	34		
State University of Iowa, Homeo. Dept., Iowa City.—H.	8,497	42	1	9	0	36	36		
State University of Iowa, Medical Dept., Iowa City.—R.	8,497	255	11	41	1	52	36		
<b>KANSAS</b>								211	42
Kansas Medical College, Topeka.—R.	41,886	66	3	13	0	38	31		
School of Medicine, Univ. of Kansas, Kansas City.—R.	77,912	96	5	17	1	90	34		
Eclectic Medical University, Kansas City.—E.	77,912	36	5	0	2	37	31		
<b>KENTUCKY</b>								985	254
Kentucky School of Medicine, Louisville.—R.	226,129	270		41		47	30		
Louisville and Hospital Medical College, Louisville.—R.	226,129	335		102		28	30		
Louisville National Medical College, Louisville.—R.	226,129	36		6		22	30		
Southwestern Homeopathic Med. Coll., Louisville.—H.	226,129	11	2	1	1	28	30		
University of Louisville, Louisville.—R.	226,129	331		100		62	29		
<b>LOUISIANA</b>								569	110
Flint Medical College, New Orleans.—R.	314,146	34		8		15	29		
Tulane University, New Orleans.—R.	314,146	535		102		69	30		
<b>MAINE</b>								93	29
Medical School of Maine, Portland.—R.	55,167	93		29		35	32		
<b>MARYLAND</b>								1,338	344
Baltimore Medical College, Baltimore.—R.	553,669	323		82		69	32		
College of Phys. and Surg., Baltimore.—R.	553,669	253		68		55	32		
Johns Hopkins University, Baltimore.—R.	553,669	262	19	67	1	103	32		
Atlantic Medical College, Baltimore.—P.	553,669	34	3	21	1	50	30		
University of Maryland, Baltimore.—R.	553,669	316		73		62	32		
Woman's Medical College, Baltimore.—R.	553,669		28		11	34	32		
Maryland Medical College, Baltimore.—R.	553,669	100		20		22	32		
<b>MASSACHUSETTS</b>								933	171
Boston University School of Medicine, Boston.—H.	602,278	74	28	12	7	61	32		
College of Physicians and Surgeons, Boston.—R.	602,278	162		26		45	32		
Harvard University, Medical School, Boston.—R.	602,278	298		70		166	36		
Tufts Medical College, Boston.—R.	602,278	336	35	51	5	101	32		
<b>MICHIGAN</b>								640	123
Detroit College of Medicine, Detroit.—R.	353,535	146		30		108	33		
Detroit Homeopathic Medical College.—Detroit.—H.	353,535	20	2	5	1	36	32		
University of Michigan, Dept. of Medicine, Ann Arbor.—R.	14,645	369	21	65	7	65	36		
University of Michigan, Homeopathic Dept., Ann Arbor.—H.	14,645	72	10	10	5	11	36		
<b>MINNESOTA</b>								298	69
University of Minnesota, Homeo. Dept., Minneapolis.—H.	273,825	6	0	3	0	75	34		
University of Minnesota, Dept. of Med., Minneapolis.—R.	273,825	158	8	31	1	114	34		
Hamline University, Minneapolis.—R.	273,725	121	5	34					
<b>MISSISSIPPI</b>								133	11
University of Mississippi, Vicksburg.—R.	15,710	28				9	34		
Mississippi Medical College, Meridian.—R.	20,503	103	2	11	0	16	28		

\* Night schools. † Figures for 1903-7. R, Regular; H, Homeopathic; E, Eclectic; Ph.M., Physio-Medical; P, Panpathic.



NAME AND LOCATION OF COLLEGE.

NAME AND LOCATION OF COLLEGE.	Population of city in which college is located. (Census Bureau estimate, 1906.)	Number of students registered, session of 1907-8		Graduates 1908.		Total number of teachers.	Weeks in college year.	Total students in all colleges in state, 1907-8.	Total graduates all colleges in state, 1908.
		Men.	Women	Men.	Women				
MISSOURI									
University Medical College, Kansas City.—R.	182,376	192		64		53	32	1,448	383
Kansas City Hahnemann Med. Coll., Kansas City.—H.	182,376	57	5	14	1	43	32		
Ensworth Med. Coll., St. Joseph.—R.	118,004	91		25		34	31		
Barnes Medical College, St. Louis.—R.	649,320	300	25	69	9	69	32		
St. Louis University, St. Louis.—R.	649,320	241		63		105	31		
St. Louis College of Phys. and Surg., St. Louis.—R.	649,320	164		49		39	29		
American Medical College, St. Louis.—E.	649,320	41		8		17	29		
Hippocratean College of Medicine.—R*	649,320	28	6			30	38		
Homeopathic Med. Coll. of Missouri, St. Louis.—H.	649,320	25	2	9	0	27	30		
Washington University, St. Louis.—R.	649,320	206	2	59	0	92	32		
University of Missouri, Columbia.—R.	7,800	57	8	7	1	28	34		
NEBRASKA									
University of Nebraska, Omaha.—R.	124,167	95	2	24	0	82	32	340	85
Creighton Medical College, Omaha.—R.	124,167	150	8	41	0	52	32		
Lincoln Medical College, Lincoln.—E.	48,232	48	2	18	0	46	36		
Nebraska College of Medicine, Lincoln.—R.	48,232	32	2	2	0	40	35		
NEW HAMPSHIRE									
Dartmouth Medical College, Hanover.—R.	1,634	58		9		22	36	58	9
NEW YORK									
Albany Medical College, Albany.—R.	98,537	180		40		63	31	2,170	464
College of Physicians and Surgeons, New York.—R.	4,113,043	322		81		163	34		
Cornell University, New York.—R.	4,113,043	293	23	57	1	181	33		
Eclectic Medical College, New York.—E.	4,113,043	46	10	5	2	30	32		
Long Island College Hospital, New York.—R.	4,113,043	337		89		99	30		
New York Homeo. Med. College, New York.—H.	4,113,043	80		18		74	30		
New York Woman's Medical College, New York.—H.	4,113,043		20		3	43	30		
University and Bellevue Medical College, New York.—R.	4,113,043	593		88		128	32		
Fordham University, School of Medicine, New York.—R.	4,113,043	30				65	32		
Syracuse University, Syracuse.—R.	118,880	142	8	41	2	51	32		
University of Buffalo, Buffalo.—R.	381,819	166	10	36	1	99	32		
NORTH CAROLINA									
Leonard Medical School, Raleigh.—R.	14,225	146		43		10	30	382	61
University of North Carolina, Raleigh.—R.	14,225	114		12		44	34		
North Carolina Medical College, Charlotte.—R.	22,009	82		6		28	30		
Wake Forest School of Medicine, Wake Forest.—R.	823	40				46	34		
NORTH DAKOTA									
University of North Dakota, University (Grand Forks).—R.	10,127	20	0			16	35	20	0
OHIO									
Western Reserve University, Cleveland.—R.	460,327	104	0	30	0	94	34	763	159
Cleveland Coll. of Phys. and Surg., Cleveland.—R.	460,327	82	8	18	2	60	30		
Cleveland Homeopathic Med. Coll., Cleveland.—H.	460,327	37	6	9	1	57	31		
Eclectic Medical Institute, Cincinnati.—E.	345,230	91		23		25	30		
Medical College of Ohio, Cincinnati.—R.	345,230	115	2	25	1	61	32		
Pulte Medical College, Cincinnati.—H.	345,230	11	4	0	1	32	31		
Miami Medical College, Cincinnati.—R.	345,230	68	2	15	1	61	32		
Starling-Ohio Medical College, Columbus.—R.	145,414	204	5	28	2	71	32		
Toledo Medical College, Toledo.—R.	159,980	26	3	3	0	46	34		
OKLAHOMA									
University of Oklahoma, Norman.—R.	3,040	8				12	35	29	2
Epworth University Med. Dept., Oklahoma City.—R.	20,990	20	1	2	0	39	29		
OREGON									
University of Oregon, Portland.—R.	109,884	82	6	16	4	39	30	123	50
Willamette University, Salem.—R.	7,287	34	1	9	1	18	30		
PENNSYLVANIA									
Temple College of Medicine, Philadelphia.—R*	1,441,735	126	8	8	0	61	36	2,518	440
University of Pennsylvania, Philadelphia.—R.	1,441,735	604		118		157	35		
Hahnemann Medical College, Philadelphia.—H.	1,441,735	168		37		73	33		
Jefferson Medical College, Philadelphia.—R.	1,441,735	693		126		155	33		
Woman's Medical College, Philadelphia.—R.	1,441,735		138		32	50	32		
Medico-Chirurgical College, Philadelphia.—R.	1,441,735	419		66		95	32		
Western Pennsylvania Medical College, Pittsburg.—R.	375,082	349	13	51	2	80	32		
SOUTH CAROLINA									
Medical College of South Carolina, Charleston.—R.	56,317	153		17		28	25	153	17
SOUTH DAKOTA									
University of South Dakota, College of Med., Vermilion.—R.	2,183	3				9	34	3	0
TENNESSEE									
Tennessee Medical College, Knoxville.—R.	36,051	80	3	15	2	24	28	1,883	409
Knoxville Medical College, Knoxville.—R.	36,051	19	4	4	0	11	28		
University of Nashville, Nashville.—R.	84,703	302		67		30	30		
Vanderbilt University, Nashville.—R.	84,703	207		40		39	30		
University of Tennessee, Nashville.—R.	84,703	137		40		26	30		
Meharry Medical College, Nashville.—R.	84,703	274	11	75	3	24	28		
Memphis Hospital Medical College, Memphis.—R.	125,235	386		83		32	28		
College of Physicians and Surgeons, Memphis.—R.	125,235	69		15		52	28		
University of West Tennessee, Memphis.—R.	125,235	33	2	9	0	20	28		
University of the South, Sewanee.—R.	500	99		31		21	28		
Chattanooga Medical College, Chattanooga.—R.	34,297	262		25		23	28		
TEXAS									
Fort Worth University, Fort Worth.—R.	27,096	104	4	7	2	34	28	572	81
University of Texas, Galveston.—R.	34,355	190	8	24	1	22	32		
Baylor University, Dallas.—R.	52,793	59	3	11	0	36	28		
Physio-Med. Coll. of Texas, Dallas.—Ph.M.	52,793	38		1					
Southwestern University Medical College, Dallas.—R.	52,793	62	1	8	1	28	28		
College of Physicians and Surgeons, Dallas.—R†	52,793	103		23					
UTAH									
University of Utah, Dept. of Med., Salt Lake City.—R.	61,202	28	0			13	34	28	0
VERMONT									
University of Vermont, Burlington.—R.	21,070	142		33		56	30	142	33
VIRGINIA									
Medical College of Virginia, Richmond.—R.	87,246	215		38		52	32	479	105
University College of Medicine, Richmond.—R.	87,246	158		43		52	32		
University of Virginia, Charlottesville.—R.	6,449	106		24		29	36		
WEST VIRGINIA									
University of West Virginia, Morgantown.—R.	6,000	24				10	35	24	0
WISCONSIN									
Milwaukee Medical College, Milwaukee.—R.	317,903	139	8	43	0	53	32	231	52
Wisconsin College of Phys. and Surg., Milwaukee.—R.	317,903	57	1	9	0	49	32		
University of Wisconsin, College of Medicine, Madison.—R.	25,128	23	3			48	34		

\* Night schools. † Figures for 1906-7. R, Regular; H, Homeopathic; E, Eclectic; Ph.M., Physio-Medical; P, Panpathic.



Number.	NAME OF COLLEGE.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Number.
		Alabama..... 683	Arizona..... 15	Arkansas..... 419	California..... 408	Colorado..... 156	Connecticut..... 273	Delaware..... 53	Dist. Columbia. 122	Florida..... 132	Georgia..... 655	Idaho..... 24	Illinois..... 1,749	Indiana..... 711	Iowa..... 724	Kansas..... 468	Kentucky..... 630	Louisiana..... 493	Maine..... 182	Maryland..... 347	Massachusetts... 840	
1	Birmingham Medical College.—R.....	120								2	1			1				2				1
2	Medical College of Alabama.—R.....	156	1							1												2
3	Arkansas University, Medical Dept.—R.....			154										1		1	1	5				3
4	College of Physicians and Surgeons.—R.....		3	51	1									3		1	1			1		4
5	Cooper Medical College.—R.....				82									1	1	1	1		1		2	5
6	University of California, Medical Dept.—R.....				33									1								6
7	Hahnemann Med. Coll. of the Pacific.—H.....				31																	7
8	Coll. of P. and S., San Francisco.—R.....				53						1			1								8
9	Oakland Coll. of Med. and Surgery.—R.....				8																	9
10	Univ. of So. California, Coll. of Med.—R.....		1		82									1								10
11	College of P. and S., Los Angeles.—R.....		1		6									3	3	2	1					11
12	California Medical College, Los Angeles.—E.....				8																	12
13	Denver and Gross Coll. of Med.—R.....					45							1	4	3	3	2			1		13
14	Denver Coll. of Phys. and Surg.—P.....					46																14
15	Univ. of Colorado, School of Medicine.—R.....				1	26			1			2	3	1	1				1		2	15
16	Yale University, Dept. of Medicine.—R.....						93															16
17	George Wash. Univ., Dept. of Med.—R.....	2			1	2			42	1	1		11	2	3	4	2	3		12	3	17
18	Georgetown Univ., School of Med.—R.....	1			2		5		16											1	7	18
19	Howard University, Medical Dept.—R.....	4					1	2	48				3	1					8	2		19
20	Atlanta College of Phys. and Surg.—R.....	28								21	152						1	1				20
21	Atlanta School of Medicine.—R.....	25	1							19	196											21
22	Georgia Coll. of Eclectic M. and S.—E.....	6								3	58											22
23	Medical College of Georgia.—R.....									4	87							1				23
24	Internat. Med. Miss. Coll., Atlanta.—R.....										4											24
25	American Medical Missionary Coll.—R.....	1			1						1			3	2	1	2					25
26	Bennett Coll. of Eclectic M. and S.—E.....	2		3	1	2	1	1			1	2	51	8	6	2	1	1	1			26
27	Illinois Medical College.—R.....												24	22			1	1				27
28	College of Medicine and Surgery.—Ph.M.....												17	1	2							28
29	College of Physicians and Surgeons.—R.....			1	1	2			1		1		279	23	17	8	5	1				29
30	Hahnemann Med. Coll. and Hospital.—Ht.....			2									45	11	14	6						30
31	Hering Medical College.—Ht.....												35	4	2	3						31
32	Jenner Medical College.—R.....												175									32
33	Northwestern University Med. School.—R.....	2			8	5						3	141	46	74	18	3	2				33
34	Rush Medical College.—R.....	4		4	11	3			1	1	1	1	210	34	63	16	3	2	1			34
35	National Medical University.—P.....												123									35
36	Chicago Coll. of Med. and Surgery.—R.....	2		1	2	1	1						121	29	15	6	6				4	36
37	Reliance Medical College.—R.....												22	6	2		2			1		37
38	Physio-Medical Coll. of Indiana.—Ph.M.....													24								38
39	Eclectic Medical College of Indiana.—E.....													11								39
40	Indiana University School of Med.—R.....										2			3	282		1					40
41	Drake University Coll. of Medicine.—R.....					1								1		63	2					41
42	Keokuk Med. Coll. of P. and S.—R.....				1							1	33	1	45	5						42
43	Sioux City College of Medicine.—R.....														26							43
44	State Univ. of Iowa, Hom. Med. Dept.—H.....											1	1		36	1						44
45	State Univ. of Iowa, Med. Dept.—R.....												10		236					1		45
46	Kansas Medical College.—R.....						1									61						46
47	School of Medicine, Univ. of Kansas.—R.....															92						47
48	Western Eclectic Coll. of Med. and Surg.—E.....			3	1	1								1	2			1				48
49	Kentucky School of Medicine.—R*.....	2	1	5						3	4	2	5	24			123	6			2	49
50	Louisville and Hospital Medical College.—R.....	4		12	1					2	1		10	31	2	4	172	4	1		1	50
51	Louisville National Medical College.—R.....	1								1				8		1	17					51
52	Southwestern Homeopathic Med. Coll.—H.....													4			7			1		52
53	Univ. of Louisville, Medical Dept.—R.....	3		3	1		2			2	2		14	27	7	1	148	6	1	1		53
54	Flint Med. Coll. of New Orleans Univ.—R.....	1		1							1							14				54
55	Tulane University, Medical Dept.—R.....	62	1	15						8	12							238	1			55
56	Med. School of Maine, Bowdoin Coll.—R.....																		80		8	56
57	Baltimore Medical College.—R.....	2		2	1		26	1		1	1								10	48	37	57
58	College of P. and S. of Baltimore.—R.....	2					17	2		1	2					1			2	34	19	58
59	Johns Hopkins Medical School.—R.....	6		3	12	1	17	1	3	1	6		5	4	6	4	8	3	6	33	3	59
60	Atlantic Medical College.—Pt.....						1	2											1	32		60
61	Woman's Med. Coll. of Baltimore.—R.....						2													4	2	61
62	Univ. of Maryland, School of Med.—R.....			1			5	8	1	5	5			1				1	1	19	2	62
63	Maryland Medical College.—R.....	1					4	1			2			1					1	31	4	63
64	Boston University School of Med.—H.....				1		2											1	4		61	64
65	College of Physicians and Surgeons.—Rt.....						4	3											4		123	65
66	Harvard University Medical School.—R.....			2	11	3	4		1				5	1	1	1	2		10		174	66
67	Tufts College Medical School.—R.....						6							1					18		289	67
68	Detroit College of Medicine.—R.....					1							2	4								68
69	Detroit Homeopathic Med. College.—H.....																					69
70	Univ. of Michigan, Dept. of M. and S.—R.....	1			5	2	1				2	2	22	25	5	1	6		1		2	70
71	Univ. of Mich., Homeo. Med. College.—H.....												2	4	2							71
72	Coll. of Hom. M. and S., U. of Minn.—H.....																					72
73	College of M. and S., Univ. of Minn.—R.....		1										1	1	2							73
74	Hamline University, Medical Dept.—R.....												1									74
75	Med. Dept., Univ. of Miss., Oxford.—R.....										1							1				75
76	Mississippi Med. Coll., Meridian.—R.....	5																1				76
77	Univ. Med. Coll. of Kansas City.—R.....			1		1									2	72		1				77
78	Kansas City Hahnemann Med. Coll.—H.....				1									3	1	5	21					78
79	Ensworth Medical College.—R.....												2		11	15						79
80	Barnes Medical College.—R.....			7		2						5	83	3	3	7	7	3				80
81	St. Louis University Med. Dept.—R.....	1		7	2	2							59	3	12	7	2	2		1		81
82	St. Louis Coll. of Phys. and Surgs.—R.....			2									82	2	3	3	4	1				82
83	American Medical College.—E.....																					83
84	Hippocratean College of Medicine.—R.....																					84
85	Homeo. Med. College of Missouri.—H.....		1	1									10	3	1							85
86	Univ. of Missouri, Dept. of Med.—R.....			2		1								1	1	1						86
87	Washington Univ., Medical Dept.—R.....	1		4		1							48	4	2	3	3			1		87
88	Univ. of Nebraska, Coll. of Med.—R.....														5	1						88
89	John A. Creighton Med. College.—R.....				1									1		41					1	89
90	Lincoln Medical College.—E.....															3						90
91	Nebraska College of Medicine.—R.....												1	2	1							91
92	Dartmouth Medical College.—R.....						5						2						4		17	92



Number.	Michigan.....	Minnesota.....	Mississippi.....	Missouri.....	Montana .....	Nebraska.....	New Hampshire..	New Jersey.....	New Mexico.....	New York.....	Nevada.....	North Carolina..	North Dakota....	Ohio.....	Oklahoma.....	Oregon .....	Pennsylvania... .	Rhode Island ....	South Carolina..	South Dakota ....	Tennessee.....	Texas.....	Utah.....	Vermont .....	Virginia.....	Washington .....	West Virginia...	Wisconsin .....	Wyoming .....	Foreign .....	P. I., Ha., P.R.	Total.....	Number.	
1			3																2		1	2										134	1	
2			4																1		1	3										169	2	
3			3																		2	2										177	3	
4																																	87	4
5																																	97	5
6	1																																36	6
7																																	33	7
8																																	70	8
9																																	10	9
10	1																																89	10
11																																	37	11
12																																	8	12
13																																	79	13
14																																	46	14
15	1																																52	15
16	3																																136	16
17	2	4																															198	17
18	2																																82	18
19																																	205	19
20																																	234	20
21																																	274	21
22																																	71	22
23																																	113	23
24																																	5	24
25	9																																42	25
26	12	1																															150	26
27																																	53	27
28																																	28	28
29	8	8																															463	29
30	6	2																															117	30
31	3	1																															58	31
32																																	175	32
33	31	28	2																														533	33
34	15	16	5																														586	34
35																															</			



Number.	NAME OF COLLEGE.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Number.
		Alabama.....	Arizona.....	Arkansas.....	California.....	Colorado.....	Connecticut.....	Delaware.....	Dist. Columbia.	Florida.....	Georgia.....	Idaho.....	Illinois.....	Indiana.....	Iowa.....	Kansas.....	Kentucky.....	Louisiana.....	Maine.....	Maryland.....	Massachusetts...	
		683	15	419	408	156	273	53	122	132	655	24	1,749	711	724	468	630	493	182	347	860	
93	Albany Medical College.—R.....							1													6	93
94	College of Physicians and Surgeons.—R.....	5			3		10				2		5	1	2	1	3		5		8	94
95	Cornell University Medical College.—R.....			1	1		6						2	1			2	1	5		7	95
96	Eclectic Medical College.—E.....						1															96
97	Long Island College Hospital.—H.....						2													1	1	97
98	New York Homeo. M. C. and Hosp.—H.....				2		1												1			98
99	N. Y. Med. Coll. and Hosp. for Women.—H.....																				1	99
100	Univ. and Bellevue Hosp. Med. Coll.—R.....				3	2	11			1			2	1	1		1		1	1	7	100
101	Fordham Univ. School of Med.—R.....						1															101
102	Syracuse Univ. Coll. of Med.—R.....						1									1					1	102
103	University of Buffalo, Medical Dept.—R.....																					103
104	Leonard Medical School.—R.....	13		1					2	8	9							1		2		104
105	Wake Forest School of Medicine.—R.....									1												105
106	North Carolina Medical College.—R.....																					106
107	Univ. of North Carolina, Med. Dept.—R.....									1												107
108	Univ. of North Dakota, Med. Dept.—R.....												1									108
109	Western Reserve Univ. Med. Coll.—R.....													10	2	2					2	109
110	Cleveland Coll. of Phys. and Surgs.—R.....					1																110
111	Cleveland Homeopathic Med. Coll.—H.....				1																	111
112	Eclectic Medical Institute.—E.....			1		2					2		6	8	1	1	7					112
113	Medical College of Ohio.—R.....		1											6			16				1	113
114	Pulte Medical College.—H.....																2		1			114
115	Miami Medical College.—R.....												1	2			5					115
116	Starling-Ohio Medical College.—R.....												1	1	1						2	116
117	Toledo Medical College.—R.....													1	1							117
118	College of Medicine, Epworth Univ.—R.....																					118
119	School of Med., Univ. of Oklahoma.—R.....																					119
120	University of Oregon, Medical Dept.—R.....				1							2	1		1							120
121	Willamette Univ., Medical Dept.—R.....				1																	121
122	Temple Coll. of Phila., Dept. of Med.—R.....				1		2	2					1									122
123	Univ. of Pennsylvania, Dept. of Med.—R.....	4		3	3	1	4	6		1	5	1	4	5	5	5	1	1	1	2	12	123
124	Hahnemann Med. Coll. and Hosp.—H.....				1		3	3					2	3	3	1	3		2	3	2	124
125	Jefferson Medical College.—R.....	5	1	4	7		13	9	1		10		8	3	3	4	4	1	1		9	125
126	Woman's M. C. of Pennsylvania.—R.....			1	3			2	4		1					1	2		3		3	126
127	Medico-Chirur. Coll. of Philadelphia.—R.....				1		4	6				1		2			1	1		2	2	127
128	Western Pennsylvania Med. Coll.—R.....				1										1	2						128
129	Med. Coll. of State of South Carolina.—R.....									8	1											129
130	Univ. of South Dakota, Coll. of Medicine.—R.....																					130
131	Tennessee Medical College.—R.....										2		1				4					131
132	Knoxville Medical College.—R.....																					132
133	University of Nashville, Med. Dept.—R.....	39		12					8	3		5			10	37						133
134	Vanderbilt University, Med. Dept.—R.....	33		5	2					6		4	1			19	9					134
135	University of Tennessee, Med. Dept.—R.....	15		2	2					1	1	3		1		7	8					135
136	Mohr Medical College.—R.....	24		13		1			6	30		7	2	2	4	8	11					136
137	Memphis Hospital Medical College.—R.....	14		53					1	2						2	80					137
138	Memphis Coll. of Phys. and Surgs.—R.....			6						3							1					138
139	Univ. of West Tennessee, Med. Dept.—R.....	1		5						1							5					139
140	University of the South.—R.....	20		4						2	9			1			2	10				140
141	Chattanooga Medical College.—R.....	57	1	2	1	1	3			10	7		4	1	1	2	5	1	1	1	1	141
142	Ft. Worth University, Med. Dept.—R.....			1	2									1		1						142
143	University of Texas, Dept. of Med.—R.....																	1				143
144	Baylor Univ. Coll. of Med.—R.....				1																	144
145	Physio-Medical Coll. of Texas.—Ph.M.....																					145
146	Southwestern Univ. Med. Coll.—R.....		1	1														1			1	146
147	College of Physicians and Surgeons.—R*.....	1		12									1		1	9	1	6				147
148	University of Utah, Medical Dept.—R.....																					148
149	University of Vermont, Medical Dept.—R.....						8												12		16	149
150	Medical College of Virginia.—R.....	1		1						2								1				150
151	University College of Medicine.—R.....	1			1			2		1	2					1					1	151
152	University of Virginia, Dept. of Med.—R.....	2		2				1	1	2	3		1			1	1			5		152
153	University of West Virginia.—R.....																					153
154	Marquette University, Medical Dept.—R.....				1										3							154
155	Wisconsin Coll. of Phys. and Surgs.—R.....																					155
156	Univ. of Wisconsin, College of Medicine.—R.....												2									156
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

R. Regular; H. Homeopathic; E. Eclectic; Ph. M., Physio-Medical; P. Panpathic.  
 \* Figures for 1906-7. † Figures exact; distribution based on that of 1906-7.

(Continued from page 585.)

direct written communication certifying to the applicant's professional and moral qualifications, and to the exact work he had done in said college.

	CURRICULUM.			
	No. of Hours of Lectures.	Hours of Labora- tory.	Hours of Clinics.	Total.
Histology .....	30	60	..	90
Embryology .....	30	60	..	90
Osteology .....	30	..	..	30
Anatomy .....	190	230	..	420
Physiology .....	180	120	..	300
Chemistry and Toxicology.....	100	200	..	300
Materia Medica .....	40	20	..	60
Pharmacology .....	40	20	..	60
Therapeutics .....	90	..	..	90
Bacteriology .....	40	100	..	140
Pathology .....	100	140	..	240
Medical Zoology, Postmortem Work and Clinical Microscopy	30	60	..	90
Physical Diagnosis .....	20	..	80	100
Practice of Medicine .....	180	..	360	540

Surgery .....	180	..	360	540
Obstetrics .....	100	..	60	160
Gynecology .....	50	..	110	160
Pediatrics .....	40	..	60	100
Eye and Ear .....	30	..	30	60
Nose and Throat .....	30	..	30	60
Mental and Nervous Diseases..	60	..	60	120
Electro-Therapeutics .....	20	..	40	60
Genito-Urinary Diseases .....	30	..	30	60
Dermatology and Syphilis.....	20	..	20	40
Hygiene and Public Health.....	30	..	..	30
Dietetics .....	30	..	..	30
Medical Jurisprudence .....	30	..	..	30
	1,750	1,010	1,240	4,000

No time credit shall be given to holders of a Bachelor's degree, but subject credit can be given on satisfactory examination. Four years of residence in a medical college shall be required of all candidates for the degree of doctor of medicine.

Medical Education.—Candidates for the degree of Doctor of Medicine shall have attended four courses of study in four calendar years, each annual course to have been of not less than thirty teaching weeks' duration, and at least ten months shall intervene



(Continued on page 603.)



COLLEGES.	1901		1902		1903		1904		1905		1906		1907		1908		Totals.		
	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Percentage of Grads.
ALABAMA.																			
Birmingham Medical College.....	77	15	82	8	94	22	104	5	75	16	72	8	113	12	134	16	751	102	13.6
Medical College of Alabama.....	130	38	136	13	145	12	167	38	170	31	158	29	170	28	169	25	1,245	214	17.2
ARKANSAS.																			
University of Arkansas.....	240	20	220	11	236	12	115	19	220	28	176	26	182	26	177	19	1,566	161	10.3
CALIFORNIA.																			
Cooper Medical College.....	167	27	214	25	212	45	193	44	155	37	136	30	112	29	97	24	1,286	261	20.3
University of California.....	164	28	151	24	115	26	113	27	104	17	90	19	54	24	36	16	827	181	21.9
California Medical College.....	49	10	84	6	60	7	47	8	40	8	45	10	.....	.....	8	1	333	50	15.0
Hahnemann Medical College.....	40	6	45	8	38	12	33	8	34	9	24	4	28	2	33	9	275	58	21.1
Coll. of P. and S., San Francisco.....	171	38	180	41	146	28	124	29	144	29	145	30	79	16	70	16	1,059	227	21.4
Oakland Coll. of M. and S.....	.....	.....	.....	.....	6	0	8	0	12	0	10	4	10	2	10	1	56	7	12.5
Univ. of Southern California.....	87	19	102	14	106	27	110	24	115	23	127	28	99	27	89	26	835	188	22.5
Coll. of P. and S., Los Angeles.....	.....	.....	.....	.....	.....	.....	.....	.....	25	6	31	3	34	2	37	10	127	21	16.5
COLORADO.																			
Denver and Gross.....	138	35	133	35	130	33	127	32	115	31	100	26	101	29	79	22	923	243	26.3
Denver Coll. of Phys. and Surg....	40	5	34	10	29	6	32	7	29	6	23	5	42	6	46	6	275	51	18.6
University of Colorado.....	70	9	63	13	63	8	52	17	54	6	70	16	58	12	52	11	482	92	19.1
CONNECTICUT.																			
Yale Medical College.....	133	18	145	20	145	27	140	23	138	22	134	25	153	29	136	29	1,124	193	17.2
DIST. OF COLUMBIA.																			
George Washington Univ.....	249	26	257	26	260	34	206	52	298	62	280	51	215	63	198	45	2,063	359	17.4
Georgetown University.....	123	21	130	13	144	22	140	32	133	32	102	20	82	12	82	27	936	179	19.1
Howard University.....	142	19	145	27	141	29	155	36	153	21	157	29	186	44	205	24	1,284	229	17.8
GEORGIA.																			
College of P. and S., Atlanta.....	282	67	257	111	200	34	215	31	250	48	180	52	200	37	234	29	1,818	409	22.5
Georgia Eclectic Med. Coll.....	55	21	58	21	46	2	54	17	53	14	57	15	76	12	71	23	470	125	26.6
University of Georgia.....	107	30	121	47	110	7	115	26	108	14	113	30	98	20	113	32	835	206	23.2
Atlanta School of Medicine.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	220	21	233	20	274	48	727	89	12.2
ILLINOIS.																			
American Medical Miss. Coll.....	119	13	92	24	88	22	88	21	80	21	80	23	46	10	42	4	635	138	21.7
Bennett Medical College.....	124	37	104	21	113	18	115	10	103	30	156	52	153	34	150	28	1,018	230	22.6
College of Med. and Surgery.....	46	9	40	9	76	12	70	11	50	12	40	5	28	2	23	3	378	63	16.7
Coll. of P. and S., Chicago.....	676	164	692	220	685	216	695	214	651	213	556	210	501	146	463	150	4,922	1,533	31.1
Hahnemann Med. Coll., Chicago..	175	51	185	49	195	69	138	49	220	61	178	58	136	42	117	43	1,344	422	31.4
Hering Medical College.....	60	12	72	13	90	22	92	29	50	14	48	14	80	11	58	16	550	131	23.8
Illinois Medical College.....	202	36	228	21	265	47	237	58	192	59	192	48	212	40	53	30	1,581	339	21.4
Jenner Medical College.....	101	13	105	18	107	13	122	24	102	13	250	38	185	19	175	32	1,147	170	14.8
Northwestern University.....	344	74	465	96	608	127	587	133	593	143	580	125	473	134	533	135	4,133	967	23.1
Rush Medical College.....	1,055	213	803	211	1,047	220	1,033	160	522	112	450	83	567	83	536	70	6,063	1,152	19.0
National Medical University.....	144	12	150	11	173	17	234	20	232	23	249	29	250	26	123	.....	1,555	138	9.0
Chicago Coll. of M. and S.....	.....	.....	36	0	126	10	262	23	292	34	189	23	239	35	325	70	1,469	195	13.3
INDIANA.																			
Indiana Medical College.....	375	73	427	92	493	103	480	105	458	116	339	122	227	70	197	50	2,996	731	24.4
Physio-Med. of Indiana.....	34	9	31	4	29	9	32	9	22	5	23	6	25	7	24	5	220	54	24.5
Eclectic Medical Coll. of Indiana.....	14	0	25	.....	28	5	30	3	45	8	20	6	12	3	12	5	186	30	16.1
Indiana University.....	.....	.....	.....	.....	.....	.....	18	.....	14	.....	21	.....	109	25	111	24	273	49	17.9
IOWA.																			
Drake University.....	78	14	64	10	66	11	65	13	60	10	81	10	76	17	75	18	565	103	18.2
Keokuk Med. C. of P. and S.....	247	51	247	52	243	56	267	47	230	50	170	50	127	30	115	37	1,646	373	22.7
Sioux City College of Medicine....	52	5	63	10	72	13	59	12	72	14	72	14	29	10	26	9	445	87	19.6
University of Iowa (H).....	59	16	59	7	35	11	35	9	41	9	47	8	44	4	43	9	363	73	20.1
University of Iowa (R).....	272	35	248	40	251	35	249	49	277	65	267	51	272	52	266	42	2,102	369	17.6
KANSAS.																			
Kansas Medical College.....	98	0	99	16	101	12	104	24	91	23	90	18	82	14	69	13	734	120	16.3
University of Kansas.....	365	100	271	61	283	53	310	65	241	53	162	57	115	29	101	18	1,853	436	23.5
Eclectic Medical University.....	48	14	49	12	61	15	60	16	56	17	46	16	36	9	41	11	397	110	27.7
KENTUCKY.																			
Kentucky School of Medicine.....	309	43	295	45	290	56	275	58	193	49	275	48	270	66	270	44	2,177	409	18.8
Louisville-Hospital Med. Coll.....	530	77	627	94	678	122	669	160	688	133	554	148	436	147	335	102	4,517	983	21.8
Louisville National Med. Coll.....	21	4	.....	7	26	4	38	4	37	6	50	7	50	13	36	6	258	51	20.0
Southwestern Homeo. Med. Coll..	33	11	27	4	22	5	21	6	19	6	16	6	11	1	13	2	162	41	25.3
University of Louisville.....	361	55	418	49	557	91	580	110	588	151	497	129	456	158	331	100	3,788	843	22.2
LOUISIANA.																			
Flint Medical College.....	32	2	47	4	42	5	50	5	55	7	54	8	51	9	34	8	365	48	13.2
Tulane University.....	390	114	36	53	405	82	438	91	469	83	458	102	516	91	535	102	3,572	718	20.1
MAINE.																			
Medical School of Maine.....	90	40	90	4	100	20	101	22	93	18	82	17	94	16	93	29	743	166	22.3
MARYLAND.																			
Baltimore Medical College.....	507	97	532	93	410	93	409	77	406	96	441	97	481	97	323	82	3,509	732	20.9
College of P. & S., Baltimore.....	359	59	305	58	315	76	343	83	298	70	298	65	302	75	253	68	2,473	551	22.4
Johns Hopkins Med. School.....	209	54	229	123	257	49	276	45	291	53	293	84	264	70	281	68	2,100	543	26.0
Atlantic Medical College.....	32	10	35	9	26	3	39	13	33	9	18	5	22	11	37	22	242	82	33.6
University of Maryland.....	332	71	366	76	392	96	340	96	340	83	339	83	311	62	316	73	2,736	646	23.4
Woman's Medical College.....	31	7	25	4	16	2	24	3	36	2	33	2	34	6	28	11	227	37	15.3
Maryland Medical College.....	75	29	128	39	204	59	223	104	207	93	124	29	125	29	100	29	1,186	402	33.9
MASSACHUSETTS.																			
Boston University.....	127	24	125	23	127	36	99	27	83	14	100	23	96	13	102	19	859	179	20.8
College of P. and S., Boston.....	127	9	131	9	117	19	117	27	168	28	134	20	123	26	162	26	1,079	164	15.2
Harvard University.....	591	116	496	167	432	114	364	133	307	67	292	69	366	64	298	70	3,146	800	25.4
Tufts Medical College.....	277	35	335	35	349	35	394	50	385	62	375	73	376	57	371	53	2,862	403	14.1
MICHIGAN.																			
Detroit College of Medicine.....	224	45	242	48	257														



COLLEGES.	1901		1902		1903		1904		1905		1906		1907		1908		Totals.		
	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Percentage of Grads.
MISSOURI.																			
Univ. Med. Coll., Kansas City.....	246	69	225	27	222	63	234	67	220	58	235	54	238	57	192	64	1,812	459	25.3
Kansas City Hahnemann M. C.....	.....	.....	72	10	71	17	52	17	32	10	76	21	74	11	62	15	439	101	23.0
Ensworth Medical College.....	63	8	80	14	110	14	94	19	90	22	149	34	117	26	91	25	794	162	20.4
Barnes Medical College.....	520	111	501	78	495	100	485	125	427	109	385	72	352	79	323	78	3,488	752	21.3
St. Louis University.....	366	87	488	55	391	88	407	93	385	103	295	115	268	56	241	68	2,811	665	23.4
Coll. of P. and S., St. Louis.....	243	52	280	50	270	62	250	47	275	29	278	53	270	44	164	49	2,030	386	19.0
American Medical College.....	75	16	69	14	78	18	76	12	66	16	63	22	38	9	41	8	506	115	22.7
Homeopathic College of Missouri..	66	11	67	12	63	13	57	10	45	7	46	4	44	11	27	9	418	77	18.4
Washington University.....	227	54	242	43	281	53	279	63	254	62	239	55	215	50	208	59	1,945	439	22.6
University of Missouri.....	85	11	90	.....	98	12	83	10	108	8	98	8	66	2	65	8	693	59	8.5
NEBRASKA.																			
University of Nebraska.....	149	23	153	38	138	38	150	30	92	28	142	7	82	16	98	24	1,001	204	20.3
Creighton Medical College.....	123	27	151	37	142	29	153	27	167	33	172	39	167	35	158	41	1,233	268	21.7
Lincoln Medical College.....	74	12	98	21	86	16	83	22	81	15	71	15	50	12	50	18	593	131	22.1
NEW HAMPSHIRE.																			
Dartmouth Medical College.....	89	27	72	15	65	14	68	13	60	12	59	10	62	11	58	9	533	111	20.8
NEW YORK.																			
Albany Medical College.....	142	28	154	26	165	33	173	41	172	52	165	33	195	40	180	40	1,346	293	21.8
Coll. of P. and S., New York.....	801	149	778	145	795	168	691	174	568	185	450	152	387	93	322	81	4,792	1,147	23.9
Cornell University.....	356	26	415	53	394	60	360	55	392	74	379	59	342	72	316	58	2,954	457	15.5
Eclectic Med. Coll., New York....	84	12	100	7	104	13	95	8	99	13	105	15	83	11	56	7	726	86	11.8
Long Island College Hospital.....	187	41	245	31	290	40	389	47	414	73	343	72	342	87	337	89	2,547	480	18.9
New York Homeo. Med. Coll.....	107	27	106	23	111	29	118	28	110	21	110	30	109	22	80	18	851	198	23.3
N. Y. Woman's Med. Coll.....	33	9	36	6	34	8	33	5	34	9	20	6	24	4	20	3	234	59	21.4
University and Bellevue M. C.....	285	43	319	48	311	73	342	61	391	47	481	53	502	68	503	88	3,134	481	15.3
Syracuse University.....	116	19	128	19	140	29	131	31	154	31	153	23	153	24	150	43	1,125	219	19.5
University of Buffalo.....	212	46	239	38	237	45	243	54	231	37	225	44	214	59	176	37	1,777	360	20.3
NORTH CAROLINA.																			
Leonard Medical College.....	8	1	106	21	113	23	125	21	136	21	147	33	149	24	146	43	930	187	20.1
North Carolina Med. College.....	42	8	55	18	67	10	84	17	81	26	92	24	69	14	82	6	572	123	21.5
University of North Carolina.....	.....	.....	62	.....	83	4	72	4	100	9	96	11	114	10	114	12	641	50	7.8
OHIO.																			
Western Reserve University.....	133	24	126	36	97	26	88	31	73	19	85	12	87	10	104	30	793	188	23.7
Cleveland Coll. of P. and S.....	78	15	86	30	86	22	75	19	84	16	88	22	92	13	90	20	679	157	23.1
Cleveland Homeo. Med. Coll.....	150	46	112	23	115	40	85	25	66	24	50	14	43	10	43	10	664	192	29.0
Eclectic Medical Institute.....	141	26	142	36	146	45	142	27	135	37	116	35	97	31	91	23	1,010	260	25.7
Medical College of Ohio.....	200	60	180	47	170	54	145	46	121	33	137	33	133	35	117	26	1,203	334	27.8
Pulte Medical College.....	39	5	40	10	30	10	22	7	18	5	13	3	15	5	15	1	192	46	24.0
Miami Medical College.....	112	25	97	31	106	40	103	27	85	22	78	24	75	15	70	16	726	201	27.7
Starling-Ohio Medical College.....	401	77	394	93	377	107	292	74	163	67	228	72	197	39	209	30	2,261	559	24.7
Toledo Medical College.....	55	8	52	10	41	14	33	7	33	7	20	9	20	8	29	3	283	66	23.3
OREGON.																			
University of Oregon.....	64	11	80	20	88	10	96	16	102	26	82	16	86	20	88	20	686	139	20.3
Willamette University.....	27	5	27	5	40	7	42	8	50	7	50	15	45	16	35	10	316	73	23.1
PENNSYLVANIA.																			
Temple College.....	.....	.....	35	0	70	0	63	2	87	2	101	14	90	16	134	8	580	42	7.2
University of Pennsylvania.....	565	160	542	151	469	111	472	96	546	116	577	103	538	114	604	118	4,363	969	22.2
Hahn. M. C. of Philadelphia.....	264	52	269	58	233	69	201	66	164	44	186	52	188	48	168	37	1,673	426	25.4
Jefferson Medical College.....	736	106	724	140	771	166	732	165	676	179	617	209	629	126	693	126	5,578	1,203	21.7
Woman's M. C., Pennsylvania.....	175	37	157	28	165	30	159	43	151	42	136	25	152	29	138	32	1,233	266	21.6
Medico-Chirurgical Coll., Pa.....	403	67	447	23	431	93	414	70	461	86	467	84	434	75	419	66	3,481	561	16.2
Western Pennsylvania M. C.....	338	73	327	57	317	79	259	51	281	53	307	46	346	48	362	53	2,537	460	18.1
SOUTH CAROLINA.																			
Med. Coll. of South Carolina.....	95	32	89	4	95	21	91	23	87	28	99	6	130	21	153	17	839	152	18.1
TENNESSEE.																			
Tennessee Medical College.....	97	35	79	23	62	8	86	10	92	13	82	19	80	16	83	17	661	141	21.3
Knoxville Medical College.....	34	4	37	3	23	6	30	8	47	6	45	4	32	1	23	4	271	36	13.3
University of Nashville.....	182	66	257	34	317	50	301	41	317	75	298	42	414	86	302	67	2,388	461	19.3
Vanderbilt University.....	211	92	160	16	162	34	168	34	158	35	197	36	215	42	207	40	1,478	329	22.2
University of Tennessee.....	182	75	162	18	150	33	154	30	161	44	182	25	167	41	137	40	1,298	306	23.6
Meharry Medical College.....	217	39	233	55	252	41	287	57	328	59	321	68	300	73	285	78	2,223	470	21.1
Memphis Hosp. Med. Coll.....	750	189	687	171	675	195	566	153	476	51	492	82	388	63	386	83	4,420	990	22.4
University of the South.....	209	102	227	81	203	38	148	24	132	36	119	28	150	39	99	31	1,287	379	29.4
Chattanooga Medical College.....	224	54	252	41	264	41	252	37	268	39	267	33	249	36	262	25	2,038	306	15.0
University of West Tennessee.....	.....	.....	.....	.....	17	0	27	3	33	6	40	4	23	3	35	9	175	25	14.3
TEXAS.																			
Fort Worth University.....	157	27	141	17	108	5	106	9	191	21	192	24	176	19	108	9	1,179	131	11.1
University of Texas.....	119	6	167	13	179	35	172	23	168	23	189	31	188	27	198	25	1,380	183	13.3
Baylor University.....	81	15	98	19	63	3	68	14	132	36	70	8	57	6	62	11	634	112	16.9
Physio-Medical College of Texas.....	.....	.....	20	3	20	3	21	0	42	5	47	11	44	2	38	4	232	28	12.1
Southwestern University.....	.....	.....	.....	.....	.....	.....	38	11	48	14	85	4	68	9	63	9	302	47	15.5
Coll. of P. and S., Dallas.....	.....	.....	.....	.....	.....	.....	72	14	72	14	95	18	103	23	.....	.....	342</		



## I. COLLEGES NOW EXISTING.

The dates here given refer to the colleges as they exist under their present titles. Some were organized originally under other names, to which reference is made in the fourth column.

Number.	NAME AND LOCATION OF COLLEGE.	Year Organized.	First Class Graduated.	Years When No Classes Graduated.	Previous Titles.	Dean, or Secretary.	1908-9 Session.			Number.
							Begins. 1908.	Ends. 1909.		
ALABAMA.										
1	Birmingham Medical College, Birmingham.....	1894	1895			B. L. Wyman, M.D.....	Oct. 5	April 19	1	1
2	Medical Department of the University of Alabama, Mobile .....	1907	1908		See II-2...	Rhett Goode, M.D.....	Oct. 1	May 1	2	2
ARKANSAS.										
3	College of Physicians and Surgeons, Little Rock..	1906	1907			J. P. Runyan, M.D.....	Oct. 1	April 30	3	3
4	University of Arkansas, Medical Department, Little Rock .....	1899	1900		See II-5...	James H. Lenow, M.D....	Oct. 1	May 1	4	4
CALIFORNIA.										
5	California Eclectic Medical College, Los Angeles..	1907	1908		See II-9...	J. A. Munk, M.D.....	Sept. 14	May 24	5	5
6	College of Physicians and Surgeons, Los Angeles.	1903	1905			Charles W. Bryson, M.D..	Sept. 26	June 23	6	6
7	College of Physicians and Surgeons, San Francisco	1896	1897			D. A. Hodghead, M.D....	Sept. 14	May 1	7	7
8	Cooper Medical College, San Francisco.....	1882	1883		See II-15...	Henry Gibbons, Jr., M.D.	Aug. 15	May 6	8	8
9	Hahnemann Medical College of the Pacific, Homeopathic, San Francisco.....	1902	1903		See II-11...	James W. Ward, M.D....	Sept. 9	May 27	9	9
10	Oakland College of Medicine and Surgery, Oakland	1900	1906			Edward N. Ewer, M.D....	Aug. 17	May 17	10	10
11	University of California Medical Department, San Francisco .....	1872	1873		See II-14...	A. A. D'Ancona, M.D....	Aug. 17	May 12	11	11
12	University of Southern California, College of Medicine, Los Angeles.....	1885	1888			W. Jarvis Barlow, M.D...	Oct. 1	June 11	12	12
COLORADO.										
13	Denver and Gross College of Medicine, Denver....	1902	1902		See II-18...	Walter A. Jayne, M.D....	Sept. 8	May 13	13	13
14	Denver College of Physicians and Surgeons, Denver .....	1908	1908		See II-21...	Joseph B. Kinley, M.D....	Sept. 7	May 13	14	14
15	University of Colorado, Medical Department, (Colorado School of Medicine), Boulder.....	1883	1885	1898-1899		William P. Harlow, M.D.	Sept. 14	June 4	15	15
CONNECTICUT.										
16	Yale Medical School, New Haven.....	1884			See II-22...	Herbert E. Smith, M.D...	Sept. 24	June 25	16	16
DISTRICT OF COLUMBIA.										
17	George Washington University Department of Medicine, Washington .....	1904	1905		See II-23...	W. F. R. Phillips, M.D..	Sept. 30	June 9	17	17
18	Georgetown University School of Medicine, Washington .....	1851	1852			George M. Kober, M.D...	Sept. 27	June 11	18	18
19	Howard University Medical Department, Washington .....	1868	1871			Robert Reyburn, M.D....	Oct. 1	May 28	19	19
GEORGIA.										
20	Atlanta College of Physicians and Surgeons, Atlanta .....	1398	1899		See II-39...	W. S. Elkin, M.D.....	Sept. 28	May 1	20	20
21	Atlanta School of Medicine, Atlanta.....	1905	1906			George H. Noble, M.D....	Sept. 25	April 23	21	21
22	Georgia College of Eclectic Medicine and Surgery, Atlanta .....	1836	1837			Elzie B. Thomas, M.D....	Oct. 1	April 1	22	22
23	Medical College of Georgia, Augusta.....	1829	1833	1864		Joseph Eve Allen, M.D....	Oct. 1	May 1	23	23
ILLINOIS.										
24	American Medical Missionary College, Battle Creek, Mich., and Chicago.....	1895	1899			J. H. Kellogg, M.D.....	Sept. 15	June 15	24	24
25	Bennett College of Eclectic Medicine and Surgery, Chicago .....	1868	1870			John D. Robertson, M.D..	Sept. 22	May 24	25	25
26	Chicago College of Medicine and Surgery, Chicago, (No. 2) <sup>1</sup> .....	1907	1908		See II-44...	Henry S. Tucker, M.D....	Sept. 29	May 18	26	26
27	College of Medicine and Surgery, Physio-Medical, Chicago .....	1899	1900		See II-53...	N. LaDoit Johnson, M.D.	Sept. 23	May 15	27	27
28	College of Physicians and Surgeons, Chicago.....	1882	1883			William E. Quine, M.D...	Sept. 28	June 8	28	28
29	Hahnemann Medical College and Hospital of Chicago .....	1859	1861			W. Henry Wilson, M.D...	Sept. 21	May 15	29	29
30	Hering Medical College, Chicago.....	1892	1893			H. C. Allen, M.D.....	Sept. 30	May 30	30	30
31	Illinois Medical College, Chicago.....	1894	1895			B. B. Eads, M.D.....	Sept. 2	April 29	31	31
32	Jenner Medical College, Chicago <sup>2</sup> .....	1892	1896			John MacKellar, M.D....	Sept. 1	June 25	32	32
33	National Medical University, Chicago <sup>2</sup> .....	1900	1900		See II-76...	L. D. Rogers, M.D.....			33	33
34	Northwestern University Medical School, Chicago	1891	1892		See II-51...	Charles L. Mix, M.D....	Oct. 6	June 15	34	34
35	Reliance Medical College, Chicago <sup>2</sup> .....	1907				J. F. Burkholder, M.D....	Sept. 3	June 27	35	35
36	Rush Medical College, Chicago.....	1843	1844			John M. Dodson, M.D....	Oct. 1	June 11	36	36
INDIANA.										
37	Indiana University School of Medicine, Bloomington and Indianapolis.....	1890	1908			B. D. Myers, M.D.....	Sept. 22	June 25	37	37
38	Physio-Medical College of Indiana, Indianapolis..	1873	1874			C. T. Bedford, M.D.....	Sept. 8	May 4	38	38
IOWA.										
39	Drake University College of Medicine, Des Moines	1903	1904		See II-110...	D. S. Fairchild, M.D.....	Sept. 14	June 16	39	39
40	Keokuk Medical College, College of Physicians and Surgeons, Keokuk.....	1899	1900		See II-109...	G. F. Jenkins, M.D.....	Sept. 15	May 25	40	40
41	Sioux City College of Medicine, Sioux City.....	1890	1893			F. E. Franchere, M. D....	Sept. 17	June 7	41	41
42	State University of Iowa, College of Medicine, Iowa City .....	1869	1871			James R. Guthrie, M.D...	Sept. 16	June 13	42	42
43	State University of Iowa, College of Homeopathic Medicine, Iowa City.....	1877	1878			George Royal, M.D.....	Sept. 16	June 16	43	43
KANSAS.										
44	Kansas Medical College, Topeka.....	1890	1892			Wm. S. Lindsey, M.D....	Sept. 8	April 28	44	44
45	University of Kansas, School of Medicine, Kansas City and Lawrence.....	1880	1906			George H. Hoxie, M.D....	Sept. 16	June 9	45	45
46	Western Eclectic College of Medicine and Surgery, Kansas City .....	1908			See II-117...	Theodore Doyle, M.D....	Sept. 7	April 30	46	46
KENTUCKY.										
47	Louisville National Medical College (Colored), Louisville .....	1888	1889			E. S. Porter, M.D.....	Oct. 6	May 21	47	47
48	Southwestern Homeopathic College, Louisville....	1892	1894			G. S. Coon, M.D.....	Oct. 6	May 19	48	48
49	University of Louisville, Medical Department, Louisville .....	1846	1847	1863	See II-128...	T. C. Evans, M.D.....	Nov. 1	May 31	49	49



Number.	NAME AND LOCATION OF COLLEGE.	Year Organ- ized.	First Class Graduated.	Years When No Classes Graduated.	Previous Titles.	Dean, or Secretary.	1908-9 Session.			Number.
							Begins. 1908.	Ends. 1909.		
LOUISIANA.										
50	Flint Medical College of New Orleans University, New Orleans .....	1902	1903	.....	See II-132.	A. D. Bush, M.D.....	Sept. 28	May	5	59
51	Medical Department of the Tulane University of Louisiana, New Orleans.....	1884	1885	.....	See II-133.	Isadore Dyer, M.D.....	Oct. 1	May	19	51
MAINE.										
52	Medical School of Maine, Brunswick.....	1820	1820	.....	.....	Alfred Mitchell, M.D.....	Oct. 22	June	23	52
MARYLAND.										
53	Atlantic Medical College, Baltimore.....	1907	1908	.....	See II-142.	Eldridge C. Price, M.D....	Oct. 1	June	3	53
54	Baltimore Medical College, Baltimore.....	1881	1882	.....	.....	David Streett, M.D.....	Sept. 21	May	21	54
55	College of Physicians and Surgeons, Baltimore...	1872	1873	.....	.....	Charles F. Bevan, M.D....	Oct. 1	June	1	55
56	Johns Hopkins Medical School, Baltimore.....	1837	1907	.....	.....	William H. Howell, M.D..	Oct. 6	June	14	56
57	Maryland Medical College, Baltimore.....	1898	1899	.....	.....	Harry Gross, M.D.....	Oct. 1	June	1	57
58	*University of Maryland School of Medicine, Balti- more .....	1812	1813	.....	See II-139.	R. Dorsey Coale, M.D....	Oct. 1	June	1	58
59	Woman's Medical College of Baltimore, Baltimore	1882	1883	.....	.....	J. R. Abercrombie, M.D.	Oct. 1	May	31	59
MASSACHUSETTS.										
60	Boston University, School of Medicine, Boston....	1873	1874	.....	.....	John P. Sutherland, M.D.	Oct. 1	June	2	60
61	College of Physicians and Surgeons, Boston.....	1880	1882	.....	.....	C. H. Cobb, M.D.....	Sept. 18	June	20	61
62	Harvard Medical School, Boston.....	1782	1788	.....	.....	William L. Richardson....	Oct. 1	June	30	62
63	Tufts College Medical School, Boston.....	1893	1894	.....	.....	F. M. Briggs, M.D.....	Sept. 30	May	26	63
MICHIGAN.										
64	Detroit College of Medicine, Detroit.....	1885	1886	.....	See II-155.	F. B. Walker, M.D.....	Sept. 16	May	27	64
65	Detroit Homeopathic College, Detroit.....	1899	1900	.....	.....	D. A. MacLachlan, M.D..	Sept. 15	May	15	65
66	University of Michigan, Department of Medicine and Surgery, Ann Arbor.....	1850	1851	.....	.....	Victor C. Vaughan, M.D..	Sept. 29	June	24	66
67	University of Michigan, Homeopathic College, Ann Arbor .....	1875	1877	.....	.....	W. B. Hinsdale, M. D....	Sept. 29	June	24	67
MINNESOTA.										
68	University of Minnesota, College of Medicine and Surgery, Minneapolis .....	1883	1889	.....	.....	F. F. Wesbrook, M.D.....	Sept. 15	June	5	68
69	University of Minnesota, College of Homeopathic Medicine and Surgery, Minneapolis.....	1888	1889	.....	See II-167.	Eugene L. Mann, M.D....	Sept. 15	June	5	69
MISSISSIPPI.										
70	Mississippi Medical College, Meridian.....	1906	1907	.....	.....	T. A. Barber, M.D.....	Oct. 1	May	1	70
71	University of Mississippi, Medical Department, Oxford .....	1903	.....	.....	.....	W. S. Leathers, M.D.....	Sept. 8	June	8	71
MISSOURI.										
72	American Medical College, St. Louis <sup>3</sup> .....	1873	1874	.....	.....	P. C. Clayberg, M.D.....	Sept. 16	April	21	72
73	Barnes Medical College, St. Louis <sup>4</sup> .....	1892	1893	1899	.....	C. M. Ament, M.D.....	Sept. 7	May	1	73
74	Ensworth Medical College, St. Joseph <sup>5</sup> .....	1888	1889	1906-1907	See II-175.	T. E. Potter, M.D.....	Sept. 7	May	1	74
75	Hippocratean College of Medicine, St. Louis <sup>4</sup> .....	1907	.....	.....	.....	Emory Lauphear, M.D....	Sept. 7	June	19	75
76	Homeopathic Medical College of Missouri, St. Louis .....	1859	1860	1862-1864	.....	L. C. McElwee, M.D.....	Sept. 8	April	23	76
77	Kansas City Hahnemann Medical College, Kansas City .....	1902	1903	.....	.....	Frank Elliott, M.D.....	Sept. 8	May	8	77
78	St. Louis University School of Medicine, St. Louis	1903	1904	.....	See II-191.	E. P. Lyon, M.D.....	Oct. 1	May	22	78
79	St. Louis College of Physicians and Surgeons....	1869	1870	1874-1879	.....	Waldo Briggs, M.D.....	Sept. 12	May	1	79
80	University of Missouri, Medical Department, Columbia <sup>6</sup> .....	1845	1846	Note 6	See II-190.	A. W. McAlester, M.D....	Sept. 14	June	2	80
81	University Medical College, Kansas City.....	1838	1889	.....	See II-210.	J. E. Logan, M.D.....	Sept. 6	May	15	81
82	Washington University Medical Department, St. Louis .....	1891	1892	.....	See II-207.	Wm. H. Warren, Ph.D....	Sept. 28	May	26	82
NEBRASKA.										
83	John A. Creighton Medical College, Omaha.....	1892	1895	.....	.....	D. C. Bryant, M.D.....	Sept. 1	May	1	83
84	Lincoln Medical College (Eclectic), Lincoln.....	1890	1891	.....	.....	F. L. Wilmeth, M.D.....	Sept. 7	June	7	84
85	Nebraska College of Medicine, Lincoln.....	1905	1907	.....	.....	James F. Stevens, M.D....	Sept. 14	June	9	85
86	University of Nebraska, College of Medicine, Lincoln and Omaha.....	1902	1903	.....	See II-216.	Henry B. Ward, Ph.D....	Sept. 16	May	20	86
NEW HAMPSHIRE.										
87	Dartmouth Medical School, Hanover.....	1797	1798	.....	.....	William T. Smith, M.D...	Aug. 4	March	26	87
NEW YORK.										
88	Albany Medical College, Albany.....	1838	1839	.....	.....	Samuel B. Ward, M.D....	Sept. 23	May	18	88
89	College of Physicians and Surgeons in the City of New York .....	1807	1811	.....	See II-237.	Saml. W. Lambert, M.D..	Sept. 23	May	26	89
90	Cornell University Medical College, Ithaca and New York City.....	1898	1899	.....	.....	William M. Polk, M.D....	Sept. 30	June	9	90
91	Eclectic Medical College of the City of New York, York City .....	1866	1867	.....	.....	Geo. W. Boskowitz, M.D.	Sept. 15	May	15	91
92	York City .....	1905	.....	.....	.....	James J. Walsh, M.D.....	Sept. 24	May	20	92
93	Long Island College Hospital, Brooklyn.....	1858	1859	.....	.....	John D. Rushmore, M.D..	Sept. 28	May	14	93
94	New York Homeopathic Medical College and Hos- pital, New York City.....	1887	1888	.....	See II-255.	J. W. Dowling, M.D.....	Oct. 6	May	12	94
95	New York Medical College and Hospital for Women (Homeopathic), New York City.....	1866	1867	.....	See II-259.	Helen C. Palmer, M.D.....	Oct. 1	May	11	95
96	Syracuse University, College of Medicine, Syra- cuse .....	1875	1876	.....	See II-235.	John L. Heffron, M.D....	Oct. 6	June	10	96
97	University and Bellevue Hospital Medical College, New York City.....	1898	1899	.....	See II-229.	Egbert LeFevre, M.D.....	Sept. 30	June	2	97
98	University of Buffalo Medical Department, Buffalo	1846	1847	.....	.....	Matthew D. Mann, M.D...	Sept. 28	May	28	98
NORTH CAROLINA.										
99	Leonard School of Medicine (Colored), Raleigh....	1882	1886	1887	.....	James McKee, M.D.....	Oct. 1	May	13	99
100	North Carolina Medical College, Charlotte.....	1893	1893	.....	See II-275	W. O. Nisbet, M.D.....	Sept. 9	April	20	100
101	University of North Carolina, Medical Depart- ment, Chapel Hill and Raleigh.....	1890	1903	.....	.....	H. A. Royster, M.D.....	Sept. 7	May	29	101
102	Wake Forest School of Medicine, Wake Forest <sup>7</sup> ...	1902	.....	.....	.....	Watson S. Rankin, M.D..	Sept. 1	May	25	102
NORTH DAKOTA.										
103	Medical College of the State University of North Dakota, University <sup>7</sup> .....	1905	.....	.....	.....	M. A. Brannon, A.M.....	Sept. 22	June	17	103

For footnotes to this table see page 602.



Number.	NAME AND LOCATION OF COLLEGE.	Year Organ- ized.	First Class Graduated.	Years When No Classes Graduated.	Previous Titles.	Dean, or Secretary.	1908-9 Session.			Number.
							Begins. 1908.		Ends. 1909.	
OHIO.										
104	Cleveland College of Physicians and Surgeons, Cleveland	1896	1897		See II-281.	R. E. Skeel, M.D.	Oct. 1	May 20		104
105	Cleveland Homeopathic Medical College, Cleveland	1898	1898		See II-308.	George H. Quay, M.D.	Sept. 23	May 14		105
106	Eclectic Medical Institute, Cincinnati	1845	1846		See II-312.	R. L. Thomas, M.D.	Sept. 14	April 28		106
107	Medical College of Ohio, Cincinnati <sup>8</sup>	1819	1821			Fred. Forchheimer, M.D.	Oct. 1	June 5		107
108	Miami Medical College, Cincinnati <sup>8</sup>	1852	1853	1858-1865		J. C. Oliver, M.D.	Oct. 1	June 5		108
109	Pulte Medical College, Cincinnati	1872	1873			Charles E. Walton, M.D.	Sept. 30	May 25		109
110	Starling-Ohio Medical College, Columbus	1907	1908		See II-305.	George M. Waters, M.D.	Sept. 23	May 18		110
111	Toledo Medical College, Toledo	1883	1883			James Donnelly, M.D.	Oct. 1	June 1		111
112	Western Reserve University, Medical Depart- ment, Cleveland	1881	1882		See II-285.	B. L. Millikin, M.D.	Oct. 1	June 17		112
OKLAHOMA.										
113	College of Medicine of Epworth University, Okla- homa City	1904	1907			A. K. West, M.D.	Oct. 2	May 10		113
114	State University of Oklahoma, School of Medi- cine, Norman	1903				C. S. Bobo, M.D.	Sept. 15	June 10		114
OREGON.										
115	Medical Department Willamette University, Salem <sup>9</sup>	1865	1867	1896		W. H. Byrd, M.D.	Oct. 5	May 15		115
116	University of Oregon Medical Department, Port- land	1887	1888			S. E. Josephi, M.D.	Sept. 14	May 2		116
PENNSYLVANIA.										
117	Hahnemann Medical College and Hospital, Phila- delphia	1869	1870		See II-323.	Herb't L. Northrop, M.D.	Sept. 21	June 2		117
118	Jefferson Medical College, Philadelphia	1833	1839		See II-326.	James W. Holland, M.D.	Sept. 24	June 8		118
119	Medico-Chirurgical College of Philadelphia	1831	1882			Seneca Egbert, M.D.	Sept. 23	June 5		119
120	Temple College, Medical Department, Philadel- phia	1901	1904			I. Newton Snively, M.D.	Sept. 14	June 15		120
121	University of Pennsylvania, Department of Medi- cine, Philadelphia	1782	1783		See II-318.	Charles H. Frazier, M.D.	Sept. 25	June 16		121
122	Western Pennsylvania Medical College, Pittsburg	1836	1887			J. Chris Lange, M.D.	Oct. 1	June 15		122
123	Woman's Medical College of Pennsylvania, Phila- delphia	1850	1851	1861, 1862		Clara Marshall, M.D.	Sept. 23	May 26		123
PHILIPPINE ISLANDS.										
124	Philippine Medical School, Manila	1907				Harry T. Marshall, M.D.				124
125	University of St. Thomas, Medical Department, Manila	1771				Lic. Blas C. Aleuaz				125
SOUTH CAROLINA.										
126	Medical College of the State of South Carolina, Charleston	1832	1833	1861-1865	See II-335.	Allard Memminger, M.D.	Oct. 1	April 10		126
SOUTH DAKOTA.										
127	University of South Dakota, College of Medicine, Vermilion <sup>7</sup>	1907				Christ. P. Lommen, B.S.	Sept. 14	June 10		127
TENNESSEE.										
128	Chattanooga Medical College, Chattanooga	1839	1890			J. R. Rathmell, M.D.	Sept. 23	April 26		128
129	College of Physicians and Surgeons, Memphis	1906	1907			Heber Jones, M.D.	Oct. 1	May 1		129
130	Knoxville Medical College (Colored), Knoxville	1900	1900	1907	See II-342.	H. M. Green, M.D.				130
131	Memphis Hospital Medical College, Memphis	1880	1881			W. B. Rogers, M.D.	Oct. 1	April 30		131
132	Meharry Medical College (Colored), Nashville	1876	1877			G. W. Hubbard, M.D.	Sept. 9	April 6		132
133	Tennessee Medical College, Knoxville	1889	1890			S. L. Jones, M.D.	Oct. 1	May 1		133
134	University of Nashville, Medical Department, Nashville <sup>10</sup>	1850	1852			William G. Ewing, M.D.	Sept. 15	April 30		134
135	University of Tennessee, Department of Medicine, Nashville	1879	1880		See II-344.	Hilliard Wood, M.D.	Apr. 1	Oct. 31, '08		135
136	University of the South, Medical Department (Sewanee Medical College), Sewanee	1892	1893			John S. Cain, M.D.	Sept. 15	May 1		136
137	University of West Tennessee, Medical Depart- ment (Colored), Memphis	1900	1904			M. V. Lynk, M.D.	Sept. 14	April 14		137
138	Vanderbilt University, Medical Department, Nashville <sup>10</sup>	1874	1875			William L. Dudley, M.D.	Sept. 16	May 1		138
TEXAS.										
139	Baylor University College of Medicine, Dallas	1903	1904		See II-353.	Edward H. Cary, M.D.	Oct. 1	May 1		139
140	College of Physicians and Surgeons, Dallas <sup>11</sup>	1905	1906		See II-346.	Arthur C. Bell, M.D.				140
141	Medical Department of Fort Worth University, Fort Worth	1894	1895			W. R. Thompson, M.D.	Oct. 6	May 6		141
142	Southwestern University Medical College, Dallas	1903	1904			Jno. O. McReynolds, M.D.	Oct. 1	April 30		142
143	University of Texas, Department of Medicine, Galveston	1891	1892			William S. Carter, M.D.	Oct. 1	May 29		143
UTAH.										
144	University of Utah, Department of Medicine, Salt Lake City <sup>7</sup>	1906				Byron Cummings, A.M.	Sept. 14	June 2		144
VERMONT.										
145	University of Vermont, College of Medicine, Bur- lington	1822	1823	1837-1853		Henry C. Finkham, M.D.	Nov. 11	June 24		145
VIRGINIA.										
146	Medical College of Virginia, Richmond	1858	1859		See II-365.	Chris. Tompkins, M.D.	Sept. 15	May 19		146
147	University of Virginia Department of Medicine, Charlottesville	1825	1828	1865		R. H. Whitehead, M.D.	Sept. 10	June 16		147
148	University College of Medicine, Richmond	1894	1894		See II-364.	Paulus A. Irving, M.D.	Sept. 15	May 18		148
WEST VIRGINIA.										
149	West Virginia University College of Medicine, Morgantown <sup>7</sup>	1902				J. N. Simpson, M.D.	Sept. 21	June 15		149
WISCONSIN.										
150	Marquette University, Medical Department (Mil- waukee Medical College), Milwaukee	1894	1895			Warren B. Hill, M.D.	Oct. 1	June 1		150
151	University of Wisconsin College of Medicine, Madison <sup>7</sup>	1907				Charles R. Bardeen, M.D.	Oct. 1	June 18		151
152	Wisconsin College of Physicians and Surgeons, Milwaukee	1893	1894			J. C. Phillips, M.D.	Sept. 29	May 27		152

For footnotes to this table see page 602.



II. COLLEGES EXTINCT, OR NO LONGER EXISTING UNDER NAME GIVEN.

Number.	NAME AND LOCATION OF COLLEGE.	Year Organ- ized.	First Class Graduated.	Years When No Classes Graduated.	Last Class Graduated.	Year of Ter- mination.	Remarks.	Number.
<b>ALABAMA.</b>								
1	Graffenberg Institute, Dadeville.....	1852	.....	.....	.....	1862	Extinct. Charter expired.....	1
2	Medical College of Alabama, Mobile.....	1859	1861	1862-1868	1907	1907	New title. See I-2.....	2
3	Medical College of Montezuma University, Bessemer....	1896	1897	.....	1898	1898	Extinct.....	3
4	Southern University, Medical Department, Greensboro....	1872	.....	.....	1880	1880	Extinct.....	4
<b>ARKANSAS.</b>								
5	Arkansas Industrial University, Medical Department Little Rock .....	1879	1880	.....	1899	1899	New title. See I-4.....	5
6	Bethel Medical Department of Southwestern University, Little Rock .....	.....	.....	.....	.....	1890*	Extinct (a) .....	6
7	Sulphur Rock College, Medical Department of Sulphur Rock .....	1898	.....	.....	.....	1902	New charter. No grads. See II-349.	7
8	Texas Health College, Hot Springs.....	1893	.....	.....	.....	.....	Extinct. Fraudulent (b).....	8
<b>CALIFORNIA.</b>								
9	California Medical College.....	1879	1880	.....	1906	1906	New title. See I-5.....	9
10	California Medical Society and College of Physicians....	1876	.....	.....	.....	1877	Extinct. ....	10
11	Hahnemann Hospital College of San Francisco, San Francisco .....	1888	.....	.....	1902	1902	New title. See I-9.....	11
12	Hahnemann Medical College, San Francisco.....	1883	1884	.....	.....	1888	New title. See II-11.....	12
13	Pacific Coast Regular College of Medicine, San Fran- cisco .....	1900	.....	.....	.....	1900	New title. See II-17. Fraudulent..	13
14	Toland Medical College, San Francisco.....	1863	1865	.....	1872	1872	New title. See I-11.....	14
15	University College of San Francisco, Medical De- partment .....	1873	.....	.....	.....	1882	New title. See I-8.....	15
16	University of the Pacific, Medical Department, San Francisco .....	1858	1859	1865-1869	.....	1873	New title. See II-15.....	16
17	West Coast Medical College, San Francisco.....	1900	.....	.....	.....	1900	Extinct. No graduates (c).....	17
<b>COLORADO.</b>								
18	Denver College of Medicine, Denver.....	1881	1882	.....	1901	1902	Merged with II-20 to form I-13.....	18
19	Denver Homeopathic College, Denver.....	1894	1895	.....	1906	1907	New title. See II-21.....	19
20	Gross Medical College, Denver.....	1887	1888	.....	1901	1902	Merged with II-18 to form I-13.....	20
21	Westminster University College of Medicine.....	1907	1907	.....	1907	1903	New title. See I-14.....	21
<b>CONNECTICUT.</b>								
22	Medical Institution of Yale College.....	1813	1814	.....	.....	1879	New title. See I-16.....	22
<b>DISTRICT OF COLUMBIA.</b>								
23	Columbian University Medical Department, Washington	1873	1874	.....	1904	1904	New title. See I-17.....	23
24	National Homeopathic Medical College, Washington....	1893	1894	.....	1895	1896	New title. See II-27.....	24
25	National Medical College, Washington.....	1825	1826	1834-1838	.....	.....	.....	25
26	National University Medical Department, Washington..	1884	1885	1861-1863	1873	1873	New title. See II-23.....	26
27	Washington Homeopathic Medical College, Washington..	1896	1896	.....	1903	1903	Merged into II-23.....	27
28	University of Florida Medical Department, Tallahassee, Jacksonville .....	1883	.....	.....	.....	1886	Extinct .....	28
<b>GEORGIA.</b>								
29	Atlanta Medical College, Atlanta.....	1855	1856	1861-1865	1898	1898	Merged with II-41 to form I-20.....	29
30	Clark University, Medical Department, Atlanta.....	1886	.....	.....	.....	1886	Extinct. No classes graduated.....	30
31	College of American Medicine and Surgery, Forsyth- Macon-Atlanta .....	1874	1874	1877-1881	1883	1884	Merged into II-33.....	31
32	Dalton Medical College, Dalton.....	1886	.....	.....	.....	.....	Extinct (a).....	32
33	Georgia Eclectic Medical College, Atlanta.....	1877	1877	.....	1886	1886	New title. See I-22.....	33
34	International Medical Missionary College and Training School for Nurses, Atlanta.....	1904	1906	.....	1908	1908	Suspended .....	34
35	Medical Academy of Georgia, Augusta.....	1828	.....	.....	.....	1829	New title. No graduates. See I-23..	35
36	Middle Georgia Medical College, Griffin.....	1859	.....	.....	.....	.....	Extinct (a).....	36
37	Oglethorpe Medical College, Savannah.....	1856	.....	.....	.....	1861	Extinct .....	37
38	Reform Medical College of Georgia, Macon.....	1854	.....	1861-1867	.....	1874	New title. See II-31.....	38
39	Savannah Medical College, Savannah.....	1838	.....	1861-1866	.....	1880	Extinct. ....	39
40	Southern Botanic Medical College,, Forsyth-Macon- Atlanta .....	1839	1841	.....	.....	1854	New title. See II-38.....	40
41	Southern Medical College, Atlanta.....	1878	1880	.....	1893	1898	Merged with II-29 to form I-20.....	41
42	Thompsonian College, Barboursville.....	1850	.....	.....	.....	.....	Extinct. ....	42
43	Woman's Medical College of Georgia and Training School for Nurses, Atlanta.....	1889	1890	.....	1891	1891	Extinct .....	43
<b>ILLINOIS.</b>								
44	American College of Medicine and Surgery, Chicago....	1902	1903	.....	1907	1907	New title. See I-26.....	44
45	Chaddock School of Medicine, Quincy.....	1888	1889	.....	1890	1890	Extinct. Had 30 graduates.....	45
46	Chicago College of Medicine and Surgery, (Physio-med- ical), Chicago .....	1897	.....	.....	.....	1899	Merged with II-53 to form I-27. No classes graduated .....	46
47	Chicago College of Science, Chicago.....	1888	.....	.....	.....	1889	Extinct. Fraudulent .....	47
48	Chicago Correspondence University, Chicago.....	1885	.....	.....	.....	1887	Extinct. Fraudulent .....	48
49	Chicago Eclectic Medical College, Chicago.....	1901	.....	.....	.....	1902	New title. See II-44. No graduates.	49
50	Chicago Homeopathic Medical College, Chicago.....	1876	1877	.....	1904	1904	Merged into I-29.....	50
51	Chicago Medical College .....	1864	.....	.....	1891	1891	New title. See I-34.....	51
52	Chicago Northwestern College.....	1862	.....	.....	.....	1870	New title. See II-59. Fraudulent...	52
53	Chicago Physio-Medical College .....	1891	1891	.....	1899	1899	Merged with II-46 to form I-27.....	53
54	Chicago Physio-Medical Institute.....	1885	1886	.....	1890	1891	New title. See II-53.....	54
55	College of Physicians and Surgeons of the Upper Mis- sissippi, Rock Island.....	1848	1850	.....	.....	1850	New title. See II-108.....	55
56	Dearborn Medical College, Chicago.....	1903	1904	.....	1907	1907	Extinct. A night school.....	56
57	Dunham Medical College, Chicago (Homeopathic).....	1895	1896	.....	1902	1902	Merged into I-30.....	57
58	Dutton Medical College, Chicago.....	.....	.....	.....	.....	1903*	Fraudulent. Extinct .....	58
59	Edinburg University of Chicago and St. Louis, Chicago.	1870	.....	.....	.....	.....	Extinct. Fraudulent .....	59
60	German Academy of Physiatrie Physicians, Chicago...	1892	.....	.....	.....	.....	Extinct. Fraudulent (d).....	60
61	German-American Homeopathic Medical College, Chicago	1892	.....	.....	.....	.....	Extinct. Fraudulent (d).....	61
62	German College of Gynecology, Pediatrics and Obstet- rics, Chicago .....	1892	.....	.....	.....	.....	Extinct. Fraudulent (d).....	62
63	German College of Medicine and Obstetrics, Chicago....	1891	.....	.....	.....	.....	Extinct. Fraudulent (d).....	63
64	German Homeopathic Medical College, Chicago.....	1891	.....	.....	.....	.....	Extinct. Not recognized (d).....	64
65	German Medical College, Chicago.....	1891	.....	.....	.....	.....	Extinct. Fraudulent (d).....	65
66	Harvey Medical College, Chicago.....	1891	1895	.....	1905	1905	Extinct. A night school.....	66
67	Illinois Health University, Chicago.....	.....	.....	.....	.....	1897	Charter revoked. Fraudulent (e)...	67
68	Illinois Standard College of Medicine and Surgery.....	.....	.....	.....	.....	1898*	Extinct. Not recognized (a).....	68

\* Date given is approximate. Footnotes, (a), (b), etc., will be found on page 602.



Number.	NAME AND LOCATION OF COLLEGE.	Year Organized.	First Class Graduated.	Years When No Classes Graduated.	Last Class Graduated.	Year of Termination.	Remarks.	Number.
<b>ILLINOIS—Continued.</b>								
69	Independent Medical College, Chicago.....	1895	.....	.....	.....	1899	Charter revoked. Fraudulent (e)...	69
70	International Medical Missionary Institute.....	1895	.....	.....	.....	.....	Extinct (a).....	70
71	Medical Department of Illinois, Jacksonville.....	1843	.....	.....	.....	1848	Extinct. Had 37 graduates.....	71
72	Medical Department of Lind University, Chicago.....	1859	1860	.....	.....	1864	New title. See II-51.....	72
73	Medical Department University of St. Charles, St. Charles.....	1844	.....	.....	.....	1845	Extinct.....	73
74	Metropolitan Medical College, Chicago.....	.....	.....	.....	.....	1900	Charter revoked. Fraudulent (e)...	74
75	National Homeopathic Medical College, Chicago.....	1891	1892	.....	1895	1895	New title. See II-76.....	75
76	National Medical College, Chicago.....	1895	1896	.....	1899	1900	New title. See I-33.....	76
77	National University of Illinois, Chicago.....	1889	.....	.....	.....	.....	Extinct. Fraudulent.....	77
78	Northwestern College of Midwifery, Chicago.....	1875	.....	.....	.....	1878	New title. Fraudulent. See II-92 (f).....	78
79	Northwestern University Woman's Medical School, Chicago.....	1892	1892	.....	1901	1901	Extinct.....	79
80	Quincy College of Medicine, Quincy.....	1882	1884	.....	1888	1888	New title. See II-45.....	80
81	Woman's Hospital Medical College, Chicago.....	1870	1871	1872-1878	1891	1892	New title. See II 79.....	81
<b>INDIANA.</b>								
82	American Medical College, Indianapolis.....	1894	1895	.....	1897	1897	Extinct (g).....	82
83	Beach Medical College, Indianapolis.....	1883	.....	.....	.....	1884	New title. See II-84.....	83
84	Beach Medical Institute, Indianapolis.....	1884	1885	.....	1885	1886	Merged into II-96 (h).....	84
85	Central College of Physicians and Surgeons, Indianapolis.....	1879	1880	.....	1905	1905	Merged with II-103 to form II-99.....	85
86	College of Physicians and Surgeons of Indiana, Indianapolis.....	1873	1874	.....	1878	1878	Merged with II-98 to form II-103.....	86
87	Curtis Physio-Medical College, Indianapolis.....	1893	.....	.....	.....	1898	Extinct (g).....	87
88	Curtis Physio-Medical Institute, Marion.....	1831	.....	.....	.....	1890	Extinct (g), (h).....	88
89	Department of Obstetrics, Indiana Eclectic Medical College, Indianapolis.....	1878	.....	.....	.....	1890	Extinct. Fraudulent (f).....	89
90	Eclectic College of Physicians and Surgeons, Indianapolis.....	1890	1891	.....	1894	1894	Extinct.....	90
91	Eclectic Medical College of Indiana.....	1900	1903	.....	1905	1908	Suspended.....	91
92	Fort Wayne College of Medicine, Fort Wayne.....	1879	1880	1899	1905	1905	Merged with II-103 to form II-99.....	92
93	Hospital Medical College of Evansville, Evansville.....	1882	1883	.....	1886	1886	Extinct.....	93
94	Indiana Central Medical College, Greencastle.....	1850	.....	.....	.....	1854	Extinct.....	94
95	Indiana College of Medicine and Midwifery, Indianapolis.....	1878	.....	.....	.....	1888*	Extinct. Fraudulent (f).....	95
96	Indiana Eclectic Medical College, Indianapolis.....	1880	1881	.....	1890	1890	Extinct (h).....	96
97	Indiana Medical College, LaPorte.....	1845	.....	.....	.....	1849	Extinct.....	97
98	Indiana Medical College, Indianapolis (No. 1).....	1869	1870	.....	1878	1878	Merged with II-86 to form II 103.....	98
99	Indiana Medical College, Indianapolis (No. 2).....	1905	1906	.....	1908	1908	Merged into I-138.....	99
100	LaPorte University, Medical Department, LaPorte.....	1844	.....	.....	.....	1845	New title. See II-97.....	100
101	Medical College of Evansville, Evansville.....	1849	1850	1854-1872	1884	1884	Extinct.....	101
102	Medical College of Fort Wayne, Fort Wayne.....	1876	1877	.....	1883	1883	Extinct.....	102
103	Medical College of Indiana, Indianapolis.....	1878	1879	.....	1905	1905	Merged with II-85, 92, to form II-99.....	103
104	State College of Physicians and Surgeons, Indianapolis.....	1906	1907	.....	1907	1907	New title. See I-38.....	104
105	University of Indiana, New Albany.....	1833	.....	.....	.....	.....	Extinct. Fraudulent.....	105
106	University of Indianapolis, Indianapolis.....	.....	.....	.....	.....	1891*	Non-existent (i).....	106
107	University of Medicine, Indianapolis.....	1897	1898	.....	.....	.....	Extinct (g).....	107
<b>IOWA.</b>								
108	College of Physicians and Surgeons, Keokuk.....	1849	1850	.....	1899	1899	Merged with II-114 to form I-40 (j)...	108
109	Council Bluffs Medical College, Council Bluffs.....	1893	.....	.....	.....	1895	Extinct. No graduates.....	109
110	Iowa College of Physicians and Surgeons, Des Moines.....	1882	1883	.....	1903	1903	New title. See I-39.....	110
111	Iowa Eclectic Medical College, Des Moines.....	1881	1882	1884-1887	1893	1893	Extinct. See II-112 (h).....	111
112	Iowa Medical College, Eclectic, Des Moines.....	1883	1884	.....	.....	1887	Extinct (h).....	112
113	Iowa Medical College, Keokuk.....	1858	.....	.....	.....	1860	Extinct.....	113
114	Keokuk Medical College, Keokuk.....	1890	1891	.....	1899	1899	Merged with II-108 to form I-40.....	114
115	King Eclectic Medical College, Des Moines.....	1883	1884	.....	.....	1889*	Extinct (k).....	115
<b>KANSAS.</b>								
116	College of Physicians and Surgeons, Kansas City.....	1894	1895	.....	1905	1905	Merged. See I-45.....	116
117	Eclectic Medical University, Kansas City.....	1898	1900	.....	1908	1908	New title. See I-46.....	117
118	Kansas City College of Medicine and Surgery, Kansas City.....	1897	1898	.....	1898	1898	New title. See II-194.....	118
119	Kansas Medical College, Independence.....	1872	1874	.....	1875	1875	Extinct.....	119
120	Wichita Medical College, Wichita.....	1889	.....	.....	.....	1890	Extinct. No graduates.....	120
<b>KENTUCKY.</b>								
121	Eclectic Medical College, Louisville.....	1848	.....	.....	.....	.....	Extinct.....	121
122	Hospital College of Medicine, Louisville.....	1874	1875	.....	1907	1907	Merged with II-127 to form II-126....	122
123	Jefferson School of Medicine, Louisville.....	1882	1882	.....	1882	1882	Extinct.....	123
124	Kentucky School of Medicine, Louisville.....	1850	1851	.....	1908	1908	Merged into I-49.....	124
125	Kentucky University Medical Department, Louisville.....	1898	1899	.....	1906	1906	Merged into I-49.....	125
126	Louisville and Hospital Medical College, Louisville.....	1907	1908	.....	1908	1908	Merged into I-49.....	126
127	Louisville Medical College, Louisville.....	1869	1870	.....	1907	1907	Merged with II-122 to form II-126....	127
128	Louisville Medical Institute, Louisville.....	1837	1838	.....	1846	1846	New title. See I-49.....	128
129	Medical Department State University (Colored) Louisville.....	1899	.....	.....	.....	1903	Merged into I-47. No graduates.....	129
130	Medical Department of Transylvania University, Lexington.....	1817	1818	.....	.....	1859	New title. See II, 124.....	130
<b>LOUISIANA.</b>								
131	Charity Hospital Medical College, New Orleans.....	1873	.....	.....	.....	1877	Extinct.....	131
132	Medical College of New Orleans, University, New Orleans.....	1889	1892	1893	1902	1902	New title. See I-50.....	132
133	Medical College of Louisiana, New Orleans.....	1834	1835	1863-1865	1884	1884	New title. See I-51.....	133
134	New Orleans School of Medicine, New Orleans.....	1856	.....	.....	.....	1870	Extinct.....	134
<b>MAINE.</b>								
135	Druidic University of Maine, Lewiston.....	1880	.....	.....	.....	1887	Charter revoked (h) (l).....	135
136	Eclectic Medical College of Maine, Lewiston.....	1831	.....	.....	.....	1887	Charter revoked (h) (l).....	136
137	Portland School for Medical Instruction, Portland.....	1858	.....	.....	.....	1902	Extinct. No graduates.....	137
<b>MARYLAND.</b>								
138	Baltimore University School of Medicine, Baltimore.....	1884	1885	.....	1907	1907	Extinct.....	138
139	College of Medicine of Maryland, Baltimore.....	1807	1810	.....	1812	1812	New title. See I-58.....	139
140	Medical Department of Washington College, Baltimore.....	1827	1828	.....	.....	1840	New title. See II-143.....	140
141	Medico-Chirurgical and Theological College of Christ's Institution, Baltimore.....	1900	.....	.....	.....	.....	(m).....	141
142	Southern Homeopathic Medical College, Baltimore.....	1891	1892	.....	1907	1907	New title. See I-53.....	142
143	Washington University School of Medicine, Baltimore.....	1840	.....	1851-1866	.....	1877	Merged into I-55.....	143

\* Date given is approximate. Footnotes, (a), (b), etc., will be found on page 602.



Number.	NAME AND LOCATION OF COLLEGE.	Year Organized.	First Class Graduated.	Years When No Classes Graduated.	Last Class Graduated.	Year of Termination.	Remarks.	Number.
<b>MASSACHUSETTS.</b>								
141	Bellevue Medical College of Massachusetts, Boston.....	.....	.....	.....	.....	1883	Extinct. Fraudulent .....	144
145	Berkshire Medical College, Pittsfield.....	1823	.....	.....	.....	1867	Extinct. ....	145
146	Clark University Medical Department, Worcester.....	1887	.....	.....	.....	.....	Extinct. Did not grant degrees.....	146
147	Excelsior Medical College, Boston.....	.....	.....	.....	.....	1883	Extinct. Fraudulent (n).....	147
148	First Medical College of the American Health Society, Boston .....	.....	.....	.....	.....	.....	.....	.....
149	Medical Department of the American University of Boston, Boston .....	.....	.....	.....	.....	1883	Moved. See II-362. Fraudulent (o).....	148
150	New England Botanic-Medical College, Worcester.....	1848	.....	.....	.....	1883	Extinct. Fraudulent .....	149
151	New England Female Medical College, Homeopathic, Boston .....	1843	.....	.....	.....	1852	New title. See II-154.....	150
152	New England University of Arts and Sciences, Boston.....	.....	.....	.....	.....	1874	Merged with I-60.....	151
153	Reserved College of Physicians and Surgeons, Springfield .....	.....	.....	.....	.....	1881	Extinct. Fraudulent .....	152
154	Worcester Medical College, Eclectic, Worcester.....	1852	.....	.....	.....	1893	Extinct. Fraudulent .....	153
						1859	Suspended .....	154
<b>MICHIGAN.</b>								
155	Detroit Medical College, Detroit.....	1868	1869	.....	1885	1385	Merged with II-159 to form I-64.....	155
156	Detroit University of Medicine, Detroit.....	1881	.....	.....	.....	.....	Extinct .....	156
157	Detroit University of Rational Medicine and Surgery, Detroit .....	1880	.....	.....	.....	.....	Extinct .....	157
158	Grand Rapids Medical College, Grand Rapids.....	1897	1893	.....	1907	1907	Extinct .....	158
159	Michigan College of Medicine, Detroit.....	1880	1881	.....	1885	1885	Merged with II-155 to form I-64.....	159
160	Michigan College of Medicine and Surgery, Detroit.....	1838	1889	.....	1906	1907	Extinct .....	160
161	Michigan Eclectic Medical College, Detroit.....	1880	.....	.....	.....	.....	Extinct .....	161
162	Michigan Homeopathic Medical College.....	1872	.....	.....	.....	1873	Extinct .....	162
163	Michigan Medical College, Lansing.....	1871	.....	.....	.....	1873	Extinct .....	163
164	Michigan School of Homeopathy and Surgery, Detroit.....	1863	.....	.....	.....	.....	Extinct .....	164
165	Saginaw Valley Medical College, Saginaw.....	1896	1897	.....	1903	1903	Merged into II-160.....	165
<b>MINNESOTA.</b>								
166	Minneapolis College of Physicians and Surgeons, Minneapolis .....	1883	1886	.....	1908	1908	Merged into I-68.....	166
167	Minnesota Homeopathic Medical College, Minneapolis.....	1884	.....	.....	.....	1888	New title. See I-69.....	167
168	Minnesota Hospital Medical College, Minneapolis.....	1831	.....	.....	.....	1888	Absorbed by I-68.....	168
169	St. Paul Medical College, St. Paul.....	1878	.....	1830-1885	1887	1887	Merged into I-63.....	169
170	Winona Medical School .....	1872	.....	.....	.....	.....	Extinct. No diplomas issued.....	170
<b>MISSOURI.</b>								
171	American Anthropological University of St. Louis.....	.....	.....	.....	.....	1885*	Extinct. Fraudulent .....	171
172	Beaumont Hospital Medical College, St. Louis.....	1883	1887	.....	.....	1901	Merged with II-192 to form II-191.....	172
173	Central Medical College of St. Joseph, St. Joseph.....	1894	1895	.....	1905	1905	Merged with I-74 to form II-179.....	173
174	College of Homeopathic Medicine and Surgery of the Kansas City University.....	1896	1897	.....	1900	1900	New title. See II-180.....	174
175	College of Physicians and Surgeons of Kansas City.....	1869	1870	.....	1880	1880	New title. See II-189.....	175
176	College of Physicians and Surgeons of St. Joseph, St. Joseph .....	1878	1870	.....	1881	1882	Merged with II-200 to form II-201.....	176
177	College of Physicians and Surgeons, St. Louis.....	1839	1870	.....	1871	1872	Extinct .....	177
178	Columbian Medical College, Kansas City.....	1898	1899	.....	1900	1901	Merged into II-194.....	178
179	Ensoworth Central Medical College, St. Joseph.....	1905	1906	.....	1907	1908	Resumed former name. See I-74.....	179
180	Hahnemann Medical College of the Kansas City University, Kansas City .....	1900	1901	.....	1902	1902	Merged with II-187 to form I-77.....	180
181	Hering Medical College, Homeopathic, St. Louis.....	1880	.....	.....	.....	1882	Merged into I-76.....	181
182	Homeopathic Medical College of St. Louis, St. Louis.....	1873	.....	.....	.....	.....	Extinct. Fraudulent .....	182
183	Humboldt Institute, St. Louis .....	1859	.....	.....	.....	1866	New title. See II-184.....	183
184	Humboldt Medical College, St. Louis.....	1866	1867	.....	1863	1869	Extinct .....	184
185	Joplin College of Physicians and Surgeons, Joplin.....	1880	1881	.....	.....	1884	Extinct (h) .....	185
186	Joplin Medical College, Joplin.....	1881	.....	.....	.....	1882	Extinct (h) .....	186
187	Kansas City Homeopathic Medical College, Kansas City.....	1888	1889	.....	1902	1902	Merged with II-180 to form I-77.....	187
188	Kansas City Hospital College of Medicine, Kansas City.....	1882	1883	.....	.....	1888	Extinct (h) .....	188
189	Kansas City Medical College, Kansas City.....	1880	1881	.....	1905	1905	Merged into I-45.....	189
190	Kemper College Medical Department (McDowell Medical College), St. Louis.....	1840	1841	.....	1845	1845	New title. See I-80.....	190
191	Marion-Sims-Beaumont College of Medicine, St. Louis.....	1901	1901	.....	1903	1903	New title. See I-78 and II-192.....	191
192	Marion-Sims College of Medicine, St. Louis.....	1890	1891	.....	1900	1901	Merged with II-172 to form II-191.....	192
193	Medical College of Kansas City, Kansas City.....	1859	.....	.....	.....	1873	Extinct. Held three sessions.....	193
194	Medico-Chirurgical College, Kansas City.....	1898	1899	.....	1905	1905	Merged into I-45.....	194
195	Missouri Eclectic Medical College, Kansas City.....	.....	.....	.....	.....	.....	Extinct. (a) Not existing since 1900.....	195
196	Missouri Medical College (McDowell Medical College), St. Louis .....	1855	.....	1862-1865	1899	1899	Merged into I-82.....	196
197	Missouri School of Midwifery and Diseases of Women and Children, St. Louis.....	.....	.....	.....	.....	1891*	Extinct. Fraudulent.....	197
198	Northwestern Medical College, St. Joseph.....	1879	1881	.....	1894	1894	Extinct .....	198
199	Occidental College of Physicians and Surgeons, Joplin.....	1886	.....	.....	.....	1887	Extinct .....	199
200	St. Joseph Hospital Medical College, St. Joseph.....	1876	1878	.....	1882	1882	Merged with II-176 to form II-201.....	200
201	St. Joseph Medical College, St. Joseph.....	1882	1883	.....	1888	1888	New title. See I-74.....	201
202	St. Louis College of Homeopathic Physicians and Surgeons, St. Louis .....	1869	.....	1871-1880	1882	1882	Merged into I-76.....	202
203	St. Louis College of Medicine and Natural Sciences St. Louis .....	1855	.....	.....	.....	1859	New title. See II-183 (p).....	203
204	St. Louis Eclectic Medical College, St. Louis.....	1874	.....	.....	.....	1883	Closed by legal process (h).....	204
205	St. Louis Hahnemann Medical College, St. Louis.....	1873	1874	.....	1874	1874	Extinct. Graduated 4 students.....	205
206	St. Louis Hygienic College of Physicians and Surgeons, St. Louis.....	1887	.....	.....	.....	1893*	Extinct .....	206
207	St. Louis Medical College .....	1855	1856	.....	1891	1891	New title. See I-82.....	207
208	St. Louis University Medical Department.....	1842	1843	.....	1855	1855	New title. See II-207. See also I-78.....	208
209	St. Louis Woman's Medical College, St. Louis.....	1894	1895	.....	1896	1896	Extinct (q) .....	209
210	University of Kansas City Medical Department, Kansas City .....	1881	1882	.....	1888	1888	New title. See I-81.....	210
211	Woman's Medical College, Kansas City.....	1895	1896	.....	1903	1903	Extinct .....	211
212	Woman's Medical College of St. Louis, Regular.....	1891	1893	.....	.....	.....	Extinct (q) .....	212
213	Woman's Medical College of St. Louis, Homeopathic.....	1883	.....	.....	.....	1884	Extinct .....	213
<b>NEBRASKA.</b>								
214	Nebraska School of Medicine, Omaha.....	1880	.....	.....	.....	1881	New title. No graduates. See II-215.....	214
215	Omaha Medical College, Omaha.....	1881	1882	.....	1902	1902	New title. See I-86.....	215
216	University of Nebraska, College of Medicine, Regular Department, Lincoln.....	1870	1884	.....	1887	1887	Extinct. See also I-86.....	216
217	University of Nebraska, College of Medicine, Homeopathic Department, Lincoln.....	1883	1884	.....	1887	1887	Extinct .....	217
218	University of Nebraska, College of Medicine, Eclectic Department, Lincoln .....	1883	.....	.....	.....	1885	Extinct .....	218

\* Date given is approximate. Footnotes, (a), (b), etc., will be found on page 602.



Number.	NAME AND LOCATION OF COLLEGE.	Year Organ- ized.	First Class Graduated.	Years When No Classes Graduated.	Last Class Graduated.	Year of Ter- mination.	Remarks.	Number.
NEW HAMPSHIRE.								
219	New England University of Arts and Sciences, Man- chester .....	1876	.....	.....	.....	1877	Charter repealed. Fraudulent.....	219
220	University of New Hampshire, Department of Medi- cine, Nashua .....	1888	.....	.....	.....	.....	Extinct. Fraudulent (r).....	220
NEW JERSEY.								
221	Central University of Medicine and Science, Jersey City .....	.....	.....	.....	.....	1891	Charter repealed. Fraudulent.....	221
222	Hygieo-Therapeutic College, Bergen Heights.....	.....	.....	.....	.....	1891	Charter repealed. Fraudulent.....	222
223	Livingston University, Haddonfield.....	.....	.....	.....	.....	1891	Charter repealed. Fraudulent.....	223
224	Medical and Surgical College of the State of New Jersey .....	1888	.....	.....	.....	1891	Charter repealed (s).....	224
NEW YORK.								
225	American College of Arts and Sciences, Buffalo.....	1886	.....	.....	.....	1893	Charter revoked. Fraudulent (r)..	225
226	American Society of Arts and Sciences, Buffalo.....	1883	.....	.....	.....	1893	Charter revoked. Fraudulent (r)..	226
227	American Society of Literature and Art, Buffalo.....	1886	.....	.....	.....	1893	Charter revoked. Fraudulent (r)..	227
228	American College of Medical Science, New York City..	1853	.....	.....	.....	.....	Extinct. No graduates.....	228
229	Bellevue Hospital Medical College, New York City.....	1861	1862	.....	1893	1898	Merged with II-262 to form I-97.....	229
230	Brooklyn Academy of Medicine, Eclectic, Brooklyn....	1861	.....	.....	.....	1888	Charter revoked. Not a teaching body .....	230
231	Buffalo College of Rational Medicine, Homeopathic, Buffalo .....	1879	.....	.....	.....	.....	Extinct. Fraudulent .....	231
232	Central Medical College of New York, Eclectic, Syra- cuse .....	1849	.....	.....	.....	1850	Moved. New title. See II-263 (t).....	232
233	College of Medicine, Botanic, New York City.....	1836	.....	.....	.....	1846	Extinct (t).....	233
234	College of Physicians and Surgeons, Homeopathic, Buffalo .....	1880	1881	.....	1883	1884	Charter revoked (u).....	234
235	College of Physicians and Surgeons of the Western Dis- trict of New York (Fairfield).....	1809	1816	.....	1839	1840	Extinct. Total graduates, 589.....	235
236	College of Physicians and Surgeons of Syracuse Uni- versity, Syracuse .....	1872	1873	.....	1875	1875	New title. See I-96.....	236
237	Columbia College, Medical Faculty, New York City....	1792	1793	1793-1801 1803-1809	1810	1817	Merged into I-89.....	237
238	Druidic Banchoreion, Buffalo .....	1836	.....	.....	.....	1893	Charter revoked. Fraudulent (r)..	238
239	Eclectic Medical Institute of New York, Rochester.....	1848	.....	.....	.....	1849	Merged with II-237 to form II-231 (t)	239
240	Excelsior Medical College, New York City.....	1857	.....	.....	.....	1879	Extinct (t) .....	240
241	Geneva Medical College, Geneva.....	1861	1862	.....	1872	1872	Merged into II-236. See II-248.....	241
242	Hamburg Canal College, Buffalo.....	.....	.....	.....	.....	1883	Extinct. Fraudulent .....	242
243	Homeopathic College of Physicians and Surgeons, Buffalo .....	1879	1880	.....	1880	1880	New title. See II-234.....	243
244	Homeopathic Medical College of the State of New York. New York City .....	1860	1861	.....	1869	1869	New title. See II-255.....	244
245	Kings College, Medical Faculty.....	1767	1769	.....	1774	1774	New title. See II-236.....	245
246	Medical and Surgical Institute and Sanitarium, Buffalo.	1836	.....	.....	.....	1893	Charter revoked. Fraudulent (r)..	246
247	Medical Faculty of Rutgers (Queen's) College.....	1826	1827	.....	1827	1827	Extinct. See II-269 (t).....	247
248	Medical Institution of Geneva, Geneva.....	1835	1835	1854	1861	1861	New title. See II-241.....	248
249	Medical School of Fredonia, Fredonia.....	1847	.....	.....	.....	1848	New title. See II-239.....	249
250	Metropolitan Medical College, Eclectic, New York City.	1852	.....	.....	.....	1862	Charter revoked. Four classes graduated (t) .....	250
251	Mohawk Medical College, Buffalo.....	1879	.....	.....	.....	1884	Extinct. Fraudulent. Continua- tion of II-234.....	251
252	New Medical Institution, New York City.....	1792	1792	1794-1826	1827	1827	Extinct. Same college as II-247 and II-266 .....	252
253	New York College of Magnetism, New York City.....	1887	.....	.....	.....	1893	Charter revoked (t).....	253
254	New York Free Medical College for Women, New York City .....	1871	1874	.....	1875	1876	Extinct. Diplomas recognized.....	254
255	New York Homeopathic Medical College, New York City .....	1869	1870	.....	1837	1887	New title. See I-94.....	255
256	New York Hygieo-Therapeutic College, New York City.	1857	.....	.....	.....	1864	Extinct .....	256
257	New York Institute of Medical Science.....	1837	.....	.....	.....	1893	Extinct. Fraudulent. Not chartered	257
258	New York Medical College, New York City.....	1850	1851	.....	1864	1864	Extinct .....	258
259	New York Medical College for Women, Homeopathic, New York City .....	1833	1864	.....	1866	1866	New title. See I-95.....	259
260	New York Preparatory School of Medicine, New York City .....	1859	.....	.....	.....	.....	Extinct (t) .....	260
261	New York Reformed Medical College, Eclectic, New York City .....	1826	.....	.....	.....	1829*	Extinct (t) .....	261
262	New York School of Medicine, New York City.....	1831	.....	.....	.....	1833	Extinct .....	262
263	New York University Medical College, New York City..	1841	1842	.....	1898	1898	Merged with II-229 to form I-97.....	263
264	Niagara University Medical Department, Buffalo.....	1883	1833	.....	1898	1898	Merged with I-98 .....	264
265	Preparatory Medical College, New York City and Poughkeepsie .....	1890	.....	.....	.....	1893	Exposed. Fraudulent .....	265
266	Queen's College (New Jersey), Faculty of Medicine, New York City .....	1792	1792	.....	1793	1793	New title. See II-247.....	266
267	Randolph Eclectic Medical Institute, Randolph.....	1848	.....	.....	.....	1849	Merged with II-239 to form II-232 (t)	267
268	Rochester Eclectic Medical College, Rochester.....	1850	.....	.....	.....	1852	Extinct (t) .....	268
269	Rutgers Faculty of Geneva College, New York City.....	.....	.....	.....	.....	1877*	Extinct. Fraudulent (t).....	269
270	Syracuse Medical College, Rochester.....	1850	.....	.....	.....	1855	Extinct (t). See II-273.....	270
271	United States Medical College, Eclectic, New York City .....	1878	1879	.....	1883	1884	Declared illegally chartered.....	271
272	Woman's Medical College of the New York Infirmary for Women and Children, New York City.....	1868	1870	.....	1899	1899	Extinct. Recognized.....	272
273	Worcester Medical School, Eclectic, Worcester.....	1846	.....	.....	.....	1852	Extinct (t). See II-270.....	273
NORTH CAROLINA.								
274	College of Physicians and Surgeons, Arlington.....	1871	.....	.....	.....	.....	Extinct .....	274
275	Davidson School of Medicine, Davidson.....	1889	.....	.....	.....	1893	New title. See I-100. No graduates	275
276	Edinburgh Medical College, Lumberton.....	1868	.....	.....	.....	.....	Extinct. Had 1 professor.....	276
OHIO.								
277	American Eclectic Medical College, Cincinnati.....	1879	.....	.....	1896	1896	Extinct. (v) .....	277
278	American Health College, Cincinnati.....	1874	.....	.....	.....	.....	Extinct. Fraudulent.....	278
279	American Medical College, Eclectic, Cincinnati.....	1839	.....	.....	.....	1857	Merged into I-106.....	279
280	Botanico-Medical College of Ohio, Cincinnati.....	1838	.....	.....	.....	1850	Extinct .....	280
281	Charity Hospital Medical College, Cleveland.....	1863	1865	.....	1869	1869	New title. See II-307.....	281
282	Cincinnati College of Medicine and Surgery, Cincinnati	1849	1852	.....	1901	1901	Extinct. Dept. for women. See II-311 .....	282
283	Cincinnati Medical College, Cincinnati.....	1834	.....	.....	.....	1846	Merged into I-107.....	283
284	Cincinnati Physio-Medical College, Cincinnati.....	1836	.....	.....	.....	1880	Extinct .....	284
285	Cleveland Medical College, Cleveland.....	1843	1845	1862-1863	1881	1881	New title. See I-112.....	285
286	Cleveland Medical College, Homeopathic.....	1890	1891	.....	1897	1898	Merged with II-237 to form I-105.....	286

\* Date given is approximate. Footnotes. (a), (b), etc., will be found on page 602.



Number.	NAME AND LOCATION OF COLLEGE.	Year Organ- ized.	First Class Graduated.	Years When No Classes Graduated.	Last Class Graduated.	Year of Ter- mination.	Remarks.	Number.
OHIO—Continued.								
287	Cleveland University of Medicine and Surgery, Cleveland .....	1894	1895	.....	1897	1898	Merged with II-286 to form I-105.....	287
288	College of Medicine, Medical Department of National Normal University, Lebanon.....	1889	1891	1897-1899	1900	1900	Extinct .....	288
289	Columbus Medical College, Columbus.....	1875	1876	.....	1892	1892	Merged into II-305.....	289
290	Dayton Medical University, Dayton.....	1886	1887	.....	1889	1889	Extinct .....	290
291	Eclectic College of Medicine and Surgery, Cincinnati....	1856	1857	.....	1859	1859	Merged into I-106.....	291
292	Homeopathic Hospital College, Cleveland.....	1870	1871	.....	1894	1894	New title. See II-287.....	292
293	Hygeia Medical College, Cincinnati.....	1893	1895	.....	.....	.....	Extinct (w) .....	293
294	Homeopathic Medical College for Women, Cleveland..	1868	.....	.....	.....	1870	Merged into II-292.....	294
295	Inter-National Electropathic Institution, Penn., Brant- ford, Ont., and Mentor.....	1861	.....	.....	.....	1894	Extinct. See II-321 (w).....	295
296	Laura Memorial Woman's Medical College, Cincinnati,	1895	1896	.....	1903	1903	Extinct .....	296
297	Medical University of Ohio, Cincinnati.....	1883	.....	.....	.....	1891*	Extinct. Fraudulent .....	297
298	Northwestern Ohio Medical College.....	1883	1884	.....	1891	1891	Extinct .....	298
299	Ohio College of Obstetrics, Medicine and Midwifery, Cincinnati .....	1889	.....	.....	.....	.....	Extinct. Fraudulent .....	299
300	Ohio Medical University, Columbus.....	1890	1893	.....	1907	1907	Merged with II-305 to form I-110.....	300
301	Physio-Eclectic Medical College, Cincinnati.....	1876	.....	.....	.....	1879	New title. See II-277. Fraudulent.	301
302	Physio-Medical College, Cincinnati.....	1836	.....	.....	.....	1880	Extinct (x) .....	302
303	Physio-Medical Institute, Cincinnati.....	1859	.....	.....	.....	1885	Extinct .....	303
304	Presbyterian Hospital and Woman's Medical College, Cincinnati .....	1891	1892	.....	1895	1895	Merged with II-311 to form II-296....	304
305	Starling Medical College, Columbus.....	1847	1848	.....	1907	1907	Merged with II-300 to form I-110.....	305
306	Toledo School of Medicine, Toledo.....	1878	.....	.....	.....	1881	Extinct. No graduates.....	306
307	University of Wooster, Medical Department, Cleveland.	1869	1870	1881	1896	1896	New title. See I-104.....	307
308	Western College of Homeopathic Medicine, Cleveland..	1849	1853	.....	1857	1857	New title. See II-309.....	308
309	Western Homeopathic College, Cleveland.....	1857	1858	.....	1870	1870	New title. See II-292.....	309
310	Willoughby University, Medical Department, Wil- loughby, Lake County, Ohio.....	1835	.....	.....	.....	1847	Merged into II-305.....	310
311	Woman's Medical College of Cincinnati, Cincinnati....	1887	1888	.....	1895	1895	Merged with II-304 to form II-296....	311
312	Worthington Medical College, Eclectic, Worthington...	1832	1834	1839-1843	1845	1845	New title. See I-106.....	312
313	Zanesville Academy of Medicine, Zanesville.....	1877	.....	.....	.....	1881	Closed by court.....	313
OKLAHOMA.								
314	Oklahoma Medical College, Oklahoma City.....	1907	.....	.....	.....	1907	Suspended. No degrees given.....	314
315	Twentieth Century Physio-Medical College, Guthrie...	1900	.....	.....	.....	1904	Charter revoked. Fraudulent (y)...	315
PENNSYLVANIA.								
316	American College of Medicine in Pennsylvania and the Eclectic Medical College of Philadelphia.....	1853	.....	.....	.....	1856*	New title. See II-320.....	316
317	American University of Pennsylvania, Eclectic, Phil- adelphia .....	1867	.....	.....	.....	1880	Extinct. Fraudulent .....	317
318	College of Philadelphia, Department of Medicine.....	1765	1768	1772-1779	1782	1782	New title. See I-121.....	318
319	Eclectic Medical College of Pennsylvania, Philadelphia.	1856	.....	.....	.....	1880	Extinct. Fraudulent. Do not con- fuse with II-320.....	319
320	Eclectic Medical College of Philadelphia.....	1856	.....	.....	.....	1865	New title. See II-331.....	320
321	Electropathic Institute, Philadelphia.....	1861	.....	.....	.....	1876	Moved to Canada, then Ohio. See II-295 .....	321
322	Franklin Medical College, Philadelphia.....	1847	.....	.....	.....	1852	Extinct .....	322
323	Hahnemann Medical College of Philadelphia.....	1866	1867	.....	1869	1869	Merged with II-324 to form I-117....	323
324	Homeopathic Medical College of Pennsylvania, Phil- adelphia .....	1848	1849	.....	1869	1869	Merged with II-323 to form I-117....	324
325	Lincoln University Medical Department, Oxford.....	1870	.....	.....	.....	1872	Extinct .....	325
326	Medical Department of Jefferson College, Philadelphia.	1825	1826	.....	1838	1838	New title. See I-118.....	326
327	North American Academy of the Homeopathic Healing Art, Allentown .....	1835	.....	.....	.....	1841*	Extinct .....	327
328	Penn Medical University, Philadelphia.....	1853	.....	1868-1874	.....	1881	Extinct .....	328
329	Pennsylvania Medical College, Philadelphia.....	1839	.....	.....	.....	1861	Extinct .....	329
330	Philadelphia College of Medicine and Surgery, Phil- adelphia .....	1846	.....	.....	.....	1859	Merged into II-329.....	330
331	Philadelphia University of Medicine and Surgery, Philadelphia .....	1865	.....	.....	.....	1880	Extinct. Fraudulent.....	331
332	Thompsonian Medical College, Allentown, Pa.....	1904	.....	.....	.....	.....	(z) .....	332
RHODE ISLAND.								
333	Brown University, Medical Department, Providence..	1811	1814	1821	1827	1827	Extinct .....	333
SOUTH CAROLINA.								
334	Charleston Medical School, Charleston.....	1894	.....	.....	.....	1895*	Extinct (a) .....	334
335	Medical College of South Carolina, Charleston.....	1823	1825	.....	1832	1832	New title. See I-126.....	335
336	University of South Carolina Medical Department, Columbia .....	1866	.....	.....	.....	1876	Extinct .....	336
TENNESSEE.								
337	Botanic Medical College, Memphis.....	1857	.....	.....	.....	1859	New title. See II-339.....	337
338	Chattanooga National Medical College (Colored), Chattanooga .....	1899	.....	.....	1904	1904	Extinct .....	338
339	Eclectic Medical Institute, Memphis.....	1859	.....	.....	.....	1861	Extinct .....	339
340	Hannibal Medical College (Colored), Memphis.....	1889	.....	1893-1896	.....	1896	Extinct. No evidence of any grad- uates .....	340
341	Jefferson Medical Association, Dandridge.....	1854	.....	.....	.....	1875*	Extinct. Four diplomas grant- ed (aa) .....	341
342	Knoxville College, Medical Department (Colored), Knoxville .....	1895	.....	1896-1897	.....	1900	Extinct. See I-130.....	342
343	Memphis Medical College, Memphis.....	1854	.....	1861-1868	.....	1873	Extinct .....	343
344	Nashville Medical College, Nashville.....	1876	1877	.....	.....	1896	New title. See I-135 (bb).....	344
345	Shelby Medical College, Nashville.....	1858	.....	.....	.....	1862	Extinct .....	345
TEXAS.								
346	Bell Medical College, Dallas.....	1903	1904	.....	1905	1905	New title. See I-140.....	346
347	Dallas Medical College, Dallas.....	1900	1901	.....	1904	1904	Merged with I-139.....	347
348	Galveston Medical College, Galveston.....	1864	.....	.....	.....	1873	New title. See II-352 (cc).....	348
349	Gate City Medical College, Texarkana.....	1902	.....	.....	.....	1908	Suspended .....	349
350	Medical Department of the University of San Antonio, San Antonio .....	1888	.....	.....	.....	.....	Extinct. No graduates.....	350
351	Physio-Medical College of Texas, Dallas.....	1902	1902	.....	1908	1908	Merged into I-27.....	351
352	Texas Medical College and Hospital, Galveston.....	1873	.....	1882-1888	.....	1891	Extinct .....	352
353	University of Dallas, Medical Department, Dallas....	1900	1901	.....	1903	1903	New title. See I-139.....	353
354	University of Medicine and Surgery, Dallas.....	1906	.....	.....	.....	.....	No graduates.....	354
UTAH.								
355	Medical Institution of Morgan City, Morgan City.....	.....	.....	.....	.....	1883*	Extinct .....	355

\* Date given is approximate. Footnotes, (a), (b), etc., will be found on page 602.



Number.	NAME AND LOCATION OF COLLEGE.	Year Organ- ized.	First Class Graduated.	Years When No Classes Graduated.	Last Class Graduated.	Year of Ter- mination.	Remarks.	Number.
VERMONT.								
356	Castleton Medical Academy, Castleton.....	1818	.....	.....	.....	1821	New title. See II-361.....	356
357	Castleton Medical College, Castleton.....	1841	.....	.....	.....	1861	Extinct .....	357
358	Clinical School of Medicine.....	1827	.....	.....	1835	1835	New title. See II-363.....	358
359	Trinity University, Coll. of Med. and Surg. of the State of Vermont, Bennington.....	1889	.....	.....	.....	.....	Extinct. Fraudulent (r).....	359
360	Union Medical Institute, Newbury.....	1887	.....	.....	.....	.....	Extinct. Fraudulent .....	360
361	Vermont Academy of Medicine.....	1821	.....	1839	.....	1841	New title. See II-357.....	361
362	Vermont Medical College (the Second Medical College of the American Health Society), Rutland.....	1883	.....	.....	.....	1893	Extinct. Fraudulent (o).....	362
363	Vermont Medical College, Woodstock.....	1835	1836	.....	.....	1856	Extinct. See II-358. Reputable....	363
VIRGINIA.								
364	College of Physicians and Surgeons, Richmond.....	1893	.....	.....	.....	1894	New title. See I-148.....	364
365	Hampden Sydney College, Medical Department, Richmond .....	1838	1840	.....	1853	1858	New title. See I-146.....	365
366	Medical School of the Valley of Virginia, Winchester.	1826	.....	.....	.....	1861	Extinct .....	366
367	Randolph Macon College, Medical Department, Prince Edward Court House.....	1849	.....	.....	.....	1855	Extinct .....	367
368	Winchester Medical College, Winchester.....	1826	.....	1829-1850	.....	1862*	Extinct .....	368
WASHINGTON.								
369	Northwestern College of Biochemistry, Spokane.....	1892	.....	.....	.....	1893*	Extinct. Fraudulent .....	369
370	University of Spokane Falls, Coll. of Med., Spokane.	1890	.....	.....	.....	.....	No sessions held.....	370
371	University of Washington Medical Department.....	1885	.....	.....	.....	.....	No sessions held.....	371
372	Washington Biochemic Medical College, North Yakima.	1889	.....	.....	.....	1892	New title. See II-369. Fraudulent(dd)	372
WISCONSIN.								
373	Milwaukee College of Physicians and Surgeons (Coney Medical Institute), Milwaukee.....	1881	.....	.....	.....	1883	Charter annulled. Frandulent.....	373
374	Wisconsin Eclectic Medical School, Milwaukee.....	1894	.....	.....	.....	1898	Suppressed. Fraudulent .....	374

\* Date given is approximate.

REFERENCES TO TABLE 4, PART I.

1. See also II-46.
2. Reported not in good standing by the Illinois State Board of Health.
3. Graduated two classes each year from 1874 to 1883 inclusive.
4. Reported not now in good standing by the Missouri State Board of Health.
5. The name of this college dnring 1906 and 1907 was the Ens-  
worth-Central Medical College. See II-179.
6. No classes were graduated in 1857, 1853, 1860 to 1873 inclusive,  
1887 to 1890 inclusive, 1892 and 1902.
7. Offers only the first two years of the medical course.
8. These colleges in 1909 will become the College of Medicine of  
the University of Cincinnati.
9. Was located at Portland from 1878 to 1895.
10. From 1874 to 1895 sessions were held jointly by the University  
of Nashville and Vanderbilt University Medical Departments, each  
university graduating its own portion of the class each year.

REFERENCES TO TABLE 4, PART II.

- (a) Physicians have appeared before state boards claiming  
graduation from these colleges.
- (b) Incorporated by one Orrin Robertson et al., all claiming to  
be "M.D.'s," although the sources of their degrees are unknown.  
Exposed by the Hot Springs (Ark.) Medical Journal. (Rauch.)
- (c) Said to have existed only on paper.
- (d) These six colleges were organized by one Johann Malok of  
Chicago, and were all declared fraudulent by the Illinois State  
Board of Health. (Rauch.)
- (e) Organized by "J. Armstrong, M.D.," et al. The charters of  
these three institutions were revoked by the Supreme Court on the  
ground of fraud. In 1900 Armstrong was sentenced to jail for  
eighteen months and fined \$500.
- (f) This and two other institutions were organized by one  
Charles P. Heil. All were listed as "fraudulent" by the Illinois  
State Board of Health.
- (g) Reported as "not recognized" by the Indiana State Board of  
Medical Registration and Examination.
- (h) Diplomas not recognized by the Illinois State Board of  
Health. (Rauch.)
- (i) A "graduate" of this institution appeared in England in 1891.
- (j) This was the Medical Department of the State University of  
Iowa from 1854 to 1870 inclusive.
- (k) In 1899 this school was declared not in good standing by the  
Iowa State Board of Medical Examiners. (Kennedy.)
- (l) Reported "not recognized" by the Maine Board of Registra-  
tion of Medicine.
- (m) This school was chartered in 1900. The Maryland Board of  
Medical Examiners refused to recognize the diplomas, but was  
compelled by a writ of mandamus to examine the graduates. The  
court ruled that, under the Maryland law, since the institution  
was legally incorporated, the equipment, curriculum, hours of  
study, etc., could not be considered. The character of the insti-  
tution can further be seen by a perusal of its "Fifth Annual Com-  
mencement and Catalogue"; which was "Edited by the Rev. Dr. P.  
Thomas Stauford, A.M., M.D., D.D., LL.D., Ph.D., Vice-Presi-  
dent." The sources of these multitudinous degrees are not given.

- (n) This college was founded by a "Dr." Alfred Booth, who,  
April 7, 1893, was sentenced to the New York State Penitentiary for  
having sold a diploma to a reporter of the New York Herald.  
(Rauch.)
- (o) These two institutions were organized by one George Dut-  
ton. Listed as fraudulent by the Illinois State Board of Health.  
(Rauch.)
- (p) An attempt at reform in medical education. Preliminary  
science work, and a graded four-year course were required.  
(Rauch.)
- (q) Present evidence seems to indicate that these were separate  
institutions, but they may have been one and the same.
- (r) Operated by one "P. Ripley Bradbury, M.D." whose right  
name seems to have been Henry Freeland Bradbury. Listed as  
fraudulent by the Illinois State Board of Health. (Rauch.)
- (s) Pronounced "disreputable" in 1890 by the Hudson County  
(N. J.) Medical Society. (Rauch.)
- (t) Reported as not recognized by the New York Board of  
Regents.
- (u) The diplomas issued by this college were made legal by act  
of the New York legislature.
- (v) In his 1891 report on medical education, page 131, John  
Rauch, at that time secretary of the Illinois State Board of Health,  
gives information which renders doubtful the reputability of this  
institution.
- (w) Reported as not recognized by the Ohio State Board of  
Medical Registration and Examination.
- (x) Also known as the Cincinnati Literary and Scientific Insti-  
tute.
- (y) The dean of this college was H. Warner Newby, a "grad-  
uate" of the Independent Medical College, a Chicago diploma  
mill. The secretary was R. S. Clymer, M.D. This school had  
"Correspondence Departments" at Union City, Michigan, and at  
Hatfield, Pennsylvania. Circulars were sent out advertising  
diplomas for \$10 each, under the name of "shares of the Twentieth  
Century Health Association." The claim was made that "gradu-  
ates of the Twentieth Century Medical College can practice any-  
where in the United States without any interference by the State  
Board of Medical Examiners." (See Journal A. M. A., Oct. 1,  
1904, page 990.)
- (z) A printed circular sent out a few years ago says that this  
college was incorporated by the State of Colorado in February,  
1904, "for the purpose of giving a complete course in medicine, at  
the college and by correspondence." The charter was filed in  
Pennsylvania April, 1904, and a Sanitarium opened in Allentown.  
The charter was also filed in California in June, 1904; and offices  
were opened at Sacramento. There are departments at Detroit,  
Michigan, and at Philadelphia, Pennsylvania, as well as in Mexico  
and in London. There is a Hillside Sanitarium Co., Incorporated;  
a Thompsonian Health Association Sanitarium and a Hillside Sani-  
tarium operating in connection and a Sanitarium at Carversville,  
Pennsylvania. The secretary and treasurer is given as R. S.  
Clymer, M.D. See note (y) above.
- (aa) Said to have been an examining board only.
- (bb) This name was coupled with that of the Medical Depart-  
ment of the University of Tennessee for the classes graduating to  
and including 1898.
- (cc) Exposed by the Arkansas Medical Journal, Aug. 15, 1907,  
page 134. See Journal A. M. A., Oct. 19, 1907, page 1385. Recog-  
nition withdrawn by the Texas State Board of Medical Examiners  
in November, 1907.
- (dd) Ten days after the charter for this institution was ob-  
tained, George M. Carey, a non-graduate in medicine, registered a  
diploma which he had issued to himself. (Rauch.) See also II-369.



(Continued from page 591.)

cine, Columbia, Mo.; University Medical College, Kansas City, Mo.; Medical Department St. Louis University, St. Louis, Mo.; Washington University Medical Department, St. Louis, Mo.; University of Nebraska College of Medicine, Lincoln and Omaha, Neb.; University of Buffalo, Medical Department, Buffalo, N. Y.; University and Bellevue Hospital Medical College, New York, N. Y.; University of North Carolina Medical Department, Chapel Hill, N. C.; Wake Forest College School of Medicine, Wake Forest, N. C.; University of North Dakota Medical Department, University, N. D.; Miami Medical College, Cincinnati, Ohio; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, Cleveland, Ohio; Western Reserve University Medical College, Cleveland, Ohio; Starling-Ohio Medical College, Columbus, Ohio; State University of Oklahoma School of Medicine, Norman, Okla.; Meharry Medical College, Medical Department Walden University, Nashville, Tenn.; Vanderbilt University, Medical Department, Nashville, Tenn.; University College of Medicine, Richmond, Va.; University of West Virginia Medical Department, Morgantown, W. Va.; Marquette University Medical Department (Milwaukee Medical College), Milwaukee, Wis.; University of Wisconsin College of Medicine, Madison, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, Wis.

The secretary-treasurer of the Association is Dr. Fred C. Zapffe, 1764 Lexington Street, Chicago.

SOUTHERN MEDICAL COLLEGE ASSOCIATION.

The following requirements for admission to the freshman year are exacted by the colleges belonging to this Association:

The student must possess a diploma of graduation from some literary or scientific institution of learning, or a certificate that he has passed the entrance examination to a university, or a certificate from some legally constituted high school. The minimum preliminary education required by the Southern Medical College Association is a grammar school education and two years' successful attendance at a recognized preparatory school or a high school, or its equivalent, said equivalent to be determined by a superintendent of public instruction. A student may be given one month from date of his admission to submit his certificate of qualification. And if he fails to possess the requisite educational qualifications in one or more branches, he may matriculate and attend his first course of lectures, but must present the requisite certificate before matriculating in the second course, and all tickets or certificates in such cases must have the conditions printed plainly on the face of each.

Colleges belonging to this Association are not to issue certificates of credit to any student who has not been in actual attendance on at least 80 per cent. of a seven months' medical course, nor to allow advanced standing on credentials representing less than that amount of work. No student is to be allowed to graduate unless he has been in actual attendance on at least 80 per cent. of a seven months' session immediately preceding said graduation.

The following colleges are members:

Medical College of Alabama, Mobile, Ala.; Birmingham Medical College, Birmingham, Ala.; Medical Department University of Arkansas, Little Rock, Ark.; College of Physicians and Surgeons, Little Rock, Ark.; Atlanta College of Physicians and Surgeons, Atlanta, Ga.; Medical College of Georgia, Augusta, Ga.; Medical Department, University of Mississippi, Oxford, Miss.; Medical Department, Epworth University, Oklahoma, Okla.; Medical Department, University of Tennessee, Nashville, Tenn.; Medical Department, University of Nashville, Nashville, Tenn.; Memphis Hospital Medical College, Memphis, Tenn.; Chattanooga Medical College, Chattanooga, Tenn.; Tennessee Medical College, Knoxville, Tenn.; Medical Department, University of the South, Sewanee, Tenn.; Medical Department, Fort Worth University, Fort Worth, Texas; Medical Department, Baylor University, Dallas, Texas; Medical Department, Southwestern University, Dallas, Texas.

The secretary-treasurer is Dr. Lewis C. Morris, Birmingham, Ala.

AMERICAN INSTITUTE OF HOMEOPATHY.

The minimum requirements for entrance into the freshman class of all homeopathic medical colleges, as adopted in 1901, are, with abbreviation, as follows:

1. English Composition.—Exercise on assigned theme, not less than 200 words. Exercise in reading. Exercise in correction of ungrammatical sentences.
2. Mathematics.—Arithmetical exercises in (a) vulgar fractions, (b) decimals, (c) percentage, (d) proportion, (e) square and cube root, (f) weights and measures, (g) decimal system. Mensuration.—(a) Definition of terms, (b) exercises under the more fundamental rules.
3. Geography.—General facts about North America.
4. History.—General, with particular reference to human progress in art, science and letters. (The examination to avoid exact dates and minor details.)
5. Latin Language.—(a) Grammar, (b) four books on Cæsar or its equivalent.

The colleges recognized as in good standing by this organization are:

Hahnemann Medical College of the Pacific, San Francisco, Cal.; Denver College of Physicians and Surgeons, Denver, Colo.; Hahnemann Medical College, Chicago; Hering Medical College; Homeopathic Medical Department of the State University of Iowa; Southwestern Homeopathic College, Louisville, Ky.; Atlantic Medical College, Baltimore, Md.; Boston University School of Medicine; Homeopathic Medical College of University of Michigan; Detroit Homeopathic College; College of Homeopathic Medicine and Surgery of University of Minnesota; Homeopathic Medical College of Missouri; Kansas City Hahnemann Medical College; New York Homeopathic Medical College; New York Medical College for Women; Cleveland Homeopathic Medical College; Pulte Medical College, Cincinnati; Hahnemann Medical College of Philadelphia.

The secretary is Dr. Frank Kraft, 2055 East Nineteenth Street, Cleveland, Ohio.

NATIONAL CONFEDERATION OF ECLECTIC MEDICAL COLLEGES.

The following are the present minimum requirements for admission to colleges members of this Association:

1. A certificate of good moral character.
2. Diploma of graduation from (a) a four years graded high school, or (b) normal school, or (c) seminary, or (d) literary or scientific college, or (e) university, or (f) evidence of having passed the matriculation examination to a recognized literary or scientific college, or (g) a medical student's certificate secured by examination from a state medical board.

The following colleges are members of this Association:

American Medical College, St. Louis, Mo.; Bennett College of Eclectic Medicine and Surgery, Chicago, Ill.; California Eclectic Medical College, Los Angeles, Cal.; Eclectic Medical College of the City of New York, New York, N. Y.; Eclectic Medical Institute, Cincinnati, Ohio; Georgia College of Eclectic Medicine and Surgery, Atlanta, Ga.; Lincoln Medical College, Lincoln, Neb.; Western Eclectic College of Medicine and Surgery, Kansas City, Kan.

The secretary-treasurer is John K. Scudder, M.D., 1009 Plum Street, Cincinnati, Ohio.

COLLEGE NOTES.

**Colleges Merged.**—During the past year several mergers of medical colleges have taken place. In Kentucky last summer the Louisville Medical College and the Hospital College of Medicine united, forming the Louisville and Hospital Medical College, and just recently this college and the Kentucky School of Medicine merged into the University of Louisville Medical Department. In Indiana, the Indiana Medical College merged into the Indiana University School of Medicine. In Minnesota the Minneapolis College of Physicians and Surgeons merged into the University of Minnesota College of Medicine and Surgery. In Ohio, the Medical College of Ohio and the Miami Medical College have united to form the Medical Department of the University of Cincinnati.

**Colleges Discontinued.**—Besides the seven medical colleges which have lost their identity through mergers during the year, seven colleges have suspended. These are the International Medical Missionary College, Atlanta, Ga.; the Dearborn Medical College, Chicago; the Eclectic Medical College of Indiana, Indianapolis; the Baltimore University School of Medicine, Baltimore, Md.; the Michigan College of Medicine and Surgery, Detroit; the Physio-Medical College of Dallas, Texas, and the Gate City Medical College of Texarkana, Texas.

**New Colleges.**—Besides the new colleges formed by mergers as noted above, during the year two colleges have been established. These are the College of Medicine of the University of South Dakota and the College of Medicine of the University of Wisconsin. The California Medical College of San Francisco, which was suspended in 1906, was reorganized at Los Angeles last fall under the name of the California Eclectic Medical College.

**Medical Graduates Holding Baccalaureate Degrees.**—Reports from the various colleges show that of the 4,741 medical graduates in 1908 at least 820, or 17.3 per cent., were also graduates of colleges of liberal arts as compared with 18 per cent. last year.

**Advance in Entrance Requirements.**—There are 11 medical colleges which already require for admission two or more years of work in a college of liberal arts. These colleges and the dates when the requirement began are as follows:

College.	Began.
Johns Hopkins University, Medical Department.....	1893
Harvard Medical School.....	1900
Western Reserve University, Medical Department.....	1901
Rush Medical College.....	1904
University of California.....	1905
University of Minnesota, College of Medicine.....	1907
University of Minnesota, Homeopathic Department....	1907
University of North Dakota, College of Medicine.....	1907
University of Wisconsin, College of Medicine.....	1907
Cornell University, Department of Medicine.....	1908
Wake Forest School of Medicine.....	1908



Fifteen other medical colleges have definitely announced an increase in their entrance requirements to two or more years of work in a college of arts. These colleges and the dates when the requirement will become effective are as follows:

College.	Begins.
Yale Medical School.....	1909
George Washington University.....	1909
Northwestern University Medical School.....	1909
University of Kansas, School of Medicine.....	1909
University of Michigan, College of Medicine.....	1909
American Medical Missionary College.....	1910
University of Colorado School of Medicine.....	1910
State University of Iowa, College of Medicine.....	1910
Drake University Medical College.....	1910
John A. Creighton Medical College.....	1910
College of Physicians and Surgeons of New York.....	1910
Syracuse University Medical Department.....	1910
University of Pennsylvania, Medical Department.....	1910
University of Utah, Medical Department.....	1910
University of South Dakota College of Medicine.....	1910

The twenty-six following schools either already require one year of work in a college of arts devoted to physics, chemistry and biology, in addition to a four-year high school education, or have announced their intention to do so on or before the year given:

College.	In force.
University of Missouri, Medical Department.....	1906
University of Nebraska, Coll. of Med.....	1908
St. Louis University, Medical Department.....	1909
University of North Carolina, Medical Department....	1909
Cooper Medical College.....	1910
Oakland College of Medicine and Surgery.....	1910
University of Southern California, Coll. of Med.....	1910
Georgetown University, Medical Department.....	1910
College of Physicians and Surgeons, Chicago.....	1910
Hahnemann Medical College, Chicago.....	1910
Indiana University, School of Medicine.....	1910
Tulane University of Louisiana.....	1910
College of Physicians and Surgeons, Baltimore.....	1910
University of Mississippi, Medical Department.....	1910
Washington University, Medical Department.....	1910
Medical College of Ohio.....	1910
Miami Medical College.....	1910
Starling-Ohio Medical College.....	1910
Cleveland Homeopathic Medical College.....	1910
Cleveland Coll. of P. and S.....	1910
University of Oklahoma, Medical Department.....	1910
University of Oregon, Medical Department.....	1910
University of Texas, Medical Department.....	1910
University of Virginia (3 years high school and 2 years University).....	1910
University of West Virginia.....	1910
Wisconsin College of Physicians and Surgeons.....	1910

Practically all these schools have expressed their intention to require that the work in physics, chemistry and biology be taken in a college of liberal arts.

About twelve medical colleges expressed their intention to make this increase in preliminary requirements, some of which were omitted because they have made no mention of such in their printed announcements. The others were omitted because it was found by inspection they were not satisfactorily equipped to teach medicine.

**State Board Requirements of Preliminary Education.**—It should be noted that five state boards have adopted a requirement of one or two years' work in a college of liberal arts. These states are as follows:

State Examining Board of	No. of years Required.	Affects Students Matriculating.	Affects All Applicants After
Minnesota .....	2	1908-9	1912
Connecticut .....	1	1908-9	1912
North Dakota .....	2	1907-8	1911
South Dakota .....	1	1906-7	1910
Colorado .....	1	1908-9	1912

#### Educational Standards and Pseudomedical Colleges.

The following statements in regard to the various systems of pseudomedicine given by Dr. F. M. Crandall a few years ago show the necessity of having one standard of admission

to the practice of medicine with no special standards or laws for different sects or systems. While the remarks<sup>1</sup> refer particularly to the situation in New York at the time that state was striving for their present medical practice act, they will apply equally well to the problems of other states:

"The most strenuous work of recent years has consisted of opposition to the demands of various systems of pseudomedicine. These systems are nothing more or less than levers and sledge hammers seized upon as the most effective means of breaking through the medical laws. And here we come upon a subject upon which there is much misapprehension. The medical laws are but a part of the general educational laws of the state. These laws are wide in their application, and cover many professions and diverse conditions. There is nothing exceptional in the laws covering medical practice. They are at the farthest possible remove from class legislation. They are simply a part of the great educational system of the state. The medical profession has upheld the hands of the state educational authorities, whose aim has been to enact a broad and consistent system of just and equitable laws. A state educational system has, therefore, been built up, of which the laws controlling medical practice are an integral part.

#### POSITION OF THE MEDICAL PROFESSION.

"The position of the medical profession is often misunderstood, and their arguments have frequently been misjudged. The opposition of physicians to attempts to destroy the medical laws is often attributed to a spirit of trade unionism. This is controverted by the single fact that no attempt is made by the profession to curtail the practice of medicine by competent men. It is one of the fundamental principles that every man and woman exhibiting proper qualifications should be admitted to practice. Our opposition to pseudomedicine is, and should be, educational, not professional. We do not try to raise barriers against practitioners because they use a special system or adopt certain remedial measures. We do not oppose certain prevalent isms because of their methods of treatment, but because they are new and very clever manifestations of the old, old scheme to get within the medical fold without expending the time and money necessary to make a competent practitioner. The various systems of pseudomedicine are not pushed forward year after year with such determination because men so love this or that particular form of treatment, but because they offer the most promising means of evading the requirements of preliminary education, four expensive years in the medical college, a state examination, and then, perhaps, two years of unpaid service in a hospital. It is the educational question that is at the bottom of every one of these modern isms, and they are the more aggressive, as the educational barriers are raised higher. It is upon educational, not professional grounds that we oppose them.

#### TREAT ALL ALIKE; NO SPECIAL FAVORS.

"The medical profession approves the system which requires the same general professional education of all its members. The specialist upon the eye and the specialist upon the throat, the physician and the surgeon, must each undergo the same training and must pass the same state examination. One may select any specialty he chooses and may adopt any method of treatment which his educated judgment dictates. He may use large doses or small, massage or electricity. What the state requires for one body of practitioners it should not abate in favor of another.

#### AN ADEQUATE TRAINING REQUIRED.

"We have one sound reason for opposing these systems which permit an abbreviated education, and one argument that no man can gainsay. We may properly demand that every man and woman who enters upon the practice of the healing art should have adequate education. Here we are on ground that can not be misjudged or misrepresented. We ask no favors or special privileges. We are not the ones who are seeking to bring half-educated practitioners in by the back door. We simply ask equal requirements for all. Our position is, that those who seek to treat disease should go in through the same door, and a few should not be permitted to crawl in through holes and underground passages. We simply ask for an American square deal and equal rights for all."—*N. Y. and Phila. Med. Jour.*

<sup>1</sup> Reprint, Journal of the Med. Soc. of N. J., January, 1906, p. 247.



THE JOURNAL OF THE  
AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, AUGUST 15, 1908.

## MEDICAL TRAINING AND INTELLECTUAL INFLUENCE.

The recent issue of the life of Rabelais<sup>1</sup> in the French Men of Letters series, makes available in English an excellent study of the career of this famous physician, whose contributions to literature and to education stamp him as one of the leaders in thought of a period especially fruitful in eminent men. Everyone knows in general what a wonderful group of men made their appearance in Europe during the early sixteenth century, but not many realize how much the thinking of these men meant for the generations after them, even our own. Probably only those who have been especially interested in history appreciate that so many of the names we ordinarily consider among the greatest in the intellectual life of modern times are to be found in this period, and that not a few of them belong to men trained by medical study and practice. James Russell Lowell, using a medical simile, once said that a case of immortality in a family was so common during the sixteenth century in Europe, that like measles almost any family might expect to have one or more attacks of it. Though we are not apt to think of medicine as producing great men quite so early in modern history as this, there is probably no equal period in human history so crowded with them.

Rabelais was born in 1492, an important year for America, the one, also, which saw the birth of Paracelsus, who lived until about the middle of the sixteenth century. Rabelais' life, therefore, runs contemporary with the closing years of Columbus, the navigator, but also with those of another Columbus, to whom the Italians refer the discovery of the circulation in the lungs, and who was born at the beginning of the sixteenth century. A still more distinguished colleague was Vesalius, the "father of anatomy." Then there was Servetus, the first to publish a complete description of the pulmonary circulation, and many others of scarcely less note. Such men as Berengar, of Carpi, who first described the vermiform appendix, Varolius, Cæsalpinus, to whom the Italians attribute the discovery of the general circulation before Harvey, Sylvius, Fabricius, the teacher of Harvey—all were living during Rabelais' time. Medical science indeed, in our modern

sense of the term, had its greatest uplift just at this period. It is not surprising then to find that a man who was educated in medicine at Paris, but received his doctorate degree at Montpellier, who had traveled in Italy and was acquainted with most of the great Italian discoverers, should have had the originality of mind to write in the form of a satire the most common sense ideas with regard to education that had ever been uttered up to this time.

It is because Rabelais represents the result of the medical influences of his time in molding his intellect, that he can scarcely help but be interesting to modern educated physicians. His work was unfortunately disfigured by many vulgarities, though that was the custom of the times, and as we well appreciate, manners are not morals, and a time that is very squeamish about its modes of expression may be far from circumspect in its actions. Rabelais contributed nothing to medicine itself and indeed seems to have practiced comparatively little. His philosophy of life and of education, however, can not fail to have been profoundly modified by his long and arduous medical studies, and his books undoubtedly represent what a trained physician of his time had to say about many subjects. If sometimes the language of them is couched in terms that suggest the physiology and pathology of human nature, rather than its intellectuality and spirituality, this will surely be passed over for the sake of the nucleus of profound thought which they contain and which the more serious study of the recent time has brought out so clearly.

Mr. Tilley emphasizes especially Rabelais' contribution to the science of education. "Rabelais' medical experience and the importance which he attached to health—'without health life is no life,' " he says in the prologue to the fourth book, "led him to pay special attention to the care of the body, while to his interest in science is due perhaps the most original contribution to the subject—his insistence on the cultivation of the powers of observation. On the whole his scheme (of education) is remarkable for its large mindedness, its good sense, its freedom from those fads and prejudices to which educationalists of all ages have been prone, rather than for any subtle or deep insight into the human mind."

While aiding in the simplification and perfecting of general education, Rabelais was not without suggestive hints for medical education. As might be expected of one living at a time when a certain exaggerated notion of the value of Greek contributions to every form of thinking was common, he suggested that students should devote themselves to the old-time masters of medicine, but he also insisted on the necessity for personal observation on the human body. In a famous letter from Gargantua to his son the following passage is noteworthy:

"Then go over again the books of Greek, Arabian and Latin physicians, not despising the Talmudists and

1. François Rabelais, by Arthur Tilley, A.M., Philadelphia, J. B. Lippincott Co., 1907



Cabalists; and by frequent dissections acquire perfect knowledge of the other world, the microcosm which is man." This colleague of the Renaissance is evidently deserving of more than the attention that certain objectionable features of his works now bring him.

#### CATARRHAL JAUNDICE.

The pathogenesis of icterus has been a continually debated subject, and although there is now general acceptance of the view that in nearly all, and perhaps in all cases, there is some form of obstruction to the escape of bile, yet the mechanism and cause of the obstruction are not always clear. If the icterus is transient and not accompanied by severe constitutional symptoms the usual assumption is that an inflammatory process in the duodenum has extended into the ampulla of Vater, which becomes closed either by the swelling of the mucosa or by a plug of thick mucus, hence the term "catarrhal jaundice." The general acceptance of this view is probably due to the observation by Virchow in a case of this kind that came to autopsy, in which it was found that a duodenal inflammation had extended along the bile ducts to the liver, and had resulted in the formation of a mucus plug in the ampulla which was sufficient to withstand the feeble pressure of the bile. A few others, among them Osler, have observed similar conditions in "catarrhal jaundice."

Opportunities to examine thoroughly at autopsy the conditions existing in so-called catarrhal icterus without complicating processes are of necessity rare, because of the mildness of the results of the uncomplicated disease, and hence our exact knowledge on this subject is as inconsiderable as our speculations have been extensive. Eppinger<sup>1</sup> recently secured such an opportunity, and the results of his studies are very interesting and suggestive. A girl of 19 was examined clinically on the eighth day of what was a typical attack of catarrhal icterus, with the usual history of the jaundice following an acute gastroenteritis from dietary causes. On the following day she fell from the third story of a building and was instantly killed. The gall tracts were found somewhat distended, and pressure on the gall bladder did not force the bile through the ampulla into the duodenum. Microscopic study of the part of the common duct which lies within the wall of the intestine showed that the very complete occlusion was due to a hyperplastic condition of the lymphoid tissue of the mucosa of the duct. Study of normal specimens showed that, normally, there are islands of lymphoid tissue in the wall of the duct, surrounding the submucous glands, and developed to varying extent in different specimens. This lymphoid tissue with the embedded mucous glands is believed by Eppinger to be analogous to the tonsils, and located at the end of the bile tract as a means of defense against bacterial inva-

sion from the intestine. Just as with the tonsils, this adenoid tissue is subjected to anginal attacks with swelling, which result in occlusion of the duct and jaundice. On this basis epidemics of catarrhal jaundice may be considered as analogous to epidemics of tonsillitis, and the tendency of some young people to attacks of transient jaundice without evident cause may be ascribed to a "lymphatic constitution."

These observations fall into line with the views of those who hold that the rich lymphoid apparatus of the vermiform appendix indicates a relationship of this organ to the tonsils, and that anginal swelling of the circularly disposed lymphoid tissue of the appendix may be a cause of acute appendicitis through the occlusion of the lumen and the interference with blood supply. Eppinger does not imply that all cases of transient icterus are due solely to lymphoid hyperplasia, for there can be no doubt that acute inflammatory processes do extend from the duodenum along the common duct and lead to simple inflammatory swelling, or to over-secretion of mucus with resulting occlusion; nevertheless, the suggestion that anginal-like attacks of lymphoid swelling may be a cause of some of the epidemic forms of jaundice, and as an explanation of the particular tendency of certain individuals to icteric attacks, contains much that seems reasonable and suggestive.

#### STATES, MUNICIPALITIES AND MEDICAL EDUCATION.

For many years certain states have had medical departments connected with the state universities. The opinion that the proper training of physicians is a function which the state should assume has been rapidly spreading, since of the twenty or more state universities which now have medical departments no less than nine have been established during the last five years. During this same time, state legislatures have made large appropriations for medical buildings, equipment and hospitals. It now appears that a large city is about to assume a like responsibility. Three cities have long supported colleges of liberal arts which were under city control and largely supported by municipal taxation, these being the College of Charleston, South Carolina, opened in 1791; the College of the City of New York, opened in 1849, and the University of Cincinnati, opened in 1874. None of these institutions, however, has had medical departments until the one recently established in the University of Cincinnati by the merger of the Medical College of Ohio and the Miami Medical College, as announced a few weeks ago.<sup>1</sup>

The recent session of the Ohio legislature authorized Cincinnati to appropriate funds for building and equipping the colleges of the university, including the medical, in the discretion of the mayor and the city council. The management of all the scientific work of the hospitals of

1. Wien. klin. Wchnschr., 1908, xxi, 480.

1. THE JOURNAL A. M. A., July 11, page 152.



the city has been placed in the hands of the university by the board of public service and now that the two medical colleges above referred to have united in the university, the entire medical service of the city hospital will be placed under the direction of the university. A large new city hospital is being erected and the university has already taken steps to erect medical college buildings in connection with the hospital. The pathologist of the city hospital will also be the professor of pathology of the new medical school.

Cincinnati occupies a unique position, therefore, in both controlling and supporting a medical college. That city is planning to put its medical college on a high plane and will then make it responsible for the proper care of the city patients. Under the circumstances it seems to be an advantageous arrangement not only for the city and for the sick poor, but for medical education as well. The future development of the new medical college at Cincinnati will be watched with interest.

#### MEDICAL EDUCATION IN THE UNITED STATES.

##### STATISTICS FOR THE COLLEGE YEAR 1907-8.

The tabulated statistics herewith presented (pages 586 to 591) are for the year ending June 30, 1908, and are based on signed reports received directly from the medical colleges, or from other reliable sources. We wish here to acknowledge the courtesy and cooperation on the part of the medical colleges which have made the compilation of these complete statistics possible.

##### STATISTICS OF COLLEGES.

On pages 586 and 587 is Table 1, which gives all the colleges in session during 1907-8, the population of the city in which each college is located, the number of students, men and women, registered during the year, the number of 1908 graduates, men and women, the number of teachers for each college and the number of weeks of actual work in the college year. Beginning on page 575 are given essential facts of all medical colleges, arranged by states, and on pages 585, 590, 591 and 603 will be found the requirements of the different college associations, together with lists of colleges belonging to these organizations.

##### NUMBER OF MEDICAL STUDENTS.

The total number of medical students (matriculants) in the United States for the year ending June 30, 1908, was 22,602, a decrease of 1674 below 1907, and a decrease of 2,602 below 1906. It is the lowest number since THE JOURNAL began compiling these statistics in 1900. Of the total number of students, 20,936 were in attendance at the regular schools, 891 at the homeopathic, 479 at the eclectic, 90 at the physiomedical, and 206 at the unclassifiable schools. The attendance at the regular schools shows a decrease of 1,367 below that of last year, of 2,180 below 1906, and of 3,183 below 1905.

In the homeopathic schools there was a decrease of 148 below the attendance of 1907, of 194 below 1906, and of 213 below 1905. The eclectic schools show a decrease of 66 since 1907, of 165 below 1906, and of 99 below 1905. The physiomedical colleges had 90 this year as compared with 97 in 1907, 110 in 1906, and 114 in 1905.

TABLE 5.—MEDICAL COLLEGE ATTENDANCE.

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med.	Non-descript.	Total.
1880.....	9,776	1,220	830	.....	.....	11,826
1890.....	13,521	1,164	719	.....	.....	15,404
1900.....	22,710	1,909	552	.....	.....	25,171
1901.....	23,846	1,683	634	80	144	26,117
1902.....	24,878	1,617	765	91	150	27,501
1903.....	24,971	1,498	848	125	173	27,615
1904.....	23,662	1,309	1,014	123	234	28,142
1905.....	24,119	1,104	578	114	232	26,147
1906.....	23,116	1,085	644	110	249	25,204
1907.....	22,303	1,039	545	97	292	24,276
1908.....	20,936	891	479	90	206	22,602

##### GRADUATES.

The total number of graduates for the year ending June 30, 1908, was 4,741, a decrease of 239 below 1907, of 623 below 1906, and of 859 below 1905. The percentage of graduates to matriculants was 21.0, as compared with 20.5 in 1907, and 20.5 in 1906. The number graduated from the regular schools was 4,370, or 221 less than in 1907 and 471 less than in 1906. From the homeopathic colleges there were 215 graduates, or 10 less than 1907 and 71 less than in 1906. The eclectic colleges graduated 116, or 7 less than last year and 70 less than in 1906. The physiomedical schools had 12 graduates this year as compared with 11 last year and 22 in 1906.

TABLE 6.—MEDICAL COLLEGE GRADUATES.

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med.	Non-descript.	Total.
1880.....	2,763	380	188	.....	.....	3,241
1890.....	3,853	380	221	.....	.....	4,454
1900.....	4,715	413	86	.....	.....	5,214
1901.....	4,879	387	148	18	12	5,444
1902.....	4,498	336	133	16	11	4,999
1903.....	5,088	420	149	24	17	5,698
1904.....	5,190	371	146	20	20	5,747
1905.....	5,126	276	153	22	23	5,600
1906.....	4,841	286	186	22	29	5,364
1907.....	4,591	225	121	11	32	4,980
1908.....	4,370	215	116	12	28	4,741

##### WOMEN IN MEDICINE.

During the past year there were 835 women studying medicine, or 3.7 per cent. of all medical students as compared with 3.8 per cent. in 1907. There were 185 women graduates this year, or 3.9 per cent. of all graduates. In 1907 there were 928 women students and 211 graduates, while in 1906 there were 895 women students and 233 graduates. Of all the women matriculants, 186 (22.3 per cent.) were in attendance at the three medical colleges for women, as compared with 210 (22.6 per cent.) in 1907, and 189 (21.0 per cent.) in 1906. From the three women's colleges there were 46, or 24.9 per cent. of all women graduates as compared with 39 (18.5 per cent.) in 1907. The remaining 649 (77.7 per cent.) were matriculated in coeducational colleges.



TABLE 7.—WOMEN IN MEDICINE.

Year.	Total women students.	Percent. of all students, both sexes.	Total women graduates.	Percent. of grads., both sexes.	Women's colleges.	Students.	Percent. of all women students.	Graduates.	Percent. of all women graduates.	Co-ed. schools.	Students.	Percent. of women students.	Graduates.	Percent. of all women graduates.
1904	1,129	4.3	244	4.0	3	183	16.2	56	23.0	97	946	83.8	198	77.0
1905	1,073	4.1	219	4.0	3	221	20.6	54	24.5	96	852	79.4	165	75.5
1906	895	3.5	233	4.3	3	189	21.0	33	14.1	90	706	79.0	200	85.9
1907	928	3.8	211	4.2	3	210	22.6	39	18.5	86	718	77.4	172	81.5
1908	835	3.7	185	3.9	3	186	22.3	46	24.9	88	649	77.7	139	75.1

NUMBER OF COLLEGES.

During the past year seven colleges (mentioned on page 603) have been suspended and seven lost their identity through mergers. Three new colleges were formed by the merging of others, however, and two new colleges were established, making a net decrease of nine colleges since last year, the total now being 152. The regular schools number 123, a decrease of eight since last year. The homeopathic schools number 16, a decrease of 1. The eclectic colleges have 8, the same number as last year, and the physiomedical colleges have decreased by one, there being now only 2, while there are now 3 nondescript schools which offer to teach all systems of medicine.

TABLE 8.—MEDICAL COLLEGES.

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med.	Nondescript.	Total.
1880.....	72	12	6	.....	.....	90
1890.....	93	14	9	.....	.....	116
1900.....	121	22	8	.....	.....	151
1901.....	124	21	10	2	2	159
1902.....	121	20	10	3	1	155
1903.....	121	19	10	3	1	154
1904.....	133	19	10	3	1	160
1905.....	129	18	9	3	1	160
1906.....	130	18	9	3	1	161
1907.....	131	17	8	3	2	161
1908.....	123	16	8	2	3	152

LENGTH OF TERMS.

The length of the terms of the same colleges fluctuates somewhat from year to year, but on the whole there has been a lengthening of college terms. This has reference to the weeks of actual work, exclusive of holidays. Only 2 colleges this year report sessions shorter than twenty-seven weeks, as compared with 6 in 1907 and 14 in 1906. In 1901 there were 58 which held sessions of less than twenty-seven weeks. Of those having sessions of twenty-seven or twenty-eight weeks, the number is 21 this year, or 6 less than last year, and 25 less than in 1903. There are now 26 colleges claiming courses of twenty-nine or thirty weeks of actual work, or 2 more than in 1907, and 51 claiming courses of thirty-one or thirty-two weeks, or 9 more than 1907. Forty-six colleges require from thirty-three to thirty-six weeks, a decrease of 12 since last year. The 4 colleges claiming courses longer than thirty-six weeks are night schools. It would apparently require twelve or fourteen years of the usual night school study, however, to secure the

equivalent of four years of thirty weeks each in our better day colleges. Omitting the four night colleges there are 97, or 63.8 per cent. of all colleges, which claim more than thirty weeks of actual work as compared with 100, or 62.1 per cent. of all colleges in 1907.

TABLE 9.—COLLEGE TERMS.

Year.	23 to 26 weeks.		27 to 28 weeks.		29 to 30 weeks.		31 to 32 weeks.		33 to 34 weeks.		35 to 36 weeks.		Ov. 36 weeks.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
1901	58	36.5	42	26.4	8	5.0	26	16.4	4	2.5	18	11.3	3	1.9
1902	44	28.4	44	28.4	11	7.1	33	21.3	3	1.9	18	11.6	2	1.3
1903	33	21.4	46	29.9	15	9.7	37	24.0	2	1.3	19	12.4	2	1.3
1904	27	16.3	44	26.5	22	13.3	37	22.3	13	7.8	20	12.0	3	1.8
1905	15	9.4	35	21.8	12	7.5	44	27.5	13	8.1	38	23.8	3	1.9
1906	14	8.7	35	21.7	26	16.1	32	19.9	24	14.9	28	17.4	2	1.3
1907	6	3.7	27	16.8	26	16.1	42	26.1	29	18.0	29	18.0	2	1.3
1908	2	1.3	21	13.8	28	18.4	51	33.6	24	15.8	22	14.5	4	2.6

POPULATION OF COLLEGE CITIES.

Of the 144 colleges that had graduates 96, or 66.7 per cent., are located in cities of 100,000 or greater population and these colleges had 3,650, or 77.2 per cent. of all graduates of 1908, while the 48 schools located in cities of less than 100,000 had 1091, or 22.8 per cent. of all graduates. In cities of less than 50,000 there are 31 medical colleges which had 595 graduates in 1908, while 8 colleges having 144 graduates in 1908 are located in cities having less than 10,000 population.

DISTRIBUTION OF MEDICAL STUDENTS.

Table 2 on pages 588 to 591 shows from what states the students come who were in attendance at each medical college during the session of 1907-8. The influence of the proximity of the medical school is seen in the fact that states having medical colleges contribute more students in proportion to the population than those which have no colleges. A comparison of this table with the large tables based on state board examinations,<sup>1</sup> which show the distribution of the alumni of each college, is interesting. The college which has a widely distributed alumni has also a student body from an equally large number of states.

Only two states contributed over 2,000 students each this year, these being New York with 2,116 and Pennsylvania with 2,104. Illinois, which last year contributed 2,126, contributed only 1,749 this year. The next states in the order of the number of students contributed are Missouri, 919; Ohio, 912; Texas, 874, and Massachusetts, 860. Three states had less than 20 each, these being Wyoming, 6; Nevada, 8, and New Mexico 11.

MEDICAL STUDENTS AND GRADUATES FOR EIGHT YEARS.

Table 3, on pages 592 and 593, shows the students and graduates for each college for each of the past eight years, as well as the totals of students and graduates and

1. JOURNAL A. M. A., May 30, 1908, pages 1848 to 1863.



the average proportion of graduates to students. Many interesting points are brought out by this table. The fluctuation in the attendance on each college is shown and in some of the leading colleges the time when changes in entrance requirements were made are indicated by marked fluctuations in the number of students.

#### PROPORTION OF GRADUATES TO MATRICULANTS.

The proportion of graduates to matriculants is especially interesting. If a college continued a three-year course, about one-third or 33.3 per cent. of the entire student body would graduate each year, the other 67 per cent. being supposedly in the junior and middle classes. For the four year course with its four classes, one class, or about 25 per cent. of all matriculants, would graduate each year. This would be the percentage, doubtless, for each college at the present time if every student who matriculated in a college remained in that college four full years and then graduated. There are numerous factors, however, which tend to alter the percentages of graduates of each college.

The average proportion of graduates to matriculants each year for all colleges is 20.4 per cent., instead of 25, which shows that only about 4 out of every 5 students who matriculate continue until they graduate. In this number which do not graduate may be included those who go into other lines of activity, those who take special courses, and those deceased.

#### CAUSES OF FLUCTUATION IN PERCENTAGES.

The percentages of the individual colleges fluctuate for various causes. A high-grade college located in a small city may have many matriculants and yet have a low percentage of graduates, showing that the students seek the larger cities for their final or clinical years in medicine. This would also result in a higher percentage of graduates for colleges in the large centers of population. The percentage of graduates is seen to be low for colleges in Arkansas and other states where undergraduates are allowed to take the state examination for license to practice medicine. There are 20 colleges for which the average percentage of graduates each year was less than 15 per cent. of all matriculants and four of these had less than 10 per cent. of graduates each year.

Eighteen colleges had an average percentage of graduates each year of over 25 per cent. and four of these graduated over 30 per cent. of all matriculants, two of these schools being in Chicago and two in Baltimore, the percentages of these being 31.1, 31.4, 33.6 and 33.9.

Only four colleges had over a thousand graduates in the eight years, these being the College of Physicians and Surgeons of Chicago, 1,533; Jefferson Medical College, Philadelphia, 1,208; Rush Medical College, Chicago, 1,152, and the College of Physicians and Surgeons of New York, 1,147. There are 21 medical colleges which had over 500 graduates in the eight years, while there are 34 colleges which had less than 100 graduates.

This does not include the colleges not granting medical degrees, nor a number of colleges which have become extinct, and which have been grouped with "miscellaneous colleges."

#### LIST OF EXISTING AND EXTINCT MEDICAL COLLEGES.

Table 4, on pages 594 to 602, gives a complete list of all colleges existing and extinct. Part I gives the existing colleges, the year when each was organized under its present title, the year the first class graduated, the years, if any, when no classes graduated, reference to previous titles if there were such, the name of the dean or secretary, and the dates when the next session begins and ends. Part II gives all colleges which are extinct, or which have ceased to exist under the title given, together with the year each was organized, the year the first class was graduated, the years, if any, when no classes graduated, the year when the last class graduated, the year when the school ceased to exist, and reference to any other titles. By means of these tables an institution's life history under several titles can be readily traced. For example, Part II, No. 85, is the Central College of Physicians and Surgeons, which was organized in 1879, the first class graduated in 1880, and classes were graduated in all subsequent years to and including 1905, when it merged with (II, 103) the Medical College of Indiana to form (II, 99) the Indiana Medical College which in turn graduated classes in 1906, 1907 and 1908, when it merged in (I, 138) the Indiana University School of Medicine.

#### FRAUDULENT COLLEGES.

In the "remarks" column reference is made to all schools which have been reported as fraudulent, or disreputable, or to other items which are important. Where further description has been necessary letters in brackets (a), (b), etc., have been added, which refer to footnotes giving such description.

The list contains the names of many colleges regarding which complete information has not been received and which may be unobtainable. If any of our readers can help us complete the data, we will be under great obligations.

#### FORMER SOURCES OF INFORMATION.

The chief sources of information regarding medical colleges of the United States prior to 1890 are the invaluable reports issued under the direction of Dr. John Rauch, who was then secretary of the Illinois State Board of Health. The United States Bureau of Education's reports since 1890 have contained fairly complete lists of medical schools together with much important data. Reports of the New York Education Department likewise furnish much valuable information. Beginning with and since the college session of 1900-1901, THE JOURNAL has been publishing complete statistics, to which, since 1905, have been added the special researches of the Council on Medical Education.



## COLLEGE MERGERS AND THE KENTUCKY PROBLEM.

Eighteen months ago Louisville had five regular medical colleges—the Hospital College of Medicine, the Kentucky School of Medicine, the Kentucky University Medical Department, the Louisville Medical College, and the University of Louisville Medical Department. A year ago the Kentucky University Medical Department merged into the University of Louisville and a little later the Louisville Medical College and the Hospital College of Medicine merged under the name of the Louisville and Hospital Medical College. Thus there remained three colleges which have since<sup>1</sup> merged, retaining the name of the University of Louisville Medical Department. In an effort to have the college thus formed become the Medical Department of the Kentucky State University, a conference was held July 17 in Lexington with the trustees of the Kentucky State University.<sup>2</sup> At this conference objection was made to having a medical department in any city other than the seat of the university. This is the same difficulty which came up with the universities of California, Kansas, Maine, Nebraska, North Carolina and Indiana in establishing their medical departments, as well as in the establishment of a medical department of Cornell University in New York City. In California, Kansas, Maine, Nebraska and North Carolina the problem was solved by offering the first two years of the medical course at the seat of the university and the clinical years in the largest city in each state. Cornell University adopted the plan of giving the work of the first two years both at Ithaca and at New York City, but all the clinical work was to be taken at the latter place. Indiana University followed the Cornell plan and the student may take the first two years either at Bloomington or Indianapolis, but his clinical years must be taken at Indianapolis. In all these mergers, the results of which have been favorably reported, the advantage of having the clinical work at the largest city in the state seems to have more than offset the disadvantage of having a part or all of the medical work in a city other than the seat of the university.

## CHOLERA IN THE VOLGA VALLEY.

A recent press report of the outbreak of cholera involving the valley of the Volga from Nijni Novgorod to the mouth of the river, indicates the vast progress made during recent years in the care of the public health. We learn that isolation hospitals have been established along the river, and a floating hospital and inspection steamers are commissioned. The local quarantine method will not be adopted, but isolation of patients, attendants, contacts and suspects will replace it. Measures such as these, as we found in the last New Orleans yellow fever epidemic, are calculated to allay rather than to excite panic—and panic itself, by depressing the vitality, becomes a predisposing cause, thus tending to increase the epidemic in both extent and severity. It is not surprising to learn that with such enlightened meas-

ures, even the superstitious Russian peasantry, who on former occasions, by their hostility toward the medical officers, have added to the natural difficulties attendant on an epidemic, are now learning to cooperate with the authorities.

---

*Medical News*

---

## DISTRICT OF COLUMBIA.

**Tuberculosis Camp.**—An open-air tuberculosis camp was opened by the American Red Cross Society on the grounds of the new Tuberculosis Hospital, August 8. The camp is well equipped and is in charge of the Visiting Nurses' Society.

**Postage on Medicine.**—By a decision of the postmaster general, packages of medicine bearing written directions for taking are subject to the first-class rate of postage on the ground that written directions are not permissible additions to fourth-class mail matter under the law.

**Health Report.**—The weekly health and mortality record for the week ended August 1 shows that there were 116 deaths, of which 61 were white and 55 colored. Of the 119 births, 77 were white and 42 colored. The number of cases of measles decreased from 103 to 56, and those of chicken-pox from 163 to 34. Typhoid fever shows an increase, there being 33 new cases and 6 deaths.

**New Assembly Hall.**—Work has been commenced on a new assembly hall at the Government Hospital for the Insane. The building is designed to provide modern facilities for theatrical productions and other entertainments and to afford proper quarters for religious worship. The building will be completed about June 1, 1909, at an approximate cost of \$96,000. The seating capacity of the amusement hall will be 1,000.

**New Hospital Opened.**—The Municipal Tuberculosis Hospital at Fourteenth and Varnum Streets, N.-W., Washington, was opened June 27 by a public reception. Dr. Percy G. Smith, superintendent of the hospital, headed the reception committee. The hospital has cost about \$100,000 and will accommodate 120 patients. An innovation in tuberculosis hospital construction in this institution is the idea suggested by Dr. George M. Kober of putting the open wards on the upper story instead of grouping them round the base of the building.

## ILLINOIS.

**Hospital Dedicated.**—The new St. James Hospital, Pontiac, erected at a cost of about \$100,000, was dedicated July 19 with appropriate ceremonies.

**Tuberculosis Infirmary Plans Approved.**—The plans for the tuberculosis infirmary on the grounds of Cook County Hospital have been approved by the county board. The building is to be 158x124 feet, five stories in height for the main building and four stories in height for the wings. The top floor of the former and the roofs of the latter are to form sun parlors and exercising grounds for the patients. The building is estimated to cost \$300,000, and will accommodate 320 patients.

**Tuberculosis Exposition.**—The Peoria Society for the Prevention of Tuberculosis, with the aid of the national society, held a tuberculosis exposition at Peoria, July 27 to August 6, inclusive, at which there was an average attendance of nearly 700 a day. Each evening lectures were given and lantern slides shown. Among the interesting features were maps showing the location of each death from tuberculosis for the last 15 years, and daily exhibits showing the amount of tuberculous meat condemned at the local slaughter-houses by government inspectors. Dr. Sumner M. Miller is president of the society, and Dr. Jay H. Bacon, secretary.

## Chicago.

**Free from Smallpox.**—For the first time this year the Isolation Hospital is reported as having no tenant, and it is now undergoing a thorough disinfection.

**Children of the Poor Healthy.**—It is reported that out of 16,586 children examined by the 78 medical inspectors of the health department since July 20 only 281 were found to be ill.

**Communicable Diseases.**—During the week ended August 8, 264 cases of communicable disease were reported, distributed as follows: Diphtheria, 51; scarlet fever, 40; measles, 15; chickenpox, 10; typhoid fever, 76; whooping cough, 40; pneu-

1. THE JOURNAL A. M. A., Aug. 8, p. 506.

2. THE JOURNAL A. M. A., July 25, p. 325.



monia, 10; tuberculosis, 25, and diseases of minor importance, 6.

**Deaths of the Week.**—The total number of deaths from all causes for the week ended August 8 was 657, or 47 more than for the preceding week and 11 more than for the corresponding week of last year. Of the deaths 212 were caused by acute intestinal diseases; 48 by tuberculosis; 41 by violence (including suicide); 36 by nephritis, and 35 by heart disease.

**Hot Weather Care of Children.**—The Chicago department of health has issued a circular entitled "Hot Weather Care of Children," in which the important features of instruction are as follows: Avoid overfeeding; avoid improper foods; avoid improper milk; avoid pacifiers; give baby a drink of water; avoid heavy clothing; keep baby in open air; give baby bath; let baby sleep alone, and do not drug the baby.

**Personal.**—The degree of D.Sc. was conferred on Dr. John B. Murphy by Sheffield University at the recent meeting of the British Medical Association.—Dr. Carl Beck returned from Europe July 29.—Dr. Hyman Cohen has been appointed chief disinfecter of the health department, vice Dr. Charles W. Behm, deceased.—Dr. Eugene O. Christoph has resigned from the staff of St. Bernard's Hospital.—Dr. and Mrs. Walter H. Allport have sailed from Liverpool on their return from Europe.

**Hospital Notes.**—The outdoor performance at Ravinia Park last week netted a little more than \$1,000 to the funds of the Tribune Summer Hospital.—An addition to cost \$200,000 is to be made to the Hospital of St. Anthony of Padua. The principal addition will be a five-story fireproof building 112x50 feet.—The building and land for Iroquois Memorial Emergency Hospital No. 1 has been acquired at 87 Market Street. The land has been leased for ninety-nine years at an annual rental of \$1,800, and the three-story building on the lot will be remodeled for hospital purposes at an expense of from \$10,000 to \$25,000.

**Visit to Ottawa Tent Colony.**—On August 2 a party of about 80 members of the Chicago Medical Society, and ladies, accepted the invitation of Drs. James W. Pettit and Everett H. Butterfield, medical directors of the Ottawa Tent Colony for Tuberculosis, to make a visit of inspection and entertainment. After investigation of the colony near Ottawa, a picnic lunch was served on the bluff before the river trip to Horseshoe Canyon and Starved Rock, at which dinner was served. Other points of historic or esthetic interest were also visited, and the party returned to Chicago the same evening.

**Hospital Notes.**—By a baseball game July 22 more than \$1,000 was netted for the Chicago Union Hospital.—The Deaconess Training School and Wesley Hospital have each been bequeathed \$1,000 by the will of the late Mrs. Eugenia Shumway, Polo.—The Chicago Tuberculosis Sanitarium at Winfield, on an elevation fronting the DuPage River, will be open in about six weeks. Dr. Theodore Sachs will head the medical staff, and the institution is being established under the auspices of the women of the Chicago Jewish Club.—Cook County Hospital has acquired a strip of land 16 feet wide and 550 feet long for \$9,720, and by this purchase is now the owner of the entire block on which the hospital is located.

#### INDIANA.

**Charges Withdrawn.**—The charges filed before the State Board of Medical Registration and Examination against J. W. White, Indianapolis, by Dr. Hugh A. Cowing, Muncie, were withdrawn July 14. Dr. White was charged with giving aid to an illegal practitioner known as "the boy wonder"; and the reason for the withdrawal of the charges is said to be that this individual has left the city.

**Sanitary Association Organized.**—The Indiana Sanitary and Water Supply Association, affiliated with the State Board of Health, was organized July 18 at Indianapolis by superintendents of water works, water chemists, health officers and members of the State Board of Health. H. E. Barnard, state water commissioner, was elected president, and Frank Jordan of the Indianapolis Water Company, secretary. The purpose of the organization is to study the source of the public water supplies, their preservation, conservation and purification, and to work for advanced legislation looking to that end.

**Licenses Revoked.**—The State Board of Medical Examination and Registration is said to have revoked the licenses of Dr. W. P. Ilacker, Bloomington, and Dr. McKendree Green, Pleasant Lake, on the ground that they had been writing prescriptions for the purchase of intoxicating liquors, without first making examination of the individuals to whom such prescriptions were issued.—The State Board of Medical

Registration and Examination, at its meeting July 16, issued an order revoking the license of Herman Reiss, Hammond, to practice medicine. It is charged that Reiss obtained his license in an irregular manner, and had failed to present his license for cancellation as agreed.

#### MISSOURI.

**Tuberculosis Dispensary Opened.**—A free dispensary for the treatment of tuberculosis was opened in the Post-Graduate Hospital, Kansas City, July 13. There will be clinics three days in the week, at which physicians and nurses will be in attendance; and in addition arrangements have been made to have visiting nurses and representatives of the Associated Charities visit homes of patients.

**Circulating Medical Library.**—The library of the University of Missouri has made arrangements whereby members of the State Medical Association may have access to books in the library. On making application to the librarian, books will be sent to the applicant, who has to pay charges of transportation in towns where there is no public library; in towns which have libraries the books will be sent through the library.

**Personal.**—Dr. William Bayliss, superintendent of the Missouri State Sanatorium for Incipient Tuberculosis, has resigned and Dr. Orville H. Brown, physician-in-charge, has been placed in full charge of the institution pending further action by the board of directors.—Dr. Edmund A. Donelan, St. Joseph, celebrated his eighty-fourth birthday, July 9. The local medical society made the occasion memorable by presenting Dr. Donelan with a handsome leather rocking chair.—Dr. and Mrs. Thomas C. Allan, Bernie, have returned from a vacation trip to Colorado, Mexico and the Pacific Coast.

#### St. Louis.

**Proposed Health Building.**—The Society for the Promotion of Health, St. Louis, proposes to erect a health building in University City to cost \$300,000. The building will contain offices, furnished free of charge, for all societies engaged in the fight against tuberculosis, and will have an auditorium with a seating capacity of 5,000, which is to be offered, rent free, in the interest of philanthropic movements.

**Medical Practice Act Not Retroactive.**—Judge Kinzie of the Circuit Court has declared that that portion of the Medical Practice Act which authorizes the State Board of Health to revoke licenses is not retroactive. This opinion was rendered in the case of Dr. Edward J. Hogan, whose license was revoked in 1906, on the charge of unprofessional conduct, before the new law allowing appeal to the Circuit Court went into effect.

**Personal.**—Drs. Edward and Henrietta A. S. Borek sailed for Europe from Baltimore, July 8.—Drs. Samuel T. Bassett, Samuel T. Lipsitz, Albert Vogel, C. M. Barr and Frank L. Whelpley have been appointed junior physicians at the State Hospital.—Dr. Bradford N. Robinson has been appointed assistant junior physician at the Female Hospital.—Dr. F. W. Klocke has been appointed junior physician at the City Hospital.

**Maternity Hospital.**—The Maternity Hospital is now established in its new quarters, 2521 Locust Street. In addition to the charity ward there are a number of private rooms. The medical staff consists of Dr. Davis Forster, physician-in-chief; Dr. Frank Hinchey, alternate; and Dr. Harry D. Carley, assistant. The consulting staff is composed of the following physicians: Dr. John C. Morfit, president; Dr. John Young Brown, vice-president; Dr. Davis Forster, secretary; and Drs. Alonzo R. Kieffer, Edwin R. Meng, William H. Stauffer, John Green, Paul Y. Tupper, Eugene T. Senseney, J. O'Fallon Farrah, Leo C. Huelsman, Amand Ravold and Cyrus E. Burford.

#### NEW YORK.

##### New York City.

**Vanderbilt Clinic to Become a Dispensary.**—Plans have been filed for remodeling the Vanderbilt Clinic of the College of Physicians and Surgeons into a dispensary. The projected improvements are to cost \$20,000.

**New Milk Distributing Headquarters.**—A new headquarters and laboratory for the Nathan Straus milk distribution philanthropy will be opened in East Thirty-second Street. The building is a three-story building, constructed of marble and tiles and fitted with all modern appliances for serving pure milk.



**Insanity on the Increase.**—State Commissioner in Lunacy S. T. Viele says that the average increase in insanity for the last ten years is 717 cases a year. Last year the increase was about 750. This year he expects it will be at least 1,000. Most of this increase is from the city of New York and vicinity.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ended August 1, 461 cases of tuberculosis, with 154 deaths; 187 cases of diphtheria, with 17 deaths; 153 cases of measles, with 11 deaths; 123 cases of scarlet fever, with 4 deaths; 76 cases of typhoid fever, with 13 deaths; 29 cases of whooping cough, with 4 deaths; 12 cases of cerebro-spinal meningitis, with 11 deaths; and 14 cases of varicella, a total of 1,055 cases and 214 deaths.

**Sanitary Work Effective.**—There has been a marked decrease in the mortality among children for the week ended August 1. The Conference on Summer Care of Babies which brought about a cooperation of the institutions engaged in work among the poor on the East Side attributes this reduction to unity in effort, and asserts that 872 babies might be saved if the whole city should gain as Brooklyn has. There the number dropped in two weeks from 151 to 91. The number of deaths in the tenement houses for the last week in July was 968 in 1907 and 649 in 1908.

#### OHIO.

**Society Meetings.**—Physicians of the South Side, Columbus, at a meeting recently held, organized the South Side Physicians' Association, with the following officers: President, Dr. Myron T. Dixon; vice-president, Dr. Herman C. Hoppe; secretary, Dr. D. R. Williams, and treasurer, Dr. Herman L. Harris. —At a joint meeting of the medical societies of Butler, Warren, Montgomery and Green counties, held in the Chautauqua grounds, Middletown, July 14, Dr. Thomas A. Dickey, Middletown, was elected president; Dr. Asa C. Messenger, Xenia, secretary, and Dr. Hugh J. Death, Franklin, treasurer.

**Hospital Notes.**—It is announced that the McKinley home, Canton, is to become a Roman Catholic hospital. —St. Luke's Hospital, Cleveland, was formally opened July 19. The building has 41 private rooms; and in addition a railroad, a male and a female ward, each containing eight beds. The building was erected at a cost of \$150,000, and the following compose its staff: Surgery—Drs. Charles B. Parker, Maurice D. Stepp and John F. Hobson; medicine—Dr. Milton J. Lichty; gynecology—Drs. Roland E. Skeel and Albert F. Spurney; nose, ear and throat—Dr. John N. Lenker; eye—Drs. Daniel B. Smith and Edward S. Lauder; obstetrics—Dr. Roland E. Skeel; pediatrics—Dr. Samuel W. Kelley; dermatology—Dr. Harry B. Kurtz, and hydrotherapy—Dr. James Stotter. —The contract for the main building for the State Sanatorium for Tuberculosis, near Mount Vernon, has been awarded to R. H. Evans & Co., Zanesville, on a bid of \$300,660. —The contract for the addition to Grant Hospital, Columbus, has been awarded to John Heckert, whose bid was \$125,000.

#### PENNSYLVANIA.

**Fire Destroys Hospital.**—The City Hospital of Lock Haven was destroyed by fire July 28. There were 30 patients in the institution at the time, but they were all removed without harm. The loss is estimated at \$45,000.

**Bids for Asylum Rejected.**—The state commission for the State Hospital for the Criminal Insane, to be erected at Fairview, Wayne County, has rejected the bids for the erection of the new buildings Nos. 4 and 8. The site of the proposed hospital is a square mile of land near Carbondale, and is 2,200 feet above the sea. The land was deeded to the state for one dollar by the Delaware & Hudson Railway Company.

**Personal.**—Dr. Harry G. Burns, William H. Weber and Charles C. Williams have been appointed members of the councilmanic committee from the select council of Pittsburg, and Drs. Paul H. Franklin, W. G. Adair, F. H. Frederick and E. F. Schatzman from the common council, to investigate the use of water meters. —Drs. S. S. and William Koser, Williamsport, were seriously injured in an automobile accident near Loyalsockville, July 20. —Dr. Charles C. Wiley, Pittsburg, major-surgeon of the Second Brigade, N. G. Pa., was injured by a stroke of lightning at the National Guard encampment, Gettysburg, July 23.

#### Philadelphia.

**Personal.**—Dr. William W. Keen, who has been abroad for more than a year and a half, is expected to return August 25. —The Alvarenga prize of the College of Physicians, Philadelphia, for 1908 has been awarded to Dr. William T. Shoemaker

for an essay entitled "Retinitis Pigmentosa." —Dr. John F. X. Jones sailed for Europe August 1. —Dr. Aller G. Ellis has returned from a year's study in Europe. —Dr. Charles J. Hoban sailed for Europe August 8.

**Health Report.**—The total number of deaths reported for the week ended August 8 aggregated 482, including 268 males and 214 females. This is an increase of 9 over the number reported in the preceding week and an increase of 55 over the number reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 5; measles, 3; scarlet fever, 3; pertussis, 9; diphtheria, 5; consumption, 56; cancer, 22; apoplexy, 8; heart disease, 34; acute respiratory disease, 13; enteritis, 100; hepatic cirrhosis, 6; appendicitis, 4; Bright's disease, 38; premature birth, 10; congenital debility, 15; senility, 10; suicide, 4; accidents, 14, and marasmus, 13. There were 84 cases of contagious diseases reported, with 13 deaths, as compared with 105 cases and 6 deaths reported in the previous seven days.

#### FOREIGN.

**Galligo Prize.**—This prize of \$100 is conferred every three years for the best work on syphilis or the diseases of children, written in Italian and offered anonymously in competition. Address communications to the Accademia medico-fisica, via Lamarmora, Florence, Italy.

**International Congress of School Hygiene.**—Plans are well under way for this congress which will meet at Paris, March 29, 1910. The two preceding congresses were held at Nuremberg, 1904, and at London in 1907. For all information in regard to the congress apply to R. Dinot, rue Cernuschi, Paris V. France. M. Friedel, director of the Musée Pédagogique, 41 rue Gay-Lussac, Paris, has charge of the exposition to be held in connection with the congress.

**Typhus Fever in Russia.**—It is a matter of history that perhaps no disease in the past has included among its victims so many medical men as typhus fever. This is shown again in the present epidemic in Russia. The last issue of the *St. Petersburg med. Wochenschrift* mentions in its obituary columns four physicians, Drs. Prichodko, Lyssenko, M. Hochberg and Gerassimow, all of whom are said to have succumbed to spotted fever, professionally acquired. One leaves a family, and a pension of about \$500 (700 roubles) has been awarded to the widow. The deaths of three other physicians from the same cause were reported in a previous issue. The disease is said to be epidemic in almost every part of the Russian empire, even at Kiev and Moscow.

#### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Aug. 1, 1908.

#### Lunacy in Ireland.

The large amount of lunacy prevalent in Ireland is a cause of serious concern. Various explanations have been given of the fact. One of the most plausible is that the high percentage is apparent rather than real and is due to the depletion of the country by emigration of its healthiest and most energetic stock. In his annual report, just issued, the medical superintendent of the Cork District Lunatic Asylum brings into great prominence alcoholism as a cause. He reports that there is slight decrease of the number of inmates of the asylum as compared with the previous year, but that the most fruitful cause of insanity is intemperance. Nearly 19 per cent. of the admissions for the year were due to alcoholism. The reduction he regards as a fruit of the temperance movement, which has made considerable progress in Ireland in recent years.

#### The Teaching of Hygiene.

The board of education has issued a new set of regulations for the training of teachers for elementary schools—regulations in which, for the first time, the necessity for rendering teachers competent instructors in the elements of hygiene and of physical exercises is brought into prominence. The board declares that the matter is urgent and that the absence of proper training of teachers is a grave defect. A model syllabus for the instruction of teachers in the principles of hygiene is supplied and the authorities of training colleges are permitted to offer for the approval of the board such modifications of this model as may seem to them better suited to the special opportunities or requirements of any given institution. The model includes a study of the indications of fatigue and of the methods of recognizing difficulties arising from defects of special sense. It is well known that



even in schools for children of the wealthy children have been punished for supposed inattention when the fault was an inability to see or to hear properly. Under the head of cleanliness the syllabus shows the teacher how to render the class room an object lesson in cleanliness.

### BERLIN LETTER.

(From Our Regular Correspondent.)

BERLIN, July 1, 1908.

#### Statistics of Population.

There is no need of argument with physicians to establish the necessity of a growth in population. Not only from the standpoint of capacity for defense, but also from the most various social points of view, an increase in population is to be desired, both by an increase in the number of births and by a diminution in the death rate. Germany has for many years been able to claim a good position in national statistics in both respects. Of late, however, the conditions have altered for the worse to her disadvantage, and political economists and physicians have on this account repeatedly taken opportunity carefully to point out this circumstance and to make efforts toward an improvement.

So far as the death rate is concerned, we have to do chiefly with infant mortality, which in Germany still maintains a high figure. For this reason attention has been directed with increased zeal to the nutrition of infants, which is, as is well known, of the greatest influence with reference to the death rate. Pediatricists and, under their leadership, the state, societies and private persons of means are working to improve the condition of nutrition of infants, especially among the poorer classes of the population. Particularly an effort is being made to induce the women of the working class to keep up breast feeding more than has formerly been the case. For a period the nourishment of infants by the bottle with cow's milk was very popular, in consequence especially of the labors of Soxhlet, to such an extent that pediatricists esteemed it as of equal value with breast feeding. It is now recognized, however, that human milk deserves the preference by far, not only for the production of stronger children and the avoidance of constitutional weakness, especially rickets, but also for the reduction of the death rate. This doctrine is of equal force for the poorer as for the well-to-do classes. Even among the latter breast feeding has quite markedly diminished in prevalence, so that, for instance in Frankfurt-on-the-Main, the employment of wet nurses as a substitute for the nourishment by the mother is scarcely known and bottle feeding is generally employed. While the preference for bottle feeding among the poorer population is occasioned by the failure of strength and of breast milk among the women and by lack of time in consequence of the necessary occupation of the woman in housework or in factories, among the well-to-do, convenience, indolence and similar factors are especially influential. The disinclination of women to nurse their own children is being gradually diminished by the repeated warnings of physicians in word and writing, and the offering of prizes for women who have nursed their children has had a favorable influence in assisting this effort with the women of the lower classes. A great deal has already been accomplished. From a publication of the Imperial Health Office, which appeared last year, it appears that the death rate of infants in many districts of Germany has been appreciably lowered in late years, in some places as much as 50 per 1,000. Last year the cornerstone of a model institution for the campaign against infant mortality was laid which, it was said, was founded on the initiative of the empress and therefore bears her name. In this institution the questions relating to the appropriate nourishment and the reduction of the mortality of infants are to be studied practically and scientifically.

As to the other factor affecting the growth of the population, namely, the birth rate, Germany, as has been remarked, is not in so good a position as formerly. In places of over 2,000 inhabitants the number of births fell on the average, reckoned for 1,000 inhabitants, from 38.6 in the years from 1867 to 1870 to 33.3 in 1902. In Berlin there were in 1876 240 births for every 1,000 married women; in 1905 only 110. In Stuttgart in the period from 1872 to 1875 there were, on the average, 45 births for 1,000 inhabitants, but in 1906 only 29; in Munich 46 births in 1877 per 1,000 fell to only 30 in 1906. It is readily seen that it is in the cities that the evil is especially great, and as the urban population of Germany increases from year to year the fear that the increase of population will be progressively diminished is near at hand. In 1876 the excess of births over deaths was 14.6 per 1,000 in-

habitants, but in 1905 it was only 13.2. The reasons for the reduction of the birth rate are evident. Economic questions play a rôle here, even among the well-to-do, more than in connection with infant mortality. The increased demands entailed in making a living reduce the inclination and the ability of men to marry and on the other hand, favor the artificial limitation of offspring. Families with two children, which were formerly characteristic of the conditions prevailing in France, may be found now with extraordinary frequency in Germany.

But it is just the consideration of the situation in France which increases the anxiety of the German political economists. In France, where the family has not remained stationary with two children, but in not a few instances has descended to the plane of one child, the birth rate has continually diminished. According to the statistics of population for 1907, the births were 33,000 less than the year before. While previous to 1907, the birth rate exceeded the death rate to a slight extent, during this year the relation was reversed; the number of deaths exceeded the births by 20,000, and an actual reduction of the population has occurred in France for the first time. These conditions, of course, must occasion the greatest anxiety in that country. Some years ago the French government appointed a commission with the task of working out a program for raising the birth rate. The commission proposed, among other measures, to reduce the taxes of the fathers of large families, to simplify the formalities of marriage, and to facilitate the naturalization of the numerous foreigners.

While the conditions in England are by no means so bad as in France, they are not at all promising. In England and Wales the number of births in 1907 was only 26.3 per 1,000 inhabitants. In comparison with 1876 the fertility of married women in 1907 had fallen 25 per cent. The same evil is to be seen in many civilized countries, and there is scarcely any doubt that the same causes are influential in all.

#### Oscar Liebreich.

The eminent pharmacologist of the Berlin University and Privy Medical Councillor (Geheimer Medizinalrat), Professor Oscar Liebreich, died July 2 at the age of 69. He was compelled to give up his active teaching a year ago. An advancing arteriosclerosis, which especially affected the brain and led to dementia, necessitated his withdrawal from the faculty of the university and entrance into a sanatorium. His death was only a release for him. Liebreich belonged to the circle of men who have materially increased the reputation of German science in general and of the Berlin University in particular. He belonged to the group of men of which Helmholtz, Virchow, Langenbeck, v. Bergmann and others were the most prominent members. As assistant of Virchow, whose institute he entered in 1867, it was his fortune to discover the hypnotic action of chloral hydrate which had been produced by Liebig in 1832. This discovery was practically and theoretically of the greatest importance and would of itself be enough to secure for Liebreich a permanent place of honor in the history of medicine. To this were added other discoveries in the same field of analgesic agents; he discovered butylchloral and ethyl chlorid. Of other investigations, the determination that protagon is the principal phosphorus-containing constituent of the brain (an observation which Liebreich made when a student), the introduction of hydrargyrum formamidatum, and especially that of lanolin, should be noted. His chemical studies of food-stuffs and investigation of balneotherapy should be emphasized. In a literary way Liebreich was extraordinarily fruitful. The compendium of materia medica published by him and Langaard is widely used. He founded the *Therapeutische Monatshefte* and the less well-known *Enzyklopädie der Therapie*. Liebreich was a clever man who knew well how to turn his scientific discoveries to good use. He was a brilliant speaker. As a teacher, it is true, he was at a disadvantage for medical students, because he did not understand how to meet the practical needs of students. But the smaller the amount of pharmacology the students of medicine learned in his institute, the more severe were his examinations. On this account he was quite as much feared as an examiner as Virchow, and not a few students failed under him one or more times. Personally he was agreeable and he played a not insignificant rôle in the social life of Berlin. His death is a loss to the medical faculty of Berlin. And in this case also the view which we expressed in a former letter holds good; the rising generation does not justify the hope that men like Liebreich can be replaced by others equally gifted.



## Pharmacology

### THE BROADER AIMS OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

TORALD SOLLMANN, M.D.

Member of the Council, Professor of Pharmacology and Materia Medica at the Medical Department of Western Reserve University.  
CLEVELAND, OHIO.

(Continued from page 511.)

#### XXI. THE CONSTRUCTIVE WORK OF THE COUNCIL.

In the preceding paper I emphasized the fact that the real tendency of the Council has been toward construction. This phase of the work may have been obscured in the public mind by the more striking nature of the exposures. In fact, however, these exposures and condemnations are merely incidental; the practical success of the Council must be measured by its constructive work. The number of products which have been brought to compliance with the rules is a better test of success than the number which have been refused or exposed. Of the more than 300 articles admitted by the Council, only a fraction complied with the rules when these were formulated. This showing is a gratifying measure of progress, but is a symptomatic rather than an essential measure.

Whether a thousand, or a hundred, or but ten products are recognized by the Council is not in itself a vital matter. This is important mainly in that it throws light on the really important question, whether it is more profitable to market a medicinal product honestly or dishonestly. For this reason, then, there is cause for congratulation in the fact that so many remedies are being marketed in conformity with the Council's rules—not because of their number, but because it proves that manufacturers consider it profitable, and they consider it profitable because they are convinced that a large part of the medical profession will insist on this compliance. On the other side of the ledger, however, is the fact that five-sixths of the remedies advertised in current journals do not conform to these rules. This seems to show that a very large part of the profession does not insist on these rules.

Signs of progress there are in all directions. The articles submitted and re-submitted to the Council show constant improvement. Correspondence with manufacturers shows a more serious realization of their responsibilities. Prescription-counts all over the country indicate that the tide in the use of proprietary remedies has turned; and it is to be hoped that the decrease affects mainly the unworthy products. The five-sixths of unaccepted advertised articles, however, is a stubborn fact; it may be the indication of a desperate death struggle; or it may mean that the end of the campaign is not yet in sight. It probably indicates both; but whatever its meaning, we should be active to hasten the end.

As I said in my first paper, the Council should advance to a broader work—a program of research, clinical as well as experimental; of popular dissemination of scientific information; in a word, the general advancement of the sane study of scientific therapeutics. These matters have been started; but the main thing at the present time is to complete the present task. This is the "proprietary problem"; it should be disposed of NOW. In the next and final paper, I shall discuss the directions which this further work must take.

(To be concluded.)

#### The Ethics of Medical Journalism in Germany.

The evils that affect the medical press in this country are evidently not limited to America. The "original article" type of proprietary write-up and the department of "therapeutic notes" is evidently by no means an unknown quantity in European medical journalism.

A somewhat lively discussion of journalistic ethics has recently been going on between two German medical journals—the *Ärztliche Mitteilungen*, and the *Münchener medizinische Wochenschrift*. The former journal expresses the opinion editorially that the medical profession should deal thoroughly with the subject of medical advertising. These sentiments, like many to be found in medical journals nearer home, while admirable as expressions of abstract principle, are somewhat vitiated by the inconsistency of existing facts. This the *Münchener medizinische Wochenschrift* points out and calls attention to the department published by the *Ärztliche Mitteilungen* entitled "Aus der Praxis" (from practice) which, while ostensibly devoted to reliable clinical reports, is, in fact, largely made up of "reading notices" of proprietary products. As the *Münchener medizinische Wochenschrift* states, there may be no objection to inserting such notices in the advertising pages, as everyone knows that space is paid for. Such departments as "Aus der Praxis," however, may be assumed to belong to the parts of the journal for which the editor is responsible and in which no matter of a commercial nature appears.

It appears, too, that the *Ärztliche Mitteilungen* had among its original articles a paper by Dr. Golinger on the action of the proprietary preparation, biocitin. Golinger, it seems, is one of those physicians, not unknown in the United States, who prostitute the profession of medical journalism by placing themselves at the disposal of pharmaceutical manufacturers for the purpose of preparing "original articles" that exploit proprietary products.

The German medical press has an association whose members refuse to accept for their respective journals, either such "original articles" or abstracts of them. The existence of such an association and the fact that the ethics of medical journalism is a subject of sufficient moment to give rise to the discussion referred to, augurs well for the future of medical journalism, in Germany at least.

#### Proprietary Meat Juice.

Puro, a widely advertised German tonic, is stated to be the meat juice expressed from raw beefsteak, each bottle "representing five pounds of meat juice." About a million bottles of the preparation are sold annually in Germany, and quite a sensation has followed the announcement by Prof. von Gruber in the Antiquackery Society's organ, the *Gesundheitslehrer*, that there is little or no meat juice in the preparation and that it consists only of meat extract and egg albumin. The numerous testimonials from physicians to the remarkable efficacy of the "meat juice" preparation show once more the effects of auto-suggestion in the matter of proprietary articles.

## Correspondence

#### Cheapness in Pharmacy.

EVANSTON, ILL., July 25, 1908.

To the Editor:—In Dr. Sollmann's article in THE JOURNAL, June 27, page 2146, there appears the following statement: "If the official products are used with due regard to their therapeutic limitations; if they are actually obtainable of a grade superior, or at least equal, to that of the proprietary equivalents, and if they are materially cheaper to the consumer—then their use should be encouraged."

Because of the great good Dr. Sollmann is doing, the broadness, generally speaking, of his views on medical and pharmaceutical subjects, and the thoroughness of his education along these lines, it is disappointing that he should thus prejudice the pharmacist's side of the question.

The extended circulation of THE JOURNAL and Sollmann's reputation will be the means of attracting the attention of so many physicians to the statement, that the article should not be passed without discussion. I do not desire to criticize, but to call attention to another side of this big subject.

The hint given of cheapness of product, in a way, is a continuance of the same grinding-down process, which has been



going on for years, and disheartens the man who wishes to practice true pharmacy. Quality and reliability should be the physicians' goal. The law of supply and demand will regulate the just price. It may be unfortunate, but it is nevertheless true, that without proper compensation true pharmacy is an impossibility.

An article in *Appleton's Magazine*, April, 1908, discussed the compensation for physicians' services in its true light, and may well be applied to pharmacy. The pharmacist's charges should not, and can not, be simply for the material furnished plus an allowance for time at laborer's rates. The remuneration which he should and must receive differs not one iota from that of any one of the professional followings, plus ordinary mercantile profits. The amount received must be in proper proportion to the great length of time and the necessary education required to enable him to compound and to dispense properly. The competent surgeon is not paid two, five or fifteen hundred dollars for simply carving human flesh, but for so skilfully performing an operation that a human life will be saved. So with the pharmacist, a proper reward must follow for his services in skilfully manufacturing and dispensing while assisting in prolonging or saving that same life. It is realized that we must exercise the greatest amount of patience possible in handling the subject so often spoken of as "a return to the practice of medicine and pharmacy" and also with each other while doing so. In order to accomplish the greatest amount of good, it is necessary, without doubt, that the physician should become more fully acquainted with the pharmacist's side of the subject and the pharmacist must take an equal interest in becoming more intelligent regarding the physician's ground.

"The well-known fact" that the druggist's charges are far greater than is necessary, has never been proved by the existence of swollen bank accounts or a showing of what money can buy. Compare conditions as they exist. It does not appear to be a crime for those engaged in purely commercial lines to own a comfortable home and a building in which to carry on their business, to be interested in outside investments, and to have a bank account which enables them to pay bills promptly and take advantage of discounts or favorable changes in the market price on the material they handle; but for the pharmacist no such conditions must ever enter into his dreams. Going confidentially deeper into this side of the question, dare we tell the layman how necessary is the laboratory, which to-day for financial reasons does not exist?

The movement inaugurated by the American Medical Association and backed by all good intentioned men will gradually improve, it is hoped, the overcrowded conditions, and the future physician and pharmacist will occupy more nearly their rightful positions. If physicians honestly desire good pharmacy, it must be nursed and assisted in every way. No one attempts to deny that proprietary and specialty articles are very much overpriced, but that side of the question will right itself. The main point to be kept in view is the non-secrecy of the formula. The physician and the pharmacist, working hand in hand, should not find it difficult to decide on what mixtures are necessary; neither should he be willing to betray the trust of those who so confidently place their lives in their hands, by prescribing or dispensing medicines the nature of which they do not know. We need not take into consideration the charges made at a "drug store" where slipshod methods of compounding and dispensing are used. This class of stores will find their own graves at a rate proportionate to the advance made by the total body. Those best fitted must be given an opportunity to do enough work in true pharmacy so that it will be possible to reach the standard desired, and at the same time the public must be educated to higher demands. With the many drug stores of to-day owned and run by those having but the one thought "for commercial reasons only" in mind, it is a matter for future demonstration as to whether it will be possible to be a pharmacist or own a pharmacy.

Every earnest, educated laborer is entitled to his hire, and the compensation should be sufficient to allow him to live comfortably and lay aside for old age or the days when he will be unable to work. For lack of that necessary intimate acquaint-

ance with the subject it ill becomes a pharmacist to try to regulate a physician's charges, and for the same reason the physician should refrain from attempting to price the pharmacist's goods or services.

GEORGE P. MILLS, Ph.G.

This letter was referred to Dr. Sollmann, whose reply follows:

The plea of Mr. Mills deserves the serious attention of the medical profession. Whoever has had the least acquaintance with the business side of pharmacy will agree that the common notion of the enormous profits of the druggist are entirely erroneous. Indeed, the income of the average pharmacist is relatively so meager that it deters many of the best men from entering or continuing in pharmacy. No profession can advance or even keep up a high standard unless its returns are fairly attractive.

There is no good reason why a competent pharmacist should ask less for products which he makes himself than for those which he buys from a manufacturer. To the contrary, this would, in the end, work against the public interest, since it would cheapen his professional pride. However, if he asks the same price, then the "lower cost" should not be used as an argument for prescribing official products, as is so often done. The financial consideration, in this case, is the affair of the pharmacist, and does not concern the physician and his patient. This is the meaning which I had intended to convey by the words which Mr. Mills criticises.

---

## Book Notices

---

**SURGERY.** By John Allen Wyeth, M.D., LL.D. (University of Alabama), President of the New York Academy of Medicine. Cloth. Pp. 816, with 864 illustrations, of which 57 are colored. Price, \$6.00. New York: Marion-Sims Wyeth & Co., 1908.

Twenty-one years ago Wyeth's "Text-Book of Surgery" made its appearance and immediately became recognized as a standard work of reference and one to be depended on. Having become of age, it has been rechristened and now appears under a new name, "Wyeth's Surgery." Not only has it been rechristened, however, in many essentials it has been rewritten; at least every subject has been brought up to date. While most of the illustrations contained in the old book have been retained, many new ones have been added, a number being in colors. Naturally, one does not expect such exhaustive treatment of a subject, or such detailed descriptions in a single volume as in a composite work of several volumes. But in this instance there is no criticism in this regard. On the whole, the new "Wyeth's Surgery" will continue to hold the high place that its predecessor—Wyeth's "Text Book of Surgery"—has held for the last twenty-one years.

**CONTRIBUTIONS TO THE SCIENCE OF MEDICINE AND SURGERY.** By the Faculty in Celebration of the Twenty-fifth Anniversary of the Founding of the New York Postgraduate Medical School and Hospital. Paper. Pp. 485.

This is a handsome volume, issued to commemorate the twenty-fifth anniversary of the founding of the New York Postgraduate Medical School and Hospital. It contains, in addition to forty-eight original articles by members of the faculty, not a few of which are of more than ordinary interest, an obituary notice with an excellent etched portrait, by Jacques Reich, of the late Dr. D. B. St. John Roosa, to whom it will serve as a worthy memorial tribute from his former colleagues.

---

**Tact.**—There is no better market for tact than the home of and the presence of the sick. Human nature when sick and the human nature of friends of the sick is often a strange, unknown quantity, and the physician must meet emergencies arising from this source and he must often meet them instantly, with great resourcefulness. It is tactful to acquire and hold the confidence of the patient's friends in and about the home, for many a patient is completely under the influence of his friends.—*Leucocyte*.



## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### RELATIVE PROPORTIONS OF MALE AND FEMALE BIRTHS.

TERRE HAUTE, IND., July 23, 1908.

To the Editor:—Can you give me the relative proportion of male and female birth in this and foreign countries?

F. D. WIEDEMANN.

ANSWER.—In a brochure on "Numerical Proportions of the Sexes at Birth" (Memoirs of the American Anthropological Association, i, part 4), Dr. J. P. Nichols, basing his deductions on the available statistics of living births in all parts of the world aggregating 693,785,722, says that ordinarily there is a slight, though constant and decided, excess of male over female living births. We quote as follows from this brochure, pages 256, 257 and 265:

*Proportions of the Sexes of Infants Born Living.*—The statistics for the United States are scanty and scattered; but in 8,377,527 white births there were an average of 1.059 sons born alive for every 1,000 daughters; and this may be taken as an approximate average ratio for this country. The ratio for Massachusetts for fifty-one years, 1.056, is practically the same as the general average; while the adjacent states of Rhode Island and Connecticut gave ratios of 1.043 and 1.066. The highest ratio is for Philadelphia (seven years), 1.093; while New York City (twelve years) has only 1.046.

For European countries the statistics are much more complete and satisfactory. An aggregate of 649,415,411 living births in all parts of Europe yields an average ratio of 1.057 sons for every 1,000 daughters; for the decade 1891-1900, 125,394,583 living births give a ratio of 1.053. For most countries in Europe the ratios range in the neighborhood of the average. In the southernmost countries of Europe there is a decided general tendency toward a much higher ratio of boys, such as 1.132 for Greece (the highest in Europe), 1.088 for Roumania, 1.082 for Bulgaria, and 1.078 for Spain (1.103 for 1900-1903); Servia, however, is at the average, 1.058, while Italy (1.061) and Portugal (1.067) are not greatly above. In the northern countries of Europe, on the contrary, the ratio of boys tends rather below the average, although the difference is not nearly so marked as in the case of the southern countries. The ratio for England and Wales is the lowest in Europe, 1.041 for 1838-1903, 1.036 for 1891-1900. The recent ratio for France (1891-1900) is also low, 1.043.

The Musselman or Arabian population of Algeria gives the ratio of 1.191 sons for 1,000 daughters, the highest ratio found anywhere; this high rate may be taken into consideration in connection with the high rates of the neighboring southernmost countries of Europe. India, also a tropical country, yields a high rate, 1.075. The ratio in Japan, 1.047, is below the general average for the white race. The lowest ratio of all is given by the colored race in the United States, 778,443 births yielding the ratio of only 1.009.

It thus appears that there is a slight but constant numerical excess of male over female living human births in all parts of the world, the average proportions for the white peoples ranging from about 1.053 to 1.059 sons for every 1,000 daughters. There are slight variations in the ratios in different countries. In countries adjacent to the Mediterranean the ratios of sons are much above the average, while in the north of Europe they are rather lower. The colored race in the United States shows a very low rate, while the Japanese are below the average for the whites.

*Proportions of the Sexes of Infants Still-Born.*—The available statistics of still-births for the world, as reported, with the statistics of the corresponding living births, aggregating 13,635,986 still-births and 433,383,593 associated living births. In the main, the still-births are of fetuses of more than six months' gestation.

From this it immediately appears that the number of males still-born is always much greater than that of females still-born; and there are greater fluctuations in the ratios than in the case of living births.

### INTERNATIONAL MEDICAL CONGRESS.

NEW HAVEN, CONN., Aug. 7, 1908.

To the Editor:—Kindly inform me when and where will occur the 1909 meeting of The International Medical Congress.

A. G. NADLER.

ANSWER.—Aug. 24 to Sept. 4, 1909, at Budapest

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, for the week ended Aug. 8, 1908:

Mabee, J. L., capt., M. C., relieved from duty on the transport *Sherman* and ordered to Jefferson Barracks, Mo., for duty: granted leave of absence for two months.

Bratton, T. S., maj., M. C., ordered from Fort Des Moines, Iowa, with Second Cavalry to camp near Fort Riley, Kans.

Bourke, J., capt., M. C., ordered from Fort Leavenworth, Kans., to duty at camp near Fort Riley, Kans.

Stone, J. H., maj., M. C., ordered from Newport News, Va., to the U. S. Military Prison, Fort Leavenworth, Kans., for duty.

Howell, P., capt., M. C., when relieved from duty at the U. S. Military Prison, Fort Leavenworth, Kans., ordered to the Army General Hospital, Fort Bayard, N. Mex., for duty.

Palmer, F. W., capt., M. C., when relieved from duty at the Army General Hospital, Fort Bayard, N. Mex., ordered to Fort Benjamin Harrison, Ind., for duty.

Duncan, W. A., capt., M. C., granted leave of absence for 15 days.

Carter, W. F., maj., M. C., granted leave of absence for 1 month.

Stedman, C. J., capt., M. C., granted leave of absence for 3 months.

Wickline, W. A., capt., M. C., left Leon Springs, Texas, and arrived at Camp Emmett Crawford, Wyo., with detachment of Company B, Hospital Corps.

Freeland, H. L., first lieutenant, M. R. C., ordered to duty at Camp Emmett Crawford, Wyo.; granted leave of absence 20 days, about October 1.

Bayly, R. C., first lieutenant, M. R. C., ordered from Fort D. A. Russell, Wyo., to Camp Emmett Crawford, Wyo., for duty at field hospital during maneuvers.

Harris, H. I., first lieutenant, M. R. C., granted leave of absence for 16 days, after close of maneuvers near Fort D. A. Russell, Wyo.

Mueller, A., first lieutenant, M. R. C., ordered from Milwaukee, Wis., to Jefferson Barracks, Mo., for duty.

The following named first lieuts., M. R. C., recently appointed from contract surgeons, U. S. Army, with rank from July 7, 1908, are ordered to active duty and assigned at their present stations: Archer, W. M., Jr., Artand, F. E., Bayley, E. W., Daywalt, G. W., Dickenson, C. F., Hewitt, J. M., Hogan, D. D., Hughes, L. S., Kelly, J. P., McMillan, C. W., Phelan, H. du R., Truax, J. P., Tuttle, G. B., Van Kirk, H. H., Coffey, A. McD., Coffin, H. L., Kierulff, H. N., Kiess, C. C., Porter, E. H., Wilson, E., Bastion, J. E., Lincoln, H. F., Lowe, T. S., Parkman, W. E.

### Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and other officers of the Public Health and Marine-Hospital Service for the seven days ended Aug. 5, 1908:

Pettus, W. J., asst.-surgeon-general, granted leave of absence for 1 month and 15 days, from Aug. 22, 1908, with permission to go beyond the seas.

Carrington, P. M., surgeon, detailed to represent the service at the International Congress on Tuberculosis, to be held in Washington, D. C., Sept. 21 to Oct. 3, 1908.

Carrington, P. M., surgeon, granted an extension of leave of absence on account of sickness for 7 days.

Wertenbaker, C. P., surgeon, granted leave of absence for 1 month, from Aug. 9, 1908.

Clark, T. P. A., surgeon, granted leave of absence for 1 day, July 18, 1908, under Paragraph 191, Service Regulations.

Creel, R. H., P. A. surgeon, leave of absence granted for 2 months, from Aug. 3, 1908, amended to be effective from Aug. 31, 1908.

Mullan, E. H., asst.-surgeon, granted leave of absence for 7 days, from July 8, 1908, under Paragraph 191, Service Regulations.

Herring, R. A., asst.-surgeon, granted leave of absence for 1 day, July 31, 1908, under Paragraph 191, Service Regulations.

Stiles, Ch. W., chief of Division of Zoology, Hygienic Laboratory, detailed to attend the annual meeting of the American Public Health Association, Winnipeg, Canada, Aug. 25-26, 1908.

Bean, L. C., acting asst.-surgeon, granted leave of absence for 3 days, from Aug. 5, 1908.

Cleaves, F. H., acting asst.-surgeon, granted leave of absence for 12 days, from Aug. 3, 1908.

Delgado, J. M., acting asst.-surgeon, granted leave of absence for 1 day, July 30, 1908, under Paragraph 210, Service Regulations.

Hamilton, H. J., acting asst.-surgeon, granted leave of absence for 2 days.

Hicks, W. R., acting asst.-surgeon, leave of absence granted for 14 days, from June 1, 1908; amended so as to grant 5 days only.

Houghton, M. W., acting asst.-surgeon, granted leave of absence for 15 days, from Aug. 8, 1908.

Rowles, J. A., acting asst.-surgeon, granted leave of absence for 5 days, from July 29, 1908.

Safford, M. V., acting asst.-surgeon, granted leave of absence for 5 days, from July 28, 1908, under Paragraph 210, Service Regulations.

Savage, Walter L., acting asst.-surgeon, granted leave of absence for 30 days, from Aug. 8, 1908.

Schwartz, Louis, acting asst.-surgeon, granted leave of absence for 7 days, from Aug. 3, 1908, under Paragraph 210, Service Regulations.

Weldon, W. A., acting asst.-surgeon, granted leave of absence for 30 days, from July 30, 1908.

Wilson, J. G., acting asst.-surgeon, granted leave of absence for 1 day, July 27, 1908, under Paragraph 210, Service Regulations.

Megaw, H., pharmacist, granted leave of absence for 30 days, from Sept. 1, 1908.

Ryder, L. W., pharmacist, granted leave of absence for 1 day,



July 31, 1908, under Paragraph 210, Service Regulations.

Thomas, A. M., pharmacist, directed to report to Surgeon H. W. Austin, chairman of a board of examiners, to determine his fitness for promotion to the grade of pharmacist of the second class.

RESIGNATION.

Pharmacist R. Miskimon resigned, to take effect Aug. 1, 1908.

BOARDS CONVENED.

A board of medical officers was convened to meet at New York, Aug. 5, 1908, for the purpose of making a physical examination of officers of the Revenue-Cutter Service. Detail for the board: P. A. Surgeon J. A. Nydegger, chairman; Acting Asst.-Surgeon Edward E. Lindeman, recorder.

A board of medical officers was convened to meet at San Francisco, on the call of the chairman, for the purpose of examining Pharmacist Thomas to determine his fitness for promotion to the grade of pharmacist of the second class. Detail for the board: Surgeon H. W. Austin, chairman; P. A. Surgeon W. W. King, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended August 7, 1908:

SMALLPOX—UNITED STATES.

California: San Francisco, June 11-18, 8 cases.  
Illinois: Springfield, July 17-23, 1 case.  
Indiana: Indianapolis, July 19-26, 1 case; South Bend, July 18-25, 2 cases.  
Kansas: Kansas City, July 18-25, 1 case; Topeka, July 19-26, 1 case.  
Louisiana: New Orleans, July 18-25, 1 case (imported).  
Minnesota: Winona, July 11-18, 1 case.  
Ohio: Dayton, July 11-18, 4 cases.  
Tennessee: Knoxville, July 18-25, 1 case.  
Virginia: Waynesboro, June and July, 20 cases.  
Washington: Spokane, July 11-18, 5 cases; Tacoma, July 12-19, 2 cases.  
Wisconsin: La Crosse, July 18-25, 5 cases; Milwaukee, July 11-18, 3 cases, 1 death.

SMALLPOX—INSULAR.

Philippine Islands: Manila, June 6-20, 5 cases, 4 deaths.

SMALLPOX—FOREIGN.

China: Foochoo, June 21-27, present; Hongkong, May 31-June 6, 4 cases, 3 deaths.  
Ecuador: Guayaquil, June 13-27, 7 deaths.  
Formosa: June 6-13, 1 case.  
Japan: Kobe, June 27-July 4, 1 case; Osaka, June 20-27, 3 cases, 1 death.

YELLOW FEVER.

Cuba: Daiquiri, Aug. 3, 2 cases, Aug. 4, 1 case, Aug. 5, 1 case, 1 death.  
Ecuador: Guayaquil, June 13-29, 1 death.  
Martinique: Fort de France, June 21-27, 1 case, 1 death.  
Mexico: Tierra Blanca, July 27, 1 case; Vera Cruz, Aug. 4, 1 case.

CHOLERA—INSULAR.

Philippine Islands: Manila, June 6-13, 1 case, 1 death; Provinces: Capiz, 100 cases daily; Pangasinan, 100 cases daily.

CHOLERA—FOREIGN.

China: Hankow, July 25, present.

PLAGUE.

China: Hongkong, May 31-June 6, 138 cases, 112 deaths.  
Ecuador: Guayaquil, June 13-27, 4 deaths.  
Egypt: General, June 25-July 2, 55 cases, 25 deaths; Alexandria, June 26-29, 7 cases, 3 deaths.  
Formosa: June 6-July 4, 117 cases, 121 deaths.  
India: General, June 6-20, 1,618 cases, 1,615 deaths.  
Japan: Kobe, June 27-July 4, 1 case; Osaka, June 20-27, 1 case, 1 death.  
Venezuela: Caracas, July 4-21, 25 cases (estimated).

Marriages

RALPH C. PEASE, M.D., to Miss Pearl Walker, both of Char-  
don, Ohio, July 26.

HENRY HUGH CLARK, M.D., to Mrs. Ida P. Graham, both of  
Pittsburg, Pa., July 28.

ALBERT W. ADAMS, M.D., to Mrs. Sophia Sarlin, both of  
Bellevue, Mich., recently.

MARVIN SCOTT, M.D., Headland, Ala., to Miss Clyde Stoveall  
of Columbia, Ala., July 29.

CLINTON J. HANCOCK, M.D., Greenup, Ill., to Miss Minnie  
Wood of Casey, Ill., July 22.

GEORGE EDWIN COOK, M.D., St. Louis, Mo., to Miss Lutie  
Boyce of Jefferson City, Mo., June 7.

GILBERT TYSON SMITH, M.D., Stamford, Conn., to Miss Olive  
Schaeffer, at Stamford, Conn., July 15.

FRANK Y. NEER, M.D., to Miss Hulda Forshay, both of Pat-  
erson, N. J., at Newark, N. J., July 14.

ALFRED S. BLACK, M.D., Winifrede, W. Va., to Miss Rose  
Murrill of Charleston, W. Va., July 22.

AUSTIN COLMAN BRANT, M.D., Canton, Ohio, to Miss Mary  
Bowdle Garde of Clifton, Cincinnati, June 15.

GEORGE W. BAILEY, M.D., St. Martins, N. B., to Miss G. Dyer  
of Montreal, Que., at St. John, N. B., August 1.

JOHN D. FREEMAN, M.D., Topeka, Kan., to Miss Bernice  
Hough of Ottawa, Kan., at Kansas City, July 28.

H. N. OLIPHANT, M.D., Forest, Ind., to Miss Florence Kather-  
ine Travis of Monroe, at Frankfort, Ind., July 6.

Deaths

Albert G. Sprague, M.D. Jefferson Medical College, Philadel-  
phia, 1859; a member of the Rhode Island Medical Society;  
for many years president of the Rhode Island State Board of  
Health; assistant surgeon of the Tenth, and afterward of the  
Seventh Rhode Island Volunteer Infantry during the Civil  
War; for several terms a member of the General Assembly  
from Warwick; twice president of the Warwick town council,  
and health officer of Warwick for more than 20 years; died  
at his home August 11, from angina pectoris, from which he  
had suffered many years, aged 71.

Franklin Theodore Howe, M.D. Georgetown University  
School of Medicine, Washington, D. C., 1867; a veteran of the  
Civil War; for many years a clerk in the war department and  
internal revenue department; later chief clerk of the board of  
public works of the District of Columbia; for more than 30  
years editor and manager of newspapers in Washington; died  
at his home in Brookland, D. C., July 28, from heart disease,  
aged 66.

Franklin J. Evans, M.D. University of Pennsylvania, Depart-  
ment of Medicine, Philadelphia, 1884; a member of the Ameri-  
can Medical Association; president of the Delaware County  
(Pa.) Medical Association; a member of the staff of the Ches-  
ter (Pa.) hospital; local surgeon to the Baltimore & Ohio  
Railroad; died at his home in Chester, July 29, from kidney  
disease, after an illness of one week, aged 45.

Louis C. Jacobson, M.D. Rush Medical College, Chicago,  
1903; formerly of Elroy, Wis.; a veteran of the Spanish-  
American War; a member of the Michigan State Medical Soci-  
ety; acting assistant surgeon U. S. Navy; on duty at the  
Norfolk (Va.) Naval Hospital; died in the King's Daughters  
Hospital, Portsmouth, Va., July 20, from typhoid fever, after  
an illness of three weeks, aged 29.

Elias J. Marsh, M.D. College of Physicians and Surgeons in  
the City of New York, 1858; a member of the American Med-  
ical Association; surgeon during the Civil War; for many  
years chief medical director of the Mutual Life Insurance  
Company; a member of the first board of free library trustees  
of Paterson, N. J.; died from heart disease August 3, at his  
home in Paterson, aged 73.

Charles Armstrong Redick, M.D. Western Pennsylvania Med-  
ical College, Pittsburg, 1888; of Bellevue, Allegheny, Pa.; for-  
merly a member of the staff of St. John's Hospital, Pittsburg;  
later of the staff of the Massachusetts State Tuberculosis  
Sanatorium, Rutland, and for the last year a resident of Bal-  
timore; died in Silver City, N. M., from tuberculosis, after an  
illness of a year, July 27.

Lawrence E. Whitney, M.D. Homeopathic Medical College of  
St. Louis, 1879; of Carthage, Mo.; city physician of Carthage,  
Mo.; was found unconscious July 30 near Carthage, where he  
had been making a professional call, and died in a hospital in  
that city a few hours later, aged 55. Foul play is feared. The  
autopsy showed that death was caused by concussion of the  
brain.

Filson Cooper, M.D. Eclectic College of Medicine, Cincinnati,  
1869; a member of the twenty-fifth General Assembly of Iowa  
from Montgomery County, and a pioneer practitioner of  
southwestern Iowa; died at his home in Villisca, July 27,  
from pneumonia, after a short illness, aged 71.

Irl Dycus (License, Texas, 1907); a member of the Ameri-  
can Medical Association; of Archer City, Texas; was killed  
and his mutilated body was found July 28 on the tracks of  
the Fort Worth & Denver Railroad near Wichita Falls, Texas,  
aged 22. Foul play is suspected.



**John A. Aulguire, M.D.** Kansas City (Mo.) Hospital College of Medicine, 1888; a member of the American Medical Association; who was injured at the time of the destruction of his hospital at Pocatello, July 26, died as the result of his injuries two days later, aged 47.

**Ezra H. Tobias, M.D.** Ohio Medical University, Columbus, 1898; a member of the American Medical Association; physician to the board of health of Bowling Green, Ohio; died suddenly in the office of a physician in that city, August 2, from heart disease, aged 39.

**Carl E. Waldeck, M.D.** Cleveland Homeopathic Medical College, 1895; formerly of Cleveland; died at his father's home in that city from paralysis, the result of a fall from a hospital which he was building in Goldfield, Nev., three months before, aged 45.

**John W. O'Falvey, M.D., L.R.C.S.** Ireland, 1853; a veteran of the Crimean War; formerly a member of the Canadian parliament; of Marquette, Mich.; died in St. Mary's Hospital in that city, August 1, from pneumonia, after a short illness, aged 84.

**Eliza Jane Wall, M.D.** New York Medical College and Hospital for Women, New York City, 1884; formerly of Denver, Colo.; died in Goshen, N. Y., August 1, from bronchitis.

#### Deaths Abroad.

**Henry Ashby, M.D.** London, 1878; M.R.C.S. London, 1873; lecturer and examiner on diseases of children at Owens College and Victoria University, Manchester; senior physician at the Manchester Hospital for Children; a member and officer of many learned societies; a strong advocate of the establishment of municipal crèches for motherless children or children with working mothers, of a proper milk supply for children, and of the proper ventilation of the homes of the working classes; one of the most eminent specialists in the diseases of children in Great Britain; died at his home in Didsbury, July 6, aged 62.

**Sir John Thomas Banks, K.C.B., M.D.** University of Dublin, 1843; F.R.C.P. Ireland, 1844; and president of the institution from 1869 to 1871; regius professor of medicine in the University of Dublin in 1880; physician in ordinary to the queen; and in 1889 made knight commander of the Order of the Bath in recognition of his distinguished services; first president of the Royal Academy of Medicine in 1882; and in 1887 president of the British Medical Association; for more than half a century a distinguished practitioner of Dublin; died July 16, from bronchitis, after a short illness, aged 96.

**E. R. Hagen, M.D.,** formerly professor of laryngology and otology at the University of Leipzig, and a noted writer and translator of works on his specialty, died at Leipzig, July 20, aged 85. He has lived in retirement during the last 15 years on account of a serious eye trouble.

### Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

#### Public Instruction in Maryland.

At the 1907 session of the Medical and Chirurgical Faculty of Maryland a Committee on Public Instruction was established whose duty it was to enlighten the public in matters pertaining to the public health. During its first year the work of this committee was carried on largely by lectures, a series of so-called "major lectures" being given by leading medical men on a variety of health topics of public interest, while an equally important work was carried on among the various social organizations, such as church societies and women's clubs, through the medium of "minor lectures." An educational campaign has now been instituted through the newspapers. Arrangements have been made to furnish each of the two leading publications of Baltimore with a weekly health bulletin on subjects of public interest and of value for the preservation of public health and the prevention of disease. These bulletins have appeared from time to time in the Sunday papers and have attracted much attention, being issued "under the jurisdiction of the Medical and Chirurgical Faculty of Maryland." After carefully considering whether these arti-

cles should be published anonymously or signed by the writers, it was decided to publish them as coming from the Medical and Chirurgical Faculty.

The method followed by the Maryland Society is an excellent one and should be imitated by many other state associations. It is in harmony with the recommendations of the House of Delegates of the American Medical Association.

#### Massachusetts Forbids Objectionable Advertising.

The following law was passed by the Massachusetts Legislature at its last session:

AN ACT TO PROHIBIT THE DISSEMINATION BY ADVERTISEMENTS OR OTHERWISE OF INFORMATION CONCERNING CERTAIN DISEASES.

*Be it enacted, etc., as follows:* Whoever publishes, delivers, distributes or causes to be published, delivered or distributed, any advertisement, statement or notice, other than a label which is attached to a bottle or package of medicine, or which is contained in a sealed package of medicine, describing the causes, symptoms, details or effects of a venereal disease, or of a disease, infirmity or condition of the sexual organs, for the purpose of calling attention to or advertising a person or persons from whom, or an office or place at which, information, treatment, or advice may be obtained concerning such diseases or conditions, shall be punished by imprisonment for not more than six months or by a fine of not less than fifty nor more than five hundred dollars, or by both such fine and imprisonment. But the prohibitions of this act shall not be deemed to apply to the printing or delivering in sealed packages outside of this commonwealth of books, pamphlets or circulars containing such advertisements; nor to newspapers printed outside of this commonwealth.

#### Campaign for a New Law in Pennsylvania Inaugurated.

*The Philadelphia Ledger* contains, July 21, an extended outline of the plan of campaign adopted by the physicians of Pennsylvania in an effort to secure adequate medical laws for the Keystone State. At a meeting at Willow Grove Park, Philadelphia, July 22, an address was made by Dr. Joseph D. Bryant, ex-president of the American Medical Association, on "Medical Legislation." It is said that one of the recent occurrences which has aroused professional sentiment along this line is the murder of Dr. W. H. Wilson, who was apparently for a number of years engaged in a lucrative and extensive illegal practice. Following the notoriety occasioned by his death, an investigation was undertaken which shows that "Dr." Wilson was never registered in the state of Pennsylvania and had been practicing for years in violation of the existing law.

The *Ledger* states that an effort will be made to establish a single examining board which shall demand the same standard of proficiency of all applicants for license to practice in the state regardless of the school to which they belong or of the system of treatment which they intend to follow. The fight will be particularly waged against the existing eclectic examining board, which is said to license men who have been rejected by the other boards or could not possibly secure a license in any other way. An effort will also be made to specify conviction for a felony as one of the grounds for revocation of license.

Any improvement or amendment of the existing medical practice act of Pennsylvania will be hailed with approval by those interested in the proper and effective restriction of the practice of medicine. It has long been known that the medical practice act of Pennsylvania was utterly inoperative. The fact that any individual could keep up a lucrative and disreputable line of practice for years in the largest city in the state without ever being detected is sufficient comment on the value of the law as it stands. One fatal defect in the present medical practice law of Pennsylvania is the triple system of boards, each of which gives examinations and passes candidates for a license without regard to any action taken or standard established by the other two boards. But the vital objection to the present law is the complete absence of any effective system of registration. The examining boards do not preserve any records of the applicants whom they pass, since these names are simply endorsed and turned over to the medical council. The medical council preserves no record at



all; in fact, this council is made up of an equal number of physicians and laymen, the latter apparently considering their official duties most unimportant and unworthy of serious attention. The license is not legal until registered with the prothonotary (or county clerk) of the county in which the licensee intends to practice. Not the slightest attempt is made by the examining boards, the medical council or the county officers to keep or preserve any records which will be of practical value. As it can not be shown in any case that a given individual is not legally qualified to practice medicine in the state, it is manifestly useless to attempt any prosecutions for violations of the act.

The result is that the law is practically a dead letter and is not of the slightest value to the people for whose protection it was supposedly enacted. There is not to-day in the state of Pennsylvania a single official, either layman or professional, who has the slightest idea how many physicians are legally qualified to practice medicine in the state; neither is there any place in the state where information can be obtained as to who have a right to practice. The only complete copy of the existing records regarding the medical profession of the state of Pennsylvania is in the vaults of the American Medical Association, and this is necessarily imperfect, owing to the slipshod manner in which the county officials have kept the records.

It is a disgrace to the state of Pennsylvania that such a law should ever have been enacted or that, having been enacted, it should be allowed to remain on the statute book. It is to be hoped that this condition of affairs will be speedily and effectively remedied at the next session of the legislature.

#### Review of Medical Organization in North Carolina.

The presidential address of Dr. J. Howell Way, delivered at the fifty-fifth annual session of the Medical Society of the State of North Carolina, on "Random Notes on the History, Aims and Purposes of the State Medical Society," appears in the *July Charlotte Medical Journal*. After some preliminary remarks and a review of the early days of the organization and of the eminent men who founded and conducted the state society in past years, Dr. Way considered the three periods of greatest activity in medical organization, namely, the closing years of the eighteenth century, when a considerable number of state medical societies were organized and medical colleges established; the middle of the nineteenth century, when the American Medical Association was organized and a number of other state associations came into existence and the present movement for medical organization.

In considering the early history of the Medical Society of the State of North Carolina, Dr. Way brought out the interesting fact that in 1850 a system of county medical societies, subordinate to the state society and sending delegates to the annual meeting, was organized in North Carolina, under the presidency of Dr. Knox. He says:

We have merely reverted to primal principles, or in other words we are now building up the medical organization of the state from the foundation upward instead of from the top downward. The division of our present society session into a House of Delegates and the General Meeting was the inevitable, logical and necessary result of activities which greatly increased our annual attendance. . . . Our House of Delegates, the legislative and business body of the society, being made up of the elected representatives of the local profession from every section of the state, certainly gives the fairest consideration of business propositions, and in voting in the various elections each section of our great state association votes exactly its proper and legitimate strength, thus eliminating the possibility of men residing within a radius of 50 miles or less of the society's meeting place exercising undue influence in the society's affairs. . . . The state association in 1850 recommended the enactment of a law providing for a general registration of births, deaths and marriages—certainly a worthy suggestion and one which after fifty-eight years is still a long-felt want.

In 1860 there were forty county societies represented at the state meeting. This splendid and ideal organization was disrupted by the Civil War.

Reviewing the State Board of Medical Examiners, Dr. Way

summarizes the laws adopted at different times. In 1859, after several unsuccessful attempts, a medical practice act was placed on the statute books and is still in force. The penalty clause was added in 1885 and the registration clause in 1888. The original law placed the selection of the Board of Medical Examiners in the hands of the medical society of the state, with the added provision "except when the legislature chooses to exercise this right."

Dr. Way also calls attention to a decision of the state Supreme Court bearing on the validity of sectarian medical legislation. He says:

There is absolutely no more excuse or reason for the existence in North Carolina of a state board of medical examiners to examine and to certify to the professional capacity of medical practitioners of electro-therapeutics or hydrotherapy or ophthalmology or any other special method or theory of practice, than there exists the necessity of a special examination, before the supreme court of attorneys applying for state license, on particular methods of professional procedure in practice about which even the best lawyers may have diverging views. . . . There yet exists a stigma on the science of medicine in North Carolina irremovable until the last vestige of sectarian medicine practice legislative enactment is erased from our statute books and all individuals essaying the practice of healing the sick men, women and children, are required to stand the same examination on the formation, nature, character and diseases of the human machine they propose to treat.

Dr. Way's address should be read by all those interested in medical organization or in doubt as to its effectiveness.

#### POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.  
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

##### Twelfth Month.

##### THIRD WEEKLY MEETING.

##### Diseases of Cornea.

Suppurative Keratitis.

Ulcers of Cornea: Etiology, varieties, treatment.

Neuroparalytic and Lagophthalmic Keratitis.

Non-Suppurative Keratitis.

Phlyctenular Keratitis: Symptoms, treatment.

Specific Interstitial Keratitis: Signs of hereditary syphilis, physiognomy, teeth, lymph glands, bones, ears. Symptoms, treatment in detail.

Non-specific Interstitial Keratitis: Causes, symptoms.

Vascular Keratitis, Pannus: Pathology, symptoms, treatment.

##### Diseases of Iris.

Iritis: Varieties: (a) serous, (b) plastic, (c) suppurative, gummatous and tubercular.

Symptoms: Pain, photophobia, loss of vision. Changes in form and appearance of iris.

##### FOURTH WEEKLY MEETING.

##### The Eye During and After the Exanthemata.

Varieties of lesions which may occur and treatment of each.

Careful observation necessary whether eye is affected or not.

Advice by attending physician.

##### The Diagnosis of Cataract.

General and partial cataracts.

Congenital, traumatic, secondary, senile cataract.

Diagnosis, symptoms and physical signs.

Differential diagnosis.

Care and advice by family physician.

##### The Diagnosis of Glaucoma.

Importance of immediate recognition and attention.

Primary and secondary. Acute, subacute and chronic.

Symptoms and physical signs. General symptoms.



**Foreign Bodies in Eye.**

Superficial, under lid and on cornea.

Deeply imbedded in cornea.

Punctured wounds of cornea and other coats.

Foreign bodies entering globe, (a) remaining, (b) not remaining.

Penetrating wounds of cornea and other coats.

When to enucleate, and when to try to preserve vision and ball.

**Society Proceedings****COMING MEETINGS.**

American Public Health Association, Winnipeg, Can., Aug. 25-28.

American Acad. of Ophthal. and Oto-Laryng., Cleveland, Aug. 27-29.

Wyoming State Medical Society, Sheridan, Aug. 28.

New Mexico Medical Society, Albuquerque, Sept. 2-3.

Washington State Medical Association, Walla Walla, Sept. 2-4.

South Dakota State Medical Assn., Yankton, Sept. 2-4.

Medical Society of the Missouri Valley, Council Bluffs, Sept. 3-4.

Colorado State Medical Society, Denver, Sept. 8-10.

Med. Soc. of the State of Pennsylvania, Cambridge Spgs., Sept. 14-17.

American Assn. of Obstet. and Gynecol., Baltimore, Sept. 22-24.

American Dermatological Association, Annapolis, Sept. 24-26.

Kentucky State Medical Association, Winchester, Sept. 23-25.

Con. of State and Prov. Bds. of N. A., Washington, Sept. 25-26.

Internat'l Congress on Tuberculosis, Washington, Sept. 21 to Oct. 12.

**MEDICAL SOCIETY OF NEW JERSEY.**

*One Hundred and Forty-second Annual Meeting, held at Cape May, June 18-19, 1908.*

**New Officers.**

A list of the officers elected for the ensuing year appeared in *THE JOURNAL*, July 18, 1908, page 232.

**Joint Affections in Children.**

DR. WILLIAM K. NEWTON, Paterson, in the oration on medicine, gave two reasons for the ignorance of the general practitioner regarding infectious arthritis and for the lack of fulness and definiteness in the literature on this subject: the custom of calling all cases of arthritis rheumatism, and the attempt to group all these joint affections under the title of Still's disease. Infectious arthritis, he said, might be the result of any of the infections with pus-producing organisms. He excluded those caused by tuberculosis, syphilis, and acute rheumatic fever, and confined his attention to the less understood cases of infectious arthritis, considering their etiology, pathology and symptoms.

**Endothelioma of the Pleura.**

DR. HENRY S. PATTERSON, New York, reviewed the literature of the subject, including ninety-six cases. Malignant new growth of the pleura should be suspected when bloody fluid is found in the chest. A number of conditions must be excluded in making the diagnosis, particularly tuberculosis, aneurism and primary new growth elsewhere. Persistent bloody fluid, not tuberculous, with progressive emaciation, usually accompanied with fever, made a suggestive picture. Sometimes cells were found in the fluid. The only absolutely sure method of diagnosis was by making a microscopic examination of tissue that had come to the surface by extension of metastasis. The disease must be treated at first by aspiration. The skin might be frozen with ethyl chlorid, care being taken to allow the frost to wear off before puncturing; otherwise the needle would have to go through a tough, leathery layer and run the chance of bending or breaking. The subsequent pain was relieved by local applications and by the coal-tar products, with or without morphin. In the last stages morphin to the point of toxic effect was indicated. Symptoms referable to metastasis must be treated as they arise. The only justification for surgical treatment was the presence of purulent effusion.

**DISCUSSION.**

DR. PHILIP MARVEL, Atlantic City, asked whether the malignant growths of the pleural cavity are more liable to metastases than are similar tumors elsewhere.

DR. CHARLES A. ROSENWASSER, Newark, thought it impor-

tant to do all that could be done to afford relief in cases pronounced inoperable, and asked whether Dr. Patterson's experience with methylene blue in cases of inoperable sarcoma had been that the patients had been made more comfortable by its use, and whether life had been prolonged.

DR. N. L. WILSON, Elizabeth, said that in sarcoma of the antrum he thought it better to let the tumor alone and keep the patient under the influence of an opiate.

DR. H. S. PATTERSON said that he would never have been able to recognize the condition in this case had it not been for an article by Dr. Delafield reporting similar cases. The diagnosis was confirmed at autopsy. Theoretically, one would imagine that the pleura, being so rich in lymphatic drainage, would form a primary site from which metastases would be frequent and extensive; but, on the contrary, the cases in which metastases was mentioned represented only about 20 per cent. of the total. He had had no experience with methylene blue in this class of cases, and stated that his reference to malignant growths of the antrum was not in relation to operative interference, but simply as one of the means of eliminating primary growths elsewhere than in the pleura.

**Medical Expert Testimony.**

DR. EDWARD J. ILL, Newark, in his presidential address expressed regret that the Governor of New Jersey had seen fit to appoint but one medical man on the State Board of Health, this one being a retired physician. He stated that the society is working under a disadvantage, owing to a lack of competent legal advice, and suggested that it engage counsel to defend the members in malpractice suits and do other necessary legal work. He thought that damage suit expenses should be paid by the society; because the accused practitioner was defending not only himself, but every physician in the state. The difference between an ordinary and an expert witness, he said, was that one simply states a fact and the other expresses an opinion. An ordinary witness who does not speak the truth might be prosecuted, but an expert could not be reached by the law for expressing a false opinion. The opinions of medical experts carried no weight, because even those who were honest were discredited by what had become a pernicious system. Dr. Ill thought that the law should be amended so as to make such scandalous conflicts of opinion impossible. The man who sold his opinion, he said, should not be allowed to remain a member in good standing in the New Jersey Medical Society. The profession should put an end to a system that was already dead, in that it had outlived its usefulness.

**When Shall the Physician Distrust His Own Judgment in Surgical Matters.**

DR. MAURICE H. RICHARDSON, Boston, in the oration on surgery, said that it was most important that the diagnosis be made early enough to check the disease in the beginning; and on the shoulders of the physician, because he was the first in the field, rested the responsibility as to whether it should be treated medically or surgically. The errors of surgery were often the result of a too favorable prognosis based on a wrong diagnosis; and the largest proportions of these wrong diagnoses were due to physicians, who were not experts in the diagnosis of tumors. If there were strong possibilities of a serious or fatal lesion that the differential diagnosis could not rule out and for which the only hope lay in immediate surgical intervention, then must the physician distrust his own opinion, even if that opinion is favorable. It was common for the surgeon to shift to the physician the responsibility for surgical failure. When there was any doubt as to the placing of the responsibility, the surgeon should be eager to assume the burden. There were many cases, also, in which the physician should distrust not only his own judgment, but that of the surgeon. He should distrust the judgment of any surgeon who had failed to make a thorough examination. Surgeons did not always appreciate the weight of responsibility that the physician felt toward the family of his patient in recommending an operation. Dr. Richardson thought that the more intimate becomes the association between these two branches of medicine, the better would be the results.

*(To be continued.)*



## Medicolegal

### Need File Certificate Only in County of Residence.

The Court of Criminal Appeals of Texas says, in *Person vs. State*, that Article 440 of the penal code of that state of 1895 provides: "If any person shall hereafter engage in the practice of medicine in any of its branches or departments for pay, or as a regular practitioner, without having first filed for record with the clerk of the district court in the county in which such person may reside or sojourn a certificate from some authorized board of medical examiners, or a diploma from some accredited medical college, he shall be punished as prescribed in Article 438." It was evidently the purpose and intent of the legislature that, for the protection of society, all persons undertaking to practice medicine as physicians, or act as physicians, should, before being permitted so to do, be required to furnish evidence of their skill and preparation by being compelled to file in the office of the district clerk the evidence of their qualification, such instrument, either certificate or diploma, to be filed in the county of their residence, or where at the time they were sojourning. The court thinks it clear that where the physician had once complied with the law by filing a certificate or diploma in the county where he resides that he would and should be permitted to accept professional calls and practice in any adjacent county, and as for that matter throughout the counties of the state where his services might be needed, and that it would not be required of him that he must file such certificate or diploma where he might be called after he had, in the terms of the law, filed such diploma in the county where he resided, or where at the time he might sojourn.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### New York Medical Journal.

August 1.

- 1 \*Treatment of Laryngeal Stenosis, Including Intubation by the Dorsal Method. L. Fischer, New York.
- 2 \*Method for Preventing Infection from the Skin During Surgical Operations. J. S. Horsley, Richmond, Va.
- 3 Sarcoma of the Tonsil. J. E. Rhodes, Chicago.
- 4 Syphilis Communicated in Assault and Battery. H. G. Watson, New York.
- 5 Dies Caniculares (concluded). J. Knott, Dublin, Ireland.
- 6 \*The Solvent Action of the Sulphocyanates on the Lime and Magnesium Deposits in the System. W. Bentley, Athens, Ohio, and B. R. LeRoy, Athens, Ohio.
- 7 Impetigo Contagiosa. R. T. Sutton, Kansas City, Mo.

1. **Laryngeal Stenosis.**—Fischer discusses acute laryngeal stenosis. This, he says, is never found in syphilis, the history of the stenosis in which is of an altogether different type. The bacteriologic diagnosis of acute stenosis is not always easy, but the treatment is identical, whether the organism be the Klebs-Loeffler bacillus, the influenza bacillus, or the streptococcus, viz.: mechanical relief of the respiration. Fischer cites as a diagnostic point that, if a child appears in good health and awakens suddenly at night without having given evidence of disease the day before, such croup is usually of the catarrhal type and is not to be classed with that serious form of laryngeal stenosis due to diphtheritic pseudomembranes. Diphtheritic laryngeal stenosis usually appears slowly. It comes on gradually. A child with diphtheria usually shows malaise during the period of incubation and anorexia; also hoarse, barking cough, labored breathing, swollen glands of neck, rapid pulse, usually not very high temperature. After the respiratory difficulty the worst effect is on the heart. Fischer then discusses intubation, which should not be postponed in private practice, as can be more safely done in a hospital with expert assistance always at hand. The pulse must be the guide as to the urgency of operation. A very rapid pulse, or one becoming thready, and an intermittent pulse are danger symptoms which demand relief. Procrastina-

tion means death, hence it is wise not to resort to emetics and thus to delay the chances of recovery. In the treatment three important points should be remembered: They are: 1, To relieve the stenosis by intubation and thereby prevent asphyxia; 2, to inject sufficient antitoxin to neutralize the toxemia present; and, 3, to restore inactive functions by nutrition and by hygienic means, also giving the required amount of stimulation to strengthen the heart and stimulate all the emunctories to activity. Fischer describes the technique of the dorsal method of intubation. He discusses false passages and says that if a false passage has been produced and we are unsuccessful in our attempts at intubation, then it is much wiser to resort to tracheotomy, rather than to risk the danger incident to exhaustion from both the deficient oxygenation and the heart strain in the struggling child.

He considers recurring laryngeal stenosis after intubation, which, he says, can be summed up in the single word "traumatism," and paralysis of the vocal cords. The prevention of recurring laryngeal stenosis in ordinary membranous diphtheria calls for gentleness, removal of tube every five days, and the O'Dwyer plan of immersing a rubber tube in a hot solution of gelatin containing 25 per cent. of powdered alum. Alternative intralaryngeal medications are given. If an unskilled operator must intubate, then a hypodermatic injection of 1/100 grain strychnin or 1/2 grain tablet caffeine sodium benzoate may be given prior to the operation. It is also wise to have a mustard foot bath ready to stimulate the circulation in case of collapse. If the circulation does not improve after the mustard foot bath given at a temperature of 100 F., then a hot saline colon flushing at a temperature of from 115 to 120 F. may be given. In the treatment of extubation with recurring laryngeal stenosis, especially in a very nervous and fretful child, Fischer orders some antispasmodic treatment 24 hours before extubation. From 5 to 10 grains of sodium bromid, depending on the age of the patient, may be given in water or in milk, every 3 hours. Codein in doses of from 1/10 to 1/4 grain, depending on the age, may be given during the evening before extubation, to insure rest and quiet to the nervous system.

2. **Prevention of Skin Infection.**—To avoid infection in operation from the deeper layers and cut edges of the skin, Horsley tucks around the edge of the cut skin a towel folded in the middle. The towel is fastened by small tenacula or small safety pins; usually three on each side are sufficient. A short distance from each angle of the wound the two towels are clamped together with a hemostatic forceps.

6. **Solution of Lime and Magnesium Deposits.**—Bentley and LeRoy, finding, from a study of the saliva (*New York Med. Jour.*, March 7, 1908, abstracted in *THE JOURNAL*, March 21, p. 991), that there is always precipitation of the calcium and magnesium, held in solution in normal saliva, by the increased content of ammonia and a simultaneous decrease or entire absence of the sulphocyanates, have made a study of these substances. They have used sodium sulphocyanate (the least poisonous to man of all the sulphocyanates) in small doses in arteriosclerosis, with prompt and rapid relief. LeRoy has never had occasion to give more than one grain (.065) of the drug at a dose, often not more than a fraction of a grain well diluted. They are making an exhaustive study of the solvency of lime and magnesium calculi, and think it safe, even now, to say that in this drug we have a remedy which will not only slowly dissolve the already formed stone, but will prevent the formation of the calculi, or other deposit in the system when the sulphocyanids are present in sufficient quantities. They give this caution: "Do not give the sulphocyanates for any length of time, or in large doses, without carefully watching the patient and making repeated measurements of the blood pressure with the sphygmomanometer, and keeping an accurate record of the case; in this you will learn that large doses of the drug will not be called for, nor will you give them when you will have learned with what ease small doses will do the work." The details of laboratory experiments as to the solvency of calculi are given.



## Boston Medical and Surgical Journal.

July 30.

- 8 \*Occurrence of Infantile Paralysis in Massachusetts in 1907. R. W. Lovett, Boston.
- 9 \*Osteosarcoma of Knee Joint. E. G. Abbott and T. J. Burrage, Portland, Maine.
- 10 \*Abuse of Alcohol in Treatment of Children's Diseases. C. W. Townsend, Boston.
- 11 Modification of the Drigalski-Conradi Litmus-Lactose Agar, for Isolation of *B. Typhosus*. D. Gregg, Boston.

8. **Infantile Paralysis.**—Lovett analyzes carefully the literature and investigations on the subject, and presents briefly the data and conclusions suggested as to the etiology of the disease. He then reviews the cases that occurred in Massachusetts in 1907 in regard to distribution, relation to traumatism and condition preceding onset, and sums up the evidence in regard to etiology. The sudden febrile onset and the character of the onset suggest infection, and there is a general impression that the disease is infectious, but the case is not proved by positive bacteriologic data, so far collected, and most bacteriologic examinations are negative. But in this case negative evidence does not disprove the theory of infection, for the organism present, if one exists, may liberate a toxin and disappear. The seasonal occurrence, the age of the children, and the frequent association of intestinal disturbance with the onset suggest some intestinal infection as the possible source of the disturbance. The disease follows the curve of summer diarrhea as to age and season, and follows the curve of cerebrospinal meningitis as to neither. From the evidence it seems reasonable to suspect that some bacillus, probably an anaërobic one, reaches the intestines in milk and there liberates a toxin which is absorbed and carried to the spinal cells by the blood current. Hence, the findings in the cerebrospinal fluid withdrawn by lumbar puncture are negative in most cases. It can not be regarded as certain, however, that infantile paralysis is always caused by the same organism, nor even that it is a pathologic entity. It may be simply the clinical expression of the reaction of the spinal cord to one of the several causes, of which infection may well be one. A similar pathologic condition has been seen to arise from lead poisoning, from the experimental injection of bacteria in rabbits, and from the injection of toxin in guinea-pigs. Allowance must also be made for the possible influence of traumatism, dampness, overfatigue, the exanthemata, and foci of pyogenic infection, as possible causes of infantile paralysis, or a disease indistinguishable from it. At present, he states, we must observe and study and collect material, remembering that we may be dealing (1) with a specific infectious disease; (2) with an infection due to one of several organisms, or (3) with a disease of more than one origin, not always necessarily infectious. The data contained in this report are not sufficient to establish the theory of contagion, although the distribution of the disease, its spread from foci, the involvement of contiguous towns, the spread along lines of most frequent travel, and the suggestive histories given may well warrant us in suspecting it and collecting further data, and no harm could arise from the isolation of these patients from other children during the acute attack.

9. **Osteosarcoma of Knee.**—Abbott and Burrage discuss this condition at large and report a case. They conclude that a radical measure, such as amputation, for the central variety of sarcoma of knee-joint is advisable, because (a) early and high amputation gives the largest percentage of recoveries without recurrence; (b) treatment by the use of toxins, which seems a useful adjunct, though when used alone, according to present statistics, gives only 15 per cent. of cures in all varieties, can not be entirely depended on; (c) immediate death following operation seldom occurs if the previous condition of the patient is fair; (d) resection is of doubtful benefit, and where there is so much at stake should not be attempted.

10. **Alcohol for Children.**—Townsend contends for the utmost caution in using alcohol in children's diseases. He quotes a case in which he was called in consultation and found a 22-months-old infant had been having a dram of whisky every hour, originally prescribed during an acute attack of pneumonia, besides an alcoholic proprietary food. The diagnosis of

meningitis was modified, the whisky stopped and the child did well.

## Medical Record, New York.

August 1.

- 12 \*Tuberculosis in Connecticut, Especially in Rural Connecticut. S. J. Maher, New Haven.
- 13 Autochthonous Urethral Calculi. H. A. Fowler, Washington, D. C.
- 14 \*The Esophagoscope as a Diagnostic and Therapeutic Aid in Esophageal Obstruction. J. S. Myer, St. Louis.
- 15 Surgical Technique Without the Use of Antiseptics: With Report of Forty-one Consecutive Successful Abdominal Operations. W. H. Dukeman, Los Angeles.
- 16 \*Epilepsy in Private Practice, Especially That from Reflex Causes. C. G. Polk, Pensauken, N. J.

12. **Tuberculosis in Connecticut.**—Maher gives an interesting account of observations and researches on tuberculosis in rural Connecticut, and draws the following conclusions:

1. Tuberculosis was a disease of the Indians of Connecticut before the white man came.
2. Human tuberculosis has occurred in all parts of rural Connecticut—highland, lowland and plain.
3. There is considerable evidence to show that in rural Connecticut human tuberculosis occurs most frequently in badly drained districts, and in houses with damp cellars.
4. The reports received do not support the view that in rural Connecticut cases of consumption occur frequently in close proximity to insanitary barns or coops.
5. While the preponderance of testimony is that in rural Connecticut only a minority of cases of consumption have been followed by other cases in the same house or the same family, the evidence in favor of the hypothesis of "consumption houses" and "consumptive families" is often very striking and is deserving of careful consideration.
6. The density of the population of the counties of Connecticut bears no relation to the tuberculosis death rate of said counties.
7. There has been a very marked decline in the tuberculosis death rate for the past fifty years, and this decline was as steep, but not so regular, before the discovery of the tubercle bacillus as it has been since.

14. **The Esophagoscope.**—Myer describes the history of esophageal examination and briefly refers to the anatomy of the esophagus and the difficulties of its examination. He reports cases of foreign bodies and other forms of esophageal obstruction, illustrating the usefulness of the esophagoscope as a diagnostic aid. He uses the Killian instrument, the patient being in the sitting posture, and considers anesthetization, though not always necessary, a very wise procedure. He describes the technic.

16. **Epilepsy.**—Polk points out that he can not find a single course of treatment recommended by high authorities that has not been set aside as valueless by other authorities entitled to equal respect and credence. He insists that reflex epilepsy does exist, and holds that the denial of that fact by some, causes many cases of reflex epilepsy to become permanent, when in earlier stages it would have yielded to correction of defects. The general treatment he does not discuss, as it is so various and disputed, and each practitioner will select for himself and be guided by his own results. The hygienic treatment he holds of equal importance with the medicinal, and he says that a course of treatment along comprehensive lines should be mapped out and the patient be required to give reports as to his adherence to it. A copy of the following rules may be given him. They do not cover every case, but there can be no mistake in the observance of them:

Have meals regularly, with the last meal of the day early and light. Do not continue eating until there is a sense of fullness. Do not eat peas, beans, veal, much meat, or cereals. A vegetable diet is the best. Fish and milk are permissible. Use as little salt in the food as possible and forego tea and coffee. Do not eat much at one sitting. Keep the bowels free and the intestinal tract aseptic by the use of some antifermentative, like salol or betanaphthol. Flush the colon frequently. Take warm salt baths, not remaining in the water sufficiently long to fatigue. Sleep with the head high and keep the feet warm at all times and especially at night. See that any defects in the eyes are corrected and do not use the eyes a long time without resting. If glasses are worn, have the frames straightened at regular intervals. Take as much out-door exercise as possible without fatigue. Spinal douches and massage should be taken regularly. If seizures come early in the day take 15 grains of sodium bromid before retiring.

## Lancet-Clinic, Cincinnati.

July 11.

- 17 Colorado and the Eastern Pulmonary Case. W. A. Campbell, Colorado Springs, Colo.
- 18 Pregnancy When Complicated by Tuberculosis. H. A. Müller, Pittsburg.
- 19 Tracheobronchoscopy, Esophagoscopy and Gastroscopy. J. W. Murphy, Cincinnati.
- 20 Some Features of Femoral Hernia. W. D. Gaines, Cincinnati.
- 21 Obscure Fractures Discovered by Roentgen Examination. S. Lange, Cincinnati.



July 18.

- 22 \*Mortality and Morbidity of Child-Bearing Women Could be Reduced to Minimum if Maternity Hospitals Were More in Favor With Profession and Laity. E. G. Zinke, Cincinnati.  
23 Sympathetic Ophthalmia. L. D. Brose, Evansville, Ind.  
24 Neurasthenia Gastrica, Nervous Dyspepsia or Dyspeptic Symptoms Due to Eye-Strain. C. R. Jones, Pittsburg.  
25 Necessity of Added Emphasis in Teaching of Therapeutics and Pharmacology. W. A. Dickey, Toledo.  
26 Penis Clamp in Treatment of Acute Gonorrhea. J. W. Miller, Cincinnati.

July 25.

- 27 Tuberculosis of Larynx. A. B. Thrasher, Cincinnati.  
28 Résumé of Gallstone Factors. R. A. Bate, Louisville, Ky.  
29 Gallstones as an Etiologic Factor in Diabetes. J. C. O'Day, Oil City, Pa.  
30 Traumatic Pulsating Pleurisy. C. B. Van Zant, Denver, Colo.

22. **Maternity Hospitals.**—Zinke argues in favor of more maternity hospitals. There is an indifference in the profession to the study of obstetrics, a subject which involves grave responsibility, hard work, long hours and little or no pay. Hence many practitioners abandon midwifery in favor of less laborious and more profitable fields in medicine and surgery. Others, never intending to practice it, study it only so far as to meet the requirements for graduation. Others, again, in their early career, meet with only easy cases, and so believe themselves masters in obstetrics, requiring no further study than the mere accumulation of experience. Hence they persistently refuse to send obstetric cases to maternity hospitals, notwithstanding the dangerous environment of the home and the difficulty there of meeting complications. Zinke emphasizes the fact that "every physician, no matter how favorable his experience with obstetrics may have been, should always realize that pregnancy, from the beginning to the end, is, under the most favorable conditions, an event of grave importance." The hygiene of pregnancy, though often of the utmost significance, is ignored. The same may be said of pelvimetry, the diagnosis of the attitude of the fetus in utero, as well as the preparation for labor previous to the event. He holds the hospital the safest place for women to pass through the ordeal of labor, and asks why we hesitate to do with the child-bearing woman what it is now the custom to do with all difficult and complicated cases, medical and surgical, while the patient is yet in good condition. He discusses the reasons of the objections of the profession and the laity to the practice of obstetrics in hospitals.

#### American Journal of Obstetrics, York, Pa.

July.

- 31 \*General Administration of Anesthetics. J. M. Baldy, Philadelphia.  
32 Immediate vs. Deferred Operation for Intra-abdominal Hemorrhage Due to Tubal Pregnancy. J. E. Janvrin, New York.  
33 \*Id. E. E. Montgomery, Philadelphia.  
34 \*Id. C. C. Frederick, Buffalo, N. Y.  
35 \*The Time to Operate in Intra-abdominal Hemorrhage Due to Tubal Pregnancy. W. P. Manton, Detroit.  
36 \*Forty-one Cases of Tubal Pregnancy, with Two Deaths. A. L. Smith, Montreal.  
37 \*Immediate vs. Deferred Operation for Intra-abdominal Hemorrhage Due to Tubal Pregnancy. H. J. Boldt, New York.  
38 \*Pernicious Anemia and Pregnancy. P. Findley, Omaha.  
39 \*Hospital Histories. R. L. Dickinson, Brooklyn.  
40 \*Hospital Gynecology. R. L. Dickinson, Brooklyn.  
41 \*Second Report on Operations for Relief of Pelvic Diseases of Insane Women. L. Broun, New York.  
42 \*Intrapelvic (Subpubic) vs. Abdominal Method of Dealing with Mechanical Obstruction to Delivery. R. C. Norris, Philadelphia.  
43 \*Indications for Cesarean Section. B. C. Hirst, Philadelphia.  
44 \*Hygiene of the Eye in School Children. W. M. Carhart, New York.  
45 \*Recent Studies on Scarlet Fever. A. W. Williams, New York.  
46 Symptomatology and Diagnosis of Lobar Pneumonia and Bronchopneumonia in Children. L. Kerr, Brooklyn.

31 and 33 to 37. Abstracted in THE JOURNAL, June 20, 1908, pp. 2100 and 2101.

38 to 43. Abstracted in THE JOURNAL, July 4, 1908, pp. 69 and 70.

44. **Hygiene of the Eye in School Children.**—Carhart summarizes his paper as follows:

1. The increase during late years in the number of children wearing glasses is due not to an increase in the number of weak or diseased eyes, so much as to the greater strain on the function of vision necessitated by our more extended use of the eyes for close work in the complex civilization of the present day.
2. The normal child is born hypermetropic and without astigmatism. The myopic child is either defective from birth or has

acquired myopia from the stress of eyestrain through the "turn-stile of astigmatism." Astigmatism is not congenital, but is practically always acquired in the normal child during the early years of life by excessive strain on the muscles of accommodation.

3. Kindergarten and primary work should be so arranged as to avoid strain on the muscles of accommodation of the eye in the plastic years of childhood. Hence, sewing and all weaving exercises should be limited in amount, if not absolutely eliminated.

4. Systematic study should be begun only when the delicate and soft tissues of the child's eyes have attained sufficient formation to resist distortion on moderate use of the accommodation. This means, that prolonged close work should not be allowed until the age of 10 or over. A child beginning systematic study at that age will, with suitable care, be able at 16 or 18 to acquire all the knowledge possible to its more precocious companion, and will have the inestimable advantages of normal eyes and healthy physique.

5. No young child should be encouraged to compete with its companions for prizes. Mental and ocular overstrain are the inevitable results of such educational monstrosities. In the primary schools especially there should be no grading of the children.

6. A child incapable of the prolonged use of the eyes at the proper age should not be classed as culpably lazy. In the majority of cases there will be found uncorrected refractive error.

7. Inability to concentrate the mental attention, and deficient powers of observation are often caused by bad visual memory resulting from eyestrain.

8. The symptoms and physical signs of eyestrain in children can be easily recognized, and there is no more brilliant success in medicine than that which follows the correction in children of refractive overstrain.

45. **Scarlet Fever.**—Williams refers to our lack of definite knowledge of scarlet fever, notwithstanding that it has been recognized as an entity since Sydenham's time. We do not know the chief site of the virus, and hence the chief source of infection; or how long the virus may remain infective after separation from the patient; or the exact period of incubation; or any real pathognomonic symptoms, for the rash is seen in other cases—e. g., after serum inoculation; desquamation may occur after any erythema, and the enlargement of papillae on the tongue, which is regarded as pathognomonic, is often so slight as to be difficult to make out, and, moreover, it has been reported as occurring in other diseases. The discussion over Duke's "fourth disease" demonstrates the uncertainty. Little work has been done on the minute pathology. The only constant change is a hyperplasia of lymphatic tissue over the whole body. The only characteristic change is the bodies found by Mallory in 1903, and these have so far received but little corroboration. Field has examined by an improved technique skin from 20 living scarlet-fever patients and from 10 autopsies, with a number of controls, and has come to the conclusion that most, if not all, the bodies are degenerations of the cytoplasm of the host cells. None were found in living skin. The author has completed an examination of skins from 17 living patients and 33 autopsies, with 9 controls. She reports the findings and states that so far there is no evidence that they are living organisms; neither has she been able to demonstrate anything like a tiny organism within the larger bodies. She can not, therefore, agree with Prowazek in including scarlet fever in the group of diseases produced by what he calls "chlamydozoa." Future work is contemplated on the exudates and the superficial tissues of the mouth and nose, which are regarded as more promising sources of information. The streptococcus undoubtedly plays an important rôle in the secondary lesions and sequelæ of scarlet fever. The antistreptococcal treatment has been tried in too few cases to justify conclusions, but Williams regards the results so far as encouraging.

#### Military Surgeon, Carlisle, Pa.

June.

- 47 \*Anti-Typhoid Inoculation in the British Army. Brevet Lieut.-Col. W. B. Leishman, Royal Army Medical Corps.  
48 Operation for Radical Cure of Hydrocele by the Inversion of the Tunica Vaginalis. Major P. C. Fauntleroy, U. S. Army.  
49 \*Classification of the Effects of the Sun's Rays and of Artificial Heat. H. D. Corbuser, U. S. Army.  
50 Diseases and Sanitary Conditions Among Alaskan Indians. Capt. P. C. Hutton, U. S. Army.  
51 Ethyl Chlorid as a General Anesthetic in Minor Surgery. E. M. Blackwell, U. S. Navy.  
52 Austro-Hungarian View of the Care of the Wounded on the Battlefield in Modern War. Staff Surgeon Bertold Reder, Vienna. (Translated by Capt. E. B. Vedder, U. S. Army.)

47. **Antityphoid Inoculation.**—Leishman describes the vaccine method adopted for antityphoid inoculation in the British army, under the following heads: 1, the method of preparing



and standardizing the vaccine; 2. the system adopted for carrying out inoculation; 3. the arrangements for the collection of statistics as to the results of inoculation. Two tables showing the incidence and mortality between the inoculated and uninoculated in the Seventeenth Lancers and the Royal Fusiliers, also the results of experimental work and particularly of antityphoid inoculation in seven large Indian stations from Jan. 1 to June 30, 1907, are given.

49. **Heat.**—Corbusier classifies the effects of the sun's rays, and points out that "sunstroke" and "heat stroke," as now used, are general terms. Sunstroke includes the effects, 1, of the actinic rays and, 2, of the heat rays of the sun. Heat stroke includes effects of, 1, the sun's heat and, 2, artificial heat. To be more exact, one term should be used to indicate only that condition caused primarily by the action of the ultra-violet or short rays, and another to indicate that caused by sun heat, with the possibility of some actinic action also, while a third term must indicate the effects of artificial heat alone. He discusses the subject at length and proposes the following classification:

1. **Siriasis (insolation):** That pathologic condition in which the actinic rays are the predominating factor; characterized by violent headache; vomiting; dryness of mucous membranes; very high fever, from 105 to 110 F.; rapid pulse, often irregular and intermittent; cyanosis; intensely hot skin, first moist then dry; deep or stertorous breathing; absence of corneal and other reflexes; subsultus tendinum and convulsions; unconsciousness; contracted or irregular pupils; scanty urine; coma or sudden death. These symptoms may occur while the patient is in the sun or may not manifest themselves until many hours after exposure.

2. **Sunstroke (sun traumatism):** Cases due chiefly to sun heat, but in which the actinic effect may play some part; characterized by sudden faintness and quick recovery; or else by mental and physical fatigue; thirst; headache; vertigo; confusion; photophobia; pain in the limbs; injected cornea; skin moist and cool; perhaps nausea and vomiting; rapid, shallow respiration, never stertorous; small, compressible pulse; normal or subnormal temperature; pupils normal or dilated; no complete loss of consciousness; reflexes present; perhaps irritable bladder; more rapid recovery than in siriasis. These cases occur when the patient has been exposed to the sun, particularly while undergoing physical exertion. This condition is often a precursor to a more severe attack developing into true siriasis.

3. **Heat exhaustion (heat stroke):** Effects of artificial heat alone; characterized by symptoms similar to those just mentioned; headache; vertigo; moist, cool skin; shallow respirations; small pulse; subnormal temperature, being characteristic.

#### Wisconsin Medical Journal, Milwaukee.

June.

- 53 Puerperal Fever in the Light of Our Present Day Knowledge. J. P. McMahon, Milwaukee.
- 54 \*Prognosis in the Recoverable Psychoses. A. W. Rogers, Milwaukee.
- 55 Scopolamin Anesthesia. F. A. Stratton, Milwaukee.

54. **Recoverable Psychoses.**—Rogers concludes that the records of the large hospitals for the insane in this country and Europe show a percentage of recoveries from all forms of insanity, ranging from 50 to 60 per cent. If statistics were limited to recoverable cases, and if those cases treated at home were included, this would be augmented to nearly 75 per cent. The percentage of complete recoveries has been greatly increased as a result of more scientific methods of diagnosis and treatment. Contrary to popular prejudice, inherited insanity is far from a hopeless condition, many patients recovering, but recurrence is made more probable by the presence of this factor. The prime essential for recovery in the psychoses is that the patient come under proper treatment early. Fully 50 per cent. of those recovering began treatment in the first three months of the disease. Statements concerning prognosis in any type of insanity should always be guarded, and no definite opinion should be offered until ample time has passed for careful study and observation of the patient.

#### Colorado Medicine, Denver.

June.

- 56 \*Abdominal Diagnosis as Tested by Operation. J. N. Hall, Denver.
- 57 Association of Gastric Ulcer with Other Intra-peritoneal Lesions. H. D. Niles, Salt Lake City, Utah.
- 58 Acute Pancreatitis. W. A. Jayne, Denver.
- 59 Chronic Pancreatitis. R. C. Robe, Pueblo.
- 60 \*The Reflexes in the Insane. A. L. Skoog, Pueblo.

56. **Abdominal Diagnosis Tested by Operation.**—Hall gives a summary of the results found on operation in 312 abdominal

cases, of which 300 were in private practice and 12 in hospital work. The number of operators was 36, but all the cases were seen at least once by Hall. Correct diagnoses were found in 244 out of the 312 cases.

60. **Reflexes in the Insane.**—Skoog, as the result of a study of a number of cases, concludes that on comparing the tendon reflex symptoms in the mental disease of paresis with tabes dorsalis, a neurologic disease, it is noted that, whereas they are absent or diminished in the latter, in the former they are exaggerated or irregular in a large percentage of the cases. One exception in his group was accounted for by the fact that the case was a tabetic type of paralytic dementia with absence of deep reflexes. The frequent diminution or absence of the superficial reflexes in paresis is due to the general blunting of all peripheral sensations, and in the earlier stages abnormal distracting mental activities. The epileptics, high-grade imbeciles, senile and secondary dementias, drug habits and intoxication psychoses give reflex findings which are similar. They all have a large percentage with decreased or absent superficial reflexes, and deep reflexes increased and decreased in a small, about equal number. The paranoia and dementia præcox cases present no marked or significant changes in the reflex action. In these there have as yet been demonstrated no definite macroscopic or microscopic changes in the brain.

#### American Journal of Surgery, New York.

July.

- 61 Removal of the Falciform Tonsils as a Means of Relieving Catarrhal Deafness. R. C. Myles, New York.
- 62 Intracranial Lesions of Otitic Origin. J. J. Kyle, Indianapolis.
- 63 \*Plastic Radiography (Radiographs in Relief). G. M. MacKee, New York.
- 64 Prostatic Hypertrophy in the Aged. C. E. Bowers, Wichita, Kan.
- 65 Operative Indications in Dislocation of the Humerus with Fracture. C. P. Flint, New York.
- 66 Recurrent Dislocation of the Shoulder, Successfully Operated On; With Description of Technic. F. H. Albee, New York.
- 67 Nitrous Oxid with Oxygen as an Anesthetic Agent; Value of Warming the Vapor of Ether and Chloroform. J. T. Gwathmey, New York.
- 68 Thrombosis of the Lateral Sinus and Internal Jugular Vein Following Suppurative Mastoiditis, Caused by Acute Purulent Otitis Media; Operation; Recovery. J. L. Adams, New York.
- 69 Vaginal Cesarean Section in Eclampsia. J. O. Polak, Brooklyn.

63. **Plastic Radiography.**—MacKee describes the method of reproducing radiographs in relief, so that they have the appearance of sculptures in bas-relief. He explains the results obtained by this method and enumerates their advantages, which are obvious. Five illustrations are given which show the results well. The contrast between Figure 1, print of foot made directly from radiographic negative, and Figure 2, plastic reproduction of Figure 1, exemplifies well the advantages of the method.

#### Vermont Medical Monthly, Burlington, Vt.

July 15.

- 70 \*Neurasthenia. S. W. Hammond, Rutland.
- 71 Address at Dedictory Exercises of the Vermont Sanatorium for Tuberculosis. F. C. Partridge.
- 72 The Vermont Sanatorium. H. D. Chadwick, Pittsford.

70. **Neurasthenia.**—Hammond discusses the various theories and makes a plea for early diagnosis and prophylaxis in nervous exhaustion. He lays stress on the importance of beginning prophylaxis with the mother of the child in utero, directed toward removing all real or imaginary trouble from her life during the pregnant period, rendering it as tranquil as possible, and, if disease is present, combating it with all means at command. He particularly urges on physicians, as the only ones who can discuss the subject, the necessity for reading between the lines so as to divine a sexual factor, if present.

#### Pennsylvania Medical Journal, Athens.

July.

- 73 \*Plea for Early Exploratory Laparotomy in Gastric Diseases of Doubtful Nature. W. L. Rodman, Philadelphia.
- 74 \*Intestinal Tears Following Unoperated Appendiceal Abscesses and Their Medicolegal Relations. A. R. Allen, Carlisle.



- 75 \*Typical Significance of Certain Abdominal Pains, in Their Relation to Atypical Types of Appendicitis. L. J. Hammond, Philadelphia.
- 76 \*Physical Defects of School Children, Causing Subnormal and Mentally Deficient Pupils. S. W. Newmayer, Philadelphia.
- 77 Intracranial Involvement in Acute Middle-Ear Suppuration. B. H. Potts, Philadelphia.
- 78 \*Thyroid Extract in Epilepsy and Migraine, apropos of Ten Cases. A. Gordon, Philadelphia.
- 79 Treatment of Pterosis. W. C. Meanor, Beaver.
- 80 Importance and Value of Physical Therapies. M. L. Barshinger, York.
- 81 \*Penetrating Wounds of the Thoracic and Abdominal Cavities. W. Lathrop, Hazleton.
- 82 New Mechanical Devices in Treatment of Laryngeal Diphtheria: A New Laryngeal Forceps, A New Laryngeal Probing. E. Rosenthal, Philadelphia.
- 83 \*Analysis of Gastric Contents After Gastroenterostomy. C. R. Jones, Pittsburg.
- 84 The Misfortunes of Scientific Medicine. J. C. O'Day, Oil City.

73. **Exploratory Laparotomy in Gastric Diseases.**—In the oration on surgery Rodman said that the early recognition of cancer is generally impossible without exploration, and may be so even with it unless the growth is removed. He has seen but one instance of an ulcer in any other part of the stomach than the pylorus which has undergone malignant transformation. He explains its frequency at the pylorus by greater irritation and friction and the fact that the acid chyme is thrown against it in volume and force. In addition to his own case, all that he could find in the literature of an ulcer not at the pylorus which had undergone malignant degeneration was one case by Cackovic.

74 and 75. Abstracted in THE JOURNAL, Oct. 26, 1907, p. 1465.

76. Abstracted in THE JOURNAL, Nov. 16, 1907, p. 1715.

78. **Thyroid Extract in Epilepsy.**—Gordon reports ten cases in which thyroid extract was used with beneficial effect in epilepsy and migraine.

81. Abstracted in THE JOURNAL, Nov. 9, 1907, p. 1624.

83. Abstracted in THE JOURNAL, Nov. 2, 1907, p. 1549.

#### Northwestern Lancet, Minneapolis.

July 1.

- 85 \*Sondern's Differential Leucocyte Resistance Line in Diagnosis and Prognosis of Acute Appendicitis. L. B. Wilson, Rochester, Minn.
- 86 "Charcot Joint." F. E. Leavitt, St. Paul.
- 87 \*Mental Contagion. A. S. Hamilton, Minneapolis.
- 88 Indications for Craniotomy. H. W. Jones, Minneapolis.

July 15.

- 89 Treatment of Gastric Ulcer. J. W. Bell, Minneapolis.
- 90 Study of the Metabolism in a Case of Diabetes. W. D. Sheldon, Minneapolis.
- 91 \*Surgical Necessities During Pregnancy and Labor. J. C. Litzenberg, Minneapolis.
- 92 \*Surgical Necessities Following Labor. A. E. Benjamin, Minneapolis.

85. **Sondern's Differential Resistance Line.**—Wilson illustrates a modification of Gibson's standard chart for recording observations as to the leucocyte count and the estimate of polynuclear percentage as suggested by Sondern. He reports a series of observations, divided into two groups: A, those which come under observation on or before the third day, and, B, those which come under observation on or after the fourth day. These again are subdivided as follows: Class A into (1) cases of acute catarrhal appendicitis; (2) cases of early purulent appendicitis without walled-off abscesses, and (3) cases of chronic appendicitis without pathologic evidence of the real or imagined acute exacerbation. Class B is divided into (1) cases in which a well-marked-off abscess exists; (2) cases in which there is an imperfectly walled-off abscess, and (3) cases in which there is a very small and disappearing abscess. While drawing no sweeping conclusions, Wilson thinks the following statements justifiable: 1. Sondern's hypothesis, that the polynuclear percentage is an index of infection, the total leucocytosis an index of body reaction, and their proportional relationship an index of resistance, seems to be supported. The more important exceptions to this are in moribund cases and perhaps in children. 2. As practically applied in early appendicitis cases the disproportional polynuclear increase, i. e., a rising resistance line, indicates a more or less severe infection, which is not being properly cared for

by the body. The higher and longer this line, the more serious the case. 3. A proportional polynuclear percentage or a disproportionate polynuclear decrease, if well marked, indicates mild or well-cared-for infection. 4. The value to the surgeon in early cases is but little, since in most early cases the patients are operated on anyway. It may be of some value negatively in indicating that the supposedly acute exacerbations of chronic appendicitis are not present. 5. In cases between the fourth and fourteenth days, the resistance line is of great value to the surgeon in indicating the patient's poor resistance and the necessity for immediate operation. The operative findings in these cases bear out the leucocyte determination with wonderful accuracy. 6. In cases like those in A. 3, a horizontal or falling resistance line indicates that the patient is taking care of the infection. If the infection is severe, as shown by a high though falling line, the patient may perhaps best be given medical treatment rather than submitted to operation. 7. When such a case as is indicated in B. 1 is being kept under observation, the resistance line should be determined daily, and should the line begin to rise the patient may be submitted to operation.

87. **Mental Contagion.**—Hamilton refers to the mental epidemics that have occurred in all ages, and urges the advisability of segregating the insane, the idiots and the imbecile, not only for their own sakes, but because of the unhealthy mental influence, which is otherwise constantly exercised on friends and neighbors. He reports cases to show the morbid influence of the insane or the abnormal on other minds whose power of resistance has from some cause become lessened.

91. **Operations During Pregnancy.**—Litzenberg sums up his considerations on this subject as follows: When operative conditions arise that would, if postponed, be dangerous to the health or life of a woman, the fact that she is pregnant should not deter the surgeon from operating, because, in fact, there is really little danger of interrupting pregnancy except in women who are excessively nervous. So tolerant to injury is the pregnant woman that extensive lacerated wounds of the abdomen and accidents violent enough to fracture the fetal extremities have occurred and pregnancy has gone on uninterruptedly. The condition calling for operation is usually more likely to endanger the pregnancy than the operation itself. Unless the demand for an operation be very urgent, the time which corresponds to the menstrual period must be avoided; and, as women seem prone to lose their babies at the third, fourth and eighth months, these should not be selected for operating. With these exceptions, surgery on the pregnant woman may be undertaken with little fear of unusually grave consequences.

92. **Surgical Necessities Following Labor.**—Benjamin says that labor may result in one or more of the following conditions, which he discusses seriatim: 1. Rupture of the uterus; 2. lacerated cervix; 3. lacerated perineum; 4. uterine displacement: (a) retroflexion, (b) retroversion, (c) prolapse; 5. prolapse of adnexa and uterus; 6. cystocele; 7. rectocele; 8. fistula. Among diseases that may arise, or being latent may be lighted up into activity, by labor he names: 1. Appendicitis; 2. salpingitis; 3. peritonitis; 4. septicemia; 5. ovarian cysts; 6. carcinoma; 7. tuberculous peritonitis; 8. gall-bladder disease; 9. uterine fibroids. These also he considers in detail. He draws the following conclusions: 1. It is time that the profession should recognize the importance of carefully investigating all cases of pregnant women with possible associated pelvic or abdominal disease. 2. It is certain that many diseases, such as appendicitis, gall-bladder disease, ovarian cysts and certain uterine fibroids, are better operated on during the pregnant state than after the symptoms are exaggerated by the traumatism of childbirth. 3. Women who have borne children may have had an irregular convalescence, due to the presence of pelvic disease that has been directly caused or exaggerated by labor. 4. When certain complications are manifest after childbirth their early recognition and operation often offer the safest prognosis. 5. Nearly all lacerations of the cervix, vagina and perineum are best repaired directly following the birth of the child. 6. Such repair often saves



months and years of suffering (often many women will never have these repairs done later). 7. By immediate repair other complications are frequently avoided. 8. Nearly all late cases of laceration and uterine displacement, fistula, etc., should be corrected for the bodily and mental comfort of the patients.

#### Albany Medical Annals, Albany, N. Y.

June.

- 93 Glimpses of the Past. H. M. Hicks, Amsterdam, N. Y.
- 94 The "Herd" Theory as an Etiologic Factor in Ozena. C. F. Theisen, Albany.
- 95 Clinical Types of Alcoholic Insanity. N. A. Pashayan, Schenectady, N. Y.
- 96 The Guest; or Personal Experiences of a Patient in a Hospital for the Insane (continued). Told by Himself.

#### Ohio State Medical Journal, Columbus.

June.

- 97 Six Cases of Diffuse Suppurative Peritonitis Following Appendicitis with Perforation. J. U. Barnhill, Columbus.
- 98 Operations on Some Complicated Cases of Appendicitis and Some Cases Resembling Appendicitis. H. T. Sutton, Zanesville, Ohio.
- 99 What Should a Physician in General Practice Know and Do in a Case of Appendicitis? S. B. McGavran, Cadiz.
- 100 Importance of Early Diagnosis of Acute Infections of the Middle Ear. J. M. Ingersoll, Cleveland.
- 101 Prophylaxis and Early Treatment of Acute Otitis Media. G. C. Jameson, Oberlin.
- 102 Treatment of Pain in the Ear without Operation. C. Lukens, Toledo.
- 103 Surgical Treatment of Earache from the Standpoint of a Specialist. W. Thrasher, Cincinnati.

#### Monthly Cyclopedia and Medical Bulletin, Philadelphia.

June.

- 104 Therapeutics of Cardiovascular Disease. F. P. Henry, Philadelphia.
- 105 The Essence of the Rest Cure. J. M. Taylor, Philadelphia.
- 106 The Bier Hyperemia Method—How to Enhance Its Curative Efficiency. C. E. deM. Sajous, Philadelphia.

#### Mississippi Medical Monthly, Vicksburg.

June.

- 107 Presentation of Gavel. W. H. Aikman, Natchez.
- 108 Infantile Scurvy or Scorbutus. P. Beekman, Natchez.
- 109 Neuritis. M. J. Alexander, Tunica.

#### Western Medical Review, Omaha.

June.

- 110 Nutritional Disorders in Infants. H. M. McElanahan, Omaha.
- 111 Therapeutic Value of Rest in Bed. W. F. Milroy, Omaha.
- 112 Chronic Fleus. L. Wiseman, Cheyenne, Wyo.

#### Indiana Medical Journal, Indianapolis.

June.

- 113 Pragmatism and Medicine. J. V. Reed, Indianapolis.
- 114 Principles and Practice in Treatment of Wounds. J. W. Sluss, Indianapolis.
- 115 Diagnosis of Pus in the Pleural Cavity. A. C. Kimberlin, Indianapolis.
- 116 Scleroderma. A. W. Brayton, Indianapolis.
- 117 Syphilis as Portrayed by Shakespeare. A. C. Getchell, Worcester, Mass.

#### Journal of Outdoor Life, Saranac Lake, N. Y.

June.

- 118 New Discoveries to be Made in Tuberculosis. R. Koch.
- 119 New York State Hospital for Crippled and Deformed Children. J. J. Nutt, New York.
- 120 Street Dust as a Factor in Spread of Disease. F. P. McCarthy, Oil City, Pa.

#### American Journal of Urology, New York.

June.

- 121 Hematuria. G. MacGowan, Los Angeles.
- 122 Spermatocoele. Prof. von Posner, Berlin.
- 123 Typical Cases of Spermatorrhea. F. M. Johnson, Boston.
- 124 Dual Malignancy in the Penis. J. N. Vander Veer and C. W. L. Hacker, Albany.
- 125 Amputation of Penis in Case of Syphilis. M. L. Heidingsfeld, Cincinnati.

#### Journal of the New Mexico Medical Society, Albuquerque.

June 15.

- 126 Vaginal Hysterectomy. S. D. Swope, Deming, N. M.
- 127 Ophthalmia Neonatorum. W. G. Shadrach, Albuquerque.
- 128 Report of Special Health Officer. B. Ruppe, Tucumcari, N. M.
- 129 Vaginal Hysterectomy in a Pregnant Woman—Recovery. H. Crutcher, Roswell, N. M.
- 130 Sleeplessness. J. W. Colbert, Albuquerque.
- 131 Surgery of the Gall Bladder. D. H. Carns, Albuquerque.

#### Atlanta Journal-Record of Medicine.

June.

- 132 Medical Organization. M. A. Clark, Macon, Ga.
- 133 One Hundred and Twenty Knee-Joint Operations. M. Hoke and C. R. Andrews, Atlanta.

- 134 Tumors of the Bladder. A. L. Fowler, Atlanta.
- 135 "American Hookworm"—Faciariasis. A. G. Fort, Lumpkin, Ga.
- 136 Prophylaxis and Treatment of Typhoid Fever. J. B. Woodville, Fayette, W. Va.

#### New York State Journal of Medicine.

June.

- 137 \*Oxygen in Medicine and Surgery. W. S. Bainbridge, New York.
- 138 \*Vascular Crises. H. L. Elsner, Syracuse, N. Y.
- 139 \*Causes and Treatment of High Arterial Tension. L. F. Bishop, New York.
- 140 Modern Conceptions Regarding Chemical Regulation of Function. G. Lusk, New York.
- 141 \*Technic of an Efficient Operative Procedure for the Removal and Cure of Superficial Malignant Growths. S. Sherwell, Brooklyn, N. Y.
- 142 Acute Diverticulitis. C. C. Zacharie, White Plains, N. Y.
- 143 Extracting Test-Meals. A. Bassler, New York.
- 144 \*Intracranial Complications of Middle Ear Suppuration. S. J. Kopetsky, New York.

137, 138, 139, 141 and 144. Abstracted in THE JOURNAL, Feb. 29, 1908, pp. 721 and 722.

#### FOREIGN.

##### The Lancet, London.

July 18.

- 1 \*Etiology of Pulmonary Tuberculosis. Sir W. Whitla.
- 2 \*Inborn Errors of Metabolism. A. E. Garrod.
- 3 \*Opsonic Index in Pulmonary Tuberculosis. D. L. Smith, J. A. D. Radcliffe, D. Elder and A. Crossley.
- 4 \*Blood Pressure in Neurasthenic States and Effects of Treatment. E. D. Macnamara.
- 5 Osteomalacia. W. O. Meek.
- 6 \*Diphtheritic Paralysis Treated by the Serum of Ronx. G. S. Middleton.

1. Published in the British Medical Journal, July 11, 1908, and commented on editorially in THE JOURNAL, August 1, page 410. Abstracted in THE JOURNAL, August 8, p. 535.

2. **Inborn Errors of Metabolism.**—In the third Croonian lecture Garrod takes up in detail the subject of cystinuria. He goes deeply into its chemistry. He next considers the derangement of sulphur metabolism in cystinuria, in virtue of which the subjects of the anomaly excrete some part of their cystin as such in the urine, often to their serious disadvantage. He is convinced that cystinuria is less rare than alkaptonuria. The liability to the formation of calculi composed of cystin and to other urinary disorders, such as cystitis, gives to cystinuria a practical as well as a theoretical importance. He describes the cystinuric urine and the method of obtaining cystin crystals. The cessation of deposits must not be taken as evidence that a patient has ceased to excrete cystin, for the addition of acetic acid may cause their deposition. In the feces of cystinurics no cystin can be found. The error of metabolism underlying cystinuria is more complex and less uniform than that underlying alkaptonuria. The cases hitherto investigated admit of classification on the following lines:

1. In some no diamines and no primary protein fractions other than cystin have been found in the urine. 2. In some the urine has contained cadaverin or putrescin or both, in addition to cystin, but the excretion of diamines is apt to occur in an intermittent manner. 3. In a very few cases leucin or tyrosin, or both, have been excreted, with or without diamines. 4. In a single case, that of Loewy and Neuberg, cystin was present in the urine, but no diamine, leucin or tyrosin. When diamino-acids were given by the mouth the patient excreted the corresponding diamines, and when tyrosin and aspartic acid were given these were excreted unchanged. In other cases in which similar feeding experiments have been tried no such results have followed the swallowing of diamino- or monamino-acids, and this patient was also exceptional in his method of dealing with cystin introduced by the mouth.

Garrod discusses the various methods for estimating cystin in urine. He gives tables showing (1) the uniformity of many of the figures in the daily excretion of cystin in 19 cases of cystinuria; (2) a constant variation of the C:N ratio in the output in cystinuria. Cystin administered to cystinurics is burned by them to sulphate, as is the case when given to a normal man. This lends support to the view that the cystin excreted unchanged by patients has its origin in the breaking down of the tissue proteins and not of those of



the food. Only a certain path of sulphur metabolism is interfered with in cystinuria. Cystin excretion is only one of the manifestations of the metabolic anomaly known as cystinuria. Other protein fractions than cystin may also be implicated in the error, with the result that cadaverin and putrescin, leucin and tyrosin may be excreted side by side with cystin.

**3. Opsonic Index in Pulmonary Tuberculosis.**—Smith, Radcliffe, Elder and Crossley report the results of researches, undertaken at the Crossley sanatorium, which afforded unusual opportunities of observing pulmonary tuberculosis in various degrees. The technic adopted was that of Wright and Douglas. Two or three normal persons were used as controls. From their charts the authors learn that in some cases there is a very appreciable variation in the opsonic power from hour to hour, although the patients were resting, and they conclude that one can not determine on the result of one estimation of the index whether an injection of tuberculin should be given or not. They classify different types of patients according to their suitability for inoculation. (a) Those showing extreme and rapid oscillations in opsonic power.—In cases of this type it was thought that, as even at rest the autoinoculations were so marked, the results of tuberculin treatment would probably be unfavorable. (b) Those with persistently high level indices.—Injections were not given here, as it was considered that it would not be possible to improve the patient's opsonic power and the risk of inducing a negative phase would have been incurred. (c) Those with low indices.—Injections were instituted in these cases and apparently with excellent results. Other investigations, carried out by the authors for the purpose of finding out whether there is any regular parallelism between the agglutinins and the opsonins in cases of phthisis, show that the two follow a similar course, and that the opsonic estimations are more delicate and record much slighter variations.

**4. Blood Pressure in Neurasthenia.**—Macnamara's observations lead him to the following conclusions: 1. In many cases of neurasthenia there is an alteration of the level of the blood pressure from the normal, the level being sometimes higher and sometimes lower than normal. 2. Patients who show such alterations and who undergo certain sorts of treatment manifest, in some cases, at the end of a course of treatment a level of pressure different from that which existed before treatment began. If the pressure at the commencement is abnormally high it will probably descend, while if it is abnormally low it will probably ascend. 3. The number of patients whose blood pressure is different at the end of their course of treatment from that which it was before treatment began is greater among those without a family history of nervous instability than among those with such a history. 4. In a very large majority of cases the application of high frequency currents produces a lowering of blood pressure, while the static bath (+ charge) and massage produce a raising of pressure. The discharging of a patient charged with static electricity results as often in a rise as in a fall of blood pressure. The application of the faradic current tends rather to lower than to raise the blood pressure, and the galvanic current can not be said to effect much change in either direction. 5. It is difficult to institute treatment with any confidence that there will be at the end of the course such an alteration as might perhaps be expected from a knowledge of the alteration that is likely to follow each application of the therapeutic agent employed, though we may look for a change of level, when the level was at the commencement abnormal, to one that is nearer the normal. There is no evidence that the differences of variation of level before and after treatment, which may sometimes be noted, can be correlated with improvement in health.

**6. Diphtheritic Paralysis.**—Middleton reports a severe case of diphtheritic paralysis of all four extremities in a man, 31 years old, which was progressing very unfavorably, when all other treatment was stopped and Roux's antidiphtheritic serum, obtained from Paris for the purpose, was injected. Beginning with 20 c.c. on January 16, between that date and the 25th,

80 c.c. more were injected. Increase in power was noted on January 17. By January 21 the patient could pick up small objects and turn in bed without assistance, on January 29 he could feed himself and stand alone, and he was discharged, well, by March 6. While this disease tends to spontaneous recovery, the coincidence of improvement with the first injection and its rapid and unchecked progress to cure cause Middleton to hope that the promise held out by a few previously reported cases will be fulfilled. Roux's serum was used, because that was used in the previously reported cases, but in his next case Middleton will try the antidiphtheritic serum in common use.

British Medical Journal, London.

July 18.

- 7 Bier's Induced Hyperemia. H. F. Waterhouse.
- 8 Nasal Obstruction. W. G. Spencer.
- 9 Treatment of Otitic Cerebellar Abscess. D. R. Paterson.
- 10 Complications of Chronic Otorrhea. H. H. B. Cunningham.
- 11 \*Iritis, with Special Reference to Gonorrheal Iritis. W. M. Beaumont.
- 12 \*Little-Known Type of Amblyopia in Children. S. Stephenson.
- 13 Medical Inspection of Schools. W. L. Edwards.
- 14 \*Action of Arsenic on Red Blood Corpuscles, and a Theory of Blood Defect in Pernicious Anemia. J. A. Gunn.

**11. Gonorrheal Iritis.**—Beaumont describes a syndrome—gonorrhea, arthritis, iritis. His own experience leads him to conclude that gonorrheal iritis is much more common than is generally admitted. Rheumatoid arthritis is less common. Gouty iritis he is altogether skeptical about.

**12. Amblyopia in Children.**—In cases of "incomplete post-papillie atrophy of the optic disc," which in Stephenson's observation are invariably bilateral, inquiry into the patient's personal history often elicits the fact that, when an infant, there had been a "cerebral" or "meningitic" illness, marked by such symptoms as "fits," convulsions, headache, vomiting, constipation, retraction of the head, temporary paralysis, squint, unconsciousness, and so forth. On recovery from the attack, sight was found to be partially or totally lost, but has since been more or less regained. The conclusion is almost inevitable that an infantile meningitis or encephalitis was accompanied by optic papillitis, and that both the general and local condition had to some extent been recovered from. The incomplete optic atrophy seen later by the ophthalmic surgeon is on this view to be regarded as a sequel to a meningitic papillitis. Stephenson reports cases which show that an attack of meningitis (or encephalitis) may entail, as permanent evidence of its former existence, (1) incomplete optic atrophy, (2) nystagmus, and (3) paresis of one or more of the extrinsic muscles of the eyeball. These symptoms, it will also be seen, may occur as isolated or grouped phenomena. In the last case quoted by the author paresis of the extrinsic muscles was the only evidence of a former meningitis.

**14. Red Blood Corpuscles.**—Gunn has performed a series of experiments to explain the hematinic value of arsenic, viz., its action on the formed red blood corpuscles, with the result that arsenic has been found to exert on them *in vitro* a pronounced protective influence against the hemolytic action of one of the most commonly used hemolytic agents, distilled water. He describes three experiments and says that, from the fact that the addition of distilled water produced considerably less hemolysis in those corpuscles which had been subjected to arsenic than in those which had gone through the same processes minus arsenic, three conclusions may be drawn: 1. That arsenous acid is fixed to the red blood corpuscles. 2. That this process takes place very rapidly. 3. That it protects these corpuscles against the hemolytic action of distilled water. He says that the individual high hemoglobin content of red cells in pernicious anemia, coupled with the observation that iron is present in the liver and other organs and that it is useless as a remedy, seems to indicate that the defect does not lie in the hemoglobin. He suggests that the stroma of the red blood corpuscles consists largely of lecithin and cholesterol. The condition known as pernicious anemia may be due to a deficiency in the body of lecithin or cholesterol and the administration of these substances may be of some use as a remedy. Certain facts go to show that



there may be some defect in the stroma of the red cells in this disease. For example, they do not run into rouleaux in normal fashion. On such a hypothesis of the blood defect in pernicious anemia, the results of its somewhat empirical treatment may possibly be explained.

#### Clinical Journal, London.

July 15.

- 15 Carcinoma of the Ascending Colon. L. A. Bidwell.
- 16 Modern Methods of Infant Feeding. F. Langmead.

#### Medical Press and Circular, London.

July 15.

- 17 Clinical Forms of Tuberculous Hemoptysis. F. Bezançon and S. I. de Jong.
- 18 \*Acute Disseminated Sclerosis. W. Murrell.
- 19 Inheritance of Insanity and Tuberculosis. W. R. MacDermott.
- 20 The Austrian Tyrol as a Health Resort. D. Walsh.

18. **Disseminated Sclerosis.**—Murrell reports a remarkable case of a girl, aged 19, who, after a week's sickness, with vomiting and pains in the abdomen and inability to walk, came to hospital on January 8. She was bright and cheerful looking and did not appear to be ill. He describes the symptoms, which led to a diagnosis of hysteria. She remained in the same condition until January 30, when the appearance of incontinence of urine and feces aroused the suspicion that the cause was some commencing organic lesion. By February 4 the case was regarded as an early one of disseminated sclerosis, on the basis of the following summary of symptoms: 1. Patient in bed, fairly cheerful, but disinclined to speak. 2. Inability to stand, although both legs are moved freely in bed. 3. Reflexes exaggerated, no tremor, and apparently no anesthesia. 4. Dilatation of left pupil, with left ptosis and flattening of the left side of face. 5. Incontinence of urine and feces. 6. Occasional purposeless vomiting; apparently no headache. Alternative possibilities were entertained, in succession, of a cerebral tumor in the silent area or tuberculous meningitis. The patient died February 10 and an autopsy showed nothing to account for death. A more minute examination of the hardened brain, however, showed numerous areas of degeneration throughout, their shape, size and distribution being very irregular. There was no shrinking or bulging of the cord at the sites of the degenerative areas. The diagnosis of disseminated sclerosis was thus finally established. The whole period of illness, reckoning from the onset of the first symptom to death, was forty days. This is probably the most acute case on record.

#### Journal of Tropical Medicine and Hygiene, London.

July 1.

- 21 \*Tertiary Yaws. R. Howard.
- 22 \*Situation of Splenic Rupture in Enlarged Spleens. J. Cantlie.
- 23 \*Antityphoid Inoculation. R. H. Fox.

21. **Tertiary Yaws.**—Howard, writing from British Central Africa, describes the symptoms of tertiary yaws, which he holds to be a true disease and not a form of syphilis. Syphilis is very rare in the country he writes from, while tertiary yaws is very common. In two instances, moreover, of boys of about 13, who were certainly free from syphilis, and who had undoubtedly true yaws, this tertiary form appeared. Howard describes the skin lesions, bone and joint disease, and destructive ulceration of the nose, palate and pharynx.

22. **Situation of Splenic Rupture.**—Cantlie gives drawings to demonstrate that rupture of the inner surface of the spleen may be occasioned by a blow on the surface of the body, without any evidence of bruising on the outside surface of the spleen—an important medicolegal point, since so many ruptures of the spleen follow on a blow or kick over its region.

23. **Typhoid Preventive Inoculation.**—Fox discusses this subject, including the theory and method of the inoculation, very thoroughly, and urges missionaries and others working in tropical countries to have themselves inoculated. He considers that its utility is proved, and recommends that the vaccine be obtained from laboratories under the control of the discoverer. The duration of the immunity is probably not less than two years.

#### The Journal of Hygiene, London.

Mc.

- 24 \*Insects in the Epidemiology of Plague. D. T. Verbitski.
- 25 Are Domestic Animals of India Affected by Plague? W. B. Bannerman and R. J. Kápadia.
- 26 \*Septicemia in Human Plague: Experiments on the Infectivity of the Excreta.
- 27 Bionomics of Fleas.
- 28 \*How the Flea Clears Itself of Plague Bacilli.
- 29 The Seasonal Prevalence of Plague in India.
- 30 Differential Diagnosis of Plague Bacillus.

24. **Insects in the Epidemiology of Plague.**—Verbitski presented this paper as a thesis for the degree of M.D. at St. Petersburg in 1904, but, as it was in Russian and was not published in any of the well-known journals, it escaped notice. The Indian Plague Commission, however, found that the author's experiments were so well conceived and executed and his results so important in regard to the spread of plague, and covering so much of the ground subsequently traversed by the commission—though the particular species of fleas worked with in the two instances were not identical—that they present it as one of the reports of the commission. The rat flea in St. Petersburg is not the *Pulex cheopis*, but the *Typhlopsylla*, which is found not to bite man. Among his results he notes:

1. All fleas and bugs which have sucked the blood of animals dying from plague contain plague microbes.
2. Fleas and bugs which have sucked the blood of animals which are suffering from plague, only contain plague microbes when the bites have been inflicted from twelve to twenty-six hours before the death of the animals, that is, during that period of their illness when their blood contains plague bacilli.
3. The vitality and virulence of the plague microbes are preserved in these insects.
4. Plague bacilli may be found in fleas from four to six days after they have sucked the blood of an animal dying with plague. In bugs, not previously starved or starved only for a short time (one to seven days), the plague microbes disappear on the third day; in those that have been starved for four to four and a half months, after eight or nine days.
5. The number of plague microbes in the infected fleas and bugs increase during the first few days.
6. The feces of infected fleas and bugs contain virulent plague microbes as long as they persist in the alimentary canal of these insects.
7. Animals could not be infected by the bites of fleas and bugs which had been infected by animals whose own infection had been occasioned by a culture of small virulence, notwithstanding the fact that the insects may be found to contain abundant plague microbes.
8. Fleas and bugs which have been fed on animals which have been infected by cultures of high virulence, convey infection by means of bites, and the more certainly so the more virulent the culture with which the first animal was inoculated.
9. The local inflammatory reaction in animals which have died from plague occasioned by the bites of infected insects is either very slight or absent. In the latter case it is only by the situation of the primary bubo that one can approximately identify the area through which the plague infection entered the organism.
10. Infected fleas communicate the disease to healthy animals for three days after infection. Infected bugs have the power of doing so for five days.
11. It was not found possible for more than two animals to be infected by the bites of the same bugs.
12. The crushing of infected bugs *in situ* during the process of biting, occasioned in the majority of cases the infection of the healthy animal with plague.
13. The injury to the skin occasioned by the bite of bugs or fleas offers a channel through which plague microbes can easily enter the body and occasion death from plague.
14. Crushed infected bugs and fleas and their feces, like other plague material, can infect through the small punctures of the skin caused by the bites of bugs and fleas, but only for a short time after the infliction of these bites.
15. In the case of linen and other fabrics soiled by crushing infected fleas and bugs on them, or by the feces of these insects, the plague microbes can, under favorable conditions, remain alive and virulent during more than five months.
16. Chemical disinfectants do not in the ordinary course of application kill plague microbes in infected fleas and bugs.
17. The rat flea, *Typhlopsylla musculi*, does not bite human beings.
18. Human fleas do bite rats.
19. Fleas found on dogs and cats bite both human beings and rats.
20. Human fleas and fleas found on cats and dogs can live on rats as casual parasites, and therefore can under certain conditions play a part in the transmission of plague from rats to human beings, and vice versa.

26. **Infectivity of Plague Excreta.**—The commission says that experiments devised with the object of testing the infectivity of the excreta from the point of view of the spread of the human epidemic support the conclusion that the excreta of plague patients are ineffective in this regard. These experiments show (a) that the feces are rarely infective, even when a septicemia is present; (b) that the urine—in some cases containing virulent plague bacilli—from patients acutely ill of the disease failed to infect guinea-pigs when rubbed into a scarified area of skin; (c) that guinea-pigs exposed to intimate and prolonged contact with linen soiled with the excreta of moribund patients remained free from infection.



28. **The Clearing of Fleas from Plague.**—The commission reports: Fleas that have fed on septicemic blood are capable of conveying infection to fresh animals on which they feed. This capability is associated with the presence of plague bacilli in the stomach, intestine and feces. If such infected fleas are kept in captivity, it is found that after a time they are no longer capable of conveying infection; at the same time on dissection no bacilli are found in them. The commission shows that: 1, A clearing process exists; 2, the clearing process is more active at 90 F. than at lower temperatures; 3, it is probably of a phagocytic nature.

#### Bristol Medico-Chirurgical Journal.

June.

- 31 \*Is Opsonic Treatment Useful in Phthisis? J. M. H. Munro.  
32 \*Calmette's Ocular Reaction in Tuberculosis. J. M. Fortescue-Brickdale.  
33 Treatment of Hemoptysis in Pulmonary Tuberculosis. N. Neild.  
34 Early Diagnosis of Pulmonary Tuberculosis. C. Muthu.  
35 Lachrymal Obstruction: Its Results, Dangers and Treatment. C. Goulden.

31. **Is Opsonic Treatment Useful in Phthisis?**—Munro says that this question, often asked by interested patients and their relatives, is still met by the majority of family doctors with an answer in the negative. While commending the cautious attitude, he hopes to incline them to an opposite verdict. "A strict *experimentum crucis* is hardly realizable in medicine, for when all material conditions have been arranged so that the only one to be varied at will is the therapeutic agent under test, one has still to reckon with uncontrollable changes in the patient, with psychic influences and the possibility of faith cures." He reports a series of cases, however, which lead him to the following comment: If tuberculin can show distinct evidence of specific action in serious, acute and long-standing cases of phthisis, like the few here cited, can not much more be expected of it in very early and slight cases? When the diagnosis is clearly established, it seems that it should be the very first means used after the patient has been placed under suitable conditions; and, as the essentials of rest, fresh air and good feeding can generally be obtained outside a sanatorium, he believes that tuberculin without a sanatorium can do more than a sanatorium without tuberculin. Finally, there are the very numerous cases of children and young people beginning to ail who ought to be in perfect health. The family doctor suspects a tuberculous tendency or "delicacy of chest," but no unimpeachable symptoms are discoverable. If, however, there is a group of suspicious little facts, explicable by incipient tuberculosis, though not diagnostic of it, and if a series of three or four opsonic indices (two of which may advantageously be taken before and after exercise, respectively) shows the fluctuations so often met with in actual infections, it will probably be found that a few inoculations will at once establish the diagnosis and cure the patient. Several cures of this kind have come under his own observation during the two years he has acted on the obvious indication.

32. **Ocular Tuberculin Reaction.**—Fortescue-Brickdale discusses the literature of the subject and tabulates it, adding the cases observed by himself and his colleagues at the Children's Hospital, the total number of individual cases reaching 4,448. The cases are arranged in three columns: those clinically tuberculous, those clinically non-tuberculous, and those clinically doubtful. Out of 1,623 cases in the first class, 1,419, or 87.4 per cent., gave a positive and 204, or 12.6 per cent., a negative result. In the second class there are 1,931 cases, of which 214, or 11.1 per cent., were positive and 1,717, or 88.9 per cent., negative. In the third class, out of 710 cases 275, or 38.7 per cent., were positive and 435, or 61.3 per cent., were negative. His conclusion is that "for practical clinicians the moral of Calmette's reaction is that there is no short cut to diagnosis, unless it be that made by the surgeon's knife when he opens the abdomen, for instance, and finds acute hemorrhagic pancreatitis."

#### Annales de Médecine et Chirurgie Infantiles, Paris.

July 1, XII, No. 13, pp. 433-468.

- 36 \*Case of Malingering. E. Périer.

- 37 Arterial Pressure in Normal Children. (Tension artérielle normale chez l'enfant.) E. Ganjoux.  
38 Erysipelas in the Newly Born. (Erysipèle chez le nouveau-né.) A. Herrgott.  
39 \*Standards for Growth in Length and Weight of the Newly Born. (Accroissement statural et pondéral chez le nouveau-né.) G. Variot.

36. **Case of Malingering.**—Périer uses Dienlafoy's new term "pathomimie"—from the Greek words for disease and for imitation—in referring to a case of malingering in which a girl of 14, of a wealthy family, baffled medical skill for a long time by searing herself at various points with a curling iron. The shape of one of the lesions finally gave the clue. Charcot was one of the authorities consulted.

39. **Standards for Growth in Length and Weight After Birth.**—Variot thinks that nothing can compare with the scales for determining the proper development of an infant, but records of its growth in length are also important, as he shows by a number of examples. The growth in length proceeds entirely independent of the growth in weight, and fluctuations from the normal standard of each may afford valuable information.

#### Archives Générales de Chirurgie, Paris.

June 25, II, No. 6, pp. 551-664.

- 40 Surgical Intervention in Irreducible and Old Dislocation of the Tarso-Metatarsal Joint. (Luxations irréductibles et anciennes de l'articulation de Lisfranc.) C. Lenormant.  
41 \*Pulmonary Embolism After Radical Treatment of Inguinal Hernia. Maclaure.  
42 Simultaneous Dislocation of Both Shoulder Joints. J. Anglada.

41. **Embolism of the Lungs After Radical Operation for Inguinal Hernia.**—Maclaure reports a case of bilateral phlebitis of the spermatic vein and slight right pulmonary embolism after an operation for inguinal hernia on a man of 42. He summarizes 25 cases in the literature, with 25 others briefly mentioned, and 7 cases of femoral phlebitis. The mortality in the 25 cases of which the details are known was nearly 50 per cent. The embolism is usually tardy, of sudden onset and is generally accompanied by hemoptysis. Prophylaxis consists in avoidance of injury to the vessels in the epigastrium and of traction on the femoral vein and manipulation of the vessels in the spermatic cord. Injections of serum and copious drinking of water have been recommended to prevent this postoperative embolism, on the assumption that the patient is dehydrated. If phlebitis develops in the spermatic vessels the region must be immobilized, and he suggests that embolism might be prevented by applying a ligature high on the spermatic vein. He has had considerable experience with this intra-abdominal ligation of the spermatic vessels, and he no longer hesitates in very urgent cases to ligate the femoral or iliac vein in prevention of embolism. In regard to treatment of femoral thrombosis and pulmonary embolism, he merely calls attention to Trendelenburg's recent attempts to remove the obstructing clot after resection of the third rib and arteriotomy of the pulmonary artery. See abstract in THE JOURNAL, August 8, page 539.

#### Revue de Chirurgie, Paris.

July 10, XVIII, No. 7, pp. 1-211.

- 43 Mixed Tumors of Cheek and Lips. (Tumeurs mixtes de la joue et des lèvres.) C. Lenormant, H. R. Duval and E. Cottard.  
44 \*Pathogeny and Treatment of Intestinal Invagination. X. Delore and R. Leriche.  
45 Hammer Toe. (Orteil en marteau.) Couteaud.  
46 \*Cold Retro-mammary Abscess. (Abscès froids thoraciques rétro-mammaires.) P. Hardon and Marquis. Commenced in No. 6.  
47 \*Colectomy for Cancer of Large Intestine. P. Cavaillon and E. Perrin. Commenced in No. 6.

44. **Intestinal Invagination.**—Delore and Leriche epitomize seven cases of invagination from their experience, either essential invagination or that due to obstruction from a Meckel's diverticulum turned inside out and projecting into the lumen of the intestine, or to obstruction from a benign or malignant tumor in the small or large intestine. Reduction of the invagination by a laparotomy seldom succeeds, and resection of the entire invaginated segment has a very high mortality. The most practicable method of treatment is resection of the invaginated section after incision of the portion forming the outer cylinder sheath, followed by circular enterorrhaphy and



suture of the sheath. They give an illustrated description of this technic as they have successfully applied it in the clinic in several cases. If a cancer is responsible for the invagination, they advise making an artificial anus in the cecum with enterectomy later as indicated, closing the new anus still later. This technic gave good results in one case of cancer of the sigmoid flexure with invagination. The operation was done in three stages.

46. **Cold Retromammary Abscesses.**—Hardouin and Marquis analyze 41 cases of cold abscesses in the chest, including some from their own practice, and discuss the treatment which can be only by active surgery. Puncture and modifying injections should not be considered, as the primary lesion is retrocostal or pleural and practically inaccessible. Active measures have sometimes saved patients; the question whether to operate or not is merely the question of the patient's capacity for enduring the operation.

47. **Colectomy.**—Cavaillon and Perrin denounce palliative measures in case of cancer of the large intestine, saying that colectomy should be done unless the general condition or metastasis contraindicate any such measure. The mortality of colectomy for cancer in uncomplicated cases is only 18 per cent. Ileocolostomy can be done at one operation, but cancer on the left side, requiring colo-colo-anastomosis, is best treated by operating in three stages. This has reduced the mortality from 40 or 60 per cent. to 18 or 20 per cent., and the intervention is scarcely more serious than a palliative operation. It gives good results and is a radical method of treating cancer of the colon. They present an illustrated description of the three stages of the operation with details of a number of cases which emphasize the advantages of the technic advocated.

#### Archiv für Gynaekologie, Berlin.

LXXV, No. 3, pp. 483-749. Last indexed July 4, p. 82.

- 48 \*Operative Treatment of Puerperal Peritonitis and Thrombophlebitis. G. Leopold.
- 49 Melanoma of External Genitals. P. Meyer.
- 50 Wedge Resection of Body of Uterus on Account of Chronic Metritis. (Keilresektion des Corpus Uteri.) A. Dührssen.
- 51 Two Cases of Congenital Sacral Tumor. E. Keller.
- 52 Atypical Pavement Epithelium in the Uterine Cervix. (Atypisches Plattenepithel an der Portio und an der Innenfläche der Cervix uteri.) W. Schauenstein.
- 53 \*Importance of Suprarenal Preparations in Obstetrics. (Bedeutung des Suprarenins für die Geburtshilfe.) M. Neu.
- 54 Uterine Adenomyoma. O. Ernst.

48. **Operative Treatment of Puerperal Peritonitis and Thrombophlebitis.**—Leopold has now had an experience of 18 cases in which he applied operative treatment, with recovery of 13 of the women (mortality, 27 per cent.); external causes were responsible for the fatalities in nearly every instance. He reviews this material and tabulates it under various headings, emphasizing the importance of gonorrheal infection shortly before or during the pregnancy as fraught with greater danger for the confinement than is generally supposed. In such women high fever may develop with signs of beginning peritonitis as early as the third day after delivery or not until the sixth day. The tardy fever is especially characteristic of gonorrheal infection, and may soon lead to death from acute peritonitis or thrombophlebitis. Especially dangerous are the prolonged hemorrhages after abortion, particularly when associated with fever; after expulsion of the ovum acute peritonitis or thrombophlebitis may develop. The gravest signs of this are the high, small pulse, hiccup, vomiting and chills. Of subordinate importance are abdominal pain, meteorism and, with thrombophlebitis, pain at the obturator foramen and edema of the feet and legs. Acute puerperal peritonitis indicates, not later than the third day, opening into the abdominal cavity to evacuate the pus. In every case Douglas' cul-de-sac should be opened, irrigated and drained. It is also useful to drain the abdominal cavity in the flanks. If the peritoneum is not involved, puerperal purulent thrombophlebitis should be treated by ligation and excision of the thrombosed, pus-filled vein. The best method here is the transperitoneal. The proper moment for it has arrived when chills indicate that the thrombi are crumbling and are being swept along. In view of the fact that after a

benign course of thrombosis of the femoral vein or the external iliacs on one or both sides, pyemic fever may develop later, he advocates early ligation of the iliac or the ovarian veins or even of all four. It should be recognized that the danger from the thrombophlebitis is far more threatening than that from the operation. Delay, however, reduces the resisting powers beyond redemption.

53. **Importance of Suprarenal Preparations in Obstetrics.**—Neu relates extensive experimental and clinical research on the influence of suprarenal preparations on the uterus. His findings confirmed the results of Kurdinowski's experiments with the isolated uterus kept alive with Locke's fluid and injected with a suprarenal preparation. The weakest concentration—1 or 5 to 20,000,000 parts—affects the uterus more energetically than ergot or other drugs regarded as specific uterine tonics. It is a powerful stimulant for the human uterus in all stages of its development and under all conditions. The uterus responds to injection of the suprarenal preparation into its muscle tissue with vigorous contraction and constriction of its vessels, this effect persisting for several minutes. The action of the preparation on the human uterus is thus dual: a purely muscular and a vasoconstrictor action, although either may predominate. The vascular phenomenon is generally most pronounced, but the muscular reaction persists longer. He found it possible to perform Cesarean section on animals after such an injection without loss of blood. Experiments with uteri just removed and clinical experiences confirmed the results on animals, showing that we have in the suprarenal preparations an extremely valuable means to combat atony and hemorrhage. The dose required for local application is too small to induce a general reaction of any consequence. The injection is best made, he thinks, through the abdominal wall into the muscular substance of the body of the uterus. Injection into the cervix or intrauterine instillation yields inconstant results. He has never observed any by-effects with this intramuscular injection of 0.0001 to 0.0003 gm. of the suprarenal preparations. Their principal field is to combat acute hemorrhage after expulsion and atony from inefficient labor. The old uterine tonics generally fail here on account of the delay in their action, while the suprarenal preparations act instantaneously. With this "percutaneous utero-muscular technic" the injection is made at a point on the median line about two fingerbreadths below the umbilicus, pushing the needle through the abdominal wall into the uterine muscle, with care not to push it too far. In cases of extreme relaxation of the uterine supports the uterus may have sunk down and back far enough to allow loops of intestine to fall between the abdominal wall and the body of the uterus. But this is very exceptional. As a rule, the uterus is in ante flexion and rests against the abdominal wall, while the empty bladder is down and out of the way. He warns repeatedly that the suprarenal preparations should never be injected into a vein nor allowed to get directly into a vein in any way.

#### Berliner klinische Wochenschrift.

July 6, XLV, No. 27, pp. 1257-1300.

- 55 Case of Congenital Elephantiasis. C. T. Noeggerath.
- 56 \*Convergent Reaction in Reflex Immobility of Pupils. (Convergenzreaktion bei reflektorischer Pupillenstarre.) H. Lachmund.
- 57 \*Case of Adams-Stokes' Disease with Induration in Bundle of His. J. Karcher and G. Schaffner.
- 58 Saponaceous Compounds as Complements. L. v. Liebermann and B. v. Fenyvessy.
- 59 Intranasal Opening into Maxillary Sinus. (Intranasale Eröffnung der Kieferhöhle.) Sturmman.
- 60 The Great Omentum. (Das grosse Netz.) B. Przewalski.
- 61 Contrast Staining of Bacteria and Leucocytes in Research on Phagocytosis. (Bakteriotropismus und Opsonisation.) A. Pappenheim.
- 62 Appendicitis in Pregnancy and the Puerperium. E. Runge.

July 13, No. 28, pp. 1301-1344.

- 63 \*Brain Surgery. (Zur Gehirnochirurgie.) H. Oppenheim.
- 64 Hemolysin in Human Pancreatic Juice. (Im menschlichen Pankreassaft enthaltener Hämölysin.) J. Wohlgenuth.
- 65 Nodose Periarthritis. (Meso-Periarthritis.) C. Hart.
- 66 \*Infusion of Salt and Sugar Solutions in Infants. (Kochsalz- und Zuckerinfusionen beim Säugling.) W. Welland.
- 67 Complement-binding Tuberculosis Antibodies and Their Connection with the Tuberculin Reaction. S. Cohn.
- 68 Transillumination of Maxillary and Frontal Sinuses. (Methodik der Durchleuchtung von Oberkiefer- und Stirnhöhlen.) K. Vohsen.



69 \*Acute Peritonitis. (Beurteilung und Behandlung der acuten Peritonitis.) Federmann.

70 \*Latest Epidemics of Diphtheria, and Serum Treatment. A. Baglinsky. Commenced in No. 27.

56. **Convergent Reaction with Reflex Immobility of Pupil.**—A housemaid developed a functional psychosis at 26; when examined by Lachmund two years later he noticed that the right pupil reflex was abolished. Both pupils contracted nearly alike in convergence and accommodation, but the right pupil did not react to light. This may be a congenital anomaly or the only expression of some encroaching organic affection. Lachmund has examined the pupil reflex in 27 cases of progressive paralysis and found it abolished in 20, with traces of a reaction in 2, normal reaction in 2, and unequal reaction in the two eyes in 4. In 2 cases the pupils contracted into an oval shape during convergence, the longest diameter upright when looking upward and horizontal when looking sideways, gradually becoming round. Both of these patients were taboparalytics.

57. **Adams-Stokes' Disease with Induration in Bundle of His.**—Karcher and Schaffner describe the autopsy findings in a case of Adams-Stokes' disease. The bundle of His was found to consist of connective tissue through half and more of its substance. The symptoms during life were tachysystole of the auricles with bradysystole of the ventricles. With a radial and carotid pulse rate of 33, the jugular pulse was three or four times as rapid. Twelve cases are cited from the literature in which the Adams-Stokes' disease during life was associated with induration of the bundle of His. In five there was interstitial cicatricial tissue at the apex besides that in the bundle of His; in another case the *Schrieten* were in the pericardium, and in the others the bundle was the site of syphilitic changes. In contrast to these positive cases, they mention others in which the bundle of His seemed to be normal with the Adams-Stokes' syndrome, and others in which there were no Adams-Stokes' symptoms, although the bundle of His was degenerated. They remark, in conclusion, that all these contradictory findings do not shake, in their opinion, the causal relationship between the pathologic changes in the bundle of His and the Adams-Stokes' syndrome.

63. **Diagnosis for Brain Surgery.**—Oppenheim has localized brain tumors and Krause has successfully removed them in a number of cases, their joint work having been previously mentioned in these columns. A difference of opinion has now arisen between them, Krause thinking that exploratory puncture of the brain by Neisser's technic is useless and a waste of time, while the by-effects sometimes obscure the diagnosis. Oppenheim, on the other hand, advocates it as occasionally of decisive diagnostic value. He relates his reasons for this view and cites a number of cases to show the difficulty of correct localization of a tumor when the secondary symptoms predominate. In several such cases autopsy revealed a tumor at an unsuspected point which could easily have been removed if discovered in time. The different phases of the symptoms are instructive, as they succeed each other, but it is too much to expect correct localization of the tumor from observations made during merely one of these phases. A diagnosis made "while you wait" is liable to be misleading. Enthusiasts, he reiterates, should be constantly warned of the limitations to correct localization of brain tumors. The general practitioner must also be repeatedly warned that the occasional brilliant successes are the exceptions, while in a large proportion of cases operative intervention fails on account of the uncertainty of the diagnosis or of the unfavorable character of the tumor or its multiplicity or complications, to say nothing of the gravity of the operation. It must be further impressed on the practitioner that the prospects for success are poorer with the duration of the affection, and that the patient can never be referred to the clinic for observation too early, and that the diagnosis should not be hurried. Trephining to relieve compression is very unsatisfactory, seldom giving more than transient relief and benefits vision but rarely.

66. **Saline and Sugar Infusions in Infants.**—Weiland states that injection of from 1 to 20 c.c. (16 m. to 5½ drams) of

isotonic solutions of salt, cane or milk sugar in 50 infants induced no rise of temperature in any instance. The temperature was never modified, either, when as much as 150 c.c. (5 oz.) were given in a rectal enema. These findings contradict those of Schaps, who has reported actual fever after such infusions.

69. **Acute Peritonitis.**—In the course of this report on the experiences with acute peritonitis at the Moabit Hospital at Berlin, Federmann states that diffuse gonorrheal peritonitis is liable to heal spontaneously, as he has observed many times. It consequently does not require an early operation like peritonitis of other origin. Differentiation is often difficult, as the onset is stormy and the symptoms are grave. Exploratory puncture through the posterior vaginal vault will reveal the presence of gonococci in a rapidly made, dry preparation. In his experience the patients with acute peritonitis and a leucocytosis of 20,000 and over, operated on in the intermediate stage, all recovered. Leucocytosis of 15,000 or under by the third day, he says, contraindicates operative treatment for the time being, as the resisting powers are exhausted. He has never witnessed recovery in any case of suppurative peritonitis with low leucocytosis after the expiration of the early phase. In these cases the indications are to raise the resisting power, and the best results in this line are obtained by rectal saline infusion, a drop at a time, until several quarts are thus infused during the day. The general practitioner sees the sick man first, and in his hand lies the fate of the patient, as the prompt recognition of acute peritonitis is the main factor in its cure.

70. **Recent Epidemics of Diphtheria.**—Baginsky has been studying the 63 fatal cases of diphtheria at the Children's Hospital at Berlin in the last few years. In a few cases the disease seemed to be refractory to antitoxin. The recent epidemics confirm anew the benefits of serum treatment on the whole.

#### Deutsche medizinische Wochenschrift, Berlin.

July 9, XXXIV, No. 28, pp. 1217-1256.

- 71 \*Angiosclerotic Gangrene and its Treatment by Arteriovenous Intubation. Wieting.
- 72 Cutaneous Tuberculin Reaction with Tubercle Bacilli Substance Precipitated with Iron. (Kutanreaktionen mit Eisenfällungsprodukten von Tuberkelbazillensubstanzen.) F. Dithorn and W. Schultz.
- 73 \*Simple Technic for Cultivating Meningococci. (Züchtung der Meningococci.) H. Conradi.
- 74 \*Determination and Functional Value of Hemoglobin. (Hämoglobinstimmung.) H. P. T. Oerum.
- 75 Results of Operative Treatment of Tuberculosis of Ankle. (Fussgelenktuberkulose.) R. Stich.
- 76 Treatment of Genu Valgum. G. Muskat.
- 77 Spontaneous Rupture of Uterus at Commencement of Delivery. H. Gans.
- 78 Fetal Ophthalmia. (Fötale Augenentzündungen.) R. Seefelder.

71. **Arteriovenous Intubation for Gangrene.**—Wieting reports from Constantinople what he thinks is the first completely successful case of clinical transplantation of blood vessels. The patient was a man of 40 with angiosclerosis of the legs, and the right leg had been amputated two years before on this account. Two months after the symptoms of impending gangrene had developed in the left leg Wieting implanted the femoral artery in the femoral vein, just below the mouth of the saphenous vein. He describes the simple technic and says that the foot became warm and pink at once after the operation. It was done under spinal anesthesia, and the patient has been free from symptoms and subjective disturbances since the operation, done last January.

73. **Cultivation of Meningococci.**—Conradi recommends the fluid derived by lumbar puncture as a favorable culture medium for meningococci. This is particularly convenient in cases of meningitis in which lumbar puncture is done as a therapeutic measure.

74. **The Functional Value of Hemoglobin.**—Oerum discusses the functional value of the blood, saying that the tint and the oxygen-binding property of the blood are elements which are independent of the hematin content (iron content). The blood of the Swiss averages only four-fifths the amount of hematin in the blood of the Danes, but it can bind fully as much oxygen as the latter. Its functional value is thus 1.25



in comparison with Danish blood. His measurements were made on thirty young Danish soldiers and 40 Swiss soldiers, and he cites figures which show that each 1,500 feet elevation brings an average increase of 800,000 red corpuscles. The contradictory findings in respect to the hemoglobin, with various technics, are explained.

#### Deutsche Zeitschrift für Chirurgie, Leipsic.

June, XCIII, Nos. 4-5, pp. 325-504.

- 79 \*Improved Technic for Prostatectomy. (Neue Methode der Prostatektomie.) Wilms.
- 80 Historical and Critical Study of Chondromata, Osteitis, Bone Cysts and Similar Affections. (Knochencysten, Chondrome, fibröse Ostitis und ähnliche Leiden.) R. Milner.
- 81 Ileus from Constriction of Intestine by Tube. (Seltene Form innerer Incarceration.) T. Voelcker.
- 82 New Apparatus for Fractured Arm. E. Martini.
- 83 Experimental Tetany After Parathyroidectomy: Enhanced Susceptibility of Offspring. (Tetanie jugendlicher Ratten nach Parathyroidektomie.) H. Iselin.
- 84 \*Treatment of Acute Inflammatory Affections with Artificial Hyperemia: 505 Cases. Blecher.
- 85 \*Surgery of the Pancreas. (Pankreaschirurgie.) A. Dreifuss.
- 86 Attempt to Explain Action of Bier's Hyperemia. (Erklärung der Wirkungsweise der Bierschen Stauung im Granulationsgewebe fistulöser fungöser Herde.) E. v. Felegyhazi.
- 87 Symmetrical Lymphangioma of Salivary Glands. (Lymphangiome der Mundspeicheldrüsen.) E. Hagenbach.
- 88 Arrest of growth in Rats by Parathyroidectomy. (Zur Kenntnis der Epithelkörperchen-Funktion.) H. Iselin.

79. **Improved Prostatectomy.**—Wilms gives an illustrated description of his technic for perineal removal of the prostate with the least danger to the rectum. The prostate protrudes below the lower arch of the symphysis, and its side lobes are thus readily accessible through the perineum. He makes the incision along the ascending ramus of the pubic bone for 4 or 5 cm. The tissues here can be pushed back each side, giving direct access to the lateral lobe. In his three cases the incision was scarcely 1.5 cm. deep.

84. **Artificially Induced Hyperemia in Acute Inflammatory Infections.**—Blecher declares that the course of treatment was shorter and the functional results better under Bier's hyperemia in 505 cases than in the controls. In 66 cases of recent trauma he applied the constricting band as a prophylactic measure after a crushing or other injury of the head, face or limbs and 57 healed by primary intention. He thinks that this prophylactic hyperemia by this technic has a promising future, especially in military surgery.

85. **Surgery of the Pancreas.**—Dreifuss reports successful operation in three cases. In the first the pancreas had been injured by a contusion. Acute hemorrhagic pancreatitis required laparotomy twice in one case, and retroperitoneal evacuation of an abscess cured the other patient, a woman of 48, with acute necrosis of the pancreas. The other patients were young men.

#### Jahrbuch für Kinderheilkunde, Berlin.

June 15, LXXVII, No. 6, pp. 641-766.

- 89 Scarlet Fever at Zurich, 1902-1906. N. Tiktin-Hausmann.
- 90 \*Congenital and Early Acquired Rachitis. E. Wieland.

90. **Rachitis.**—From clinical and anatomic study of 130 cases of congenital or early acquired rachitis Wieland declares that there are no clinical signs of rachitis in the new-born. Congenital softness of the skull at the vertex is found in at least 20 per cent. of all children at term, but he affirms that this has nothing whatever to do with rachitis and that it speedily vanishes without ill results. After the onset of rachitis, a secondary softening of the skull is observed, either before or after the complete consolidation of the vertex softness. This secondary softening of the skull begins invariably in the posterior and lowest parts of the skull. This craniotabes may retrogress, but other signs of rachitis are always evident. Early acquired rachitis may cause the still unconsolidated primary softness of the skull at the vertex to spread over a larger area. These peculiar and hitherto misunderstood cases are distinguished by the disproportion between the apparent severity of the skull affection (rubber skull) and the rapidity with which it subsides—in consequence of the spontaneous and regular retrogression of the non-rachitic defects. Treatment with phosphorus hastens the cure of these apparently severe cases of rachitis.

#### Medizinische Klinik, Berlin.

July 5, IV, No. 27, pp. 1011-1052.

- 91 \*Diagnosis of Abscesses in Brain. (Diagnose des Hirnabszesses.) M. Lewandowsky.
- 92 Strictures in Rectum. C. Goebel.
- 93 Polycythemia with and without Enlargement of Spleen. (Polyzythämie mit und ohne Milztumor.) K. Winter.
- 94 \*Kefir in Infant Feeding. (Kefirmilch als Säuglingsnahrung.) K. Dresler.
- 95 \*Transmission of Infection from Puerpera to Child. (Infektion von Mutter auf Kind im Wochenbett.) K. Mayer.
- 96 Diagnosis of Typhoid in General Practice. O. Schellong.
- 97 Therapeutic Application of Radioactive Substances from Mineral Waters. K. Aschoff.
- 98 Actions of Normal Sera on Organism. (Wirkungen normaler Sera auf dem Organismus.) G. Salus.

July 12, No. 28, pp. 1053-1092.

- 99 \*Nerve-strain as an Etiologic Factor in Nervous Affections. (Die Rolle des Aufbrauches bei den Nervenkrankheiten.) L. Edinger.
- 100 Progress in Treatment of Appendicitis and Peritonitis. O. Klauber.
- 101 \*Metreurynter for Placenta Praevia. (Hystereuryse bei Placenta Praevia.) W. Hannes.
- 102 Therapeutic Applications of Radium Emanations. A. Stras-ser and A. Selka.
- 103 \*Experiences with Treatment of Lupus. P. Wichmann.
- 104 Nervous Heart Affections from Balneologic Standpoint. (Die lebenswichtigen nervösen Herzkrankheiten.) J. Jacob.

91. **Diagnosis of Abscess in Brain.**—Lewandowsky relates the details of a number of typical cases of abscess in the brain. In one case astereognosis—loss of power to recognize the shape of objects by touch—was at first the only symptom pointing to a focus in the parietal lobe, and the abscess was found here. In another case the first symptom noticed was a sudden stroke of apoplexy, followed by paralysis of the right arm, slight stiffness of the neck and deep stupor. An abscess was diagnosed from the stupor and signs of meningitis and the absence of choked disc and of signs of pressure on the brain. A case of chronic bronchitis was erroneously diagnosed as a tuberculous affection, and the onset of signs of apparent meningitis was assumed to be the development of a tuberculous process. Autopsy revealed an abscess in the right hemisphere, with no signs of tuberculosis. In another case an abscess ran an absolutely latent course with sudden death from a metastatic process. In marantic sinus thrombosis and hemiepileptic conditions in senile atrophy of the brain, the stupor is not so deep as with an abscess, and the signs of irritation are more diffuse. He refers also to the singleness of metastatic abscess in the brain and the absence, in many cases, of focal symptoms. A boy of 10, three months after an injury to the brow, had headache and vomited, but there was no local tenderness nor fever or focal symptoms. An abscess was found at the site of the trauma. Lack of abnormally high pressure in the cerebrospinal fluid speaks against meningitis and against tumor. Lymphocytosis is not observed with a tumor, but it does not differentiate meningitis from an abscess. It can only be said that the majority of abscesses are not accompanied by lymphocytosis, while it is the rule in meningitis. Lymphocytosis with suspicion of abscess warns of impending perforation. Fever speaks for meningitis.

94. **Kefir in Infant Feeding.**—Dresler declares that kefir milk is the best of all acid preparations of milk and is an excellent food for healthy and sick infants. He recommends it as an inexpensive food for infants, and believes that it is destined to play an important part in the reduction of infant mortality. He describes how to prepare it, and relates his experience in a number of clinical cases, maintaining that it has saved many a child in his practice among the poor. Its chief advantage is that it is not affected by heat and remains unmodified by hot weather. He keeps a supply of the "mother" kefir on hand, and gives it to the mothers to prepare the milk themselves. Kefir in tablet form does not act so well. The milk is boiled first. It has all the advantages of buttermilk with none of its disadvantages, he says.

95. **Transmission of Infection from Puerpera to Child.**—In one of the cases described the child died in the second week of streptococcus peritonitis, after eight days of health. The mother succumbed a few days later to sepsis from purulent phlebitis. The streptococci in each were apparently the same, and it is probable that the child became infected in dressing



the cord. In another case an abscess in the nursing child contained the *Staphylococcus pyogenes albus*, which could also be cultivated from an infiltration in the mother's breast. The child had not been allowed to nurse during the acute mammitis, but evidently there were still virulent germs left in the gland after the lesion had healed.

**99. Nervous Affections from Nerve-Strain.**—Edinger's previous communications on this subject of nervous affections from nerve-strain have been summarized in these columns. He is convinced that overfunctioning of a sound nerve, or normal functioning of a degenerated or intoxicated nerve, causes fatigue which may amount to exhaustion, and the power of recuperation may be transiently or permanently lost. Poisons, like alcohol and lead, reduce the recuperating power, and nerves subjected to strain from the occupation may experience exhaustion and ultimate paralysis and atrophy. As a typical example he cites the case of a waiter, addicted to alcohol, who had paresis of the legs which subsided as he changed his occupation. The carrying of heavy loads on his shoulder later was followed by paralysis of the shoulder muscles. Edinger thinks that too little attention has been paid hitherto to the questions, What becomes of a normal nerve subjected to unduly great strain, or of a weak nerve of which normal functioning is demanded? and How does the central organ fare with these absolute or relative overdemands? His view that a constitutional, defective composition of a part leads to atrophy when functional demands are made on it throws light on the most diverse forms of congenital nervous affections. Anatomically they all present the same picture: the non-inflammatory perishing of nerve substance, its place being taken by neuroglia tissue. A similar process occurs in another group of nervous affections which are not congenital but result from the action of poisons, as in the nervous affections after ergot poisoning, after pellagra and, above all, after infection with syphilis, as in tabes and paralysis. All these have an injurious influence even on nerves of which only normal function is demanded. Physical exertion has long been known as affecting the development of tabes; men exposed to physical overexertion develop tabes in larger proportions than others free from physical stress. Particularly instructive in this line are the cases in which tabes affects limbs that are used more than others, or when the first onset is observed after unusual physical exertion. Paralysis develops in syphilitics with amazing frequency when life makes great demands on the brain. It is rare, he says, among the home-keeping natives of Switzerland and other countries, while a large proportion of those who have gone to other lands and then returned home developed paralysis. Edinger, therefore, assumes that tabes is a "superposed syndrome" which develops in those infected early, in consequence of functional demands on certain nerve tracts and their early exhaustion therefrom. The typical cases resemble each other so closely only because the symptoms affect nerves which all men have occasion to use about the same. The cases which deviate from this type have generally some special cause—always found if carefully sought for—this cause consisting in special demands on, or special sparing of, these nerve tracts. He regards general paralysis as the result of functional demands on the brain cortex in metasyphilitics. These views have great importance for treatment, and especially for prophylaxis, guarding the patients from all extra demands on their system, from long physiologic retention of urine (to avert paralysis of the bladder), from too intense measures of any kind, courses of mineral waters, etc. Every means should be adopted to spare the patients functional and mental effort of any kind. He has been applying these principles in his practice for some time, and states that the results have been far superior to anything he has previously realized.

**101. Metreurynter for Placenta Prævia.**—Hannes reports from Kiistner's clinic at Breslau that in 119 cases of placenta prævia in which the metreurynter was used the mortality was much less than with other techniques, and three times as many living children were born as in other clinics in which combined version is the preferred technic. With version the placenta is

frequently further detached, and in doing version there is often fatal collision with the umbilical cord—all of which is avoided with the metreurynter. It can be pushed through total placenta prævia and thus arrest the hemorrhage in the simplest and safest manner, while traction on it may promote good rhythmic uterine contractions. It should be the size of a normally large fetal head, for which about 600 c.c. (20 oz.) of fluid are required.

**103. Treatment of Lupus.**—Wichmann reviews the experiences at the Lupus Institute near Hamburg with 263 lupus patients. In 174 of the cases the affection began before the age of 13, and he emphasizes the necessity for systematic treatment at the incipency. In far too many cases the small initial lupus focus was canterized and the case dismissed as cured. A few months later, instead of a simple, uncomplicated lupus, the physician had to deal with an extensive canterization scar sown with lupus nodules, which naturally made effectual treatment a much more difficult matter. He urges that it is actual malpractice to cauterize an initial lupus with acids or the actual canter. If excision is refused, radiotherapy should be applied; it at least can do no harm in the hands of an expert.

#### Münchener medizinische Wochenschrift.

July 7, LV, No. 27, pp. 1417-1472.

- 105 \*True Nature of "Alternating" Heart Action. (Wesen des Herzalternans.) H. E. Hering.
- 106 Importance of Urobilinuria for the Diagnosis of Liver Affections. Fischler.
- 107 \*Treatment of Paralysis by Plastic Operations on Nerves. (Behandlung von Lähmungen mittels Nervenplastik.) H. Spitzzy.
- 108 \*Monosymptomatic "Expectation Neurosis." (Erwartungsneurose.) M. Isserlin.
- 109 History of Origin and Treatment of Hernia of Diaphragm. (Zwerchfellbruch.) W. Koch.
- 110 Etiology of Deforming Cervical Spondylitis. G. Preiser.

**105. Nature of "Alternating" Heart Action.**—Hering states that this disturbance is the result of a periodically recurring partial asystole. Part of the muscle fibers fail to respond to the stimulus as it arrives. He gives tracings of the pulsus alternans from experimental and clinical research on which he bases these views.

**107. Treatment of Paralysis by Plastic Operations on the Nerves.**—The history of nerve surgery and considerable personal research in this line are related by Spitzzy. He says that 57 cases are now on record of cure of facial paralysis by grafting the paralyzed nerve on one of its sound neighbors. His experience has been mostly with peroneal or radial paralysis, and the results after several years are extremely gratifying. One boy of 12 with paralysis from fracture of the upper arm during birth has been cured by central partial implantation of the median nerve in the paralyzed radial. He can now guide a bicycle and play the piano with the injured hand. Spitzzy states that surgery of the nerves owes much to Bethe, and that his works on regeneration of severed and sutured nerves should be studied by those interested in this branch of surgery. The literature to date reports fully 90 per cent. cures from primary and secondary suture of nerves.

**108. "Expectation Neurosis."**—Isserlin emphasizes the necessity for differentiating this disorder from other nervous affections. If its nature is misunderstood, all attempts at treatment generally only exaggerate the disturbances. There is only one method of treatment, the systematic influencing of the patient's mind, especially by hypnotic measures. This proves effectual even in the severest cases of this monosymptomatic hysteria. A number of typical examples are related, among them a case of smarting in the eyes, with headache, in an artist, after long reading and painting, until the patient was unable to write or even bear the sunlight after ten years of these disturbances. Recovery was complete after four weeks of treatment by hypnosis. Another patient was a robust man who found that he was unable to write on account of ataxic movements in the right hand. This disturbance had been noted for two years, coming on after overexertion of the arm in fencing. Treatment by suggestion cured the patient permanently in five days. Another patient was a boy of 8 who had a spasmodic cough at every attempt to eat or to



swallow. Weakness of the legs was the trouble in other cases—all these patients were cured by a brief course of suggestion. This class of cases is described by Kraepelin as an "expectation neurosis," a pathologic reaction from the internal tension resulting from the anxious waiting for a given event.

#### Therapeutische Monatshefte, Berlin.

July, XXII, No. 7, pp. 329-382.

- 111 \*Treatment of Diphtheritic Paralysis. (Diphtherische Lähmungen.) Kohts.
- 112 \*Indications and Principles for Medicinal and Dietetic Treatment of Neurasthenia. (Behandlung der Neurastheniker.) R. Bing.
- 113 Tasks and Results of Modern Gynecology and Obstetrics. (Erfolge und Aufgaben der modernen Geburtshilfe und Gynäkologie.) P. Kroemer.
- 114 Scarlet Fever and its Treatment. (Scharlach.) Garlipp.
- 115 Ocular Tuberculin Reaction. (Ophthalmolo-Reaktion und Tuberkulose.) H. Naegeli-Akerblom and P. Vernier.
- 116 Cholelithiasis and Diabetes Mellitus. M. Hedinger.
- 117 Veronal in Obstetric Practice. A. Reich and A. Herzfeld (New York).
- 118 Negative Food Value of Alcohol and its Action as a Specific Nerve Poison. (Der theoretische Nährwert des Alkohols.) M. Kassowitz.
- 119 Maximum of Elimination of Cresol in the Dog After Administration of Lysol. (Höhe der Kresolausscheidung beim Hunde nach Lysolverabreichung.) R. Friedländer.

111. Treatment of Diphtheritic Paralysis.—Kohts gives the particulars of ten cases of postdiphtheria paralysis in which the patients were cured by injections of from 6,000 to 35,000 units of diphtheria antitoxin. In severe paralysis minute doses of strychnin were also injected. The patients were all completely cured in from two to four months.

112. Treatment of Neurasthenia.—Bing's long study of this subject emphasizes the three categories of symptoms in neurasthenia: the purely psychic, the subjective disturbances and the objective manifestations, which may range from urticaria, tremor and pulse and blood pressure variations to abnormal secretory conditions in the mucosa of stomach and intestines, etc. The manifold morbid physical phenomena indicate that neurasthenia is a general neurosis in the fullest sense of the term. It is extremely important, however, to convince the patient that these various manifestations are not separate affections, but are all the outcome of a single abnormal condition of the nervous system as a whole. He discusses medicinal and dietetic measures, urging that neurasthenics should eat a little every hour, never letting the stomach be entirely empty. Even when attending to business or work of any kind, the patient can have crackers or figs or dried prunes in his pocket and a tablet of chocolate in his desk and eat a little every hour, drinking a little milk. Milk should be the main reliance. The principal indications for these dietetic regulations are in all cases in which there is a sense of oppression in the head and tendency to vertigo. In many cases of nervous dyspepsia the patients respond in an equally favorable manner to this form of dieting. Arsenic and valerian are favorites with him if drugs are required for neurasthenia. He gives minute doses of the former, keeping it up for months.

#### Virchows Archiv, Berlin.

CXCH, No. 1, pp. 1-175.

- 120 Deformities in the Limbs. (Missbildungen von Extremitäten.) B. Slingenberg.
- 121 Primary Tumor of Pleura. (Fibrosarcoma myxomatodes pleure permagnum.) R. Mehrdorf.
- 122 Congenital Lipoma and Tail-like Formations in Man. (Kongenitale Lipome und schwanzähnliche Bildungen beim Menschen.) F. Werner.
- 123 Hyalin Corpuscles in Plasma Cells. (Russellsche Körperchen.) J. Fick.
- 124 Hemorrhage in the Adrenal Gland. (Nebennierenblutungen.) M. Lissauer.
- 125 Study of Pigmentation After Prolonged Administration of Silver Preparations. (Argyrie.) S. Dohi.
- 126 Benign Tonsillar Mycosis. (Pharyngitis ceratosa punctata.) A. M. Januszkiewicz.
- 127 Liver Glycogen and Structure of Liver Cell. J. Arnold.

#### Zeitschrift für klinische Medizin, Berlin.

LXV, Nos. 5-6, pp. 353-518. Last indexed June 20, p. 2118.

- 128 Influence of External Temperature on Experimental Glycosuria. (Einfluss der Aussentemperatur auf experimentelle Glykosurie.) R. Kohler.
- 129 Systolic Murmur in Simple Aortic Insufficiency. (Systolisches Geräusch bei der reinen Aorten-Insuffizienz.) M. Conto.
- 130 Specificity of Organ Antigens. A. Schütze.
- 131 \*Tabes and Syphilis. (Tabes und Lues.) Id.

- 132 Respiratory Metabolism of an Obese Man, Fasting and After Eating. (Respiratorische Stoffwechsel eines Fettleichtigen im nüchternen Zustand und nach Nahrungsaufnahme.) R. Staehelin.
- 133 Daily Variations in Work of Kidneys on a Constant Diet. (Tägliche Variationen der Nierenleistung bei konstanter Kost.) M. Brauner.
- 134 Physical and Clinical Study of Râles and Friction Sounds. (Die sog. Rassel- und Reibegeräusche.) Buttersack.
- 135 Laws Regulating Elimination of Sugar in Diabetes. (Gesetze der Zuckerausscheidung beim Diabetes mellitus.) W. Falta.
- Id. J. L. Whitnev.
- 136 \*"Permeation" Method of Gastrointestinal Diagnosis and Treatment. (Permeation und die Anwendung ihrer Prinzipien zur Untersuchung und Behandlung des Magen-Darmkanals.) G. Scheltema.

131. Tabes and Syphilis.—Schütze reports 100 cases of tabes in which the new biologic tests were applied repeatedly. The findings testify, he says, to the great importance of the complement-binding test for the serum diagnosis of syphilis. He regards this as one of the finest fruits of modern research on immunity, which practical medicine will find of inestimable value. In 69 per cent. of all cases of tabes the absence of hemolysis, that is, the positive phenomenon of complement binding, was conspicuous in the test with the serum or cerebrospinal fluid or both.

136. "Permeation Method" of Gastrointestinal Diagnosis.—Scheltema announced a few months ago that valuable information and opportunity for treatment could be obtained by using a fine flexible rubber tube with a small weight fastened in the end, this end swallowed like a stomach tube. The tube is from 9 to 18 feet long or longer, and in the course of time the loaded end emerges from the anus. He gives some Roentgen pictures showing the tube in a frog and in a child, and describes his experiences with large animals with partial and complete permeation. It requires from 18 to 60 hours for the loaded end of the tube to pass the pylorus, but it traverses the rest of the route more rapidly. He asserts that this method of permeation makes it possible to examine conditions and apply treatment at any given point in the intestinal canal. Air can be admitted to the spot in case of anaërobic mischief, bacterial toxins can be combated in their nidus, and drugs can be applied exactly at the point at which they are needed, without taxing or injuring other organs.

## Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

PAIX, Its Causation and Diagnostic Significance in Internal Diseases. By Dr. Rudolph Schmidt, Assistant in the Clinic of Hofrat von Neusser, Vienna. Translated and Edited by Karl M. Vogel, M.D., Instructor in Pathology, College of Physicians and Surgeons, Columbia University, and Hans Zinsser, A.M., M.D., Instructor in Bacteriology, College of Physicians and Surgeons, Columbia University. Cloth. Pp. 326, with illustrations. Price, \$3.00. Philadelphia: J. B. Lippincott Co.

TRANSACTIONS OF THE ROYAL ACADEMY OF MEDICINE, Ireland. Vol. xxvi. Edited by James Craig, M.D., F.R.C.P.I., Physician to the Meath Hospital and County Dublin Infirmary. Cloth. Pp. 432, with illustrations. Dublin: John Falconer, 1908.

PROCEEDINGS OF THE THIRTY-EIGHTH ANNUAL MEETING OF THE NEW JERSEY PHARMACEUTICAL ASSOCIATION, Held at Atlantic City, N. J., June, 1908. Cloth. Pp. 236, with illustrations. Somerville: Press of the Unionist-Gazette, 1908.

HEALTH AND BEAUTY. By J. V. Shoemaker, LL.D., M.D., Clinical Professor of Diseases of the Skin in the Medico-Chirurgical College of Philadelphia. Cloth. Pp. 476. Price, \$3.00. Philadelphia: F. A. Davis Co.

THE AIR AND VENTILATION OF SUBWAYS. By George A. Soper, Ph.D., Member of American Society of Civil Engineers. Cloth. Pp. 244, with illustrations. Price, \$2.50. New York: John Wiley & Sons, 1908.

PHARMACEUTICAL PREPARATIONS. Vol. I. By A. Emil Hiss, Ph.G., and Albert E. Ebert, Ph.M., Ph.D. Cloth. Pp. 576. Price, \$3.00. Chicago: G. P. Engelhard & Co., 1908.

BULLETIN OF THE BUREAU OF LABOR. Department of Commerce and Labor. No. 75—March, 1908. Paper. Pp. 663. Washington: Government Printing Office, 1908.

PRELIMINARY ANNOUNCEMENT OF THE INTERNATIONAL CONGRESS ON TUBERCULOSIS. Washington, D. C., September 21 to October 12, 1908. Paper. Pp. 188.

157TH ANNUAL REPORT OF THE PENNSYLVANIA HOSPITAL. Paper. Pp. 119. Philadelphia: J. B. Lippincott Co.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOLUME LI

CHICAGO, ILLINOIS, AUGUST 22, 1908

NUMBER 8

## Address

### THE OPPOSITION TO MEDICAL RESEARCH.

CHAIRMAN'S ADDRESS IN THE SECTION ON PATHOLOGY,  
AND PHYSIOLOGY, AMERICAN MEDICAL  
ASSOCIATION, JUNE 5-8, 1908.

W. B. CANNON, A.M., M.D.

George Higginson Professor of Physiology in Harvard Medical  
School.  
BOSTON.

In several states during the past year there has been vigorous agitation for legislative restriction of the use of animals for medical research. This agitation is not new. For many years in Massachusetts petitioners have appealed for laws controlling laboratory methods, and previous attempts to secure such laws have been made also in Illinois, Pennsylvania and New York. In England, where a restrictive act has been enforced since 1876, still more drastic law is now demanded.

To those who are active in promoting medical science, the experience of England is particularly instructive, because the legislation asked for in this country is largely based on the English act of 1876. This act is pointed to as a model. But the present appeal in England for more drastic law indicates that even were the English act transferred to our statutes, it would be merely initial and temporary, and that it would not be permanently satisfactory to many of the agitators. Indeed, both individuals and societies hostile to the laboratories have clearly stated that what they desire is total abolition of animal experiments, and that restrictive legislation is the first step to that end. The prospect, therefore, is toward an indefinitely extended struggle for the legislative control of the methods of medical research.

The controversy is one in which violent emotions have been aroused. In some instances the attack on scientific methods has been forced with unmitigated bitterness. Under such conditions each side is prone to be blindly unjust to the other. Until the contestants can meet each other fairly and dispassionately, the controversy can never be limited to the merits of the opposed causes. It must always involve irrelevant personalities. Is it not, therefore, of prime importance to inquire into the reasons for the unfair and irritating misconceptions which prevail? So it seemed to me; and I propose to consider some of these reasons, such as the conflict of testimony, the experience and characteristics of the contestants, certain assumptions regarding animals, and the questions of motive.

### THE CONFLICTING STATEMENTS AS TO PAINFUL EXPERIMENTS.

The use of animals for experimental purposes is commonly called "vivisection." It is an unfortunate word, because it has come to have various meanings which are not clearly distinguished. To the "antivivisectionist"

the word vivisection too frequently signifies the cutting or dissection of sentient living animals, bound or restrained, and subjected to the full torture of extensive operation without anesthesia. The repeated tales of cruelty, the illustrations of instruments used in laboratory service, and the imaginary pictures of the sufferings which animals are supposed to endure at the hands of the experimenter, indicate the hideous significance ordinarily attached to the word vivisection. To the medical investigator, on the contrary, the word means something quite different. It means, to be sure, operations on living animals, but it does not imply attendant pain. If an animal is anesthetized, and operated on, and is killed without recovery from anesthesia, evidently the operation has not caused pain to the animal. So far as the experience of the animal is concerned, the operation would not have been different in effect, if the animal had first been killed, and later dissected. Now it has been shown repeatedly that in almost all physiologic experiments the observations of the living processes are made in precisely this way, i. e., while the animals are on the way to death by anesthesia. In pathologic and bacteriologic investigation injections are made and sometimes diseases are produced; and in surgical research it is occasionally necessary, after a painless operation, to keep the animals alive in order to observe the effects of the surgical procedure. It is probable, in these instances of inoculation and aseptic operation, that the animals feel ill, as they do with a distemper. Even if the lower animals were as sensitive as man, the pain, if we may judge from human experience, would not be great. There is abundant evidence, however, that the lower animals are not so sensitive as man. And, furthermore, these bacteriologic and surgical experiments are precisely the experiments which bear most directly on the explanation and the cure of disease in the much more sensitive organism, the human being.

In an inquiry made some years ago, Dr. C. F. Hodge found that of nearly 1,700 animals (including 866 frogs) used for experimental purposes in Massachusetts in one year, the operations in 64 per cent. were painless; in 12.2 per cent. as painful as vaccination; in 0.4 per cent. as painful as the healing of a wound; in 1.6 per cent. as painful as the effect of poison, and in 21.8 per cent. as painful as disease.<sup>1</sup> The official figures for Great Britain for 1906, are as follows:

	Per cent.
Inoculations or similar methods not involving any operation	93.96
Animals killed under anesthetic	3.10
Animals killed under anesthetic after a demonstration	0.34
Animals allowed to recover from anesthetic (no observation or stimulation likely to cause pain and no further operative procedure allowed without anesthetic)	2.60
	100.00

Since the pain of inoculation is trifling, and since in the vast majority of operations even on human beings

1. Pop. Sc. Month., 1896, xlix, 783.



the aseptic healing of wounds causes no considerable pain after full recovery from the anesthetic,<sup>2</sup> and since much of the suffering from disease is due to the anxiety for friends or relatives rather than to physical distress, the total body of pain resulting from animal experimentation is in all antivivisection literature grossly exaggerated.

It has been estimated that not more than 1 per cent. of the experimental procedures are really painful. As a physiologist, Hodge has testified that in more than ten years' experience in various laboratories in this country and abroad he had never had occasion to perform or witness an experiment of this painful class. I can testify to the same experience in my own career of twelve years as medical student and physiologist. And Professor Starling, writing of the use of dogs for research, states that though he has been engaged in the experimental pursuit of physiology for the last seventeen years, on no occasion has he seen pain inflicted on a dog or cat in any physiologic laboratory in England.

In opposition to this testimony as to the practically painless character of the immense majority of operations in experimental medicine, are the statements found on all sides in the writings of antivivisectionists. Some of these cases are records of experiments performed more than sixty years ago, before the use of anesthetics; some of them are frankly of the class of experiments involving pain or discomfort; and some of them are clear instances of misinterpretation by persons too unfamiliar with animal functions and the action of anesthetics to understand ordinary physiologic description. On the assumption that no one concerned in this discussion desires to imply an untruth, it is evident that the failure to recognize the extremely small percentage of cases involving pain, when such cases are cited, is clearly misleading. The failure to discriminate between the various sorts of experiments, the diffusion of the impression that animal experiments are almost uniformly attended with extremes of suffering, the neglect of the great accumulation of fact that testifies to the splendid results of medical research, the monotonous repetition of the hostile opinions of a few physicians long since dead—these characteristics of the attacks on medical investigators lead to the inference that the agitators for legislation are not as devoted as they should be to the spirit of fair play.

The belief that there is great suffering among animals used for experimental purposes is based to a large extent on a refusal to accept the statements of the experimenters. "The vivisectionist anesthesia I have no confidence in, and my association has no confidence in,"<sup>3</sup> such is the characteristic attitude of the opponents of animal experimentation. "I think that all these experimenters have the greatest contempt for the Act of Parliament,"<sup>4</sup> these are the words with which the honorary secretary of the National Antivivisection Society of England expresses his belief that English investigators do not hesitate to inflict pain in defiance of the law. Indeed, he states further, "The knowledge that horrible mutilations may be daily and hourly executed

on the bodies of living creatures with no adequate security for their insensibility makes very many humane people profoundly miserable, it rises day and night between them and their peace of minds, it haunts their lives waking and asleep, it deprives them of joy in this world which otherwise might be theirs."<sup>5</sup> From what may be found in the writings of other antivivisectionists this implication of secret atrocities in laboratories would be widely accepted as highly probable.

In no feature of the controversy is the difference between the opposing parties more clearly marked than in this attitude regarding the experience of the animals at the hands of investigators. The investigators state that they know nothing of the tortures and horrible cruelties that have been imagined; indeed, that the vast majority of operations are practically painless. The critics, on the other hand, are not only suspicious of the experimenter and distrustful of his testimony, but have even ventured to make accusation of deliberate lying. In any such conflict of testimony it is desirable to inquire into the qualifications of the witnesses in order that a proper estimate may be placed on the opposing statements.

#### QUALIFICATIONS FOR TESTIFYING.

The reason for distrusting the word of medical investigators is not evident. In almost all instances these men are trained scholars; in many instances they are also practitioners of medicine in whom members of the community place supreme confidence. As men of science their service to their fellow men consists in the search for new truth. In this process of discovery their eyes and ears are especially exercised in exact observation, their minds are continually disciplined to draw only justifiable inferences from what they have observed. They are, therefore, well qualified to report regarding the events which occur in laboratories.

In reporting their experiments it is of the greatest importance, in the interest of truth, that investigators state precisely the details of the procedure and the results that were secured. Every new investigation is a venture into the unknown from regions already known,—an extension of previous knowledge. It is the duty of investigators in their reports to give credit to those who secured the previous knowledge. They are, therefore, accustomed to study the original records of investigation, and to make exact reference to the words on which their own statements are based.

That men of science are infallible, I do not for a moment contend. But I maintain that the search for what is true, and the exact reporting of what is found, are the ideals which animate the lives of scientific investigators, and that the pursuit of these ideals is excellent training in telling the truth.

In examining the qualifications of antivivisectionists to bear reliable testimony against the methods of medical research, it is first necessary to consider the sorts of persons that are to be found among them. If one may judge from representatives at legislative hearings and from names on petitions, the opponents of research consist of many women, fewer clergymen, lawyers, artists and business men, and a relatively very small number of physicians. Setting aside for the moment the physicians who sign petitions for restrictive legislation, and considering the other opponents of medical research, one notes that they are persons without training in the methods of biologic investigation. They do not

2. M. H. Richardson, *Animal Experimentation*, p. 53. Boston, 1902.

3. Testimony of Mrs. K. Cook, Appendix to First Report of the Royal Commission on Vivisection, October to December, 1906, p. 72.

4. Testimony of Hon. S. Coleridge, Appendix of the Third Report of the Royal Commission on Vivisection. April to July, 1907, p. 183.

5. *Ibid.*, p. 146.



enter the laboratories in which they declare animals are cruelly tortured, they do not see the operations they criticise, they do not realize that there are various degrees of anesthesia (used by surgeons in operations on man), they do not know enough of the history of the medical sciences to judge the great contributions which experiments on animals have given to practical medicine and surgery, they are unacquainted with the dire problems still presented by diseases which continue to kill their thousands and tens of thousands. With all this lack of positive qualification for passing judgment on the work of the investigator there is commonly combined a keen sensibility and a vivid imagination.

Precisely this combination of real ignorance with unchecked imagination causes most of the difficulty. Imagination is permitted to take the place of careful inquiry. The tormenting of animals is assumed to prevail in medical laboratories, with no adequate proof that such is the case. Dark suspicions and insinuations are suggested against honorable men whose lives are devoted through research to the relief of human ills. Absurd claims and grotesque misinterpretations result from this eager fancy allowed free play in reading the records of experiments. Commenting on an experiment in which the peripheral end of a nerve, which had been severed under ether, was stimulated, Mr. P. G. Peabody stated, "It will be readily seen, even by the casual reader, that it involves an amount of agony beyond which science is unable to go and to approximate to which is impossible except by a person who has devoted long years to the study of nerves."<sup>6</sup> The casual layman may indeed be impressed by this apparently authoritative declaration that here is a case of atrocious cruelty; but the most primitive acquaintance with the nature of nervous conduction would have shown the utter absurdity of the assumption that even the slightest pain could have been inflicted by stimulating a piece of nerve separated from the central nervous system. This case is merely an example of many similar cases that might be cited.

Not only are most antivivisectionists, because of ignorance, incapable of intelligent interpretation of the records of experiments, they are also too frequently lacking in those scholarly qualities which demand accuracy of reference and exactness of quotation. Some years ago Dr. W. W. Keen published a large number of examples from antivivisection literature, in which the references were vague, inaccurate or garbled, and in some instances showed extraordinary and repeated interpolations and mistranslations.<sup>7</sup> Only last year there appeared an essay against vivisection, in which experiments performed under anesthesia are quoted as evidence of horrible cruelty, an experiment never performed at all is cited to show the callousness of the investigator, and arguments and statements which have been clearly answered or qualified, are repeated in their original form, as if they expressed the exact truth. This essay was granted a prize of \$300, by a committee of antivivisectionists. Its author declares that the object of her article is "not to bandy words with professional and learned men," but to state simply "some thoroughly authenticated facts."<sup>8</sup>

Here, then, are the opposed parties; on the one side men trained to close observation, to careful inference, and to exact statement; on the other side persons re-

vealing repeatedly that they are ignorant of the subject they denounce, that they are incapable of interpreting intelligently what they read, and that they let imagination play uncontrolled in regions they have never visited and in procedures they have never witnessed. These two parties can never be reconciled until both have the same desire to know the truth, and the same willingness to search for it with clear eyes and unbiased mind.

#### THE COMPLEX RELATIONS BETWEEN RESEARCH AND MEDICAL AND SURGICAL PRACTICE.

As already stated, the men engaged in research in the medical sciences are trained investigators. Most of them have had a long course in medicine, and after that they have had specialized experience in their chosen field of labor. They are engaged in a study of by far the most complicated structures and the most complicated processes in nature, the structures and processes of highly developed animals. And not only are the individual processes intricate, but the animals themselves are intricately related in the nexus of living beings. So complex are the relations that in the fight against disease an immediate and fundamental answer to the urgent practical problem is usually impossible. Each problem must be analyzed into smaller and simpler problems, and these must be patiently investigated, one by one, before the results can be combined into a solution of the practical difficulty.

Thus the question of the proper method of checking the spread of tuberculosis depends primarily on a knowledge of how the disease is spread, and that knowledge, in turn, depends on a knowledge of the cause of the disease, and that depends on a study of tuberculous tissues, and the discovery that in these tissues are bacilli, and the demonstration that these bacilli when separated in pure state and injected by themselves into animals, will produce the disease tuberculosis; and from this point the dependence runs back in all directions—to the discovery of the microscope and its perfection, to the methods of histologic investigation and the use of staining reagents, to suggestions from the study of alcoholic, lactic and acetic fermentations, to the laborious first proof that infectious diseases result from micro-organisms, and to innumerable other factors, which at every step determined whether or not progress could be made. By the failure of any one of this complex group of factors the development of our present methods of dealing practically with the spread of tuberculosis might have been stopped absolutely.

This sketch of the development of our intelligence regarding tuberculosis is only a fair example of the intricate interweaving of knowledge. If all the bearings of every discovery could be at once ascertained, or if every investigator could foresee where his advance would be delayed by ignorance in closely related fields, it might be possible to move forward with greater directness. But these conditions are impossible. The relations are too intricate. Knowledge has to be pieced together after slow and tedious labor in small realms of fact. Yet though the realm any man explores must be small and limited, he has the assurance that just in so far as he sees clearly and tells exactly what he sees, his contribution will fit in with other contributions and thus will find its value in the growing body of truth.

Yellow fever has practically been abolished in Cuba where it was a devastating disease and a constant menace to our southern cities. The glory of that service has justly been bestowed on the army surgeons who proved

6. Lealiet published by the N. E. Antivivisection Society.

7. THE JOURNAL A. M. F., 1901, xxxvi, 500.

8. Britton: Our Dumb Animals, 1908, xl, 121.



the manner in which the disease is conveyed from one person to another. It should not be forgotten, however, that the beneficent results of their work were due in part to the entomologists who had previously studied the veins and scales on the wings, and the hairs and scales on the bodies of mosquitoes, and had observed the ways in which mosquitoes reproduce. Surely these studies appear remote enough from the great human problems of disease and death. Yet how closely are they involved!

This complexity of the relation between discoveries and practice has important bearings in the present discussion of the opposition to medical research. It is the certainty that we are still woefully ignorant of many of the problems of disease, and that every fragment of biologic knowledge may be useful in solving these problems—it is this certainty, and the sincere conviction that the service he performs is in the highest sense humane, that cause the medical investigator to oppose any attempt to check the freedom of investigation. On the other hand, it is the failure of the inexperienced layman to appreciate the complicated relation between investigation and practice, that causes him to look somewhat scornfully on this or that special study and inquire with some warmth, "What can be the use of that?"

In antivivisection writings this question of utility is frequently asked; it is sometimes answered by the statement that all animal experimentation is worse than useless. And in the popular mind the statement is received unchallenged. No doubt some of the widespread ignorance of the relations between medical research and its practical bearings exists because the profession has made no attempt to enlighten the public on these matters. But how many physicians are capable of elucidating these complex relations? Certainly their training in most medical schools does not give them any clear notion of the sources of their knowledge. Their authorities are their professors and their textbooks. The urgency of teaching what to do does not always admit teaching the why and wherefore, and how the why and wherefore were discovered. Just as very few of us know the processes through which our common possessions, such as our clothes, for example, must go before they belong to us, so, too, the student of medicine knows little of the years of patient investigation which preceded the results he learns to use in his practice.

Under the circumstances it is not to be wondered at that physicians can be secured to sign petitions for laws restricting medical investigation. The proposed law seems harmless, an eager patient is interested, and the amiable doctor signs. The fact that physicians' names are on the list is regarded as the strongest support of the petitioners. But, again, the inquiry must be made, What do they know about the conditions of medical research? What do they know of its relations to practice?

Do the petitioners for restrictive legislation realize that the entire fundamental conception of infectious diseases was established by Pasteur through experiments on animals, and that all the modern methods of checking these diseases arise from that conception? Do they understand that some of the most important means of early diagnosis, most important not only for the individual but for the community as well, are dependent on the use of animals? Do they know that methods of treatment, of the greatest value, such as are used in rabies and diphtheria, for example, have been deter-

mined by animal experimentation? Do they recognize the necessity of employing animal tests in assuring pure food and pure water to a community? As physicians or as patients are they aware that in using chloral, sulphonal, trional, cocain, eucain, antipyrin, acetanilid, physostigmin, strophanthus, amyl nitrite, adrenalin, thyroid extract—are they aware that they are using drugs discovered or first demonstrated by observations on animals? I have heard antivivisectionists declare that they would refuse to profit by discoveries made on animals. This declaration shows their profound ignorance of the interdependence of modern medical and surgical practice and modern hygiene, on the results of animal experiments. In our civilization it is impossible to escape from the beneficent results of such experiments. We are surrounded by the protection that animals have afforded us. Even the warnings in the street cars against spitting are there because animal experiments proved that such warnings were necessary for our safety.

The scientific application of the experimental method has transformed the world of commerce and industry. The marvel of that transformation is a story that man tells with a just pride in his own achievement. The same sort of painstaking search for knowledge that gave man control of the forces of inorganic nature, has given him most of the control which he now has over the forces of organic nature. It was the method of experiment applied to animals that wrought the change from the empirical medicine of sixty years ago to such exactness of treatment as modern medicine can utilize. And just as the future growth in the physical world must wait further discoveries and new applications of knowledge, so in the realm of biology and medicine, the hope of progress must rest on a continuation of the method which has brought us thus far out of the darkness of the unknown—it must rest on the study of normal and pathologic processes that go on in living animals.

#### ASSUMPTIONS REGARDING ANIMALS.

Of the animals used in medical research those which rouse the greatest feeling are the dog and the cat. Throughout known history these animals have been the companions of man. They are household pets. The dog especially is capable of exhibiting a degree of affection and devotion which calls forth a like affection and devotion from his master. It is characteristic of our ways of thinking that when a general statement is made most of us interpret it in those concrete terms with which we are best acquainted—when the statement is made that dogs and cats are vivisected we are likely to think of our own dog or cat in relation to this possibility. This tendency to conceive general propositions concretely in accordance with personal experience, novelists and story-tellers, with ignorance and imagination, have utilized to harrow the feelings of animal lovers and thus to turn deep-seated sentiment strongly against the methods of medical research.

In every large city the accumulation of stray dogs and cats is a menace to public welfare. These wandering dogs are frequently vicious, they bite one another, they fight and sometimes kill dogs that are well-behaved pets, and in their wanderings they serve to keep existent the dread disease—hydrophobia. These dangers are recognized as community dangers, and instead of all dogs having the right to life, liberty and the pursuit of happiness, which some antivivisectionists imply they should have, stray dogs are collected from the streets



and are put to death. In London more than 20,000 dogs are annually suffocated in the lethal chamber. In Boston between 3,000 and 4,000 dogs and between 13,000 and 15,000 cats are killed every year by an endowed organization and by public officials. The records of every large city would tell a similar tale.

The dogs and cats used in medical research are just such animals—stray animals, often bedraggled and vicious, and savage from hunger and neglect, that are brought into the laboratories from the streets. In a medical school in which active research is progressing, two or three hundred of these stray animals might be used in a year. During their confinement they are well fed and well cared for.

On their way to death in the laboratories they serve to increase biologic knowledge, knowledge of great value to medicine and surgery; thereby they contribute to the alleviation of human suffering. In the public pound the lives of their wretched fellows go out with no service rendered. It is mere useless death.

There is no question that these thousands of dogs must die. Granted that in almost all cases there is no greater discomfort in the one way to death than in the other, which is the more desirable way for these doomed animals to die—while rendering service to their fellow-creatures, or without benefit to any one? This is the question that should be raised when there is talk of the vivisection of dogs and cats. And I believe that in time an enlightened community will not hesitate to pronounce in favor of the way which renders human service.

#### THE SIMILARITY OF MOTIVE.

It is the contention of the antivivisectionists that their movement is a crusade against pain. Their opposition to medical research is chiefly based on the belief that pain is commonly inflicted on animals in laboratories to a degree too horrifying to endure. So convinced are they of the existence of torments that they have not hesitated to call laboratory workers "fiends," "demons," "human monsters," "diabolical vivisectionists," nor to characterize medical research as a "vile pursuit," "a devilish science," "an inhuman as well as a criminal practice," "an organized system of barbarity." These are merely sample epithets. Believing that these things are true, the opponents of animal experimentation are intent on checking it or abolishing it altogether—with this "plague of scientific cruelty" the only cure is to "stamp it out." The medical investigators declare that they, too, are on a great crusade against pain. But they take definite issue with the methods of their opponents.

In the first place, the investigators object to any step tending to check the use of animals in medical research. They maintain that such interference is not justified by the present treatment of the experimental animals. They declare that the imagined horrors of medical research do not exist. The insane lust for blood, the callousness to the infliction of pain, which are attributed to the experimenters, they resent as most absurd and unjust accusations. Only the moral degenerate is capable of inflicting the torments that the antivivisectionists imagine. No one who is acquainted with the leaders in medical research, who are responsible for the work done in the laboratories, can believe for a moment that they are moral degenerates.

The medical investigators further maintain that judgment should be based on knowledge, not ignorance. They rightly insist that their critics are ignorant—

ignorant of the conditions of medical research and ignorant of the complex relations of the medical sciences to medical and surgical practice. And they contend that these critics in their ignorance are endeavoring to stop that experimental study of physiology and pathology, which, as Osler states, in the half-century between 1850 and 1900, did "more to emancipate medicine from the routine and thralldom of authority than all the work of all the physicians from the days of Hippocrates to Jenner," and he adds, "we are yet but on the threshold."

"We are yet but on the threshold"—that is the center of this controversy. How little we really know of scarlet fever and pneumonia, of diabetes, sclerosis and the cerebral degenerations, of the forms of nephritis, and of cancer! How urgent is the cry for more light on these and on many other human afflictions! This is the fact that drives the investigator to renewed exertions. The progress of the past few decades has, indeed, been splendid, but in spite of this progress problems of immense importance to the health and the saving of life, not only of men but of the brutes as well, are demanding solution; the greatest hope for the solution of these problems lies in the continued use of animals for experimental purposes—so the situation presents itself to those engaged in the struggle with disease. Shall men suffer and die to save the lives of the experimental animals, or shall the experimental animals die to mitigate pain and wide calamity among men? That is the question.

The opponents of medical investigation speak for the animals, the investigators speak for man. Which lives are the more important? The question hardly needs answering. The mere thought of sacrificing human life for the life of a dog or cat is monstrous. It is a grotesque reversal of the world's values. To make such a sacrifice would be an act of insane folly. Yet in effect that is what the opponents of medical research really advocate.

The kindly motive of the antivivisectionists can not be questioned. Their intent is to diminish pain and suffering. They pity the dumb animals; to save the lives of these creatures they would check medical progress. The kindly motive is no doubt humane. But ignorance, and shortsightedness, and grotesquely distorted perspective render such humanity a real danger to human welfare.

#### THE NEED FOR EDUCATION.

In an earlier section of this paper I suggested that ignorance and misconceptions regarding the methods and the results of medical research were due, in part, to the failure of the profession to enlighten the public. The medical profession has, indeed, made very little effort to affect the public mind. This is not because people are not ready to be taught. A large part of every community is eager for education regarding the means of maintaining bodily health, the necessities and the methods of public hygiene, the history of the medical sciences, and the requirements for medical progress. The readiness of inquiring minds to consider these subjects is the basis on which the opponents of medical research are working.

Now the facts must be faced that we are living in a democracy, and that in a democracy the most potent force is public opinion. Public opinion is the result of education. At present the education regarding the use of animals for medical progress is almost entirely one-sided. The antivivisectionists are spreading broadcast



in some communities hideous tales of cruelty, and are leading people to believe that these horrors are typical of what is daily occurring in laboratories. Pictures are published tending to harrow the heart of any one who has in him a love for animals. Meanwhile, nothing is being done to counteract the falsity of these impressions. That medical investigators are also men with tender sympathies and are sensitive to the infliction of pain, that they approach their work with reverence for the wonderful mysteries that every living body reveals, that with a keen sense of human suffering they are patiently searching for new truth in the spirit of far-seeing humanity—these facts are not made known.

The time is approaching, I believe, for this education to be started. The movement should not be confined to the medical profession, but should be taken up as a duty by every intelligent person who believes that any restraint on medical research is a danger to human welfare. Already, in England, a Research Defence Society has been started with Lord Cromer as its president. The purpose of the society is to make known the facts, the facts as to the use of animals in experiments, and the immense importance of these experiments to the well-being of mankind. These facts the society intends to diffuse among the people by published articles and leaflets, by lectures, and by answers to inquiries. Although the society has existed only a few months, it already has hundreds of members, from all departments of public life, representing every class of educated Englishmen and Englishwomen, and including many who have been actively engaged in preventing cruelty to animals.

Thus somewhat tardily in England, after research and teaching have been hampered by restrictive legislation for more than thirty years, it has seemed wise to appeal to the good sense of the people. In this country we have thus far refrained from open opposition to those who are hostile to animal experimentation. But a campaign of education will become imperative, if the attitude of the public continues to be shaped entirely by those who are opposed to medical research. The experience of England is before us. "In the mother-country our hands are tied by an act which was defined by one of the highest legal authorities as a 'penal' act; and though with us, as with others, difficulties may have awakened activity, our science suffers from the action of the state." These were the words of Sir Michael Foster at the Toronto meeting of the British Medical Association; and at the end of a review of biologic progress during the preceding thirteen years, he sounded this note of warning: "Some there are who would go still farther than the state has gone, though that is far, who would take from us even that which we have, and bid us make bricks wholly without straw. To go back is always a hard thing, and we, in England, can hardly look to any great betterment for at least many years to come. But unless what I have ventured to put before you to-day be a mocking phantasm, unworthy of this great association and this great occasion, England in this respect at least offers an example to be shunned alike by her offspring and her fellows."

**Against Medical Inspection of School Children.**—According to the *Lancet*, the Devon (England) County Council has brought a hornet's nest about its head by adopting the medical inspection of schools. Here is one of the stinging rebukes received by the head mistress of one of the schools: "Dear Madam, I objects to my child being overlorded by a doctor. I clears his blood vessels reglar with brimstone and treacle, and he don't want no more doctrine."

## Original Articles

### FURTHER RESULTS IN SUPRARENAL TRANSPLANTATION.\*

DRS. F. C. BUSCH, T. M. LEONARD AND T. WRIGHT.

BUFFALO, N. Y.

In a former communication<sup>1</sup> one of us reported a series of thirty-two cases in which suprarenal transplantation had been attempted. In this first series, a part of the animal's suprarenal was transplanted to its own kidney. At least one positive functional survival of such a graft was obtained. Partial proof of functioning suprarenal grafts was obtained in several other instances. The indication of successful transplantation, consists in survival of the animal, in the absence of all suprarenal tissue, other than that of the graft, and in the histologic demonstration of a living graft containing medullary cells.

In the present series of thirty cases, transplantations have been made into the thyroids, testes and kidneys of dogs and rabbits, not only in the same animal, but also from one animal to another of the same species. The results of implantation into the testes and thyroids were all negative. Positive results were obtained only in those cases where the kidney was used as the receiving tissue.

#### DETAILS OF TECHNIC.

The complete experiment of transplantation into the kidney, whether the giving and receiving animal are the same, or the receiving animal is another of the same species, consists of three stages, as follows:

*First stage.*—One suprarenal gland is removed in its entirety. A sagittal third of this, or of a gland from another animal, is introduced into an opening in the lower pole of the kidney cortex, patterned as nearly as possible after the graft to be implanted. The graft is held in place by means of two or more silk sutures passed over it and through the kidney capsule and cortex, on either side. As a rule, the surface of the graft is brought flush with the kidney surface. By cutting off a thin slice from the lower portion of the graft and from each pole, five raw surfaces are brought into apposition with the fresh surfaces of the kidney wound. Care is taken to prevent the intervention of blood-clot between the surfaces of the graft and the kidney. The kidney is then allowed to drop back into its bed, and the external wound is closed.

*Second stage.*—A varying period after the first operation, the animal's remaining suprarenal is completely removed. In the absence of accessories or remnants, which may have been overlooked during the first operation, there should be no suprarenal tissue remaining, other than that of the graft. If such is the case and the graft has undergone necrosis, the animal should die of suprarenal insufficiency, unless death occurs earlier through anesthesia, hemorrhage, or shock.

*Third stage.*—If the animal has survived the second operation for a considerable period, the kidney containing the graft is removed. If other causes of death, such as shock and renal insufficiency can be excluded and death occurs within three or four days, preceded by marked muscular weakness and tremor on exertion, it

\* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

<sup>1</sup>From the Physiological Laboratory, University of Buffalo.  
1. Am. Jour. Physiol., 1906, xv, No. 5.



is probable that the cause of death is suprarenal insufficiency, and that the graft had been functioning. The proof is completed by failing to find suprarenal tissue at autopsy and by the histologic demonstration of an apparently living graft containing remnants of medulla. Additional proof would be the demonstration of blood pressure raising properties of graft extracts.

#### PROOF OF FUNCTIONING.

Complete proof of functioning graft survival, as outlined above, we have obtained in two cases. In one of these the rabbit's suprarenal was transplanted into its own kidney. Thirty-six days later, the remaining adrenal was removed, and seventy-seven days after the second operation, the kidney containing the graft was removed. The rabbit recovered rapidly from the immediate effects of the operation and seemed quite normal for the first day. The morning of the second day, the animal appeared apathetic; did not move unless disturbed, but showed no pronounced muscular weakness; did not eat. In the afternoon muscular weakness was more pronounced, and there was slight tremor on exertion. When not disturbed there was still slight tremor of the hind quarters and a gentle swaying motion; dullness and apathy were increased. It was found dead, the following morning, stretched out on side, head thrown back. At autopsy the viscera appeared normal. There was no evidence of peritonitis and no suprarenal accessories or stump could be found.

The left kidney, containing the graft, which was removed at the third operation, was adherent to the omentum over the surface of the graft. These omental adhesions were very vascular. After separation of the adhesions, the graft itself was not distinguishable on the surface, but showed on cross section through the kidney as a dark hyperemic mass with a central yellowish core, about two millimeters in diameter and five millimeters in length. Microscopic examination of the graft, which had been fixed in Zenker's fluid, showed this as an oval mass at the bottom of the kidney wound and consisting of cells which stained well with hematoxylin and eosin. Outside of these and extending toward the external surface there was a mass without definite cellular structure, containing many areas of extravasated blood and occasional islands of what appeared to be cells of the suprarenal cortex. The central cells, as well as several small islands separated from the main mass by new formed connective tissue, appeared to be of the suprarenal medulla type. These latter cells also gave a reaction with chrome salts.

The second case (sixty), in which the three stages were completed, consisted in the transplantation of the suprarenal of one rabbit into the kidney of another. The rabbit's remaining suprarenal was removed thirty-six days after the introduction of the graft. The animal made an uneventful recovery. Twenty-nine days later, the kidney, containing the graft, was removed. Death occurred forty-three hours after the third operation, preceded by symptoms similar to those recorded for the first case.

At autopsy no abnormality was found in any of the viscera and there was no evidence of peritonitis. The abdominal vessels were unusually distended, which was likewise the case in the first experiment reported. No accessory adrenals or adrenal stumps were found. The kidney, which contained the graft, was found, at the time of the last operation, to be rather firmly adherent to the left lobe of the liver. The graft was visible at the

kidney surface as a yellowish body, about two millimeters wide and four millimeters long; the portion imbedded was about two millimeters in its greatest diameter.

Microscopic examination showed the graft as a wedged-shaped mass of cells walled off from the kidney by new-formed connective tissue, but with very little, if any, inflammatory reaction in the adjoining kidney tissue. The cells of the wedge were large in size and spherical to polyhedral in shape, with relatively small nuclei and much cytoplasm. The nuclei stained well with hematoxylin, and the cytoplasm faintly with eosin. It is difficult to identify them with the cells of the normal gland, but from the fact of their reaction to chrome salts and their size and arrangement it seems probable that they are of the medullary type.

Four rabbits survived the third operation—the removal of the kidney containing the graft. These were killed later, and found to possess accessory suprarenals. In two of these cases, living grafts, containing medullary cells, were found. In the third, the graft was partly necrotic and no medullary cells could be demonstrated. In the fourth, there was hydronephrosis and a partly necrotic graft.

One rabbit met with an accidental death through anesthesia, at the third operation, ninety-four days after the introduction of the graft and fifty-one days after the removal of the other suprarenal. At autopsy, no remaining adrenal stump or accessory bodies could be found. The graft itself was living and contained cells of medullary type. In this case, the transplanted suprarenal was obtained from another rabbit.

Another rabbit died through accident at the second operation, thirty-four days after the introduction of the graft. The graft, although partly necrotic, contained some islands of medullary cells.

In still another rabbit death occurred eighteen days after the removal of the second suprarenal. At autopsy no accessories were found, and the graft was necrotic. In this case the graft must have been still functioning at the time of the second operation, the process of necrosis having been completed eighteen days later, at which time the animal died from suprarenal insufficiency.

The best histologic picture of a graft is shown in an animal which died from some undetermined cause, eight days after the primary operation. In this case the cross section of the graft looks like a section through normal suprarenal, distinctly showing all the zones.

Of the remaining cases of this series, some animals died through accident at the primary operation, and the others from suprarenal insufficiency after the second operation.

#### SUMMARY.

Including the cases of our first report with those recorded here, we believe that satisfactory evidence of functioning suprarenal graft survival has been given in, at least, three cases. One of these consisted in a transplantation from one animal to another. In several other instances where complete proof could not be obtained, there is a strong probability that grafts were functioning. So far as we know these are the first successful cases of suprarenal transplantation with preservation of function.<sup>2</sup> That the original sympathetic

2. Note made on reading proof: Since the reading of this paper, there has come to our notice a report (Haberer; Arch. f. Klin. Chir., lxxviii, No. 2, 1908), of suprarenal transplantation into the kidneys of dogs and rabbits. In these experiments, however, a portion of the original blood supply was left undisturbed, and there was continuity of tissue between the intra and extra-renal portion of the gland. No adequate evidence of functional graft survival was given.



nerve connections of the gland may be severed without apparent disturbance of function has been shown by the successful cases of transplantation.

The kidney seems to be the best structure for the reception of the grafts. The method of removal of the kidney, with the graft, in the third stage of our experiment, has, we believe, in no instance, been a disturbing factor, since those animals which had accessories survived, with apparently no ill effect, the removal of one kidney.

Whether the graft alone, in any of these cases, would have been sufficient to carry on the suprarenal functions indefinitely, we can not say. The longest period of graft survival which we have recorded is 247 days.

With improved technic and more uniform success in animal experiments, it does not seem unreasonable to attempt suprarenal transplantation as a therapeutic measure in Addison's disease.

In conclusion we wish to thank Dr. James A. King and Dr. W. Ward Plummer for valuable assistance in some of the earlier operations.

#### DISCUSSION.

DR. W. M. L. COPLIN, Philadelphia: An interesting fact in regard to implantation is the suggestion, which has been accentuated by Dr. Busch's admirable communication, that transplantation in the presence of an adequate, normal suprarenal body, or where suprarenal secretion is sufficient, is followed by hyperplasia of the transplanted suprarenal. A very interesting and highly suggestive phase of this work was brought out two years ago by French workers, during attempts to induce hypernephromata by transplantation of the suprarenals. Some times the graft takes and a tumor results; in other instances no neoplasm is produced, although the transplanted tissue survives; of course, in most cases the graft dies, autolyzes and disappears. When the graft remains and its cells proliferate without evidence of suprarenal intoxication, we at once think of Professor Adami's suggestion that when cells are no longer required to maintain their secretory functions they revert to a more highly manifest hyperplastic and productive activity.

DR. H. G. WELLS, Chicago: In 1900 I performed a small series of experiments with the object of transplanting the suprarenal into the kidney in young guinea-pigs, with the object of seeing if from such misplaced adrenal tissue a hypernephroma might develop, but the results were negative. I never got any tumor formation, and only occasionally evidence of survival of adrenal cells. The results were so negative that they were never published.

DR. A. J. CARLSON, Chicago: Is there any explanation for the fact that the graft takes only in the kidney? Why should it not take in other tissues in the vascular supply?

DR. W. B. CANNON, Boston: Have grafts been placed in the spleen and other organs? Why not make use of the spleen also in these cases?

DR. F. C. BUSCH, Buffalo: The point brought up in regard to hyperplasia is interesting, but one on which I am not competent to speak. In these animals, at the first operation, only one adrenal was removed, a part of this or a similar portion of the gland from another animal, being used for transplantation. The remaining adrenal was sufficient to carry on the function until the second operation, even if the graft was inactive. I have not seen any instance of overgrowth or new growth on the part of the transplanted cells.

It is interesting to note that in those animals in which the graft became necrotic, death occurred soon after the removal of the remaining suprarenal, eight to fourteen hours after the second operation. This was due, I believe, to suprarenal insufficiency, and not to the operative procedure alone. In those subjects surviving the removal of all other adrenal tissue, we have nothing but the graft to account for such survival. After the removal of the graft itself, at the third operation, death occurred later, within two to four days, with progressive

symptoms of suprarenal insufficiency. It would seem that there had been some adaptation of the animal to the small amount of functioning suprarenal of the graft.

The questions of Dr. Carlson and Dr. Cannon as to the reason for success of transplantation into the kidney and failure in other organs, I can not answer definitely. We did not attempt transplantation into the spleen, partly because, in the rabbit, the spleen is much too small for the purpose. The kidney was chosen because of its ease of access, its vicinity to the suprarenal, its vascularity, ease of handling and control of hemorrhage, and because of its close developmental relations to the suprarenal. I have no explanation of the failure of transplantation into thyroids and testes. Survival of suprarenal cortex after transplantation into the testis has been recorded.

The difficulties involved in the three stages of the experiment I have not specifically mentioned. One of these has been the close relation between the adrenal and the vena cava or renal vein, or both. In attempting complete removal of the gland there is great danger of fatal hemorrhage from wounding these veins.

### THE PRESERVATION OF ANATOMIC DISSECTIONS WITH PERMANENT COLOR OF MUSCLES, VESSELS, NERVES AND ORGANS, BY A NEW METHOD.

A PRELIMINARY NOTE.\*

EDMOND SOUCHON, M.D.

Professor Emeritus of Anatomy, Tulane University,  
NEW ORLEANS.

Since all times, anatomists have tried to preserve dissections with permanent color of muscles, vessels, nerves and organs, but, as far as I know, they have failed in securing permanency of color.

The specimens I have seen in the northern and European museums have all the tissues bleached.

It is not so very important to preserve permanently the actual color of muscles, which varies from one subject to another, but it is essential that there should exist permanently a marked contrast between the fleshy parts of muscles and the tendons, fasciæ, bones and other white tissues, which must remain as white as possible. A dark brown color of the fleshy parts of muscles is satisfactory. The more red the brown is, the better and the prettier.

The specimens should retain their color at least five or six years or else the result would not compensate for the labor and expense. We have specimens with color that are over eight years old. Since the color has kept that long I believe it will keep indefinitely, provided the solutions are changed as soon as they become cloudy.

In my work I have used no newly-discovered chemical. I employ the old arsenic and alcohol, to which I have added carbolic acid, formalin and glycerin. These are the compounds used in colleges all over the world, but it is the combinations and proportions that make all the difference between success and failure.

I started by determining the properties or action of each combination in all the proportions I could think of and letting them go on to do their best or their worst without interfering with them beyond changing the solutions when they became cloudy or discolored. I also experimented to determine the action on color of the lapse of time when the specimens were placed

\* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



in closed empty jars, without any solution in the jar. Altogether I have seventy jars, representing as many experiments. At the end of a year each specimen was examined critically for color, and it was found that six had turned a good color. All the specimens that lost their color did so within two or three months. A new set of experiments was then undertaken, to determine which of the six methods was the best, cheapest, quickest and simplest. I finally came to the conclusion that the following method was, so far, the best in all respects:

1. Lean, male adult subjects should be used. Fat, however small in quantity, makes bad preparations.

2. The subject should be embalmed with the following formula: A. Water,  $1\frac{1}{4}$  gallons; arsenious acid (saturated solution),  $1\frac{1}{4}$  gallons; nitrate of potash, 1 pound; formalin (formaldehyd, 40 per cent.), 6 ounces. B. Alcohol, 16 ounces; carbolic acid, 6 ounces; glycerin, 16 ounces; creosote (beech-wood), 2 ounces. The two solutions, B and A, are to be mixed. I tried seven different formulas and used forty subjects before finding this formula, which seldom fails to give a satisfactory color, dark brown, for the muscles. The color may show only a few days after the embalming, but it is seldom that it disappoints. This sometimes happens, though due, I think, to the fact that the chemical composition of the tissues is not the same in all subjects. If, before dissecting, one waits three to six weeks after the embalming, the color is better; but after more than five or six weeks the white tissues often become of a dirty, whitish yellow.

3. The arteries and the veins may now be injected, if desired. This is done with hot tallow, colored with vermilion for the arteries and ultramarine blue for the veins.

4. Now the subject is partitioned off, that is, divided into a number of pieces according to the preparations that it is desired to make.

5. Each piece is placed in a glass jar filled with a solution of 1 ounce of formalin to the gallon of water (F. 1). This is changed as often as it is discolored by the blood.

6. When the specimen has been purged of its blood, it is suspended in an empty glass jar with a lid on, and is left to drain off its superfluous water. This requires ten days, more or less.

7. The dissection is then made. It should be done with the parts in the position in which they will stand when exhibited or used in demonstrating. There should be a separate specimen for each layer. In order not to destroy their situation, direction, course and relations, the structures in one exposed layer should not be raised from their beds.

8. When the dissection is completed, if the muscles present a satisfactory color (dark brown), the specimen should be immersed in a strong formalin solution, after the idea of Kaiserling, using 10 ounces to the gallon (F. 10), and leaving the specimen in for three days. When after the dissection the muscles present an unsatisfactory color, especially if they present a raw appearance in part or in totality, the specimen should be immersed in a weak carbolic solution, 1 ounce to the gallon (C. 1). The solution should be changed as soon as it becomes cloudy and the specimen should remain in the C. 1 until the solution stays clear. This distinction in the use of a strong formalin or of weak carbolic is important, because if the muscles are not truly dark brown, especially if they are of a raw color, the formalin turns them into a brown gray or bronze color that no later treatment will change. C. 1 used in place of F. 10 when the muscles present a satisfactory color, often gives good results. Sometimes the results are better than with F. 10. It is all, I think, according to the chemical composition of the tissues of the various subjects. Usually the muscles pale somewhat or change color, when placed in any one of these solutions, but later on in the process the color returns.

9. When the dissection has ceased to purge it is placed in an empty glass jar with a lid on and is allowed to cure. This curing stage is of great importance, second only to the embalming formula, as it develops or brings out again the

color, without darkening the tendons or other white tissues. It also smoothes the surfaces, which may be shreddy and ragged; it sharpens the edges of the muscles, thus giving better definition. It fixes the color so as to keep it from being perceptibly affected when the specimen is put up permanently in a solution of alcohol. Even a weak solution of formalin will not affect it much. This curing stage should last until a satisfactory color is attained, but not less than one month. It sometimes requires two or three months, or more, for the muscles to acquire a satisfactory color (dark brown).

10. The arteries must be painted with a vermilion red and the veins with a cobalt blue. The best material is the moist colors (gouache colors), originally used by Dr. Gwilym Davis. They should be allowed to dry thoroughly before the dissection is placed in the following solution.

11. Finally, the specimen is placed in a glass jar filled with a solution of 20 ounces of alcohol to every gallon of water (A. 20).

12. The solutions should be changed as often as they become slightly cloudy or discolored. This is essential to the permanent beauty. Otherwise the impurities in the cloudy or discolored solutions will settle on the white tissues, stain them and destroy their whiteness and brilliancy.

13. Some specimens are refractory to redeveloping color. If after ten or twelve weeks of curing the color has not become satisfactory, place them in A. 20 notwithstanding. If after six or eight weeks in A. 20 there is still no satisfactory color, put them up again to cure for eight or ten weeks or more. The tendons sometimes become horny, but they usually regain their whiteness after they are re-immersed in A. 20. If even then no satisfactory color has redeveloped, put them up in C. 1 until they do. There is here some risk of the tendons and other white tissues acquiring a red gold tinge. As soon as there is any positive sign to that effect, the specimen should be drained for a few days and then immersed permanently in A. 20. Very often the A. 20 will pale the red gold color of the tendons. Thus may be saved some valuable specimens which have cost much time and labor. If this fails the specimen should be made over again with the hope of securing a more favorable result.

That uniformity of color and results does not invariably follow uniformity of procedures is due, I believe, to the fact that the chemical composition of the tissues varies with the subjects. It must be well understood that these two processes are recommended only in cases of refractory specimens which presented a satisfactory color after the dissection was completed. Those specimens which presented an unsatisfactory color after being dissected will seldom respond. I estimate so far, that 85 or 90 per cent. of the specimens turn out satisfactorily. The remainder are merely good, but not good enough to be placed in a museum. Some specimens have to be done over two or three times before one is obtained that is good and pretty enough to be put in a museum.

The colors in specimens that no chemical or other treatment will improve are gray (dark or light), bronze, brick (uric acid color), coffee and milk (medium or light), and pale pink.

14. The other solutions employed for temporary immersion, instead of C. 1 or F. 10, are alcohol, 20 ounces to the gallon (A. 20); alcohol and carbolic acid (A. 20, C. 1); alcohol and glycerin (A. 20, G. 10); and glycerin and carbolic acid (G. 10, C. 1). They give fairly good results often enough, but not as often as C. 1 or F. 10, nor as good.

15. When specimens become too dark they should be placed in a solution of 20 ounces of alcohol and 1 ounce of formalin (A. 20, F. 1) to each gallon of water. As soon as they have attained a satisfactory color, remove them and put them back in A. 20.

The great practical value of this new method is to give us the means of building study museums composed only of real dissections placed in large glass jars in



spacious rooms, flooded with light, on tables so that students can come right to them and study them. Each structure in each specimen is marked by a number and on an appended card the name of the structure is opposite the number. Thus the students can prepare for the dissecting room; they see the innumerable things they never see in a dissecting room; they are able to review and fix in their minds what they have already dissected themselves; the practitioners can in a few moments relearn much anatomy. Such is the study museum that I am now building for the Medical department of Tulane University in New Orleans. Its full usefulness, however, will be brought out only by allotting on the lecture card one hour three times a week for students to study the preparations and by letting them understand that a quiz on these preparations will be a part of their final examination in anatomy.

The same method gives similar results for pathologic specimens, provided the subjects are embalmed with the foregoing solution before the postmortem examination is made.

However, this solution often affects the color of the stomach and intestines. A weaker one will not do so and will assist materially in preserving the color in making pathologic specimens. It will also delay the decomposition of the body for several days in this New Orleans climate in August, when subjects decompose in a few hours. On making the postmortem of such embalmed subjects the embalming passes unnoticed. The solution is composed as follows: A. Arsenic (saturated solution), one and a half gallons; nitrate of potash, one-half pound; formalin, two ounces. B. Alcohol, sixteen ounces; carbolic acid, four ounces; glycerin, sixteen ounces; creosote, two ounces. The two solutions are to be mixed.

The following is a formula which is best suited for embalming subjects to be used in the dissecting room; A. Water, one and a half gallons; arsenious acid (saturated solution), one gallon; formalin, eight ounces. B. Alcohol, sixteen ounces; carbolic acid, eight ounces; creosote, two ounces; glycerin, sixteen ounces. B. and A. are to be mixed. The arteries are distended with cornstarch colored with crimson anilin, the diffusibility of which is regulated by a solution of tartar emetic.

I have worked out the formula used at Tulane for subjects for operative surgery: A. Arsenious acid (saturated solution), two and a half gallons; nitrate of potash, two pounds; formalin, four ounces. B. Alcohol, sixteen ounces; carbolic acid, eight ounces; creosote, two ounces; glycerin solution. B. is to be mixed with A.

The foregoing is only a preliminary note. I shall proceed with the work for some time. Then I propose to publish another note in which I shall mention the improvements, if any, and in which I shall give numerous technical details useful to those who may wish to engage in such work and build also study museums for their universities.

2403 St. Charles Street.

#### DISCUSSION.

DR. PETER POTTER, Butte, Mont.: Over half the value of some of the greatest anatomic work which has ever been done is lost because we have only a written record of the work. For instance, Pirogoff, the Russian surgeon and anatomist, was able to get an unlimited amount of material, and climatic conditions were such that he could do much work which could not be done in a warmer climate. The result of his work is contained in five volumes of text and figures. His method was to freeze the body and cut into sections, but the

moment his studies were completed and drawings made, the material was destroyed. If we had that material to-day, preserved as Dr. Souchon would preserve it, together with his text and figures, it would be of incalculable value.

Braune of Leipsie reproduced his drawings in a manner that has never been equaled; still his work is incomplete because his material was destroyed after his book was published. The proper preservation of material would enable us to correct mistakes and complete unfinished work of other observers. Even Braune is said to have made mistakes, but this can not be proved or disproved, because his material can not be replaced, and we have nothing but his record and charts. If the material had been preserved an anatomist could go over the work and correct an error, if there was one, or confirm Braune's observations.

Something should be done in this country along the line suggested by Professor His of Leipsie toward establishing an anatomic and histologic institute which would be a central depository for material, microscopic and macroscopic, anatomic or surgical, which has been the basis for original work of merit. The material could be deposited there, and afterward studied and examined by anatomists and surgeons, or any one capable of doing the work, not only to correct errors, but to complete work which even our foremost men are often unable to finish in a lifetime. There is one institution in this country which, I suppose, is looking toward that end, although I have no authoritative information on the subject. It is my impression that we ought to encourage the Wistar Institute of Philadelphia to take charge of such work and material preserved as is done by Dr. Souchon. If the Wistar Institute is not in a position to take up this work, this Section should be.

Whatever solution is used, it must be a solution that is permanent. Another method of preservation is the use of formalin. A 50 or 100 per cent. solution of formaldehyd is the best for preserving specimens, but it does not retain the original color. If we can get a solution that will preserve the specimen as well as formalin does, and retain the color of the tissues as Dr. Souchon's method does, we shall have an ideal preserving method.

### MY PRESENT POSITION ON APPENDIX QUESTIONS,

AND REFERENCE TO THE DAWN OF THE FOURTH OR PHYSIOLOGIC ERA IN SURGERY.\*

ROBERT T. MORRIS, M.D.

Professor of Surgery in the New York Post-Graduate Medical School and Hospital.  
NEW YORK CITY.

The time has arrived when we may, at least tentatively, classify four separate and distinct kinds of appendicitis: 1, Fibroid degeneration appendicitis; 2, infective appendicitis; 3, congestive appendicitis; 4, appendicitis by external invasion.

#### FIBROID DEGENERATION APPENDICITIS.

This is an irritative lesion rather than an infective one, and it seems to be the one, on the whole, which takes the largest number of patients to the physician.

It occurs during the course of normal involution of the vermiform appendix. In this process there is replacement of the various structures of the appendix by hyperplastic connective tissue. Nerve filaments persist for a longer time than most other structures in the appendix which is undergoing involution changes, and these nerve filaments are irritated by the contracting connective tissue in the same way as other nerve filaments are irritated in contracting connective tissue in

\* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



other parts of the body—notably in the scars of amputated limbs. The effects of irritation of entrapped nerve filaments in the appendix seem to be of two chief kinds. Irritated sensory nerve filaments give rise to a sensation of discomfort in the appendix region. This is commonly little more than an indefinite feeling of discomfort, but it may amount to actual pain. Patients are apt to press on the abdomen with the hand over the appendix region, or to lean against a chair or table for relief. Irritated sympathetic nerve filaments entrapped in the contracting appendix seem to cause an excitation of the intima ganglia of the bowel wall (Auerbach's plexus and Meissner's plexus), and this leads to derangement of function of the secretory and excretory apparatus of the bowel, causing intractable intestinal dyspepsia.

According to my experience, fibroid degeneration of the appendix is the commonest single cause for intestinal dyspepsia. This probably does not often merge into infective appendicitis for two reasons: First, the structures involved in infective appendicitis are actually removed through connective tissue replacement; second, the chronic irritation calls out chronic leucocyte protection, so that the patient suffering from fibroid degeneration of the appendix seems to be specially guarded against infective invasions.

*Diagnosis of Fibroid Degeneration.*—There are five important diagnostic points for recognizing fibroid degeneration appendicitis:

1. Hyperesthesia of the right group of lumbar ganglia, when deep pressure is made at a point about one inch and a half to the right of the navel.
2. Constant presence of gas in the cecum and ascending colon to the hepatic flexure.
3. Intractable intestinal dyspepsia.
4. Persistent discomfort, varying in degree, in the appendix region.
5. An appendix which feels harder than the normal appendix on palpation.

The condition of fibroid degeneration of the appendix causes disturbance for many years, but is seldom noted in patients less than 20 years of age. It belongs to middle and later life. It is well understood by a few diagnosticians, but has been overlooked in most of the patients whom I examine. So little is the condition recognized as yet that surgeons operating in cases diagnosed as chronic appendicitis have sometimes closed the abdomen without removing the "inconsequent appendix" which was found, believing that they had made a mistake in diagnosis. Other surgeons removing such appendices on general principles, but still believing that they had been mistaken in diagnosis have been surprised at the prompt and unaccountable recovery of the patient's health.

Patients do not often go to bed with the irritative lesion of fibroid degeneration of the appendix. They are the patients who go the rounds of the profession asking for definite diagnosis in connection with their appendix symptoms or for their intestinal dyspepsia. Blake has described a series of cases corresponding closely with these cases of fibroid degeneration of the appendix, but he ascribes the symptoms to faulty mesenteric attachment. I believe that his specimens were not subjected to microscopic examination, and that another series of specimens, examined with reference to fibroid degeneration, will be found to contain many belonging to the latter class rather than to the class in which

faulty mesenteric attachment leads to mucous inclusion or to vascular derangements.

*Treatment of Fibroid Degeneration.*—My position relative to operation in these cases of fibroid degeneration is to advise against it when the patient is first seen. He is asked to follow medical treatment under the care of his physician. Many of the patients, relieved of their fears of appendicitis, become so well that they need little further attention. Other patients will return at the end of a few months and ask to have the fibroid degenerating appendix removed.

On account of my interest in the subject, some of my assistants at the hospital, for the sake of brevity, got to calling these cases "cases of Morris' appendix." The nomenclature is not allowable for two reasons. Senn described them in a general way as cases of "appendicitis obliterans," and Ribbert referred to the condition as "normal involution of the appendix" before I took up the study and noted the presence of persistent nerve filaments and observed the occurrence of hyperesthesia of the right group of lumbar ganglia as a diagnostic point. If for the sake of brevity it is desirable to call cases of fibroid degeneration of the appendix by the name of any observer, they should be called Senn or Ribbert appendices.

Another reason why the nomenclature of "Morris' appendix" is undesirable is because the appellation has gone wrong in some quarters and now stands for the perfectly normal appendix. This began apparently in a spirit of humor, but by *reductio ad absurdum* on the part of serious men it led to the conclusion that I favored removal of the normal appendix. As a matter of fact, I have always opposed the idea of removal of the normal appendix, even when it appears incidentally in the course of some other operation. My reason for this is that the field about the normal appendix is unprotected by leucocytosis, and the opening of ever so small a part of the intestinal lumen in an unprotected field calls for a great degree of skill.

A type of appendix which may be confused with the fibroid degeneration appendix is the fibrous scarred appendix remaining after infective invasion. The history of acute infective invasion, and the destruction of nerve filaments along with other structures in such an appendix will commonly serve for making the distinction.

#### INFECTIVE APPENDICITIS.

At present infective appendicitis is the most conspicuous ailment of the appendix, even though numerically the cases seem to take second place. My position in regard to causation of this type of appendicitis has not changed since the publication of my book on the subject in 1895. This work is now out of date on many other points. I believe the common, acute, infective appendicitis to be due to anything which causes the inner soft coats of the appendix to swell to the point of strangulation within the tight outer sheath. It matters not whether this swelling is caused by the presence of a concretion, the extension of an ordinary colitis, a blow or a twist from the psoas muscle, or any one of a number of disturbances.

As soon as the lymphoid, mucous and submucous coats have swollen within the tight sheath of muscularis and peritoneum they become anemic (compression anemia). An isolated anemic area of this sort should be instantly attacked by bacteria, for the reason that it has momentarily lost its leucocyte protection, and be-



cause the bowel bacteria of the lumen of the appendix are right at hand to begin invasion into such an anemic area. The infective process is brought to a halt in one of three ways: 1, By sufficient determination of phagocytes to the point, through blood vessels not disabled entirely; 2, by sufficient determination of phagocytes to the point of blood vessels in neighboring structures which have become adherent to the infected appendix; 3, by surgical removal of the appendix.

#### WHEN TO OPERATE.

It is evident that without surgical operation the infective invasion is confined only by the limitations set by the autoprotective factors of the individual patient. By this we mean his ability to manufacture opsonins and phagocytes, and to get them to the field of action through unobstructed blood channels. On the basis of this belief I still hold to the dictum, stated many years ago and which aroused considerable antagonism, to the effect that in acute progressing infective appendicitis operation must be performed as soon as the diagnosis is made. The reason for this is that the bacteria are performing an operation on the appendix, and operation by the surgeon is merely a transfer of authority. We can never know in advance what limitations to infective invasion are to be set by the patient, but we do know what many surgeons are able to accomplish, for their statistics are available.

My position toward cases that are first seen when an acute attack is evidently subsiding depends on judgment in individual cases and can not be stated as a dictum. Sometimes it is best to operate, in order to shorten the period of convalescence and to avoid the danger of recrudescence of infective invasion. Sometimes it is best to wait for entire subsidence of infection and to choose the interval stage as the time of operation. The advantages of waiting for the interval are not so great as commonly supposed. The reason is that in the interval between attacks we lose the benefit of the local hyperleucocytosis that has been called out by the infection, and the patient has to get up a new local leucocytosis for the surgeon when he finally operates.

My position toward operating in the interval depends entirely on the case. Many patients have had the appendix wholly destroyed in a violent acute attack and never need an operation subsequently unless for separation of troublesome adhesions. Other patients carry chronic infection and mucous inclusions after the subsidence of an acute attack, and these patients call for operation as soon as a convenient time can be arranged. I have had many patients get into trouble because they set the convenient time too far away, and they had to have a hurried operation at a most inconvenient time. It is not difficult, by palpation and by observance of the subjective symptoms, to classify interval cases pretty accurately, so that we know which patients need operation and which do not.

*The Incision, and Treatment of the Stump.*—Concerning the choice of incision for interval cases of appendicitis, I still hold to the McBurney or gridiron incision. The results are so ideal that I do not dare to change to other types that have been advocated by other operators. The skin incision need not often be more than an inch and a half in length, no matter how extensive the adhesions, and the split muscles fall together so readily that hernia is avoided. A pair of scissors and a needle are about the only instruments that are re-

quired in any sort of appendix operation. My position toward treatment of the stump in interval cases has changed several times. I have employed nearly all the methods that have been advocated. Since the publication of Seelig's convincing article on the subject in the *Annals of Surgery*, about three years ago, I have put aside fears and now ligate the stump simply like an artery, dropping it back into the peritoneal cavity after touching it with carbolic acid and neutralizing the carbolic acid with alcohol, which latter should be washed away with a little saline solution to avoid all irritation. This simple treatment of the stump suffices because the stump falls against parietal peritoneum, which walls it in quite as securely as does peritoncum infolded from the cecum. The adhesion to parietal peritoneum is at a point where the cecum is naturally fixed, so no harm results. By dropping fanciful methods of treating the stump we can save from one to five minutes of time, and this will allow the entire operation to be completed without hurry in less than ten minutes in most interval cases.

*Cases with Gangrene or Perforation.*—My position has changed greatly in regard to treatment of appendicitis cases with gangrene, perforation and products of infection outside the confines of the appendix. Twenty years ago I worked deliberately, made long incisions, and sometimes multiple incisions, for thorough wiping and flushing of the peritoneum. Gauze drains, gauze packing and other sorts of drainage apparatus were employed. Hydrogen dioxid was used for rapidly throwing out products of infection. I then tried to introduce refinements, in the way of more speedy work. Multiple incisions were discarded and the single incision was made shorter and shorter, until now for most cases of extensive infection I use about the same incision as for interval cases. Wiping and flushing the peritoneum, and the use of gauze drains and gauze packing were gradually dropped, as fast as I could feel that I was on safe ground.

After the publication of Dr. John G. Clark's notable paper in the *American Journal of Obstetrics* relative to complete closure of the abdominal cavity without drainage, in pyosalpinx cases, I tried for about a year, in appendicitis cases with pus and peritonitis, the method of flushing the peritoneal cavity with saline solution and then closing without drainage. Primary union was obtained in many cases. None of the patients died and none had increase of peritonitis. Secondary abscess appeared just often enough to make the method undesirable, and I now use a short wick drain and only one. In patients with thick, fat or strong muscular abdominal walls I sometimes exchange the gutta percha covering of the wick drain for sheet lead, which is benign in the tissues and which maintains a free opening through heavy walls.

In these cases of appendicitis with pus and peritonitis I have not changed from the idea of breaking up adhesions sufficiently to allow of finding multiple pus pockets, as well as for turning out the appendix; but I avoid separation of the entire mass of adhesions, because they immediately reform, and sometimes in undesirable positions. I have little objection to spreading pus on normal peritoneum which gets into the field, or of leaving such peritoneum covered with pus, as the patient's autoprotective factors care for it promptly. In former years I damaged these patients very much in attempting to do various kinds



of "ideal work" with the stump, but for some years now I have particularly avoided efforts at bringing the cecum to the surface in cases in which it would cost the patient too much. The appendix is ligated simply at the bottom of the well, or in the worst type of cases it is not even ligated. A pair of forceps is snapped over the base of the appendix and left *in situ* until the following day.

The appendix in these cases can often be pulled away with the fingers, and in some cases in which it is seen to be black and gangrenous it is not even necessary to do this, as it will melt away and run out in a day or two. It is only in the desperate class of cases, however, that one will need to leave a gangrenous appendix—the class of cases in which it is best to complete the entire operation in three or four minutes. In cases of appendicitis with pus and peritonitis it is best to complete the operation in from five to fifteen minutes as a rule. This not only conserves the patient's natural resistance, but it means a short period of intoxication with the anesthetic. Little attempt is made at protecting the normal peritoneum against pus in the course of the operation, and very often pus is still welling freely from the wound when the absorbent outer dressing is applied and the operation completed. The wound is not sutured closely, and sometimes is allowed to remain without any sutures. In these cases the advantages of the gridiron incision are supreme, as the walls fall together so nicely that hernia is almost confined to fleshy patients. In several hundred appendicitis cases since adopting the gridiron incision there are but four hernias, so far as I know—three in fleshy patients and one in a case of omental grafting for a sloughed cecum.

It was my preconceived notion that fecal fistulas would occur rather frequently after the sort of treatment that has been adopted for the stump in these cases of appendicitis with pus and peritonitis, but it seldom appears, and when it does it closes spontaneously without attention in a few days. One can keep a fecal fistula going interminably by applying "ideal treatment" of washing it out, inserting drains, and employing antiseptics which are injurious to the delicate granulation tissue. If the fistula is neglected properly, the undisturbed granulation tissue will be quickly replaced by connective tissue and the connective tissue will contract and close the opening.

*After-Treatment.*—In the after-treatment of these cases of appendicitis with widespread infection I have not dared to try different postural methods which are known to be valuable, as my results have been so satisfactory with the old recumbent position. The Ochsner starvation treatment I have adopted and applied with great satisfaction, except that I prefer to do a three-minute operation promptly in the class of cases in which Ochsner would not operate until later. Murphy's method of slow instillation of saline solution into the rectum I had applied in principle with the Quimby bag for some time before Murphy described the method and presented the profession with a perfected apparatus for its application.

The refinements offered by quick work, short period of anesthesia, as little surgery as possible, avoidance of flushing, wiping, packing and the use of extensive drainage apparatus, meet with such response on the part of patients that no surgeon accustomed to the classical régime could fail to note the advantages of the methods which I have chosen. Patients so dazed by infection

that they do not recognize the surgeon at the time of his examination may often be found reading the newspaper in bed the day after the operation.

#### SCIENTIFIC NEGLECT.

The treatment which is advocated in this paper may almost be classified as a treatment of neglect. Our highly developed art was not satisfactory when applied to cases of appendicitis with pus and peritonitis. There was a lack of harmony between art and appendicitis. For example, in 1904 Dr. L. W. Hotchkiss<sup>1</sup> published a report from one of the hospitals with which he was connected, showing that from 1895 to 1898 the operative mortality rate in cases of appendicitis with peritonitis was 30 per cent. In 1899 Dr. Hotchkiss changed from the accepted methods of the day and turned to methods which conserved the natural resistance of the patient. He did not have a single death in his next seventy-two cases, although they were of the same class as those which had given 30 per cent. death rate under conventional art, and in which 30 per cent. death rate is common over the whole world to-day. In the year when Dr. Hotchkiss changed his methods, Chauvel<sup>2</sup> made a report on the treatment of appendicitis in the French army for three years. There were 171 cases; 83 were treated medically and 88 surgically. Medical treatment had a mortality of 4 per cent. among those treated before the fourth day, 37.8 per cent. among those treated from the fourth to the eleventh day, and over 50 per cent. for those whose affection was not recognized and treated until after the eleventh day. Surgical treatment had a mortality of 42 per cent. among those operated on in the first five days, and 30 per cent. in operations from the fifth to the tenth day. France represents the highest kind of art, and I therefore make this quotation from that country, although nearly all the European countries showed equally disastrous results from attempting to apply the art of the day to the particularly trying class of cases of appendicitis with pus and peritonitis. It has resulted in turning our faces toward a new era in surgery in general.

Twelve years ago, when I reported on a series of 100 consecutive unselected appendicitis operations, with a death rate of 2 per cent., Dr. Keen publicly protested at Denver against the acceptance of such a report, and Dr. Savidge wrote to the *Medical Record*, saying that it must mean selection of cases for report. Since that time so many other surgeons have presented still better statistics that to-day I may perhaps present for purposes of illustrating the theory a report on my last 100 appendicitis operations at the Post-Graduate Hospital, dating from the last patient out of bed on May 1. There were forty-one cases of appendicitis in all stages of acute attack, with no deaths. There were fifty-nine cases of chronic appendicitis of various sorts, with one death. This death was due to ileus caused by faulty readhesion. There are no hernias in the series so far as I know. No patient was refused operation.

#### CONGESTIVE APPENDICITIS.

Congestive appendicitis occurs with loose kidney and in various conditions causing general obstruction to the lymph and blood circulation of the abdominal viscera. In these cases the swelling develops slowly. There is time for adaptation of the tissues of the tight outer

1. *Med. News*, July 2, 1904.

2. *Bull. de l'Acad. de Méd.*, January, 1899.



coats to the swelling tissues of the soft inner coats, and the result is very different from that in which rapid swelling leads to compression anemia. There seems to be no further result than a rather tense and tender appendix, which is amply protected, and which does not have a tendency to go over into the infective appendicitis class, so far as my observation counts.

#### APPENDICITIS BY EXTERNAL INVASION.

A fourth separate class of appendicitis cases may perhaps be made up from those in which the infection approaches from without. Tuberculosis of the peritoneum, and various infections from the oviduct, frequently involve the appendix incidentally, attacking the outer coats first. The inner coats swell, and may even undergo destruction, but the process is so slow that we do not look for the mishaps accompanying rapid swelling of the inner coats to the point of compression anemia. The gradual approach of infection from without calls out protective factors which take charge of the field and seem to prevent the occurrence of infective appendicitis, as that term is commonly understood.

#### THE FOURTH, OR PHYSIOLOGIC, ERA IN SURGERY.

It seems to me that the object lesson of the results of conserving the patient's natural resistance, in cases of appendicitis with peritonitis, has opened the vista of a new epoch in surgery.

In the days of Hippocrates surgery was heroic. That represents the first era. Then came Andreas Vesalius and the anatomists, and we had the second or anatomic era in surgery. Pasteur and Lister introduced the third, or pathologic, era. The pathologic era is the one now prevailing the world over. The dominant idea is to prevent the development of bacteria in wounds and to remove the products of infection by means of our art.

Appendicitis has been so refractory in response to the perfection of the art of the pathologic era that when the rubber glove appeared, representing the last degree of refinement of the art, it seemed to have overset the whole system. The use of the rubber glove necessitates comparatively slow work, the employment of long incisions and work by sight. Geologists tell us that the constant accumulation of snow and ice at the antarctic pole may cause a sudden changing of the axis of rotation of the earth. The rubber glove was the last snowstorm of the pathologic era of surgery, and the sun is now to shine on what is perhaps the most fertile area ever exposed to light.

Our faces are now turned toward Metchnikoff and Wright, with their descriptions of phagocytes and opsonins, and of the natural protective forces of the patient. We are at the dawn of the fourth, or physiologic, era in surgery. We are to conserve the natural resistance of the patient and to turn him over to his phagocytes and opsonins as helpfully as we can. We are to leave the patient in his best condition for manufacturing phagocytes and opsonins, through the shortest possible method of anesthesia and the least degree of surgery which will suffice to turn the tide of battle between bacterium and leucocyte.

That is the new principle—turning the tide of battle only and leaving the patient with his physiology as nearly intact as possible. The first object lesson in support of the new idea was perhaps furnished by the physician who did not believe in operations for appendicitis, and whose patients sometimes recovered, even

though they had pus in the peritoneal cavity. These cases required explanation, and we now have the explanation. The patient attended to the bacteria and to the products of infection. Our surgery of the pathologic era had a tendency to damage the patient to such an extent that he could not destroy his own bacteria and products of infection. The object lesson furnished by the patients of the physicians who did not believe in operating for appendicitis, and the object lesson furnished by the results of operations which neglect the details of the art of the pathologic era, are lessons sufficient for a basis of the coming art of the physiologic era in surgery.

616 Madison Avenue.

#### DISCUSSION.

DR. A. J. OCHSNER, Chicago: At the present time there is no longer any difference of opinion regarding the treatment of patients suffering from appendicitis belonging to three of the four forms described by Dr. Morris, thanks largely to the splendid work done by Morris, Murphy and many other members of the American Medical Association.

The class in regard to which there is still a difference is limited to cases of severe acute appendicitis complicated with peritonitis; cases in which the infection has extended beyond the tissues of the appendix, coming under treatment two days or more after the beginning of the attack.

Eight years ago I published the following conclusions after testing them carefully for a period of eight years. This form of treatment has been used by myself and many others in thousands of cases belonging to this class with the result of reducing the mortality in this most fatal form of appendicitis to less than 2 per cent. by changing an extremely dangerous acute into a comparatively safe interval condition:

1. Patients suffering from chronic recurrent appendicitis should be operated on during the interval.
2. Patients suffering from acute appendicitis should be operated on as soon as the diagnosis is made, provided they come under treatment while the infectious material is still confined to the appendix, if a competent surgeon is available.
3. Aside from insuring a low mortality, this will prevent all serious complications.
4. In all cases of acute appendicitis, without regard to the treatment contemplated, the administration of food and cathartics by mouth should be absolutely prohibited and large enemata should never be given.
5. In case of nausea or vomiting, or gaseous distention of the abdomen, gastric lavage should be employed.
6. In cases coming under treatment after the infection has extended beyond the tissues of the appendix, especially in the presence of incipient diffuse peritonitis. Conclusions 4 and 5 should always be employed until the patient's condition makes operative interference safe.
7. In case no operation is performed neither nourishment nor cathartics should be given by mouth until the patient has been free from pain and otherwise normal for at least four days. The same practice should be followed after operation.
- During the beginning of this treatment not even water should be given by mouth, the thirst being quenched by rinsing the mouth with cold water and by the use of small enemata. Later small sips of very hot water frequently repeated may be given, and still later small sips of cold water. There is danger in giving water too freely, and great danger in the use of large enemata.
9. All practitioners of medicine and surgery, as well as the general public, should be impressed with the importance of prohibiting the use of cathartics and food by mouth, as well as the use of large enemata, in cases of acute appendicitis.
10. It should be constantly borne in mind that even the slightest amount of liquid food of any kind given by mouth may give rise to dangerous peristalsis.
11. The most convenient form of rectal feeding consists in the use of one ounce of one of the various concentrated liquid



redigested foods in the market, dissolved in three ounces of warm normal salt solution, introduced slowly through a soft catheter, inserted into the rectum a distance of two or three inches.

12. This form of treatment can not supplant the operative treatment of acute appendicitis, but it can and should be used to reduce the mortality by changing the class of cases in which the mortality is greatest into another class in which the mortality is very small after operation. This applies particularly to severe acute perforative or gangrenous appendicitis more than thirty-six or forty-eight hours after the beginning of the acute attack.

To Conclusion 8 we now regularly add the excellent method introduced by Dr. Murphy of administering a continuous enema of normal salt solution with an apparatus which permits the flow of only a drop at a time so that it will require at least one hour to introduce 1,000 c.c.

The plan is simply this: In acute appendicitis neither food nor cathartics of any kind whatsoever should be given by mouth nor large enemata except by the drop method and operation should be performed only when the patient has attained a condition in which the surgeon can reasonably expect a favorable result, judging from his personal observation in previous similar cases.

DR. ALEXANDER HUGH FERGUSON, Chicago: In my opinion, it is a dangerous thing to teach that the incision must be a very small one. What is a small incision for one surgeon is not, for physical reasons, a small one for another surgeon. What is a proper-sized incision for the deliverance of the appendix in the hands of one man is dangerous in the hands of another. The incision, therefore, must be of the length necessary to delivery of an infected appendix without rupturing or tearing it.

I can not get over the idea of holding off operation in infected cases. Dealing first with the infected mass is, in my judgment, necessary and must be done with the greatest amount of care. I can not restrain myself from doing something for every case of appendicitis that presents itself to me, irrespective of the number of days it has existed. We can not judge by hours or days of the pathologic condition. In the apparently moribund patients, say between the third and fourth day of the disease or later, I feel like doing something more than washing out the stomach and rectum. I think that at that very stage, when we know that there is pus in that region, demonstrated by the signs and symptoms manifested by the patient, a minimum amount of surgery under local anesthesia should be practiced. Make a very small incision and drain. In other words, create a line of least resistance outward. I believe, however, that many patients have been lost because of the surgeon doing a major operation at that very dangerous time. How many of these patients now die when left to medical treatment alone is a pertinent question.

DR. D. N. EISENDRATH, Chicago: There is one feature of this subject that I wish discussed more fully. It is one which interests particularly the surgeon who is obliged to operate in cases of general peritonitis which the medical man has tried in vain for two or three days to treat by palliative measures. Many of these patients are brought to the surgeon when the abdomen is enormously distended on account of septic paralysis of the intestine, when the pulse is 130 to 160 and the patient is thoroughly septic. The time to bring the patient to the surgeon is in the first twenty-four or forty-eight hours, before there is much toxemia or a great degree of infection. We have learned to leave these advanced cases alone and try to tide the patient over the attack. We elevate the head of the bed, place the patient on starvation treatment and wait until such time as the appendix can be taken out safely in the interval.

During the past nine years Drs. McArthur, Greensfelder and myself have treated thirty-four patients with general peritonitis, and of these we have been able to save 21, or 60 per cent. This includes not only cases brought in during the first day or two of the attack, but on the fourth or fifth day. My own personal statistics based on work done during the past three years are that I have been able to save eleven out

of twelve patients. This has been accomplished by following the dicta Dr. Murphy laid down so clearly: by a rapid technic and leaving good drainage in the wound. Of much importance is the after-treatment. We must learn to leave these patients alone and not meddle too much in the after-treatment. Patients should not be filled up with fluid by mouth. We lost two patients, one my twelfth case, through giving large quantities of fluid by mouth. The result was an acute dilatation of the stomach, and all efforts to give relief failed.

Other points of importance are the use of the continuous salt solution by the drop enema method, first advocated in this country by Dr. Murphy, and the use of the Fowler position. One should be constantly on the watch to detect secondary abscess between the coils of intestine or a subphrenic abscess.

DR. CARL BECK, New York: If this country had done nothing else than to elucidate this obscure question, it would have done enough for the whole world. Germany, recognizing what America has done, accepts American views. Two years ago a discussion on this subject was held in Berlin before the local medical society. I was invited to take part and was very much pleased to see in use the methods advocated in this country, but the Germans forgot that it was this great country which brought out these ideas. I congratulated the members of the society that they had become so much Americanized, and I am the only American who ever said so to the members of the Berlin Medical Society.

Regarding the care of the appendix, from my own surgical experience, I can say that anything necrotic serves as a place for bacteria to settle.

DR. WILLIAM L. RODMAN, Philadelphia: One hesitates in entering on a discussion of appendicitis in Chicago, because so much or, I almost said, nearly all the good work in this particular line is being done in Chicago in the last few years. In 1901 I saw a great deal of work done by Dr. Ochsner. It was a revelation to me, and when I heard his epoch-making Chairman's address at St. Paul a little later I returned to Philadelphia determined to put into practice the safe, sound and sane doctrine which I had heard. I was severely criticised in several hospitals for pursuing what I believed from Ochsner's teachings to be a masterly inactivity in cases in which I had been tempted to operate before. It was with some trepidation that I looked for a good result in several instances, knowing that I would be criticised for not operating in such cases the moment I saw them, but I have never yet felt that I regretted following Ochsner's teachings. I believe that he has done more to straighten out this knotty question of when to operate than any one else who has ever lived.

As for the way to operate and the details of operative procedures and technic, of course, Murphy has swept the floor clean; he has left nothing for anybody else to say. I believe that all of us are getting results in operations for appendicitis today that would not have been possible but for the teaching of these men, because they have looked far ahead of their time and they have been the cause of saving thousands and thousands of lives by discouraging premature, foolhardy operations. As to the technic in operations, I believe in ligation of the stump, provided it is covered with the subperitoneal coat, and at the same time the meso-appendix is brought up and placed as a cap over the appendix so as to prevent any possible infection of the cavity. It is a safer procedure than the mere purse-string method.

DR. J. H. STEALY, Freeport, Ill.: I fear that two points mentioned will be misunderstood. 1. Leucocytosis does not amount to much in appendicitis. In the first stage it is very important, but many times I have found a leucocytosis of 8,000 or 9,000 and at the operation I found an ounce or two of pus in an abscess cavity. Drainage is valuable in such cases, as in many others, but the secret of drainage, in my opinion, is to know how to handle the drainage after it is once put there. I have operated on a number of patients throughout the country who were left for the practitioners to look after. If there was not much discharge at the end of the second or third day, the practitioners have removed the drainage. As a result, Nature's protecting wall has been torn up, permitting



extension of infection, and within twenty-four hours there was a general peritonitis and the patient died.

DR. C. C. ROGER, Chicago: In cases of fibrous appendicitis, when the nerves of the appendix are caught in the fibrous tissue, causing almost constant pain—a condition I have described as neuroma of the appendix—if there is no improvement under medical treatment, the appendix should be removed. What is found on entering the abdominal cavity is simply a hard, white cord, which looks as though its removal were almost useless, but the patient will be cured if it is taken off.

I admit that a leucocyte count does not amount to much. Some of my worst cases of gangrene of the appendix had only 5,000 leucocytes. That is not the rule, however; usually in such cases there is a high leucocyte count. If the patient is overcome with toxins, the leucocytes are low. Make a differential count and if you find over 80 per cent. of polymuclear cells operate; if there are 5,000 leucocytes with 98 per cent. of polymorphonuclears the case is an operative one; death is imminent and you must operate at once. The leucocyte count, then, is not of much value, but the differential count is of great value. The incision should be short. The appendix can be removed through an incision sufficiently large to introduce the index finger, provided the appendix is not bound down. The incision should be made wherever the appendix is. McBurney's point means nothing, because the appendix may be any place in the abdominal cavity. The point is to make the incision so you can get at the appendix. The time to operate is at sight in the majority of cases. To wait forty-eight hours is nonsense. Suppurative cases should always be drained, but too much drainage is bad and too little is just as bad. The drain is useless if it is removed inside of twenty-four hours. Leave it in place until it becomes slimy and the exudates push it loose (forty-eight to seventy-two hours). The drainage can be removed at the proper time without danger to the patient.

DR. H. J. BURWASH, Chicago: In the postoperative treatment of those cases of diffuse suppurative appendicitis in which there is a liability to obstruction of the bowel I have used with success enemata of oxygen gas. This is introduced early and before marked signs of obstruction present themselves. The gas is allowed to run slowly into the bowel for five or six minutes hourly. It has the immediate effect of neutralizing noxious gases in the intestinal canal, the therapeutic effects of oxygen on the general circulation, and the mechanical effect of preventing adhesions and hence obstructing by keeping the bowels inflated. This does not, I imagine, exclude the treatment advocated by Dr. Murphy.

DR. H. A. ROYSTER, Raleigh, N. C.: The general practitioner, with whom I come in daily contact, would like to understand two things about the so-called Ochsner treatment. The first is that any treatment intended to tide the patient over a dangerous period does not mean that operation must be abandoned, but that the patient is being prepared for operation. I believe that the Ochsner treatment is the greatest single advance in the treatment of appendicitis, but it is also the most misunderstood method in America to-day. I am sure that nearly every practitioner thinks it is a substitute for operation and not a preparation for it. In other words, if he begins the treatment of a case of appendicitis according to the Ochsner method, he will keep it up, no matter what happens, and, when the patient gets over the attack, rejoices in a cure without operation. If the patient dies, it was God's will.

The second point is whether pus is ever absorbed in the abdominal cavity without killing the patient. I have never understood exactly the teaching on that question. This matter must come up in the minds of the general practitioner, especially when he has a patient with a ruptured appendix, pus in the peritoneum, and the case goes along without operation under the so-called Ochsner treatment. I think that it is the duty of those who see the general practitioners when they bring these cases to let them understand that Dr. Ochsner, as well as every other good surgeon, believes always in operating early for appendicitis, but never when it is unsafe.

DR. CHARLES E. THOMSON, Scranton, Pa.: I am sure that Dr. Ochsner would blush for his treatment if he knew how it was being carried out in the country districts. What does it mean to the general country practitioner? It means: Do not operate in appendicitis, and it means nothing else. Many of those practitioners have always been opposed to surgery, and now they assert that a great surgeon in Chicago is saving nearly all his cases by not operating on them. I admire Dr. Ochsner, but I think that his theory and principles have been misunderstood, and have thus been the cause of filling many untimely graves. I believe that with the Murphy treatment we can save practically all those neglected cases to which Dr. Ochsner applies his treatment, and that the sooner the non-operative and time-limit theories be eliminated in the treatment of appendicitis the better.

DR. JOHN B. MURPHY, Chicago: It is approximately two years since this subject came before the American medical profession for discussion. We have agreed on the diagnosis, the time to operate and the limitations of this procedure. Limitations are essential to ultimate success. One must do the least thing, give the least trauma and finish in the least possible time consistent with doing the thing well.

Dr. Ochsner brought out, probably before any one else, the recognition of the time when it was dangerous to do work in the peritoneal cavity, because the patient had been neglected in the beginning and allowed to get to a position in which he was loaded to the maximum of his vital resistance by intoxication and infection. A painful mortality has brought recognition of the fact that there are cases in which a little additional work means a fatal termination; that trauma in the peritoneum is one of the most dangerous types of trauma. I am convinced that it is not yet safe to let the order go out that the simple ligation of the appendix, without any further protection of the stump, is ample. I feel that we should give an additional protection to that stump other than mere ligation in the acute infected cases. These are the cases in which we are most likely to have leakage when we simply tie the stump and cut it off. In the intermediate cases, in which I have no infiltration, no reaction to inflammation at the time, I treat it by clamping, by tying a ligature in the crease, and then by taking an overstitch so that there is no raw or abraded surface at that point to become adherent, and it will not become adherent. In the active cases I ligate and then put in a drain.

Appendicitis in pregnancy has a colossal mortality, something like 60 per cent. mortality to the mother and about 90 per cent. mortality to the child. I have been endeavoring to estimate the best time to act. In all the cases that come under my observation, in which the patient has had attacks of appendicitis, I insist on an operation before there is another attack and at the earliest time after impregnation. I think that that will give us the best results.

As to the management of peritonitis, we have up to this date had forty-three cases of perforation of the appendix into the free peritoneal cavity with general diffuse, spreading peritonitis. Among these forty-three cases we had forty-one recoveries. One patient died of pneumonia six days afterward and another died of intestinal obstruction under my own eyes four days afterward with gangrene of six inches of bowel. In the cases with recovery there was much creamy pus around the abscess. This creamy pus, Nature's means of defence, is loaded with scavenger leucocytes; it is producing a circumscribed inflammation of the peritoneum. That means resistance. In the other varieties of peritonitis and perforation not associated with appendicitis, we have had all together nine cases, making a total of fifty-two cases. Five of these were diffuse with perforation and recovery.

There is pus and pus. Dr. Morris does not mean that the pus of the appendix that has ruptured into the free peritoneal cavity could be cared for without interference, because then we would not need any operations. He means that pus of the staphylococcus, the colon bacillus, or the streptococcus type—and these are the three principal types of pus in the peritoneal cavity—does not, without the element of tension, produce a



atal absorption in any place in the body. He means that the defensive forces of the body are not fully appreciated.

The elements of treatment consist of, 1, closing the opening; 2, relieving the pus tension by putting in a drain; 3, letting out of the peritoneal cavity and leaving in the drain to prevent subsequent tension—no flushing, no washing, no sponging, no trauma. In following out that line of treatment we have not overburdened the patient at the time of the operation with the additional absorption of the products of infection; we have not killed him on the operating table, and these results gained in an experience of five and a half years shows what we can hope for in this disease. Salines are used in all our severer operations of every kind, whether abdominal or not.

DR. ROBERT T. MORRIS, New York: I adopt the Ochsner starvation treatment in principle, but prefer to do a three to five minute operation on a patient when I can; then leave him to his opsonins and phagocytes. The Ochsner treatment is one of the greatest points ever made in the history of appendicitis. The Ochsner treatment as comprehended by the average physician of New York is damnable. We are now arriving at the era of physiologic surgery, of leaving something for the patient's phagocytes and opsonins to do. If we leave this factory of the patient's in good condition, it can go on manufacturing these substances and cure him.

As to simple ligation, what is the difference whether the stump of the appendix lies against the parietal peritoneum or against the visceral peritoneum, the peritoneum of the meso-appendix, which is drawn up over it, or the peritoneum brought up on the stump by the infolding suture? In all these cases the stump lies against the peritoneum, and that is the essential thing if it is promptly walled in by a plastic exudate. We save time by the simple ligation, and time is the thing we must keep in mind in connection with this new principle, the new era in surgery. Dr. Ferguson is still afraid of pus in the peritoneal cavity. If we use gauze to wall off that area we are doing too much surgery. If we fill the patient with ganze, we are performing taxidermy on him. If we break down the adhesions, what will be the influence if we let a pint of pus into the free peritoneal cavity? That is an albuminous fluid, and it will furnish nourishment to the patient. You may kill him if you try to get it out. Let him get it out. He can do it better than we can. In cases of general peritonitis I believe in the three to five minute operation together with the Ochsner treatment. In the last 100 cases at the Post-Graduate Hospital, 100 consecutive cases of appendicitis, unselected, treated by the method of leaving the patient to his own opsonins and phagocytes, 41 acute cases of appendicitis and 59 interval and other cases, there was only one death. I might have presented other series of cases, but this one will suffice. I have operated on every appendicitis patient with peritonitis who was still breathing when I got to him.

**Treves Commends Panama Sanitation.**—Sir Frederick Treves, speaking on "Preventive Medicine at Panama," before the Royal Society of Medicine (Proceedings, June, 1908, p. 313), said: "I visited the Isthmus in February of last year and had the advantage of seeing this remarkable work under the guidance of Colonel Gorgas, the chief sanitary officer. To Colonel Gorgas is due the credit of an undertaking which in its aims and its results is not one whit less astonishing than the work of connecting by means of a canal the two great oceans of the world. Colonel Gorgas is clearing of disease one of the most pestilential spots in the tropics, and is making of the same a place where men can live in safety and in reasonable health. He is at the same time demonstrating practically the soundness and efficiency of the most recent claims of preventive medicine. . . . It will be seen, I hope, from the above brief description that the Isthmus of Panama provides at this moment an object lesson which those who control the destinies of men might study with advantage. It provides for the realization of a long contemplated and heroic ideal—the medical officer of health with a free hand."

## PROMINENT SYMPTOMS IN THE DIAGNOSIS OF GASTRIC AND DUODENAL ULCERS.\*

CHRISTOPHER GRAHAM, B.S., M.D.

ROCHESTER, MINN.

The accurate differentiation between duodenal ulcers and ulcers of the pyloric end of the stomach offers great difficulties. When a physician follows his patients from the examining room to the operating table he is forced to the conclusion that to locate a peptic ulcer is not only difficult but often impossible.

In reviewing the symptoms and diagnostic features of peptic ulcer I shall take the duodenal as the type. What holds good for duodenal ulcers, holds equally good for all ulcers situated in the pyloric end of the stomach. The chief difference arises from the degree in which the characteristic symptoms are manifest.

In this discussion I wish to emphasize but four points that seem to stand out prominently and clearly in the larger number of cases: First, the periodicity of attacks of gastric and duodenal ulcers. Second, the number of years through which these attacks and intermissions or remissions have run before surgical relief has been advised, or perhaps accepted. Third, the characteristics of pain, its great diagnostic significance and its place in differential diagnosis. Fourth, the ready control of all symptoms during the period of attack by the measures that control pain—as food, alkalies, irrigation, and vomiting.

### PERIODICITY.

The periodicity of attacks is so constant and striking a feature of ulcer of the stomach and duodenum that one can not but have in mind this lesion when the patient complains of repeated attacks, each covering days, with an intermission of normal health of varying time. The onset of symptoms is often initiated without discoverable cause, appearing suddenly and continuing without interruption for days, weeks, or even months, each day a repetition of the former, each meal producing about the same effect; first, ease—later followed by the usual syndrome of pain, or burning distress, gas, sour eructations and vomiting of sour mouthfuls of varying quantities, all these being at their worst from two to five hours after a meal.

Following this period of attack comes an intermission of days, weeks, or months, appearing, often, as unaccountably and as suddenly as did the distressing symptoms. These attacks recur at irregular intervals for years and continue for varying periods, increasing in intensity perhaps but slowly, the intermission shortening, until finally, the patient may fail to reach at any time that complete ease of previous years. Early in the period of disturbance and often for years, the interval is one of perfect health and, after the symptoms have disappeared, the patient soon reaches his normal condition. Yet again, it may be only a partial remission; the patient never quite attains normal, or his "good days" may be only days of moderate ease. The appetite is usually good until complications have changed the character of the symptoms, at which time it becomes necessary to examine carefully into the early history in order to arrive at a logical diagnosis.

These periods of complaint with the periods of intermission, each covering days or months, are so char-

\* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



acteristic, that, excluding other details, this one feature is often sufficient to warrant a probable diagnosis.

However, periodicity is not of itself peculiar to ulcers of the stomach and duodenum. The character of the attack must be considered carefully. Gallstone and appendiceal colics recur irregularly, often increase in severity as attacks multiply, may, and often do appear suddenly and without known cause. All three have one feature in common: each attack is but a part of the usual round of trouble, and the intermission is but a part of the cycle. In the latter case no more than in the former may this quiescent period be regarded as that of cure.

#### LENGTH OF TIME THE SYMPTOMS HAVE PERSISTED.

Scarcely less prominent than the periodicity of attacks is the number of years the illness has been manifest before surgical relief has been advised, or perhaps should be advised in many cases, for at first most of these cases are medical and the conservative surgeon does not lay bold hands on them.

However, as one's experience lengthens he is inclined to the belief that error is much oftener to be laid at the door of conservative surgery than at the door of aggressive surgery, and for this reason the sufferer too often fails to get that ready and early relief which is secured only through surgery. In a series of 258 duodenal cases, there are but few with histories of duration of less than one year, and in these the symptoms were clear and often urgent. Usually the history shows that the disease has run from 5 to 20 years and not infrequently to 30 and 45, the average being just short of 12 1/2 years. Considering the facts of the long series of years with distressing symptoms always promising increase, and as years go by, with invalidism increasing, marked or complete, it seems strange, not that so many patients are urged to seek surgical relief, but rather why surgical measures are not advised sooner, or at least as soon as complications appear which indicate that the medical border line has been passed.

In the series here mentioned, this history of repetition of attacks with intermissions or remissions, together with long years (average 12 1/2 years) of trouble has been clear cut in about 90 per cent. of the cases. This should quiet the most conservative internist who feels that surgery is too "freely and flippantly" advised.

#### SIGNIFICANCE OF PAIN.

Pain in gastric ulcer is the most constant symptom and perhaps the most characteristic in its manifestations. Not the kind of pain, not the location of the pain, but the time of the pain is the distinguishing feature. It varies from mild distress to that of great intensity, and, unless complications have introduced great modifications, its appearance, control and disappearance, are almost if not quite the final evidence required for a correct diagnosis. The pain appears sometime after meals; oftener it is as nearly exact to say before meals. Usually in from two to five hours after a hearty meal the burning, gnawing feeling begins, increasing in intensity until vomiting or irrigation has removed the acid-offending material. Food eases the pain, the heartier the meal the longer the relief. Especially is this true in the history of duodenal ulcer. Gradually, however, this relief lessens, until late in the history and after the patient has been long a "surgical case," food eases but little. When complications (per-

forations, adhesions, obstruction) are far advanced, food gives no ease and distress follows its ingestion. At this stage relief comes only after ridding the stomach of all offending material by irrigation or forced vomiting.

The pain comes, then, in definite periods of attack: comes daily, or two or three times a day, during this period: comes from two to five hours after meals and is therefore premeal as often as it is after-meal in time. It is epigastric, radiating seldom to other areas, and except in the later stages is relieved in part, at least, by food, drink, alkalies, vomiting and irrigation. The kind of pain depends on the pathologic condition. It may be burning, gnawing, lancinating, boring—cutting (apple-core sensation) or the felling pain of perforation.

Locating an ulcer of the peptic tract from the area of pain as given by the patient is perplexing and often very uncertain. Most of the pain is epigastric, let the lesion be where it may, but the lower the lesion, the oftener is the sensation of pain to the right of the median line, and some ulcers, especially the duodenal variety, give characteristic findings. The longer food gives comfort, other things being equal (as duration of time of disease, extent of trouble, obstruction, etc.) the farther down is the ulcer situated, so that in duodenal ulcer, especially in the early days of its history, food gives relief for a longer time than when the ulcer is located higher, i. e. in the stomach proper. Following this period of ease, the characteristic ulcer symptoms return, of gnawing, boring even to extreme pain, with gas, sour eructation, vomiting of various amounts and intensity, dependent on obstruction and extent of lesion.

There is, however, a pain of the cardia comparable to the boring of a bared apple core, very distressing, foreboding and sickening which may be present when the lesion is purely pyloric or duodenal, and is doubtless present at times when acidity is high but purely a functional disorder or due to dietetic error. This pain is brought about by reverse gastric peristalsis, acidity, ulcer, then spasm of the pylorus followed by reverse peristalsis. If the sufferer belches or vomits with difficulty the annoyance amounts to real pain, and fear of cancer is prominent. These pains come in wave periods of a few moments, and relief follows suddenly and completely at each wave if gas and sour eructation be copiously raised, or the pain gradually recedes to almost quiet, if belching, eructation or vomiting is impossible. These wave pains repeat until the stomach is relieved by measures that empty it, or they yield readily to sufficient alkalies.

It is seen, therefore, that difficulties arise, and that the most careful attempts at ulcer location fail, but until obstruction is advanced or the lesions large, the best evidence for ulcer localization is the length of time that food gives relief.

Most of the ulcers of the stomach and duodenum (and this is true independent of location) have a longer or shorter spell of relief from food, until late in the disease, at which time the early history is necessary both for diagnosis and localization of ulcer.

There are to-day clinicians who persist in the idea that if ulcer of the stomach is present, food gives immediate pain, or at any rate, no sense of comfort even for a short time. This is not true in the great majority of peptic ulcers, let the lesion be where it may.

The great number of ulcers are in the pyloric end, and in this region the symptoms are usually typical until complications arise. We then have to consider the



conditions that alter the character of the pain. They are: First, large areas (saddle ulcers); second, ulcers well toward the cardia; third, cases in which obstruction is advanced; fourth, hour-glass stomach; fifth, perforation; sixth, adhesions to the gall bladder or other organs when these adhesions cause obstruction, immobility, or deformity. In many of the above conditions the patient rarely has any perfect relief, and if there is a brief period of relief it is so soon followed by greatly exaggerated distress that the interval of ease is lost to most of them.

#### CONTROL OF SYMPTOMS.

All symptoms are usually controlled by the measures directed toward pain. When pain is at its highest, so also is gas, eructation and vomiting. By removing, neutralizing or engaging the acid in the process of digestion, the pain stops, gas no longer forms, vomiting and eructation cease and the patient enters a period of calm, to return to his former distress sometime later. The degree of discomfort depends on the extent of the lesion, the kind of food taken and the care in its mastication. Until complications (obstruction, perforation, adhesions) have advanced, the pain and other symptoms seem chiefly due to increased acidity and spasm. Reverse gastric peristalsis adds to the discomfort. Later, when complications enter for consideration, the real symptoms are obscured, and the physician is often obliged to grope in the dark for an exact diagnosis, unless the patient has a judicial mind and can relate accurately his earlier symptoms.

Again, the course of ulcer, like cancer, may be long latent, and be diagnosed only when some threatening symptom like perforation, suddenly prostrates the patient. If the perforation is not complete, or if only a small amount of septic material escapes, the pain may be of short duration, but intensely sharp and lancinating, simulating so closely gallstone colic that such diagnosis is the only logical one to make. If the perforation is free and the fluid septic or large in amount, the pain is much more intense than in gallstone colic. There is exceeding great shock, much morphin is required to control the symptoms, and early the appendiceal region will be the center of the pain. Later, if the patient survives, the pain will creep to the duodenum and gall-bladder area. Under such conditions one should think of perforating ulcer rather than gallstones or appendicitis.

When, therefore, there are attacks of stomach trouble that run in continuous periods of days or months, with intermissions of days, weeks, or months with more or less freedom from symptoms, these periods recurring and occurring over years of time gradually deepening, the symptoms bearing close relation to food and being controlled or modified greatly by dietetic measures, food, drink and alkalies, we may justly look for ulcer of the stomach or duodenum in a large number of cases.

Purely functional hyperacidity may give symptoms difficult or impossible to differentiate from early ulcer. Appendicitis and more often cholecystitis may run a train of symptoms that will mislead the most painstaking clinician, but these cases are as purely surgical as are typical ulcer cases. Comprehensive surgery finds the source of the trouble and relief is the result. If a mistake is made it should be that of diagnosis only.

#### DISCUSSION.

DR. WILLIAM J. MAYO, Rochester, Minn.: Acute ulcer is not of itself a surgical condition. It is only when such complications as perforation, hemorrhage, or obstruction occur that the physician should call the surgeon. In regard to chronic ulcerations, while the improvement between the attacks, which may last for days, weeks, months and even sometimes for years, is not by any means complete, it is sufficient to give the internist a wrong idea in regard to the cure of the patient, just as in the early days of appendicitis or gallstone disease. The surgeon considers chronic ulcers only those ulcers with thick callus which can be demonstrated to the bystander within a distance of six or eight feet from the operating table. As a result of operations it has been shown that chronic ulcers are more frequent in the duodenum than in the stomach, and that at least two patients out of three operated on are males. I do not believe that a large percentage of these patients with chronic ulceration will recover permanently under medical treatment. The preoperative stage depends largely on the length of time the patients are able to get along on a reduced selected diet; but among the laboring people one must face the conditions as they exist. The patient must not be cared for medically too long and made to live on insufficient food and ill-prepared food, such as his situation in life affords. Such a patient is disabled when living on a restricted diet, and can be restored to his full capacity for work only by enabling him to live on what he is able to pay for, and to do this operation is often necessary. In 187 resections for cancer of the stomach 54 per cent. of the cancers originated in ulcers. This does not mean, however, that most ulcers undergo cancerous degeneration. Cases with a long history of ulceration more often result in obstruction on the development of cancer than primary malignant disease of the same stage, and it is this early obstruction and not the cancer itself which sends the patient to the surgeon. Chronic ulcer existing over a period of years is, however, a grave menace to the patient because of the possibility of malignant disease grafting on ulcer base. Many people suffer severely from symptoms that may point to ulcer for which they have received no relief; these patients pass from one physician to another, to quacks and "patent-medicine" vendors. In a number of such cases one-half will be non-surgical and can be placed in three groups, namely, cases of atonic dilatation, cases of prolapse of the stomach and cases of gastric neurosis. In examining cases of atonic dilatation on the operating table one finds no obstruction and the wall of the stomach is quite flaccid. Apparently it has not sufficient power to push on the food. Atonic dilatations are not often benefited by surgery. In cases of prolapse of the stomach the *x*-ray plates look like works of art when bismuth is used to map the organ out. Such a prolapsed stomach, however, empties itself quickly; there are no mechanical conditions actually present. I do not know the definition of gastric neurosis. Some of those cases called neurotic years ago have since been relieved of gallstones, appendicitis, etc., and in the future more will be relieved. This "I do not know" group is a large one. The picture is that of a patient with gas, changing secretions, dyspepsia, indigestion, and the stomach will be found thin-walled, dilated, and the duodenum and pylorus dilated as well. It is said that many of these cases are due to pressure of the superior mesenteric vessels on the third portion of the duodenum; but this has not been found true on exploration; as a rule the jejunum and transverse colon are also dilated. At any rate they should not be subjected to operation. In the above series, one-half of all the stomach cases that come to us can be placed.

The remaining one-half of apparently serious gastric diseases belong to the surgeon. One-fifth are cases of gastric cancer; the internist has no business with them. One-fifth are cases of chronic ulcer, and the majority of these belong to the surgeon. Two-fifths are made up of a peculiar and most interesting group of cases in which ulcer has been suspected, but could not be demonstrated on exploration. Gastroenterostomy has occasionally been done and found to be harmful. Later these patients have been found to be suffering from gallstones or an inflamed appendix, tuberculosis or tumor of the



intestines, etc., giving rise to the stomach trouble. The embryology of the intestinal tract explains this; the maintenance of the body is a primitive function which existed before the development of the nervous system. The cerebrospinal system does not control the primitive function, which is still cared for by the internal secretions, etc., which cared for it before the nervous system developed. The acid in the pyloric end of the stomach controls the output from the stomach. The acidity in the duodenum is the more powerful and controls the opening and closing of the pylorus. The stomach in the storage end is a later evolution and a convenience, enabling its possessor to place rapidly a quantity of food into this receptacle for the slower process of digestion, but its control is vested in the parts to be convenienceed lying beyond the pylorus, which have the work to do, all derivatives of the midgut. Therefore the control of the pyloric apparatus lies not in the stomach itself, not in the cerebrospinal system, but in the intestinal tract lying beyond the pylorus and between it and the splenic flexure of the colon, which marks the beginning of the primitive hindgut. Therefore, gallstone disease, appendicitis, tumor and disease of the intestinal tract cause closure of the pylorus, and symptoms referable to the stomach arise which in our ignorance we have hitherto treated as diseases of the stomach. The cases comprised in the remaining fifth are surgical, but not fully worked out.

DR. FENTON B. TURCK, Chicago: In carrying out experimental research on dogs I have found it necessary to see the opened abdomen and the evidences of ulcer in order that I might know that the feces used in investigation were actually from an ulcer case. Therefore, the observations of the findings, in connection with the symptoms in these cases, have given me some idea of the existing relations and I have not yet found that the clinical symptomatology of the patient helps a great deal in diagnosis. I have seen a great many cases of ulcer of the stomach without any symptoms of pain whatsoever; I have seen cases of hypoacidity and cases of total absence of hydrochloric acid (achylia gastrica). Likewise in experimental animals with induced ulcer more frequently no evidence of pain can be elicited by pressure and there is frequently no increase of acid in the stomach—often a greatly diminished amount. In the patient the feces many times show no evidence of hemorrhage, no occult blood. These conditions I have found paralleled in the dog.

The general or systemic condition of the patient permitting ulceration to take place has not been presented sufficiently. I think that the emphasis placed on a local condition does not represent the true pathology of ulcer. Ulcer of the stomach is not found in those countries where the inhabitants eat rice. It is evidently a meat-eater's disease; the zone of ulcer is in the meat-eater's zone. Ulcer is not found among the natives of China, Japan or India, except in the seaports, which the foreigners have brought into the meat-eater's zone. Certain observations which I made with extract of meat and the colon bacillus to determine the etiology of ulcer were tabulated over a period of ten years. The attempts made on the local mucosa to produce ulcer were negative, while those made in the feeding experiments were positive. I was able to induce numerous ulcers in the duodenum at a point just beyond the pyloric region, and also in the stomach, with perforation and chronic ulceration. The question is, How does the ulcer become chronic? In the production of the acute ulcer I found the autolysis to be continuous and at times anaphylaxis, with no round-cell infiltration (chemotaxis); but in the making of the chronic form, by carefully adjusting the feeding experiments so as to bring about an alternate mild anaphylaxis and chemotaxis, I produced a condition resulting in the chronic ulcer.

DR. J. M. ALLEN, Liberty, Mo.: Seventy-two cases of ulcer of the duodenum are on record. In 1886 an article appeared in the *Kansas City Medical Journal*, in which were reported 86 cases of ulceration of the duodenum and one case of ulcer of the stomach. It is fair to assume that ulcerations in the duodenum can be controlled better than ulcerations in the stomach. By starvation the function of the duodenum can be arrested, but this will not arrest the function of the stomach. Besides, ulcers in the stomach do not come from the same

source as ulcers in the duodenum. Ulcers of the stomach depend on an embolus or thrombus of the gastric artery or on an arteriosclerosis; whereas ulcers of the duodenum originate in the results of the passage of acrid, irritating substances through the stomach. Anemia is a predisposing cause of peptic ulcer; so are exanthemata, or anything that causes an acute inflammation of the duodenum. Again, there exists a condition of acute inflammation of the duodenum which passes into the chronic form in which the inflammation passes to the duodenum through the common duct.

I believe that it is a mistake to recommend operation as soon as ulcer of the stomach is diagnosed. In ulcers of the duodenum up to the point that evidences of obstruction from the formation of new tissue or induration occurred, I do not recommend operation unless there is vomiting, especially vomiting of blood. If regurgitation from the stomach is present, then one can say that the ulceration is from one to one and a half inch from the stomach; if beyond this point, evidences will be found in the stools. Blood found in this way points directly to the necessity for operation without delay. So one can reach some conclusion regarding operation. The symptomatology of ulcer of the stomach and duodenum is quite clear. In 1872 investigations were made and a paper written in 1886 was based on clinical histories. A feature connected with this is of great importance, namely, the progressive emaciation always present, the cause of which is the failure to digest the elements necessary for fat and growth—the fats, carbohydrates and sugars. Pain begins two or three hours after the taking of food when the stomach begins to force the food out of it. I think that the duodenum is the great center, the brain as it were, of the abdominal cavity and is associated with a great many reflexes.

DR. BERTRAM W. SIPPY, Chicago: There is an apparent disparity in the statistics of Robitanski, Mayo, Moynihan and others, in regard to the relative frequency of ulcer of the duodenum. I believe that the disparity can be explained thus: Duodenal ulcer is relatively more severe than gastric. The danger of perforation and hemorrhage is greater and the symptoms are more striking and more severe; as a result these cases appear before the surgeon more frequently than do the cases of gastric ulcer, which heals under treatment, or under no treatment. The cases reported by these men include those described as fresh ulcers. It is possible that ulcers in the duodenum might be overlooked; but it is not necessary to assume that all are overlooked. The disparity between the statistics of the surgeons to-day is attributable to the fact that the duodenum is more in the domain of surgery than is the stomach.

In a given case the following should be considered: Is an ulcer present? What complications are present? Is it possible that there is malignant disease at the pylorus? Is there obstruction at the pylorus? Are there perigastric adhesions? Is the pylorus open? Is the gastric secretion present? Is the motility of the stomach interfered with? All these points should be determined in a given case. Then the possible location of the ulcer should be made out. An old ulcer would be indurated. After a careful analysis one should be able to make a diagnosis of the presence or absence of an ulcer and, if any complications exist, whether or not surgical treatment should be instituted. Surgery should be invoked when perforation is present, when a carcinoma is engrafted on the seat of an ulcer, or when medical means have failed to cure. When the motility of the stomach is disturbed by perigastric adhesions or by the hour-glass constriction, one must resort to operation; in certain cases of hemorrhage also. In 15 per cent. of the cases death occurs during the first hemorrhage. In 35 per cent. death occurs within twenty-four to thirty-six hours. Some patients could be saved by surgical interference. I advise against waiting.

DR. ELLIOTT P. JOSLIN, Boston: Dr. E. A. Codman recently published a paper in the *Boston Medical and Surgical Journal*, in which the possibility of the root of the mesentery pressing on the duodenum was discussed and considered as an etiologic factor in the production of gastric and duodenal ulcer. Dr. Codman's evidence was obtained by injections in the cadaver, observations at operation and clinical studies. In animals the



mesentery hangs vertically, so that there is no obstruction, but in human beings in the erect position the mesentery hangs along the spine and thus could easily compress the duodenum where it crosses it. Statistics on sex and age in gastric ulcer, I believe, should be modified. It is commonly considered that gastric ulcer occurs more frequently in women than in men, and particularly of women of the chlorotic type. During the past few years chlorosis has become a rather rare condition. Coincident with the diminution in cases of chlorosis it is a question whether there will not be a simultaneous disappearance in the disparity of the preponderance of gastric ulcer in the female sex.

DR. G. W. McCASKEY, Fort Wayne, Ind.: The point brought out by Dr. Graham as to the extreme chronicity of the disease should be recognized. I have seen in consultation a very severe case of hemorrhage which proved to come from a gastric ulcer, and in getting the history the fact was brought out that the first attack had occurred twenty-five years ago. During this interval of twenty-five years there had occurred six, eight or ten attacks. Another patient seen seven or eight years ago had a distinct palpable tumor, and the question arose whether it was a cancer or a central ulcer. The diagnosis was made of an ulcer. The patient is alive and well to-day. I am inclined to believe that we should attach some value to the time of the appearance of pain in making a differential diagnosis between gastric and duodenal ulcer. When food passes from the stomach into the duodenum, then pain was supposed to occur in cases of duodenal ulcer, and I attach much diagnostic importance to this point.

Dr. Mayo, in his discussion of acute gastric ulcer, spoke of hemorrhage as being an indication for surgical interference. I understand that surgical interference in cases of acute hemorrhage is a most hopeless proposition. The great difficulty is to find the bleeding point. The best treatment, in my opinion, would be rest, and not surgical interference. Carcinomatous degeneration of the ulcer, cancer, might attack these indurated ulcers and they should be excised whenever possible. Gastroenterostomy should not be done in these cases.

We should consider chronic ulcer of the stomach as serious as acute ulcer. A certain amount of healing takes place after the occurrence of the indurated scar tissue which is so characteristic of some of the cases. Nothing short of excision will cure them.

DR. JUDSON DALAND, Philadelphia: In chronic ulcer, the one requiring surgical interference, we are often deceived by an apparent recovery—an important point for the internist to consider. A few months ago I had a patient under my observation who presented symptoms of ulcer, but he apparently recovered. In spite of the fact that no symptoms existed, an operation was performed and an indurated ulcer found. There are many such cases of latent ulcer that call for surgical interference. I recall another patient who died from an initial hemorrhage. This case was looked after by a skilled specialist who thought the patient was cured of his ulcer, as there were but few dyspeptic symptoms. The patient was on his way around the world when he was suddenly taken with a hemorrhage and death quickly followed. At autopsy a gastric ulcer was found. The point that I wish to emphasize is that there are many cases of chronic gastric ulcer diagnosed as acute ulcer, the symptoms appearing for a brief time only, but the ulcer remaining for years.

DR. M. MILTON PORTIS, Chicago: The dangers of gastroenterostomy are so great that I believe that one should hesitate a long time before advising such an operation. Two years ago I published a paper in the *Annals of Surgery*, in which I had collected both the medical and surgical results following a gastroenterostomy. I had been stimulated to do this because of a few cases that fell under my observation. There is no doubt at all that serious dangers follow gastroenterostomy. Jejunal ulcers occur and severe diarrheas which lead to death. There are many other disturbances. Pawlow's and Starling's work throws much light on the disturbances noted. But the strictest indications must be present before one should resort to surgical interference. In case a medical man did not want to attend the case alone, let him call in the surgeon in consultation and thus reduce the danger.

DR. CHRISTOPHER GRAHAM, Rochester, Minn.: In differentiating between gastric and duodenal ulcer a good point is that in duodenal ulcer the food gives relief for a longer time. The degree of acidity, rather than the length of time the symptoms have been manifest, determines the severity of attack. The higher the acidity, other things equal, the greater the pain and the shorter the period of food relief.

## CLINICAL OBSERVATIONS ON ABSOLUTELY IRREGULAR HEARTS.\*

ALBION WALTER HEWLETT, M.D.

Assistant Professor of the Principles and Practice of Medicine,  
Cooper Medical College,  
SAN FRANCISCO.

The recent advances in our knowledge of the cardiac irregularities have enabled us to define their character and trace their inter-relationship with far more exactness than was ever possible before. The absolutely irregular heart,<sup>1</sup> in which all semblance to regularity has ceased to exist, is clinically the most important of the cardiac arrhythmias. It is less common, indeed, than are respiratory irregularities or extrasystoles; but it represents a far more serious condition, and James Mackenzie estimates that over 50 per cent. of all serious insufficiencies are associated with this irregularity. It is very important, therefore, that we should become acquainted with its characteristics, its clinical significance, and its relationships.

The distinguishing characteristics of the absolutely irregular heart will be discussed under three headings: (1) Absence of normal auricular contractions; (2) the irregularity itself, and (3) its permanency.

### ABSENCE OF NORMAL AURICULAR CONTRACTIONS.

This is by far the most important characteristic of the absolutely irregular heart and one that denotes a fundamental change in the heart's activities. Our clinical evidences of auricular contractions, according to Mackenzie,<sup>2</sup> consist of (a) an auricular wave in the apex tracing just preceding the ventricular wave, (b) an auricular wave on the jugular and liver pulsations, and (c) the presystolic accentuation of the murmur of mitral or tricuspid stenosis. To these might be added (d) the presence of an auricular wave on the cardiogram obtained from within the esophagus,<sup>3</sup> and (e) the auricular wave on the electrocardiogram.<sup>4</sup> By none of these methods of examination has it been possible to demonstrate that the auricles contract before the ventricles in absolutely irregular hearts. Mackenzie was the first to insist on this fundamental fact. It is probably to be interpreted as a total auricular paralysis or at least as an auricular asthenia of such a grade that the contractions of this chamber are no longer demonstrable.<sup>5</sup>

*The Venous Pulse in Absolute Irregularity.*—In the normal tracing taken over the jugular vein the so-called

\* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. This irregularity has been variously designated as the ventricular rhythm, nodal rhythm, rhythm of auricular paralysis, rhythm of the first Stannius ligature, perpetually irregular rhythm, etc.

2. Mackenzie, J.: *Abnormal Inception of the Cardiac Rhythm*, *Quar. Jour. of Med.*, i, 39.

3. Young and Hewlett: *The Normal Pulsations within the Esophagus*, *Jour. of Med. Research*, xvi, 427.

4. Kraus and Nicolai: *Ueber das Elektrokardiogramm unter normalen und pathologischen Verhältnissen*, *Berl. klin. Wochenschr.*, 1907, 811.

5. Hewlett: *The Interpretation of the Positive Venous Pulse*, *Jour. of Med. Research*, xvii, 119.



*c* wave, which corresponds in time with the carotid pulse, is preceded by an *a* wave due to the contraction of the auricle (Fig. 1). In similar tracings taken from patients with absolute irregularity the *a* wave is absent and the tracing rises abruptly without any preceding auricular wave (Fig. 2). It is now generally conceded that the first wave on such abnormal tracings, though corresponding in time with the carotid pulse, is not due to a transmitted arterial pulse, but is sent back into the vein from the heart.

I believe that this *p* wave<sup>6</sup> is due to the beginning of ventricular contraction. It can be demonstrated in tracings taken directly over the normally acting auricle, either internally from the esophagus<sup>7</sup> or externally when the bony chest wall is deficient.<sup>7</sup> In normal jugular tracings this wave is greatly diminished or absent because it is taken up by the diastole of the auricle; but when the auricular systole is absent, it is transmitted back through the filled auricle and becomes a marked feature of the venous pulse.

Maekenzie believes that this wave is due to a contraction of the auricle simultaneous with that of the ventricle. It seems to me, however, that such an interpretation is unnecessary. When the auricle is known to contract simultaneously with the ventricle, as is the case in certain extrasystoles, the succeeding *r* wave is taken up by the dilating auricle and is diminished in size.<sup>5</sup>

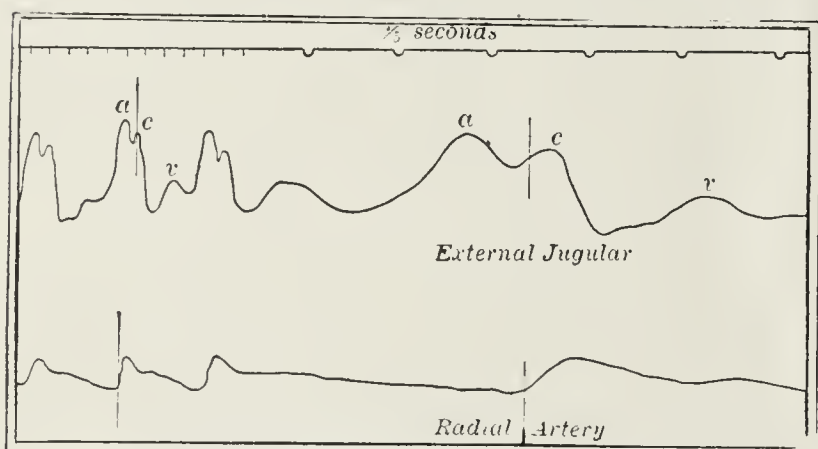


Fig. 1.—Normal venous pulse, showing the *a* wave preceding the *c* wave.

Such is not the case in absolute irregularity; but, on the contrary, the *r* wave is nearly always of unusual height. For this reason, especially, I believe that we are dealing here with a condition in which the auricle is motionless, or at least so nearly so that it does not affect the venous pulse.

A fourth venous wave, which occurs normally in late diastole, has been described by Hirschfelder, Gibson and others. A similar wave is occasionally very pronounced in cases of absolute irregularity. In some instances it seems to precede the next ventricular systole, and it might there be mistaken for an auricular wave. But, as a rule, it bears a constant time relation to the preceding ventricular systole so that it may be said to follow that rather than precede the next contraction.

**Mitral Stenosis Murmurs in Absolute Irregularity.**—Mackenzie has called attention to the remarkable change that takes place in the murmur of mitral stenosis when the heart assumes an absolutely irregular rhythm. The characteristic presystolic accentuation heard ordinarily is caused by the contraction of the auricle which in-

creases the rate of blood flow through the constricted mitral orifice just previous to ventricular systole. When such a patient develops an absolutely irregular rhythm the mitral stenosis murmur may disappear entirely. If it persists it loses its presystolic accentuation. For the past two years I have paid particular attention to mitral stenosis murmurs in patients with absolute irregularity, and I have never heard a presystolic accentuation under these circumstances. The change from the normal was particularly striking in the case of a patient who suffered from mitral stenosis with short paroxysms of irregularity. Ordinarily her heart was perfectly regular, and at such times her venous pulse was of the normal type (Fig. 3) and the murmur typically presystolic. From time to time, however, she suffered from short paroxysms of complete irregularity (Fig 4), during which her murmur lost its presystolic accentuation and

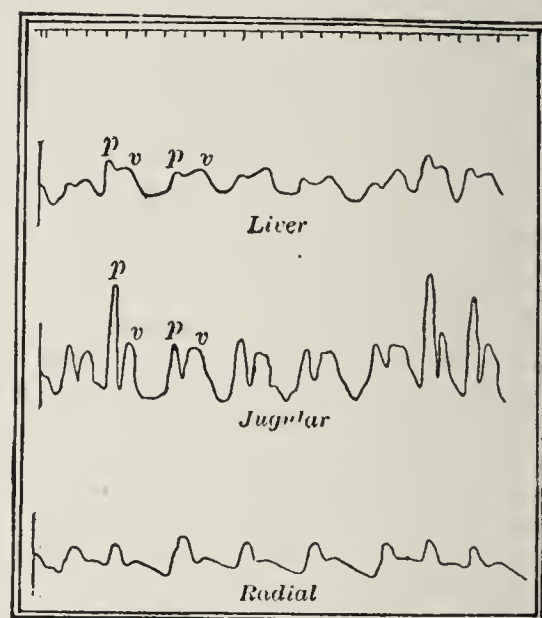


Fig. 2.—Venous and liver pulses of absolute irregularity, showing the absence of auricular waves.

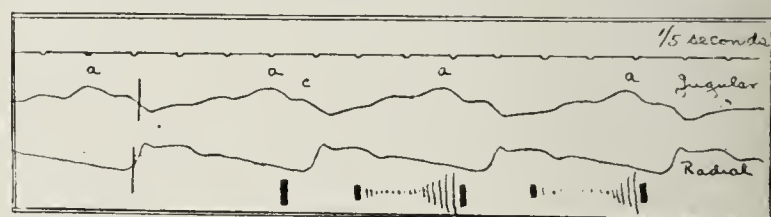


Fig. 3.—Normal type of venous pulse observed between the paroxysms of irregularity. The shading indicates the intensity of the mitral stenosis murmur. Figure reduced one-half.

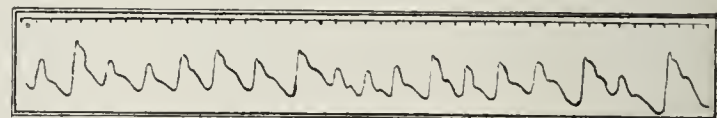


Fig. 4.—Radial tracing during the paroxysm of irregularity. Figure reduced one-half.

her venous pulse became of the type ordinarily met with in absolute permanent irregularity (Fig. 5).

The absence of the presystolic accentuation of the murmur of mitral stenosis during absolute irregularity is a matter of decided diagnostic importance. Physicians should recognize the fact that a typical murmur at such a time is not to be expected. I could cite several case histories in which a mistake might have been avoided had this fact been kept in mind. In such patients the murmur, if present, is often heard throughout diastole. Frequently it has an early diastolic accentuation owing to the more rapid flow of blood through the narrowed orifice during the earlier and more rapid part of ventricular dilatation.

6. Mackenzie's *a'* wave. A similar wave on the normal venous pulse has been called the *s* wave by Bard, the *k* wave by H. E. Hering, and the *b* wave by Piersol.

7. Erlanger: *Cardiograms Obtained from a Case of Operative Defect in the Chest Wall*, Johns Hopkins Hosp. Bull., xvi, 394.



## CHARACTER OF THE IRREGULARITY.

In typical cases of absolute irregularity the heart action is totally devoid of any semblance to regularity, a so-called *delirium cordis*. No two waves are of the same duration; rapid beats are followed by longer ones, and these in turn by a bewildering succession of pulse waves of varying duration and intensity. On auscultation over the heart the rhythm is often even more confused, for many of the shorter systoles produce no palpable radial pulses nor even second aortic sounds. Frequently we remark on the discrepancy between the number of heart beats and of pulse beats. The term *delirium cordis* expresses the extreme lack of rhythm. In other patients, however, the heart is comparatively slow, especially after compensation has been somewhat restored. I have seen it fifty-five per minute. The pulse is then fairly regular and every heart beat reaches the wrist. It may even, as in one of my cases, be perfectly regular for a time, though showing an absence of the *a* wave on the jugular pulse. Under these circumstances, however, the regularity is only transient and any light strain leads to a more or less definite *delirium*.

## PERMANENCY.

The absolutely irregular rhythm is one of the most persistent arrhythmias. When once well established, it

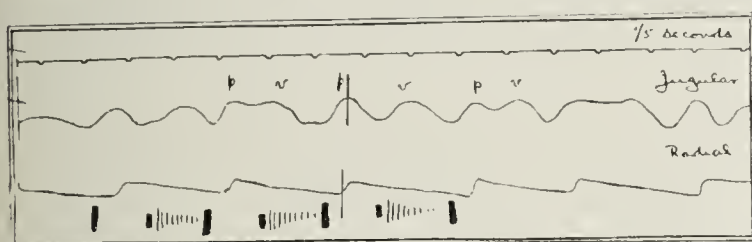


Fig. 5.—Venous pulse during the paroxysms of irregularity, showing an absence of the auricular waves. The shading indicates the intensity of the mitral stenosis murmur. Figure reduced one-half.

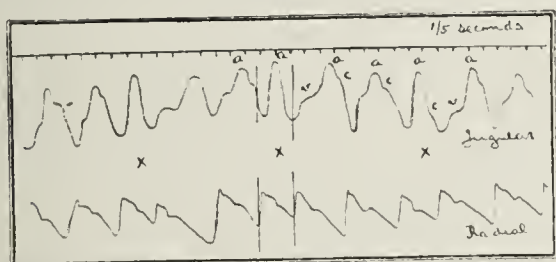


Fig. 6.—Venous pulse on the day following a paroxysm of irregularity, showing the frequent occurrence of auricular extrasystoles. Figure reduced one-half.

usually continues uninterruptedly until the death of the patient. As we have seen, the irregularity varies in degree from time to time and may be diminished by proper treatment. It may even merge into regularity for a while, but qualitatively it remains the same. The evidences of auricular contraction rarely return and slight strain is followed by a more or less marked *delirium*. The main exceptions to this characteristic permanency are the rather uncommon cases of paroxysmal irregularity, which will be discussed later.

## ANALYSIS OF CASES.

**Etiology.**—This analysis is based on the histories of thirty patients who gave the typical tracings of absolute irregularity with absence of auricular contractions. The notes of these cases were often incomplete because many were seen only on account of the arrhythmia. Of twenty-four in whom the age was given, only five were under 40, fourteen were between 44 and 60, and five were over 60. The heart lesion most frequently encountered was

mitral insufficiency. This occurred alone in ten cases, and associated with mitral stenosis in five more. Mitral stenosis alone was present in two cases, aortic lesions in three, and adhesive pericarditis in one. The remaining eleven cases showed no definite signs of valvular disease, and largely on account of the symptoms and character of the pulse they were designated as myocardial disease.

Among the etiologic factors in the past histories rheumatism stands pre-eminent, being present in twelve patients. The next most frequent factor, apparently, was the abuse of alcohol, being very marked in ten patients out of the thirty. Hyperthyroidism was the only demonstrable cause in two patients, chronic nephritis in one, while arteriosclerosis was noted in a number of others. It will be seen from these figures that absolute irregularity is most frequently associated with mitral valve disease, especially mitral insufficiency. It appears, however, to be relatively uncommon among younger patients, being more frequent in those over 40. Diseases that are known to cause changes in the heart muscle would also seem to be important causes of this irregularity, especially the abuse of alcohol, marked arteriosclerosis and hyperthyroidism.

**Symptoms.**—The symptoms of these patients represent all grades of heart failure. In the more severe types, dyspnea, edema and effusions into the serous cavi-

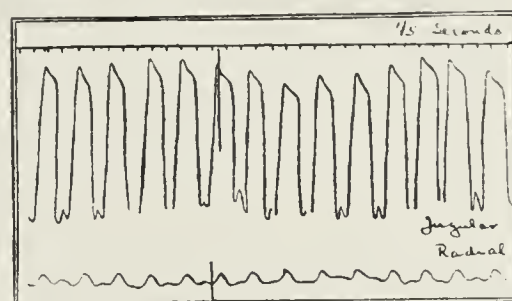


Fig. 7.—Tachycardia with positive venous pulse before strophanthin injection. Figure reduced one-half.

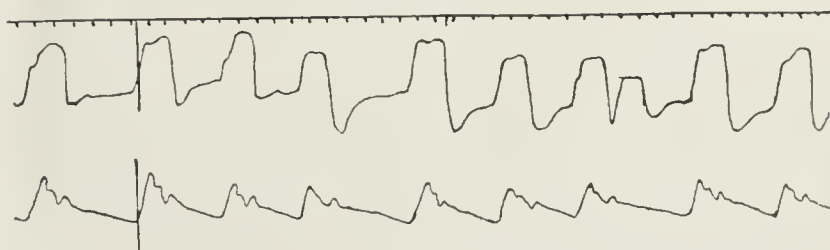


Fig. 8.—Pulse from the same patient as Figure 7, after the strophanthin injection; a typical absolutely irregular pulse.

ties were common. About a third died or were permanently and totally incapacitated for any effort. In the less severe types the symptoms were less marked. Indeed in two patients no symptoms whatever were complained of. One of these worked as a gardener without any apparent inconvenience except on extreme exertion. The other was a prospector who boasted of his ability to endure hardships and long excursions into the mountains. It is apparent, therefore, that a moderate degree of irregularity associated with auricular paralysis is not enough in itself to cause severe symptoms. This seems to be especially true when the irregularity is unassociated with valvular disease.

On the other hand, it undoubtedly adds to the gravity of the situation. The circulation can not be so good when the heart is contracting irregularly. The effect of the auricular paralysis independently of the irregularity is difficult to estimate, but Henderson's studies<sup>8</sup> would seem to indicate that the auricles play a less im-



portant part in the normal filling of the ventricles than is generally supposed. The effect of the irregularity is well illustrated in the case of paroxysmal arrhythmia already referred to, for the paroxysms caused this patient to suffer from precordial distress and decidedly increased dyspnea on exertion.

*Relation to Tricuspid Insufficiency.*—The relation of absolute irregularity to tricuspid regurgitation is of great importance, but it can not be defined with exactness at the present time. That many of these patients do suffer from tricuspid insufficiency is evidenced by the typical murmur, the positive plateau on the venous pulse, and the positive pulsations of the liver. In not a small number, however, especially after compensation is moderately restored, the liver ceases to pulsate and no murmurs whatever can be heard over the heart. In such cases the only possible evidence of tricuspid insufficiency is the positive venous pulse. Since the time of Riegel's<sup>9</sup> paper in 1881 this has been regarded by many as a pathognomonic sign of tricuspid insufficiency; but, in my opinion, we are not justified in diagnosing tricuspid insufficiency in such cases, for the abnormal venous pulse may be explained solely on the assumption of an auricular paralysis.<sup>5</sup>

Enlargement and tenderness of the liver was noted in a large proportion of my patients. In many the liver could be felt at the level of the umbilicus and pulsated vigorously during the stages of broken compensation. As compensation returned the tenderness and pulsation often diminished or disappeared and at the same time the liver became smaller. Most, if not all, of these cases were associated presumably with tricuspid regurgitation.

#### RELATION TO PAROXYSMAL IRREGULARITY.

Delirium cordis may occur in paroxysms which last but a few hours or days. The subject has been reviewed recently by Cushny and Edmunds<sup>10</sup> and by Hornung.<sup>11</sup> The following case presents a good example of this form of irregularity:

*History.*—Mrs. B., aged 55, was referred to me on account of an influenza and a right-sided hemianopsia. Her family history was negative. She had suffered from four attacks of facial paralysis at different times in the past thirty years, the first being on the right side and the remainder on the left. The last occurred in 1906 and was very mild. She never had acute articular rheumatism. In June, 1906, she was treated for heart disease, which became so bad a month later that she was unable to sleep in a recumbent position on account of dyspnea. Since then she had had several moderate breaks in compensation with dyspnea, cardiac distress and at times slight edema. In the intervals her compensation had been fairly good. In June, 1907, she was suddenly seized with weakness in the legs. Immediately after the seizure she noticed that the right leg was insensitive to touch, to pinches, and to the heat of a hot-water bottle. The weakness disappeared from the left leg almost immediately, but the right remained weak for several days. The disturbances of sensation also gradually passed off, and at the end of ten days she had completely recovered. Her rectal and bladder functions were not affected. On Dec. 1, 1907, while riding on a street car, she sustained an emotional shock, and her ideas became so confused that she was unable to find her way home without slight assistance. At dinner she noticed for the first time that she was unable to see objects to her right. She also had some headache for the next forty-eight hours, but no nausea or vomiting. I was called to see her Feb. 3,

1908. An epidemic of influenza had been passing through the household and she was suffering from the usual symptoms of this infection. In addition, she presented the typical signs of a mitral stenosis. She was also found to have a right-sided hemianopsia, more marked in the upper quadrant. Subsequent examinations showed a gradual improvement in the fields of vision until when seen the area of total blindness was limited to a small spot in the upper right quadrants of both eyes. Her hemianopsia was probably due to an embolus in the right occipital lobe. Probably also the transient paraplegia was due to a slight embolic process in the lower cord.

*Examination.*—On my first examination the pulse was 80 per minute and perfectly regular. The mitral stenosis murmur was of a marked presystolic type, with little if any rumble in early diastole (Fig. 3). Three days later, after her temperature had fallen to normal, she complained of precordial distress and felt unusually weak. The heart action was found to be absolutely irregular and about 120 per minute (Fig. 4). The mitral murmur had completely changed its character. Its presystolic accentuation had disappeared, and it was now loudest just after the second sound and in the longer diastolic intervals it practically disappeared before the occurrence of the first sound (Fig. 5). The following morning the heart action was again absolutely regular and 85 per minute, and the murmur had returned to its customary presystolic type. The early diastolic portion of the murmur was almost inaudible. The precordial distress and general weakness had passed away.

*Subsequent History.*—Since that time the patient has had about seven of these paroxysms of cardiac irregularity, and I have been able to observe her in three of these. These seemed to begin abruptly and were induced more especially by emotional disturbances, e. g., by seeing a dog nearly run down by a street car. Other attacks seemed to follow physical exertion. The attacks usually lasted during the day and passed off during the following night, the termination often being associated with sweating. During the paroxysms the patient felt weak, short of breath on exertion, and suffered considerable distress from cardiac palpitation. Examination of the heart during the paroxysms showed a slight enlargement of the cardiac dulness, and an absence of the presystolic accentuation of the mitral stenosis murmur. Between attacks her venous pulse was of the normal type, with a fairly prominent auricular wave (Fig. 3), while during the attacks no sign of an auricular contraction could be discovered in the jugular pulse (Fig. 5). It seems fair to assume, therefore, that during these paroxysms her auricles had ceased to contract normally.

Cushny and Edmunds<sup>10</sup> have suggested that such attacks may be due to fibrillation of the auricles. In the case of our patient this hypothesis receives a certain amount of support from the fact that on the day subsequent to one attack numerous auricular extrasystoles were observed (Fig. 6), indicating that the auricles were abnormally irritable. Maekenzie believes that such paroxysms may be due to an abnormal irritability of the node at the upper portion of the His bundle, which may take on the function of initiating the cardiac rhythm.

The exciting causes of the paroxysms in our patient were, as a rule, excitement or exertion. Hornung<sup>11</sup> has also noted psychic causes of such paroxysms. In one of his patients the irregularity frequently accompanied defecation, but finally it would be induced when the patient merely started for the toilet. Fr. Müller<sup>12</sup> refers to patients in whom paroxysms were caused by overloading the stomach and were relieved by vomiting or lavage. Although it seems probable from these observations that such paroxysms of irregularity may be induced by nervous influences, nevertheless some other factors are probably present which render certain hearts susceptible to such nervous influences. Hornung emphasizes the ar-

9. Ueber den normalen und pathologischen Venenpuls. Deut. Arch. f. klin. Med., xxxi, 1.

10. Paroxysmal Irregularity of the Heart and Auricular Fibrillation. Amer. Jour. of the Med. Sci., cxxxiii, 56.

11. Ueber atypische tachykardische Paroxysmen. Deut. Arch. f. klin. Med., xci, 469.

12. Müller, Fr.: The Nervous Affections of the Heart, Arch. of Int. Med., i, 1.



teriosclerosis in three of his four patients, and mitral valve disease was present in both of mine.

The relation of such attacks of cardiac arrhythmia to the permanent form of absolute irregularity is probably an intimate one. In my patient the paroxysms were associated with auricular paralysis just as is the case in the typical permanent form. Paroxysms have also been noted in patients who subsequently developed a permanent delirium. One of mine had been admitted to the hospital several years before with delirium cordis. This had disappeared after a few days, as was shown by the radial tracings taken at the time. At present he suffers from typical permanent irregularity.

#### RELATION TO TACHYCARDIA.

There is a form of tachycardia which is associated with a positive venous pulse with absence of auricular waves. This may be of the paroxysmal type with a normal venous pulse between the paroxysms or it may occur when evidence of auricular contractions is permanently lacking. The latter is certainly closely related to the permanent form of absolute irregularity, and several observers<sup>2</sup> have noted that the two may alternate in the same patient. I have observed a sudden change from tachycardia with a positive venous pulse to the absolutely irregular pulse. This patient who had myocardial disease was given an intravenous injection of one milligram of strophanthin. Within a few minutes his pulse changed from a regular rate of about 150 per minute (Fig. 7) to an absolutely irregular pulse of about 70 per minute (Fig. 8). At the same time his symptoms improved greatly. Since that time his pulse has been for the most part absolutely irregular, though at times it shows a tendency to return to the tachycardia that was present when he was first seen. The relation of paroxysmal tachycardia to the irregularities under discussion is less certain, but Hornung<sup>11</sup> has seen a paroxysmal irregularity pass directly into a paroxysmal tachycardia so that there seems some justification for grouping the latter close to the absolute irregularities.

#### THE EFFECT OF DIGITALIS AND ATROPIN.

It may be said in general that digitalis and atropin have much the same effect on absolutely irregular hearts as they have on normal hearts. Atropin increases the heart rate and digitalis slows it. Mackenzie<sup>2</sup> is of the opinion that digitalis acts especially on those irregular hearts which are associated with mitral valve disease, but I have seen similar results follow its use in patients with myocardial disease. The most striking digitalis effects are produced by the intravenous injection of strophanthin, for here the change in heart rate occurs within a few hours, and other accessory factors, such as rest in bed, can be eliminated. In addition to slowing the pulse digitalis usually renders it less irregular, increases its size and improves the subjective and physical condition of the patient. In my experience, however, neither digitalis nor atropin have ever caused the pulse to return to a normal character.

#### DISCUSSION.

DR. ROBERT H. BABCOCK, Chicago: During the last few years Mackenzie's work has revolutionized our ideas of cardiac arrhythmia, and much work has been done by others also. The great difficulty lies in the fact that the use of the instruments by which the heart's irregularity is determined is difficult, and in fact belongs to the expert. It requires an expert to obtain good jugular tracings, as well as to interpret the tracings obtained. The fact remains, however, that we are to depend on the use of instruments in the

diagnosis of cardiac disease, not only in recognizing cardiac disease but also to aid in deciding on the therapeutics appropriate in cardiac disease. For it is evident that when there is some serious interference with the transmission of stimulus to contraction from venous sinuses to ventricles with a disturbance in the cardiac rhythm of one kind or another, certain medicines, such as those belonging to the digitalis group, are not beneficial but actually dangerous.

DR. ARTHUR D. HIRSCHFELDER, Baltimore: Paralysis of the auricles was first demonstrated experimentally on animals by von Frey and Krehl in 1890 and subsequently on man by Mackenzie in about 1894 by means of the venous tracings. The absolute demonstration, however, was not really decisive until Dr. Hewlett demonstrated it by means of a tracing from the esophagus. Prior to this it might have been possible for a weak auricular contraction to go on without registering on the venous pulse; but now comparatively small contractions can be recorded in these excellent esophageal tracings. Therefore, it would appear as demonstrated almost beyond a shadow of a doubt. Auricular paralysis is very commonly seen in experiments on animals. In fact one can hardly experiment on exposed hearts without finding paralysis of the auricle at some period or other during cardiac failure. No trace of fibrillation can be seen under these conditions in any part of the auricle. Clinically I can only agree with Dr. Hewlett's findings. I have found transitory periods of auricular paralysis, etc., with absolute irregularity in cases of mitral stenosis; and disappearance of the presystolic auricular rumble at these times. I have been able to obtain the same thing in animals in experimental mitral stenosis. When mitral stenosis is brought about slowly, I have obtained, first, a gradual slowing in the diastolic filling of the heart. After the production of a more marked stenosis diastole was divided into three periods: First, a period of rapid filling; a second period, in which there was a little further filling; and a third period marked by contraction of the auricle. About one-half of the filling of the ventricle was due to this contraction of the auricle, as compared with about one-fifth in the normal heart. The presystolic rumble was loud under these conditions. If the mitral stenosis was further increased, auricular paralysis set in, arrhythmia also appeared, and the presystolic rumble disappeared. In other words, a large part of the filling of the heart was due to auricular systole and also led to a presystolic rumble and later, when auricular paralysis appeared, the auricular sounds disappeared. Clinically, I have been able to find sounds similar to those described by Dr. Hewlett as a diastolic murmur. This was particularly true in one case, in which I was able to hear a soft blowing murmur throughout diastole heard at the apex and along the left border of cardiac dullness, and also just above the angle of the scapula, corresponding exactly to where one would expect to hear if it was produced in the left auricle.

DR. W. S. THAYER, Baltimore: I feel that the term "presystolic" murmur applied so commonly in literature in a general way, to the mitral diastolic murmur, is rather unfortunate. As a matter of fact, heart murmurs heard in mitral stenosis vary greatly in character. 1. One may hear at the apex of the heart a characteristic rumbling murmur limited to that part of diastole immediately preceding systole; that is, to the time of the auricular contraction. 2. The murmur may begin shortly after the second sound with marked presystolic accentuation. 3. The murmur, of fair intensity, may begin shortly after the second sound, which diminishes in intensity during the middle, to increase again at the end of diastole. 4. The murmur may begin shortly after the second sound, disappearing entirely during a good part of diastole and reappearing again at the time of auricular contraction. 5. The murmur may be observed to begin closely after the second sound and to disappear entirely before the period of auricular systole. In all these cases in which the murmur begins in the early part of diastole it is usually ushered in by a slight snap, the so-called "opening snap" of mitral stenosis, probably due to the early tension of the sclerotic and adherent mitral valves. 6. One may hear only the first and second sounds and the opening snap without murmurs. 7. One may



hear no adventitious sounds whatever in the long pause. It is then by no means uncommon for a mitral diastolic murmur to occupy a position in the cardiac cycle other than that of presystole.

DR. EDWARD F. WELLS, Chicago: Any one who studies the cardiac rhythms will find them very suggestive, and I have studied them for many years. Some very curious features have cropped out in these investigations. For instance, the heart at one time may have presented a fairly regular rhythm, but as time goes on irregularities of the heart become more common, if not the rule. As pointed out, the paroxysmal character of the arrhythmia may be extremely marked. For example, in tachycardia the rhythm is usually irregular, sometimes very much so. This same applies, but to a much lesser degree, to paroxysmal bradycardia. I have under observation at the present time a man 75 years old with paroxysmal irregularities of the heart; these paroxysms are very profound and accompanied by cardiac distress, coldness of the skin, perspiration, etc. In this case it was noticed several years ago that efforts at vomiting would relieve the paroxysms. Although the pulse is rapid and might be classed as paroxysmal tachycardia, still the irregularity is so great that it belongs to the category of paroxysms of irregularity of the heart. In this patient, aside from marked arteriosclerosis, nothing could be found to account for these irregularities. There are other forms of irregularity, with tachycardia or bradycardia, in which the preceding features were very suggestive. For example, I have under observation one case, a woman, whose occupation requires her to lift heavy objects above her head. Her attacks are frequent and are brought on by this heavy lifting. Sometimes the attacks are short, sometimes prolonged. I have another patient under observation with paroxysmal bradycardia in whom the attacks may be induced by suspended respiration.

DR. R. C. ALLEN, St. Joseph, Mich.: There is one fact that evidently has been overlooked; that is, that many of the symptoms described are often the result of reflex phenomena rather than of organic disease of the heart. I do not refer to any special cases. In many cases it is difficult to draw a line between the many forms referred to, whether they are due to organic disease of the heart or to reflex disturbances or irritation. This is a fact very well illustrated by the last speaker. His cases might have been reflex in origin. I have a case in which there is a purely neurotic cause, a result of reflex irritation. This is a fact which I consider important and worthy of consideration. In these cases of mere tachycardia, with difficulty of respiration, etc., I would place the patient on morphin, bromid of potassium or similar agents, and the symptoms would abate.

DR. G. W. McCASKEY, Fort Wayne, Ind.: It seems to me difficult to demonstrate positively the occurrence of auricular paralysis. The absence of tracings by the intra-esophageal method is perhaps very nearly conclusive, beyond which it is impossible to entirely exclude weak and inefficient contractions of the auricle. I wish to call attention to the importance of the use of the stethoscope simultaneously with the graphic methods, as well as in the study of presystolic murmurs as a further evidence of auricular paralysis. The stethoscope is valuable in those cases in which the ventricle has apparently failed to contract in consequence of an inefficient auricular contraction or functional impairment of conducting fibers. Where there is no radial pulse and no palpable apex beat by means of the stethoscope, I am sometimes able to distinguish inefficient contractions, which would produce no pulsation whatever.

DR. A. W. HEWLETT, San Francisco: Experimental observations in regard to the production of auricular paralysis with absolute irregularity have been limited to acute conditions, whereas the clinical form of absolute irregularity is chronic and this has not yet been produced experimentally. I agree with Dr. Thayer regarding the various forms of the murmur of mitral stenosis. The presystolic accentuation when present denotes that the left auricle is active. This accentuation is absent when the pulse becomes irregular, thus adding one link to the evidence that shows that the auricle is not contracting to any demonstrable extent.

The prognosis of absolute irregularity depends on whether the condition is a paroxysmal or permanent one. If the former, the attack may be terminated by some obscure reflexes just as it may be initiated by such reflexes. If the latter, I know of nothing which will cure the irregularity. We can merely hope to improve the condition of the patient.

## THE RELATION OF ANTICYCLONIC WEATHER TO THE PREVALENCE OF LA GRIPPE AND PNEUMONIA ON THE NORTH- ERN HEMISPHERE.

WITH SPECIAL REFERENCE TO RECENT EPIDEMICS OF  
PNEUMONIA IN CHICAGO AND SAN FRANCISCO.\*

C. M. RICHTER, M.D.  
SAN FRANCISCO.

The report of the pneumonia commission of New York,<sup>1</sup> issued at the end of the year 1905, contains the words: "Our studies have thrown no light whatever on the conditions which determine the onset of lobar pneumonia in apparently healthy persons. Moreover, we have been unable to draw conclusions as to the presence of pneumococci in the lungs during life, or as to the channels by which they gain access thereto." The United States Census Report of 1900 says: "The very fact of an increasing mortality from pneumonia in late years, when general hygienic conditions have steadily improved, would disprove the efficiency of such a course of prophylaxis."

Juergens<sup>2</sup> in a summary of the latest researches on pneumonia refers to the attempts made most recently to discover a positive difference between the pneumococcus of a healthy mouth and that of the pneumonia mouth and asserts the absolute failure to establish a specific character for the pneumococcus of pneumonia.

Where there is still so much darkness I hope I may be pardoned for directing attention to certain conditions of the atmosphere which accompany pneumonia epidemics over the entire northern hemisphere, and to the knowledge of which San Francisco seems to give the key.

Osler<sup>3</sup> says that "cold" has been for years regarded as an important etiologic factor, but that in fact there is very little difference in various state groups of the United States.

Musser and Norris,<sup>4</sup> referring to meteorologic influences, say that "owing to the complexity of the problem, an exact scientific solution of it is still unattained." They add: "Most writers have attributed a predisposing potency to change of temperature."

At the session of the American Medical Association, San Francisco, June 5-8, 1894, I read a paper<sup>5</sup> on the influence of atmospheric pressure on the prevalence of pneumonia. I maintained then that excessively high air pressure appears coincident with epidemics of pneumonia in the northern hemisphere and exhibited charts demonstrating this fact for a number of cities. That paper had been made possible by a study of the different climatic regions of California in their relation to morbidity and mortality from pneumonia.

And so-called "cold weather diseases" were prevalent

\*Read before the San Francisco County Medical Society, March, 1908.

1. Pneumonia Commission: Am. Med., Sept. 23, 1905.

2. Med. Klin., 1907, No. 10.

3. The Principles and Practice of Medicine, 1906.

4. Osler, W.: Modern Medicine, 1907, iii.

5. Influence of Atmospheric Pressure on the Prevalence of Pneumonia, THE JOURNAL A. M. A., 1894, xxiii, 188.



in California, but the cold weather missing, I charted all the different meteorologic factors and the pneumonia mortality figures together for a number of years for the different climatic regions of California, and could thereby establish the fact, that, at least everywhere in California, in the Sierra as well as near the seacoast, there was absolutely no relation between temperature and humidity and such mortality, but a clear relation between periods of high air pressure and such mortality.

One may consider San Francisco as the best city in which to make a research in regard to the influence of weather on disease. Hardly any other large city on the northern hemisphere has as little difference between the mean temperature and mean relative humidity of January and July.

TABLE 1.—METEOROLOGIC RECORDS.

NORMAL AIR PRESSURE.

	Jan.	Feb.	Mar.	Apr.	May	June
Chic. ....	30.09	30.07	30.02	29.99	29.96	29.95
S. F. ....	30.11	30.10	30.06	30.05	29.99	29.95
	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chic. ....	29.98	29.99	30.04	30.04	30.06	30.08
S. F. ....	29.95	29.93	29.94	30.01	30.08	30.12

NORMAL TEMPERATURE.

	Jan.	Feb.	Mar.	Apr.	May	June
Chic. ....	23.4	26.8	34.1	45.6	56.1	66.7
S. F. ....	50.1	51.7	53.6	54.6	56.6	58.4
	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chic. ....	72.0	70.9	69.2	52.0	38.4	29.3
S. F. ....	58.3	58.7	60.4	59.3	56.3	51.4

NORMAL RELATIVE HUMIDITY.

	Jan.	Feb.	Mar.	Apr.	May	June
Chic. ....	81	81	75	71	70	72
S. F. ....	79	77	78	78	78	79
	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chic. ....	67	68	69	69	77	79
S. F. ....	83	85	80	79	75	81

Extreme winter and summer temperatures and extreme cloudiness are not to be feared in San Francisco. The lowest temperature in Chicago is 23 below zero, in San Francisco 29 above, a difference of 52 degrees. On the other hand, San Francisco could easily take the laurels from Chicago as "the windy city" in summertime. In San Francisco ocean winds are prevailing during nine months of the year. Of course it brings ocean sand with it, which we call sometimes an abominable dust. The prevailing wind of Chicago is southwest, but during five months it is northeast, coming from the lakes. San Francisco is not a densely populated city, like Chicago, and enjoys a rather pure ocean atmosphere, very different from the air inhaled in Chicago, New York, London, Paris or Berlin.

It is the presence of the Pacific Ocean and the westerly direction of the winds that insures high winter and cooler summer temperatures for San Francisco. Even Chicago's winter temperatures are somewhat ameliorated by the large area of fresh water near it.

San Francisco has an average of sixty-nine rainy days in the year and Chicago has one hundred and twenty-six. The percentage of possible sunshine is 57 per cent. for Chicago and 63 per cent. for San Francisco.

The second table gives the even temperature and humidity line for San Francisco for every day of the eleven years, 1888 to 1899, in contrast to the lines of pneumonia mortality and air pressure.

These facts prompted me to make a study of the pneumonia epidemics of Chicago and San Francisco for the five years, 1899 to 1904, in their relation principally to air pressure.

Meteorologic observations and figures take the place of experiments, when periodical changes in the atmosphere and their effect on climate are to be investigated. Such research should be more encouraged.

A fundamental difference between low and high air pressure, that is, between cyclones and anticyclones, lies in the fact that during the cyclone the lower air, the ground air, the air that had been with us since the last anticyclone, is ascending into the upper atmosphere, while during an anticyclone the reverse takes place; the air is coming down from the higher levels of the atmosphere.

The anticyclone is represented by a gyration of air that enters at the top and flows out at the bottom. The air is descending almost vertically in the center and shows an outward flow everywhere in the circumference of the anticyclone. The distance of the center of an anticyclone from that of a cyclone is generally about 2,000 miles in the United States and often more than that in Europe. It is not seldom that the entire area of the United States is covered by an anticyclone.

The cyclones travel at the rate of twenty to sixty miles an hour, the anticyclones show a similar speed, which is, in fact, the speed of our railroad trains, and which is the speed with which grip epidemics are said to travel.

Suppose that an anticyclone has its center at half distance between Chicago and San Francisco, then it is clear that some of its center air may travel at this rate 1,000 miles toward San Francisco and some of it 1,000 miles toward Chicago. It is at present assumed that the so-called "wandering" cyclones are rather shallow, extending only about two or three miles upward. They are not supposed to feed the anticyclones with their air, as the anticyclones extend higher.

The continuous procession of such areas of low and high air pressure from a westerly to an easterly direction in our latitudes furnishes the rainstorms and the fine weather periods during the so-called cold season.

The anticyclones sometimes stop wandering. Such anticyclones seem to have a dynamic, not like the rest of them, a thermic origin. They represent a blocking of the higher and lower atmosphere and it seems that cyclones in their neighborhood have no effect whatever on their gigantic mass of air that may cover the area of the United States, or of Europe and Asia together. Such anomalous anticyclones bring generally much higher pressure than their wandering cousins and they last longer.

Without doubt they bring an atmosphere to our lungs quite different in quality from the one coming out of a shallow high. I may say right here that periods of increased activity in the sun bear a certain relation to the appearance of such increase of air pressure on our globe. The sun is practically the sole source of the energy which maintains the movements of the earth's atmosphere. It is the center of a continuous outflow of radiant energy, some of which is appropriated by the earth. This outflow is more or less modified by certain periods of the sun's activity.

One of the greatest living meteorologists, I. Hann, has said only recently that "the problem of weather periods and their connection and dependence on the activity of the sun is one of the grandest and most beautiful problems of modern meteorology."

The highest levels of our atmosphere are more directly affected by this energy than the lower levels, and thus the air that flows down to us during a period of a sta-



tionary anticyclone is modified, according to the special conditions of the sun that may have affected it. For instance, ozone is formed in the highest atmosphere consequent to the absorption of ultraviolet rays; and all know the irritating effect it may have on mucous membranes.

Then again, since radium became known to us, we became acquainted with radioactivity, which is considered now a universal property of our atmosphere. A constant ionization is going on in our atmosphere, due to the radioactivity of our earth and to the work of sun-rays. Radioactive influences seem to be derived principally from the pores of the earth.

Physicists, in following up this matter, find that during cyclones this radioactive influence becomes exceedingly marked in our atmosphere. The ascending air sucks the emanation out of the soil. In consequence negative electricity predominates in our atmosphere.

During an anticyclone the rising of such radioactive emanation seems more or less prevented by the increase of air pressure over the capillaries of the earth. In consequence positive electricity prevails. As we have no special sense for electricity, nor for air pressure and its variations, we do not become aware of the tremendous differences that exist in the air we breathe during different weather conditions. In general, it may be said that during a cyclone, at least during the beginning of one, the air is filled with all the impurities that possibly can be lifted and carried upward from the ground. During an anticyclone the atmosphere coming to us should represent the purest air possible, an air possessing all qualification that the sun's energy may impart. The higher the air pressure, the higher probably is the origin of such air and the more specific is such quality.

How can such relatively pure air be of detriment to our lungs? Has change of air pressure in itself any possible effect on our system? A London physician, Dr. R. Mead, wrote in 1746:<sup>6</sup>

The whole body, in the heaviest air (30.8 inches) sustains a weight of about 33.684 pounds; in the lightest (28 inches) of 30.622 pounds 5 ounces. The difference of pressure at different times is 3.062 pounds. True it is that the internal air of the human body makes a resistance to that weight, but yet such change of pressure must necessarily have considerable effects. Such effects must of necessity be most visible in weak bodies and morbid constitutions, when other circumstances concur to their taking place, while strong bodies and sound constitutions are little affected by them.

In regard to the effect of electricity on our body, Prof. J. Loeb says that "nature has so safeguarded the electric conditions, and especially the equilibrium of electric forces within the body, that any disturbance of this by external electric force is utterly impossible. We are so constantly placed on varying electric conditions because of alterations in the electricity in the earth and the air, that if this were not the case animal life would be in almost constant danger from the magnetic storms that are so frequent."

But is it true that we are so safeguarded? Was the London physician nearer the truth in 1746, when he had his doubt about weak bodies? Is the terrible morbidity and mortality from pneumonia not perhaps a proof of an insufficient safeguarding?

Dr. W. T. Howard of Cleveland<sup>7</sup> had 35 per cent. pneumonia in 550 autopsies; 6 per cent. were due to

primary and 29 per cent. to secondary pneumonia. He says that 50 per cent. of his autopsies on typhoid-fever subjects showed pneumonia.

Any reflex action on the mucosa of the air passages may cause a hyperemia, or such molecular changes in the mucosa that a secondary infection may become established.<sup>8</sup> Whether air pressure or ozonization, or a specific ionization may cause such reflex actions, we do not know. Whether other potencies of the higher atmosphere may influence our health, we do not know.

However, these tables may demonstrate that during a prevalence of anticyclonic weather and especially inside the area of a stationary anticyclone, pneumonia and grip are generally prevailing and sometimes become epidemic.

That temperature, sunshine and humidity are in no relation to the prevalence of pneumonia I tried to prove by the San Francisco table. During the entire period of eleven years from Aug. 1, 1888, to May 2, 1899, there are only two great epidemics of pneumonia in San Francisco and they are representing at the same time the only two periods of excessively high air pressure that have been registered during those years.

About 340 deaths from pneumonia occurred during the continuous nine weeks ending March 11, 1890, and about 380 deaths during the continuous nine weeks ending Jan. 26, 1892. Not before 1890, nor after that year until the summer of 1904—my records go to 1904—has the mortality from pneumonia again reached such figures for any continuous nine weeks in San Francisco.

Of course we may call grip responsible, but then we have to blame excessive air-pressure periods for the prevalence of both diseases.

The increasing population of San Francisco, therefore, can not be blamed for an increase of the mortality from pneumonia. It seemed wise, just for this reason, to compare two cities like Chicago and San Francisco in regard to their pneumonia mortality and their air-pressure conditions. The second table gives a highly interesting problem of pneumonia epidemics.

To make the comparison as direct as possible, I gave on this table the mortality figure of San Francisco five times higher than the actual one, as the population of Chicago was just about five times higher than that of San Francisco during that period. It may be seen without difficulty that there are real epidemics of pneumonia in almost every year in either city; that they are not synchronous; that they are quite different in the figure of mortality in the different years and that these figures are not increasing from year to year; that the mortality of Chicago comes to a very low ebb every summer, except 1903; that San Francisco has a reduced, but still considerable mortality from pneumonia every summer, especially 1903, and that all these epidemics of Chicago and San Francisco are keeping most accurate pace with the increase and decrease of air pressure, as registered in these cities. If we select nine continuous weeks as a time unit of the lowest and highest mortality in either city for the five years, we find the following figures to represent mortality and air pressure:

In this comparison I have included the air pressure figures for the two weeks preceding the continuous nine weeks of lowest and highest mortality from pneumonia during the five years. We have, therefore, the air pressure figures for seventy-seven days and the mortality

6. A Treatise Concerning the Influence of the Sun and Moon on Human Bodies, and the Diseases thereby Produced, London, 1746.

7. The Frequency and Etiology of Acute, Non-tuberculous Pneumonia in a General Hospital, *Am. Med.*, Oct. 28, 1905.

8. Strasser, A.: Erkaltung und Abhartung, *Deutsch. Klin.*, 1903, I.



figures for sixty-three days. It is obvious that this should be done, and it is doubtful whether the air-pressure figures should stop two weeks before the end of the continuous nine weeks of mortality.

TABLE 2.—CHICAGO AND SAN FRANCISCO PNEUMONIA MORTALITY.

1. Lowest mortality from pneumonia.			
Days with air pressure of:	30.2 and above.	29.9 and below.	29.9-30.2
Chicago, 9 continuous weeks.....	2 days	11 days	64 days
Summer, 1900.			
Mortality, 18.3 per week.			
San Francisco, 9 continuous weeks.....	none	18 days	59 days
Summer, 1901.			
Mortality, 38.2 per week.			
2. Highest mortality from pneumonia.			
Chicago, 9 continuous weeks.....	31 days	16 days	30 days
Spring, 1904.			
Mortality, 148.8 per week.			
San Francisco, 9 continuous weeks.....	24 days	13 days	40 days
Winter, 1900-01.			
Mortality, 137.1 per week.			

These examples make it quite clear that it is not the cyclonic, but the anticyclonic weather that is in correlation to these epidemics. Chicago had a mortality of over 19,000 during the five years (256 weeks) and San Francisco of over 20,000 (1,328 cases more). Of course only one-fifth of this mortality gives the actual figure for San Francisco. During the cold period of the year Chicago had an average mortality of 104 per week and San Francisco 100 per week. During the warm period Chicago had 44 per week and San Francisco 58 per week.

Undoubtedly the effect of a high-pressure area may become mitigated or entirely offset by an area of very low pressure following it closely and extending over a longer period. The cyclone would remove the air brought by the anticyclone.

Only the closest study of these tables will give an adequate idea of the difficulty in proving a correlation numerically.

To the meteorologist it is clear that such air-pressure figures are only makeshifts in trying to prove a period. It is impossible to prove by them just where the anticyclone gives way to the cyclone, or when the air in its quality is changing from that of the upper to that of the lower atmosphere. It is impossible to give the proper numerical expression to the value of an anticyclone in contrast to the one of a cyclone. Naturally the two areas merge imperceptibly into one another.<sup>9</sup> But the proposition before us is, in future to prove the character of an anticyclone by the character and quality of its air and not only by figures of air pressure. And this is the point where the research of the medical physicist could set in.

My work necessarily has been on empiric lines, but it leads logically to the assumption that there must be something noxious in the air that comes to us during high-air pressure periods, a noxiousness that is in direct relation to pneumonia and grip.

The proposition demands, it seems, a critical examination of the air we breathe during different air-pressure conditions, less with reference to its temperature, moisture, motion and more as to the quality that is imparted by the radiant energy of the sun, by radioactivity, ozonization or whatever physical quality there may be.

Any investigation of this nature should not be limited to proving a reciprocal relation of certain weather con-

ditions and pneumonia and grip as existing in a city or on a small part of our globe, but should be carried on to prove such relation for at least one hemisphere. The southern hemisphere would necessarily show corresponding conditions.

This is exactly what I emphasized in my paper of 1894 when I pointed to the fact that the limits of high air pressure over the northern hemisphere are at the same time the limits of the prevalence of pneumonia. At that time I exhibited charts, demonstrating this fact, for Berlin, Munich, New York, Cincinnati and San Francisco, covering many years, for instance ten years for Berlin and twenty-two years for San Francisco. Likewise, I charted this correlation for St. Petersburg, London, Paris, Naples, New Orleans, Denver and Salt Lake City but, unfortunately, our great fire did away with all these charts.

Periods of excessively high air pressure appear during certain years and certain months on different parts of our hemisphere. In some years European cities will experience this condition as well as cities of the United States almost during the same month—sometimes only one continent will exhibit this feature.<sup>10</sup>

But epidemics of pneumonia or grip are always developing in consequence. The two greatest epidemics of grip that existed in Europe during the last century were the two of 1833-'4 and 1889-'90 and the entire nineteenth century had the highest air pressure recorded just during those two winters.<sup>11</sup>

I would like to close these remarks with the words of the great clinician, Ziemssen, who, alluding to epidemics of grip and pneumonia, wrote many years ago:

After all we can not but assume that there must be general conditions, perhaps multiplied by local circumstances, which appear and disappear simultaneously by great expanse of space. Of what nature these influences may be, is perfectly dark. We would not be forced to think of miasm or contagion. We are more led to believe, that fluctuations of other conditions, extending over great areas of the surface of our globe at the same time, furnish an analogy.

#### CONCLUSIONS.

Pneumonia is not merely a concomitant of the cold weather season.

Its prevalence depends on anticyclonic weather, summer and winter, on the northern hemisphere, and not on low temperature.

There is sufficient reason to assume that the quality of the air of an anticyclone changes in conformity with changes in the activity of the sun and that the prevalence of grip and pneumonia is subject to a specific quality of such air.

10. Hann, Julius: *Lehrbuch der Meteorologie*, ed. 2, 1906.

11. Richter, C. M.: *Sonnenflecken, Erdmagnetismus und Luftdruck*, Meteorol. Ztschr., 1902, xix.

**Sterilizing Action of Sunlight on Hides.**—V. Cavacini states that hides containing the germs of anthrax do not as a rule become sterilized by the various factors of the tanning process. He cites W. Koch to the effect that Russian soldiers have contracted malignant pustule from leather used on their uniforms. Sunlight, however, seems to have a direct sterilizing action—hides exposed to sunlight were found sterile after 130 hours of exposure in numerous tests with various pathogenic germs. It seemed to be immaterial whether the hides were moist or dry, and free from hair or not. If the sterilization was not complete, the germs left retained their pristine virulence unmodified. These statements are based on considerable personal research by Cavacini, reported in the *Riforma Medica*, June 29.



## TRAUMATIC CERVICAL MYELOMALACIA.

## REPORT OF A CASE WITH NECROPSY.\*

CARL D. CAMP, M.D.

Clinical Professor of Nervous Diseases at the University of  
Michigan.

ANN ARBOR, MICH.

In this paper attention is directed to the nature of lesions in the spinal cord, which are produced by traumatism to the spinal column, in cases in which pressure on the spinal cord by dislocated bone is absent or present only for a short time. The diagnosis of such a lesion is difficult, especially when it is, as in this case, practically confined to the anterior horns. It is most important, from a practical standpoint, to differentiate the symptoms from those produced by pressure on the cord and from traumatic hysteria, both of which require materially different treatment. The differential diagnosis between a hysterical and an organic affection may be difficult, but it is even more difficult to decide, in some cases, whether certain symptoms present in a case of undoubted organic disease may not be of hysterical nature. For instance, Claude and Rose<sup>1</sup> report a case in which they make a diagnosis of hysteria combined with symptoms of compression of the spinal cord probably due to Pott's disease. The interest in these cases resides not only in the diagnosis and prognosis, but also in the semeiologic value of certain signs which we usually regard as signs of hysteria.

A case illustrating these points was referred to my service in the hospital of the University of Michigan on Nov. 11, 1907, by Dr. McColgan, of Grass Lake, Mich. The history and pathologic findings were as follows:

*History.*—A farmer, aged 32, gave a negative family history and previous medical history and denied alcoholic abuse and venereal diseases. On Nov. 10, 1907, he fell about six feet striking his back on the frozen ground. He was not unconscious but said that he could not move his left leg and was carried to bed. About seven hours later he had some vague pain in all four extremities and then found his right leg also affected. He could move his arms as before. Dr. McColgan found that a prominence in the cervical region of the spinal column probably indicated a dislocation of the vertebrae and he was brought to the University Hospital the next day.

*Examination.*—On examination at the hospital it was found that he could not raise his arms above his head. He was able to flex both forearms but unable to extend them. He could neither flex nor extend the fingers of either hand. He could flex both wrists but could not extend them. The pectoral muscles on both sides contracted but weakly. He could not move the left leg but the movements of the right leg were fairly well performed. The biceps jerks were present on each side, but the triceps jerk was not obtained on either side. The knee jerks were equal though somewhat diminished on each side. The Achilles jerks were normal. Irritation of the soles of the feet produced flexion of the toes on both sides. Sensation to touch was apparently normal over both arms and the chest and abdomen. He said that he felt touch and pin-point more distinctly on the left leg than on the right, but felt pain normally all over except on the back of the left hand and fingers where he was unable to distinguish the point of a pin from the head. No area of anesthesia was made out and he never failed to respond promptly when touched, but all over the body and in both legs he would apparently keep on feeling impressions even though he was not touched, sometimes as many as four or five. He could also be made to feel a touch by suggestion. He had passed urine and feces in bed and said that he could not retain

them long. This was apparently benefited by suggestion. There was tenderness of the spines of the fourth and fifth thoracic vertebrae but no deformity of the spine at any part. A radiograph of the spine showed no displacement and apparently no fracture of the vertebrae.

He was reexamined the following day because of complete inability to make any movements in either leg except slight movement in the toes of the right side. He said that during the night he could move both legs freely. Except for added paralysis of the right leg the result of the examination was the same as the day before. No areas of anesthesia were present anywhere. An examination of his heart and lungs was negative. Urine and blood examination was also negative.

On examination made Nov. 25, 1907, the patient said that he felt well. He did not move his fingers. He could not or would not, extend his forearms but he flexed both forearms strongly. He moved the right leg freely and with strength. He was able to contract the adductor of the left leg and the quadratus femoris but produced no movement of the leg thereby. The extremities showed no evidence of vaso-motor disturbance and no atrophy. He said that he felt touch and pin-point equally well over both arms and both sides of the body. On the right side of the body there was an area extending from the sixth rib in the axillary line to the lower edge of the ribs and coming forward almost to the median line in which pin-point and touch were evidently promptly felt and, he said, were felt as accurately as on the other side. But in this area with his eyes closed he invariably referred the sensations to the opposite side. There was no transference from the left to the right. He said pin-point was felt as accurately in the left leg as in the right. No area of anesthesia was made out. The soles of the feet were somewhat hypersensitive. There were a number of places on the back near the sacrum where there were skin abrasions. The knee jerks and biceps jerks were present and normal. Irritation of the soles of the feet caused flexion of the toes on each side. He had no incontinence of urine or feces.

On Dec. 7, 1907, examination showed that the right pupil was larger than the left. He could raise the upper arms to a level with the shoulders, and in this movement the deltoid contracted normally. He could flex the arms with normal contraction of the biceps and supinator longus, but the triceps were paralyzed, and he could not extend the arms. He could flex both wrists strongly but extension of the wrists was weak. He could not move the fingers or the thumb. There was marked atrophy of the interossei of both hands; there was some atrophy of both forearms and of the triceps on both sides. The skin was very dry and scaly but not atrophied. The triceps jerks were lost on both sides; the biceps jerks were increased on both sides. The ribs did not move in respiration, breathing being entirely diaphragmatic. He had hypalgesia of the right side from the level of the third costal cartilage on down the body extending all over the right thigh, leg and foot. There was no analgesia in the upper extremities. He felt touch equally well all over the body on both the right and left sides. He still referred sensation to the opposite side when the right side was touched in the above described area on the chest. Sensation for touch seemed to be somewhat delayed in the body and limbs and he would keep on counting even though not touched. The left leg and thigh were decidedly atrophied. Left thigh 33.5 cm. (13¼ in.), right thigh 43.5 cm. (17 in.), left calf 28 cm. (11 in.), right calf 34 cm. (13½ in.). The skin of the left leg was dry and scaly. The skin of the right leg was moist and normal. The knee jerks were present on each side and about normal. He moved the right leg at all points. The left leg remained paralyzed. Irritation of the sole of the foot caused flexion of all toes on the right side, no movement of the toes on the left side. Sense of position was lost in the left hand, present in the right hand. He was a little uncertain about the position of the toes on both sides.

Jan. 20, 1908, the patient showed general emaciation and weakness his pulse being very weak, but his neural condition remained as before. The biceps jerks were large on both sides; there was also a biceps jerk obtained by tapping the small bones of the wrist on each side. The knee jerks were present on each side, about equal and normal. The skin of the extremities was exceedingly dry and was kept greased in order to avoid

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Rev. Neurolog., Jan. 30, 1908.



cracking. Pain was felt very decidedly in the soles of both feet. Plantar irritation caused no movements of the toes on either side. The patient gradually became weaker, developed an obstinate diarrhea, bed sores over the sacrum and trochanters, and died March 12, at 12:45 p. m. Necropsy was held at 2 o'clock the same day.

*Autopsy.*—Pathologic findings: There were found several fair-sized bed sores over the sacrum and a bed sore over the right trochanter. The body showed considerable emaciation, with localized atrophy of both forearms and both hands. The lungs were crepitant throughout but appeared decidedly small. The heart contained some air. Other organs were approximately normal. The brain showed no gross pathologic change. The spine appeared to be normal but after cutting through the arches of the vertebrae and removing the cord there was noticed a linear fracture in the body of the sixth cervical vertebra which allowed motion. Apparently there was no dislocation. The spinal cord showed a depression in the middle of the seventh cervical segment and was hardened in formalin for further examination.

On cross section of the cord at the level of the depression (middle of the seventh cervical) the gray matter was seen to be distinctly softened, distorted on both sides. The white matter was uninjured except the anterior portion of the posterior column. Cross section of the spinal cord at the top of the seventh cervical segment showed that both anterior horns contained softened areas. The lesion was slightly more marked on the left side than on the right and extended into the region of Clark's column (?) and intermediolateral tract. The top of the lower third of the sixth cervical segment showed slight softening in both anterior horns. The lower border of the upper third of the sixth cervical segment showed no lesion. The lesion apparently did not extend upward beyond the middle of the sixth cervical segment. Going downward the lesion disappeared in the upper half of the first thoracic segment. Below this level there was no gross disease visible in the spinal cord.

The sixth, seventh and eighth cervical and first thoracic segments were each cut in three pieces and sections made from the top of each of these pieces. Sections also were made from the mid-thoracic and lumbar regions. A summary of the microscopic findings includes: An area of softening in both anterior horns which, in the eighth cervical segment and the lower third of the seventh cervical, caused complete destruction of them and extended a little into the left lateral column and very slightly into the posterior column. There was a slight inflammatory reaction about the blood vessels in and adjacent to the softened areas but for the most part they consisted simply of softened areas filled with fatty granule cells. There was no free blood pigment. Areas of softening extended upward in the anterior horns as high as the middle of the sixth cervical segment and downward as far as the middle of the first thoracic segment. They were situated in the center of the horn on both sides and did not completely destroy them as they contained some normal staining nerve cells. In the eighth cervical segment and the lower portion of the seventh, the white matter in the vicinity of the anterior horns stained lighter by the Weigert hematoxylin stain and was evidently partially degenerated. Above these segments there was a degeneration in the anterior parts of the posterior column which did not appear to belong to any system but involved the anterior part of the column of Goll and the cornucommissural zone. There was also distinct degeneration in the region of the right direct cerebellar tract and a doubtful degeneration along the periphery of the left lateral column. In the first thoracic segment there was a slight degeneration in the left crossed pyramidal tract and in the comma tracts of Schultz.

#### AUTHOR'S EXPLANATION.

My explanation of the pathology of the condition is that there was a slight dislocation of the vertebrae pressing on the spinal cord sufficiently to block the anterior spinal artery but not sufficient to arrest impulses in the spinal cord. This dislocation was spontaneously reduced some time before he arrived at the hospital, as it was not present then, but in the meantime a thrombosis of the

anterior spinal artery or its branch in the anterior median fissure caused the areas of softening in the parts supplied by those vessels, namely, the anterior horns and to some extent the adjacent white matter.

I am aware that the usual lesion in these cases of trauma to the spinal column is a hemorrhage into the cord which affects the gray matter more often than the white because of its lesser density; also that the researches of Schmaus show that areas of softening can be produced in the spinal cord of animals by traumatism without the intervention of any such mechanism as I have described. A hemorrhage into the gray matter may have been present in this case at the onset and have been absorbed, but on microscopic examination there was no evidence, such as blood pigment or a cavity, that any such condition had previously existed. Also in the reported cases of hemorrhage the paralysis is more complete and comes on more quickly than in this case. That a traumatic myelitis produced the softening seems to me less probable, both from a clinical and pathologic viewpoint, than that the softening produced the inflammatory reaction which was present. The fact that it was practically confined to the anterior horns of only three spinal segments is, to my mind, much in favor of the latter. Whether it was a hemorrhage or myelitis it seems to me that one of the important points in the pathologic findings was the location of the lesion in the center of the cord, where totally inaccessible to operative procedure; and the destructive nature of the lesion which for another reason would contraindicate an operation, by the impossibility of making a cure.

#### DIFFICULTY OF DIAGNOSIS.

The diagnosis of the condition present was not free from difficulty until the atrophy of the paralyzed muscles in the hands. On admission clinical examination and skiagraphs showed no apparent injury to the vertebrae. This, no doubt, was due to the fact that in an ordinary dorsal position the unbroken arches prevented apparent deformity, and pressure on the spine was not painful at this point. There was no increased motility or ecchymosis. The condition present in the bones in this case, fracture of the body of the vertebra without injury of the spines or arches, is not often described, though self-reducing fracture is not rare in the cervical region of the spine.

We have no clear history of previous hysterical condition in the patient, but hysteria is a common condition in our clinic among the agricultural classes of Michigan and Indiana. The traumatism was not severe. The paralysis was peculiar inasmuch as it apparently advanced and receded, and was of a peculiar distribution for an organic lesion of the cord; both forearms and one leg seemed to be the seat of permanent paralysis, while the paralysis of the other leg apparently appeared one day to disappear the next. The biceps, knee and Achilles tendon reflexes were normal on each side.

There was no Babinski reflex, but we would not have relied on it to make a diagnosis of spinal cord injury, since it is so frequently found absent even though the spinal cord is severely injured. J. J. Thomas<sup>2</sup> reports cases in which the plantar reflex was retained even though the spinal cord was completely severed and refers to such conditions as not uncommon. Allen<sup>3</sup> says

2. Five Cases of Injury of the Cord from Fracture of the Spine, *Med. and Surg. Reps. Boston City Hosp.*, 1900, xi, 1.

3. Injuries of the Spinal Cord, with a Study of Nine Cases with Necropsy, *THE JOURNAL A. M. A.*, March 21, 1908.



that "unquestionably the majority of cases of complete transverse lesion reported have abolition of the plantar reflex." The cases reported by Potts<sup>4</sup> of traumatic cervical hematomyelia and complete division of the spinal cord had normal plantar reflexes. It will be seen, therefore, that at present the condition of the plantar reflex has but little clinical value in these cases. Probably more factors enter into it than are at present understood.

#### AN APPARENT HYSTERIC ELEMENT.

The changes found on examination of the sensation were regarded at the time as probably hysterical. No area of anesthesia or analgesia was present at the first examination. On the back of the left hand and fingers he called the point of a pin the head, and there was apparently a hypalgesia of the right leg. The patient while responding to all touches promptly, would at times keep on feeling touches after the examination was finished; whether this was due to suggestion or to so-called after-sensations can not be definitely stated, though it appeared to be due to the former. It will be evident that at this stage none of the symptoms were incompatible with a diagnosis of traumatic hysteria.

Such a diagnosis was rendered more probable at an examination made a few days later by the discovery that in a localized area he had the interesting symptom of allochiria, a transference of sensory impressions from one to the opposite side of the body. This was apparently a true allochiria, since there was no other error in localization. This symptom, the precise diagnostic value of which has been recently written on by Ernest Jones,<sup>5</sup> is considered by him as always due to hysteria. Obersteiner<sup>6</sup> was the first to describe and name this symptom. In his original definition he seems to exclude cases where there is a general defect in localizing sensation which when sufficiently great might cause an error as to which side of the body is touched, but it is doubtful whether Obersteiner really made this distinction in his cases.

This condition is now named by Jones alloesthesia or false allochiria, meaning thereby simply such a severe defect in sensory localization that the point touched or otherwise stimulated may be erroneously located by the patient on some point on the opposite side of the body. True allochiria exists only when the localizing sense is intact, except that the patient refers the stimulus to a corresponding point on the opposite half of the body. Jones publishes a very complete analysis and bibliography of the cases of true and false allochiria, and according to him there are only forty-one cases of sensory allochiria on record, of which only twenty-nine can be considered as cases of true allochiria. These were reported by Obersteiner, one, 1881; Ferrier and Debie, each one, 1882; Hammond, one, 1883; Magnin and Féré, one each, 1888; Janet, one, 1890; one by Weiss, 1891; two by Bose and one by Kerr, 1892; one by Gay, 1893; eleven by Sollier, 1897; one by Lapidous, 1899; three by Trapieznikow, 1901, and one by Sabrazès and Bousquet in 1905. To sum up, out of these twenty-nine undoubted cases of true allochiria, in twenty-six there was no reason to suppose that any other condition besides hysteria was present; in the other three, cases of tabes hemiplegia, and diphtheric paralysis, there was

reason to suppose that hysteria was present in addition to the organic affection.

In conclusion, I wish to emphasize my explanation of the mechanism of production of the lesion found in the spinal cord. I would also call attention to the difficulties in the early diagnosis between hysteria and an organic affection of the spinal cord in a case, such as this, in which there was no anesthesia and with normal reflexes and in the presence of allochiria. Finally, while there are numerous cases in which necropsy show that an operation on the spinal column for the relief of a traumatic condition would have been useless, this is such an excellent illustration of the point that I simply call attention to it.

300 South State Street.

#### DISCUSSION.

DR. J. J. THOMAS, Boston: One lesson that I should like to draw from this paper is that not all cases with hysterical symptoms are cases of hysteria. In a paper I published recently I called attention to a case of organic hemiplegia in a child, in which there were distinct hysterical symptoms that appeared and disappeared. There was contracture on the paralyzed side by which the foot was drawn down, so that the top of the toes touched the ground. Under suggestion this symptom was made to disappear. Frequently, in other cases besides those of multiple sclerosis, where we know hysterical symptoms appear, we get combinations of hysterical symptoms with organic disease; and that fact we can not be too careful to bear in mind. In the cases which I have seen, injury to the spinal cord in which it is impossible to detect either fracture or dislocation of the spine, is the rule. In a number of cases which came to autopsy at the Boston City Hospital, I persuaded the pathologist to remove a portion of the spine, and we could find the dislocation, the seat of injury of the bones, only when the spine was sawed in two lengthwise. It is the rule in injuries to the spinal column not to find dislocation or crepitus, and one has to make very frequently the diagnosis of injury of the spinal column from the injury to the spinal cord. Myelomalacia from dislocation of the spine is rather rare. Hemorrhage is much more common; yet that hemorrhage, in a number of cases which I have seen, is often at a great distance from the actual point which could have been compressed by the dislocation. I have found it as far removed from the point which was crushed as the fifth or sixth segment.

DR. FRANK R. FRY, St. Louis: I believe that traumatic cervical cord lesions are by all odds the most difficult of the traumatic cases to diagnose. We can never be sure from an *x-ray* picture as to everything that has happened. We may see a displacement of the bone in that way, but we can not tell what effect that displacement has had on the cord. As Dr. Thomas has said, we have to make the diagnosis of lesion of this cord from the nervous symptoms, irrespective of the degree of injury that seems to have been inflicted on the bone as revealed by an *x-ray* picture or otherwise. Some years ago I took the ground rather emphatically that we ought to operate in these cases when there is evidence of an important injury; that we ought to cut down if there were a fair opportunity to do so soon enough and investigate. I have seen a number of cases that impressed me that way. I do not see how we are to determine what has happened to bone except by a surgical investigation of this kind. We do not find it out reliably by an *x-ray* picture. We find out certain things, but that is not always convincing, or should not be. I believe that lesions of all kinds in the cervical region are particularly predisposing to hysteria. I have seen them so often.

DR. WILLIAM W. GRAVES, St. Louis: I can hardly agree with Dr. Camp in the idea that the variability in symptoms which seems to have been the main point leading him to suspect a hysterical condition in his patient, could be accounted for only on a hysterical basis. In the very beginning such an assumption might have been warranted, but when we consider the case in the light of his pathologic findings, and

4. Jour. Nerv. and Ment. Dis., 1905, xxxiii, 359.

5. Brain, 1907, cxx, 490; also Lancet, Sept. 21, 1907.

6. Allochiria, a Peculiar Sensory Disorder," Brain, July, 1881, 153.



when we know from them that there must have been interference with the blood supply in these particular segments of the cords, it is certainly thinkable that the interference with the nutrition of that part of the cord might have been sufficient to bring about variability in the sensory findings; and so, inasmuch as in his case there were absolutely no other evidences of a hysterical condition, and everything from the very beginning pointed really to an organic affection, the assumption of hysteria was hardly justifiable. The symptom of allochiria, while I can not explain it in this case, must be considered as due to some organic affection or to some interference with the function of certain segments of the cord.

Dr. Camp's paper emphasizes another point. There was for a long time doubt and some controversy as to the particular segment of the cord in which the reflex arc for the triceps reflexes was located. The lesion found by Dr. Camp microscopically was in the seventh cervical, eighth cervical and first dorsal segments of the cord. Oppenheim in his studies laid particular stress on the fact that the reflex arc is mainly in the last cervical and in the first dorsal segments. Dr. Camp's findings—radial and biceps reflexes, and the absolute absence on both sides of the triceps reflex—confirm the assumption of Oppenheim. These findings pointed conclusively, independently of any other symptoms present, to some interference with certain segments of the cord. Furthermore, disturbance of motility pointed unmistakably to this interference. The individual could make a fist, he could pronate and supinate his forearm; he could flex his arm at the elbow; but extension of the wrist and extension of the elbow were impossible; furthermore, he had another symptom which pointed to the involvement of these segments of the cord, namely, dilatation of the pupil on one side—at any rate, a difference in pupils—so that the findings, even in the beginning, pointed to an involvement of the cord.

I believe that the best indication for surgical interference in injuries to the bony coverings of the nervous system, is always to be found in the consideration of the nervous symptoms present; that however extensive a fracture there may be of the skull, or however much deformity there may appear to be about the vertebral column, those symptoms in themselves rarely warrant surgical interference; but that it is only by a careful consideration of the nervous symptoms that we can determine positively as to whether or not we should interfere surgically.

DR. CARL D. CAMP, Ann Arbor: I can not agree with Dr. Graves when he assumes that the diagnosis between hysteria and organic affection was not difficult. It was, of course, as an afterthought not particularly difficult to see that all the symptoms, or almost all the symptoms, at any rate, might have been due to the lesion found. I can not agree that the triceps reflex is constant. I have found it difficult to obtain in many cases. The peculiar fluctuations of the paralysis and the absence of sensory changes, with the exception of allochiria, in the early stages, would rather point to the conclusion that this was a case of traumatic hysteria. Of course, after the microscopic examination of the lesion and its demonstration as being probably a vascular condition, it is easy to say that the changes in the blood supply might have caused a fluctuation in the extent of the paralysis, but that is still doubtful. I also disagree with the statement that the neural condition is the most important as deciding for or against an operation in these cases. I think that the neural condition (the extent of the paralysis, etc.) has very little to do with deciding for or against an operation. In cases in which the spinal cord symptoms alone are obtained, and in which there are no surgical indications from a clinical or x-ray examination, I think that operation is probably contraindicated.

**Psychologic Nomenclature.**—One of the principal tasks before the Sixth International Congress on Psychology, which is to meet at Geneva, Switzerland, Aug. 31 to Sept. 4, 1909, is the revision of the nomenclature of psychology. It is expected that several sessions will be devoted to the determination of terminologic equivalents in the four languages, English, French, German and Italian.

## CEREBRAL ABSCESS.\*

EMIL AMBERG, M.D.

DETROIT, MICH.

*History.*—A local physician told me incidentally that he was treating a girl about 12 years old whose ears had been discharging since soon after birth, and that a few days since chills had set in and the child was very sick. I told him that the child in all probability had a thrombosis of the lateral sinus and that its condition was a very critical one. The doctor succeeded in sending the patient to Grace Hospital the next day.

*Examination.*—I saw the girl for the first time Sunday, January 19 at 4 p. m. The temperature was 103.2 F., pulse 144, respiration 28; the mother reported a chill at noon and one during the night.

*Operation.*—I operated immediately, performing a radical operation on the left side and exposing the lateral sinus freely. I removed the thrombus, reaching almost to the jugular bulb, until free hemorrhage occurred from below. Large masses of thrombotic material were removed also towards the torcular Herophili, but there was practically no hemorrhage. Saline solution was administered hypodermically and by rectum.

*Postoperative History.*—January 20: Chill at 9 a. m., at 10 a. m. the temperature was 104.8 F., at 11:50 a. m., 104.6 F. At 9 p. m. temperature was 97.2 F., pulse 92. Urine examination: Color yellow, sediment none, reaction acid, appearances turbid; specific gravity 1020; albumin absent, sugar absent, epithelium, few squamous; crystals of uric acid.

January 21: Slept well until after midnight, cried at times with pain in the ear. At 7:45 a. m. temperature rose to 105 F., at 10 a. m. chill; appetite reported as good. At 5 p. m. temperature 98.8 F.; at midnight 97.2 F.; had a fair day.

January 22: At 5 a. m., temperature 97.4 F.; at 9, 97.8 F.; at 12 m., 98.2 F.; at 6 p. m., 101. A fair day.

January 23: Had a good night, appetite good. At 5 a. m., temperature 97.6 F.; at 12 m., temperature 98 F.; at 8 p. m., 100 F. Passed a good day.

January 24: Slept at intervals, appetite poor: at 5 p. m., temperature 103.2 F.; at 6 p. m., temperature 99.2 F.

January 25: Good night; at 6 a. m., temperature 100 F., appetite good; at 9 a. m., temperature 100.6 F.; at 11:30 a. m., 104 F.; at 12:45 p. m., 99 F.; at 3 p. m., 100.8 F.; at 5 p. m., 98.4 F.

January 26: Had a fair night; complained of headache in the morning. At 5 a. m., temperature 99.4 F.; at 6 a. m., temperature 104 F.; severe chill, delirious; at 9 a. m., temperature 99.4 F.; at 2:30 p. m., 98 F.; at 6 p. m., 97.6 F.; appetite fair to good.

January 27: Restless all night. At 6 a. m., temperature 105.8 F.; severe chill, delirious; at 8 a. m., temperature 101.6 F.; at 11 a. m. patient was taken to operating room and examined; wound at posterior cranial fossa looked grayish; offensive odor; cleaned. Appetite fair to good. At 3 p. m. temperature 102 F., slight chill. At 5 p. m., temperature 104.6 F.; pulse 160; refused supper; did not like the light; complained of pain in left temple.

January 28: Had a good night; at 5 a. m., temperature 99 F.; at 9:30 a. m., 100.6 F.; appetite fair.

*Second Operation.*—January 28, at noon, I operated again. First I tied the internal jugular vein. It was filled with blood. I opened the middle cranial fossa and evacuated about two drams of not offensive yellowish-green pus which seemed to have been liberated from a well defined, apparently clean cavity. The patient received about 6 ounces of physiologic saline solution hypodermically during the operation, and saline solution per rectum for one hour after the operation. The child left the operating room with a good pulse, although about 125. At 3 p. m. the temperature was 104.2; comfortable since the operation. At 5 p. m., temperature 100.4, at 11, 98.2.

*Postoperative History.*—January 29: Had a good night; at 9 a. m., temperature 98 F.; at 10 a. m., 97.8 F.; at 2 p. m.,

\* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



98.9 F.; at 5 p. m., 99.4 F.; at 10 p. m., 100 F. Passed a good day.

January 30: Good night; appetite good. At 5 a. m., temperature 99 F.; at 2:30 p. m., 104.6 F.; at 5 p. m., 103.2 F.; at 7 p. m., 97.8 F.; at 9 p. m. (by rectum), 98.2 F. A poor day.

January 31: Slept well all night; quite rational; appetite fair. At 6 a. m., temperature 98 F.; at 8 a. m., 100 F.; at 3 p. m., 96.6 F.; at 6 p. m., 97.2 F.

February 1: Slept well all night; at 6 a. m., temperature 98 F.; at 11 a. m. (axilla), 96.8 F.; at 2 p. m., 98 F.; at 3 p. m., 98.2 F.; at 12 midnight (axilla), 97.8 F. A fairly comfortable day.

February 2: At 6 a. m., temperature 98 F.; complained of a great deal of pain in the head; comfortable after 1/10 gr. morphin had been given hypodermically. At 1 p. m., vomited; at 2 p. m., temperature 99.4 F.; at 3 p. m., nauseated; at 7 p. m., temperature 101.4 F.; at 11 p. m. (axilla), 98.6 F. A poor day.

February 3: A fair night; vomited at 3 a. m.; temperature 100.8 F.; at 6 a. m., 98.2 F.; at 1:15 p. m., 98 F.; at 6 p. m., 99.2 F.; temperature taken each time by axilla.

February 4: The child was in an almost comatose condition. At 2 a. m. axillary temperature 99.4 F., pulse 84. Between 6 a. m. and noon repeated spasms; temperature at 9 a. m., 99.3 F., pulse 82; at noon, 99.4 F., pulse 82; at 1 p. m. (by rectum), 100 F.; at 5 p. m. (by rectum), 99.4 F.; at 9 p. m. (axilla), 99.4 F. A poor day. While dressing the wound the absence of discharge was noticed. I thought there must be some retention of pus and explored the wound with a



Fig. 1.—Case of cerebral abscess; about  $\frac{2}{3}$  of left half of cerebrum, seen from below.

dressing forceps, evacuating a large quantity of foul smelling pus. It now became apparent to me that I had opened a deep seated abscess. The child to our surprise immediately showed signs of somewhat improved mental activity. One of the gentlemen present made the remark that the child's comatose condition was changed into a semi-comatose condition.

February 5: At 1 a. m. temperature (axilla), 100.8 F.; pulse 96; at 6 a. m. (axilla), 101.2 F., pulse 104; at 11 (axilla), 100 F., pulse 96; at 12 patient had a convulsion; at 1:30 p. m. (axilla), 104.4 F., pulse 120; at 4 p. m. (axilla), 106.4 F., pulse 120; at 4:30 p. m. (rectum), 107.6, pulse 142; at 5 p. m. (rectum), 108 F., pulse 160. The temperature kept on rising. At 6:45 p. m. the child died.

We had before us a child suffering from chronic middle-ear suppuration, which in a course of 11 or 12 years had gradually extended into the surrounding tissues. Four distinct pathologic features were present:

1. A chronic suppurative tympano-mastoiditis.
2. An abscess in the region of the dura on the roof of the antrum, being in all probability extra- and intradural.
3. An extended lateral sinus thrombosis.
4. An old deep-seated brain abscess.

While the three first-named conditions were more readily recognized, either by their clinical symptoms or by the findings during surgical interference, the last

was somewhat less plain. A severe attack of pain in the head which occurred in my absence one night between 10 p. m. and 1 a. m., and after which the child's condition appeared to change suddenly, seemed to mark the turn for the worse. I might emphasize in this case the repeated attacks of violent pain in the head. Long before, the child had asked her mother why her head should ache when she blew her nose.

I remember having heard of a medical student in a German university who told his associates that he was suffering from an affection of the brain; I do not recollect whether an abscess or a tumor. His friends regarded him as a hypochondriac and teased him. He died, and his assertion was regarded as correct. I admit that our case presented some features which were not interpreted correctly and in time on account of the complexity of the affection. The autopsy was confined to the calvarium alone. The principal findings in the autopsy were pachymeningitis externa, a small thrombus about 1 cm. in length about half way between the knee of the lateral sinus and the torcular Herophili, edema of the brain, an old abscess in the left cerebrum adjacent to the ventricle, showing a capsule, with apparently a rupture into the ventricle. The location of the deep-seated abscess was, of course, a very dangerous one, being directly adjacent to the ventricle.

Dr. G. P. Myers, pathologist to Grace Hospital, reported examination of pus smear January 24: Staphylo-



Fig. 2.—The cerebrum (A) cut at an angle of about 45 degrees; the portion marked with an inverted A shows the cerebrum in practically its normal position.

coccus, *Diplococcus pneumoniae* and an unknown bacillus. At autopsy, culture No. 1 of rest of thrombus. No. 2 of meninges near opening by operation. No. 3 of right middle ear. Nos. 1 and 2 heavy growth, pneumococcus and colon bacillus. No. 3, very scant growth of same bacteria. No. 3 unreliable because same chisel used to open calvarium used to open right ear.

270 Woodward Avenue.

## EXPERIMENTAL PAROTITIS.\*

ISABELLA C. HERB, M.D.  
CHICAGO.

The most noteworthy study of the bacteriology of mumps is by Laveran and Catrin,<sup>1</sup> who in 1893 described a diplococcus in the exudate which they obtained by aspiration of the parotid gland. They found this diplococcus 67 times in 92 cases; 39 times the organism

\* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

\* From the Pathological Laboratory of Rush Medical College and the Memorial Institute for Infectious Diseases, Chicago. This work was aided by a grant from the American Medical Association.

1. Compt. rend. Soc. de biol., 1893, v. 528.



was obtained in pure culture, twice in mixed culture, and 15 times the result was negative. The 15 negative results they attributed to the small quantity of exudate obtained. In 16 cases of secondary orchitis pure culture was obtained 12 times, once with contamination and three times they obtained no growth. The organism was obtained from the blood during the height of the fever 10 times in 15 examinations. Three times pure cultures were obtained from the edema of the overlying tissue of the gland and once from the exudate of a joint. They found it fatal in large doses to white mice. Injections into the testicle produced an inflammation which lasted about eight days.

In 1896 Meeray and Waleh<sup>2</sup> examined the saliva from Steno's duct in 10 cases. They found a diplococcus 6 times. In 8 blood examinations they obtained the organism in pure culture 3 times, mixed with the white staphylococcus 3 times, and twice their results were negative. In 1896 Busquet and Feri examined the blood and saliva in 3 convalescents and in 17 patients during the early stages of the disease and found a diplococcus in all the cases.

In 1897 Michaelis and Biem<sup>3</sup> examined the secretion from Steno's duct in 16 cases and obtained pure cul-

ism was fatal to mice, guinea pigs and rabbits in large doses. No results were obtained in dogs.

So far as may be judged from the description of the investigators I have cited it appears very probable that they have dealt with the same diplococcus.

I obtained a similar diplococcus from the body of a man about 40 years old who entered the hospital in a moribund condition and died in a few hours. Except the report that he had had mumps no history was obtained. The postmortem by Dr. LeCount showed a right suppurative parotitis, bronchopneumonia and several minor lesions.

The cerebrospinal, pleuritic and pericardial fluids, bile, spleen, lung, testicle and right parotid gland were examined bacteriologically. Cover glass preparations from the bile, pericardial and cerebrospinal fluids showed a rather large diplococcus; the latter also contained a smaller coccus occurring in groups. The pleuritic fluid contained a short bacillus. They were both Gram positive. The *Proteus vulgaris* was isolated from the pleuritic, cerebrospinal and pericardial fluids, the spleen, lung, testicle and parotid gland; the *Staphylococcus albus* from the lung, testicle, cerebrospinal fluid and parotid gland. From the lung, testicle, cerebrospinal and pericardial fluids, bile and parotid gland a coccus was isolated with the following characteristics:

The coccus appears most frequently as a diplococcus, occasionally in chains of 4 to 6 elements, or in small groups. It is round and measures from .5 to .8 microns when about 24 hours old. When several days old it measures from .6 to 1.5 microns. It is easily stained by all the ordinary anilin dyes and is Gram positive. It grows equally well aerobically and anaerobically. It is not motile, has no capsule or flagella and does not form spores, gas or indol. It grows best in a temperature of 37 C. A temperature of 50 C. for three minutes destroys growth, cold inhibits but does not prevent growth when the culture is again placed under favorable conditions. Colonies developed from a milk culture two months old and from agar which was dried till it was broken. While the coccus develops on all the ordinary media, its growth is characteristically slow, the colonies on a 24-hour glycerin agar culture being scarcely visible. I have found by mixing sterilized saliva with agar, as in making blood agar, that an abundant growth is obtained in from 12 to 24 hours. Ascitic agar is also a good medium.

The organism is fatal to white mice, white rats, guinea pigs and rabbits when injected subcutaneously or intraperitoneally. The animals usually die within 24 hours of peritonitis. Those that survive for several days die of bacteremia. The growth from a 48-hour agar slant suspended in 1 c.c. normal salt solution injected into the testis of rabbits produces an acute inflammatory condition which lasts for 7 to 10 days and then disappears without suppuration, the structure later appearing perfectly normal. On the other hand, animals similarly inoculated with staphylococcus and streptococcus die of peritonitis within 20 hours, while an injection of normal salt solution alone produces no reaction.

The following experiment was made on a medium-sized so-called white-faced ringtail monkey. On February 7, the animal, whose temperature was 100.8 F., was inoculated through the right Steno's duct with the culture from a 48-hour ascitic agar slant suspended in 1 c.c. normal salt solution.



Fig. 1.—Uniform enlargement of the left parotid gland of a dog on the fourth day after inoculation of the diplococcus into Steno's duct. The skin and muscles have been removed.

tures of a diplo-strepto-coccus in all. Their animal experiments gave negative results.

In 1906 Teissier and Esmein<sup>4</sup> examined the blood in 45 cases and obtained a diplococcus in 37. The negative results were in those with a light attack of the disease or during convalescence. The organism was obtained 33 times in pure culture, twice with streptococci, twice with a bacillus and 3 times with a coccobacillus. The exudate from Steno's duct showed in 10 examinations 9 pure cultures. The coccus was fatal to guinea pigs and rabbits. Following intraperitoneal inoculations an orchitis developed in 4 of 7 rabbits. In 1907 Korentschewsky<sup>5</sup> isolated a diplococcus from the gland exudate in 21 of 29 cases. His blood examinations gave positive results in 8 of 32 cases. The organ-

2. Med. Rec., 1896, 1, 440.

3. Verhandl. XV Congr. f. Inn. Med., 1897, 15, p. 441.

4. Compt. rend. Soc. de biol., 1906, ix, 803, 853, 897.

5. Centralbl. f. Bakteriol., part 1, 1907, xlv, 394.



February 8, temperature 103 F.; slight swelling of the parotid; refuses food.

February 9, temperature 103.2 F.; decided enlargement of the parotid; chews with difficulty, but does not appear sick.

February 10, temperature 101.8 F.; parotid about as it was yesterday; less difficulty in chewing; appetite good.

February 11, temperature 101.2 F.; parotid smaller than yesterday.

February 12, temperature 100.8 F.; swelling of parotid gradually disappearing.

February 13, temperature 100.2 F.; swelling of parotid gradually disappearing.

February 14, temperature 100.2 F.; parotid appears of normal size.

Most of my experiments have been on dogs. These animals seem to react in a characteristic manner to the introduction of the coccus into the parotid gland, while subcutaneous and intraperitoneal inoculations produce no results. Direct inoculation into the parotid gland of dogs causes a swelling of the gland, lasting for 7 to 10 days. The injection of suspensions into Steno's duct produces in dogs a uniform swelling of the parotid gland which begins in from 48 to 72 hours, the gland continuing to enlarge for a few days, when it gradually returns to the normal size. In these animals the temperature during the period of the swelling of the gland ranges from 1 to 1.5 F. above normal; in no case did suppuration develop, and with the exception of difficulty in chewing for a day or two the animals appear to suffer no special inconvenience.

Injections into the duct of mixed cultures of the organism and staphylococcus causes edema of that side of the face and the parotid gland in 3 or 4 hours and abscesses form in 3 or 4 days. In two dogs that survived these injections after drainage of the abscesses the parotid gland was completely destroyed. One dog died on the fifth day of bacteriemia, another developed lung abscesses and died on the twenty-third day.

The following record of a single experimental inoculation of the diplococcus into Steno's duct in the dog illustrates well the changes thus produced in this animal:

February 24.—Small, young, black and white dog. Temperature, 102.5 F. Inoculated into the left Steno's duct with the bacteria from two 48 hours saliva agar slants suspended in 3 c.c. broth.

February 25.—Temperature, 102.5 F. No visible enlargement.

February 26.—Temperature, 103 F. Parotid enlarged. Dog whines when firm pressure is made over the gland.

February 27.—Temperature, 103.5 F. Parotid evenly enlarged and hard. Dog does not act ill, is playful and hungry, but experiences difficulty in chewing.

February 28.—Temperature 102.8 F. Gland about as it was yesterday. Pure cultures of the organism injected developed from aspirated fluid.

March 2.—Temperature 102.5 F. Swelling gradually disappearing.

March 5.—Temperature 102.5 F. Almost no enlargement of the gland.

March 6.—Temperature 102.5 F. Gland appears normal.

Macroscopically, the enlarged parotid gland of inoculated dogs is of uniform firm consistence, the enlargement often reaching many times the size of the normal gland, and the cut surface is pinkish, exuding a slight amount of pinkish, rather turbid fluid. The neighbor-

ing lymph nodes are moderately swollen, but there are no gross changes in other parts of the body.

Microscopic examination of the parotid gland at the height of the enlargement shows a uniform infiltration of the tissue with plasma cells, small and large mononuclear cells, and polymorphonuclear leucocytes, the ducts being packed with cells. This infiltration begins in the interacinous tissue.

Examinations of the blood of the inoculated dogs shows a distinct leucocytosis, the increase being largely in the mononuclears.

Shortly after injection of the diplococcus into the parotid gland, the opsonic index of the serum of the injected animal begins to rise, reaching the highest point, about three, on about the fourth day, returning to normal gradually. So far as my observations go, a similar rise in the opsonic index with respect to the diplococcus occurs in human mumps, but many further observations are necessary before final statements may be permitted. Work along these and other lines, including the anatomic changes in the inoculated dog, is now in progress.

#### CONCLUSIONS.

From a case of mumps a diplococcus was isolated which corresponds in its essential characteristics to the organism obtained from mumps by Laveran and Catrin, Mecray and Waleh, and the other investigators cited. Inoculations of suspensions of the diplococcus into Steno's duct in the monkey and in the dog produce an acute, uniform enlargement of the parotid gland accompanied with some slight fever. In the dog this enlargement is the result of an infiltration that consists largely of mononuclear cells, and is accompanied with a general increase in the mononuclear cells in the blood as well as a distinct rise in the opsonic index with respect to the diplococcus. Further studies, especially of the changes and reactions in human mumps, are necessary before it can be said whether or not this diplococcus is the specific cause of mumps.

### Clinical Notes

#### THREE CASES OF IMPERFORATE ANUS WITH RECTOVAGINAL FISTULA.

H. J. WHITACRE, B.S., M.D.

CINCINNATI.

It has been my good fortune to see during the past five years three very unusual congenital defects of the rectum the reports of which cases are appended. The defect in these cases consists in a partial failure of development in the fetal septum which divides the cloaca into a posterior rectal portion and an anterior genito-urinary portion. The defect is well illustrated in Figures 1 and 2.

CASE 1.—*History*.—C. K., aged 8 months, well-developed female child was sent to me by Dr. Allyn C. Poole of Cincinnati for the operative treatment of a defect of the rectum which had existed since birth. This little patient suffered great inconvenience from this defect. The bowels could be moved only with great difficulty and she often suffered much abdominal pain. Furthermore, there was a constant irritation about the genitalia because of the discharge of stool through the vagina. This irritation had been kept under fairly good control by the mother. The bowels had at all times moved voluntarily, however, and there had been no incontinence.

*Examination*.—The patient is well developed and well nour-



ished, having the usual amount of adipose tissue for a child of this age. The head, chest and abdomen present no evident abnormalities. On examination of the perineum there is no depression or other evidence of an anus. On separating the labia and opening the vagina an opening into the rectum is found just within the fourchette. This opening is about one-fourth inch in diameter, is pliable and can be dilated. The mucous membrane of the rectum unites and becomes continuous with that of the vagina, with no pouting of the rectal mucosa. While the opening does not seize the finger as does the normal anal sphincter, a sensation of a definite tone is communicated to the examining finger. A curved sound introduced into the rectal opening demonstrates a pouching of the rectum backward, so that there does not seem to be much tissue between the skin at the normal site of the anus and the interior of the bowel. The vagina and the urethra are normal in their anatomic structure and arrangement.

*First Operation.*—This was performed under ether anesthesia. In view of the fact that the rectum seemed so near to the skin at the usual site of the anus, it was deemed feasible to make an opening here and close the vaginal fistula by suture. Accordingly, a three-fourths inch incision was made through the skin into the rectum and the mucosa sutured to the skin by interrupted catgut sutures. A circular incision



Fig. 1.—Imperforate anus with rectovaginal fistula. Saggital view of the conditon.

was then made around the fistulous opening into the vagina, and the edges were turned into the rectum by interrupted suture tied in the rectum. After a few days, and in spite of irrigation of the rectum to prevent accumulation, the fistulous opening into the vagina reopened. The tube was now removed from the rectum. Within a suprisingly short time the incision in the perineum closed completely and all stool was again discharged through the vagina. Three weeks later a second operation based on a more rational and correct technic was performed.

*Second Operation.*—This also was done under ether anesthesia. An incision was made in the median line from the lower border of the fistulous opening almost to the coccyx. This incision extended down to the rectal wall throughout its extent. A circular incision was now made around the fistula and the rectum was dissected free from the vagina in front and from the tissues laterally until it presented the appearance shown in Figure 3. Previous experience had demonstrated the fact that the fistulous opening in the vagina was in reality the lower end of the rectal tube, and that there was a certain amount of sphincteric action present, so it seemed rational

to suppose that a functional result could be obtained by displacing this opening backward to the normal site of the anus. When the dissection had been carried backward sufficiently to allow this opening to be placed in the desired position at the posterior extremity of the median incision, the mucosa of the bowel was sutured to the skin by interrupted chromic gut sutures. The space between the vagina and this new location of the anus was now closed by suture in a manner entirely analogous to that used in perineorrhaphy and shown in Figures 4 and 5. Figure 4 is not entirely correct. It should show the sutures passing through the loose peri-rectal tissues in the bottom of the wound—just enough to prevent dead space. The closure of the wound in this way gives a perineal body of considerable size and solidity. The bowels were moved on the fourth day and all stitches held. The result was complete at the end of two weeks' time, the bowels were moving daily, without incontinence, and have continued to act in a perfectly normal manner for the past five years. The perineum of this child is somewhat more depressed than is normal, yet it has a normal appearance on inspection. The anal opening is of sufficient diameter, the vagina is normal in

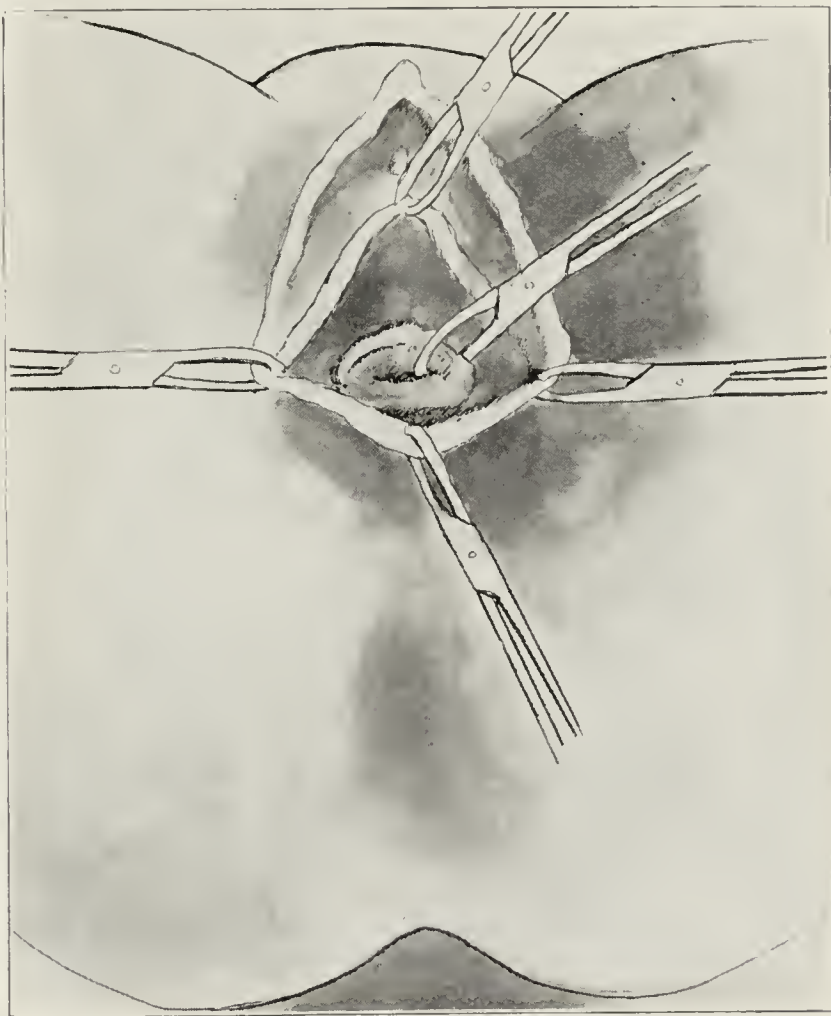


Fig. 2.—Imperforate anus with rectovaginal fistula. The vulva is distended and the vaginal anus is seen just within the fourchette.

its appearance and capacity and the perineal body has remained fairly satisfactory in size. The child is now a fine looking girl 6 years of age.

*CASE 2.—History.*—A. K., aged 5, was admitted to Christ Hospital, Nov. 27, 1906, and discharged Dec. 18, 1906. This patient was referred to me in consultation and for operation by Dr. F. C. Theiss of Cincinnati. She was a healthy, well-developed child, who gave no history of serious illness.

*Examination.*—Nothing abnormal is to be seen except the congenital defect in the rectum and vagina. On inspection of the perineal region there is absolutely no marking at the usual site of the anus. The vulva is apparently normal in appearance on the outside. The vagina shows an opening on its posterior wall about one-fourth inch in diameter and one-fourth inch back of the fourchette. This opening seems to correspond to the termination of the rectum. There does not seem to be the same considerable pouching of the rectum posteriorly that was found in Case 1. This abnormal opening shows evidence of some sphincteric action, and there is no pouting of the mucous membrane in the rectum.



*Operation.*—On Nov. 28, 1906, under nitrous-oxid, ether anesthesia, an operation, precisely similar in every detail to that done in Case 1, was performed. The primary result was again very satisfactory, the patient endured the operation well and recovery was prompt. She suffered some difficulty in movement of the bowels for a period of three or four days, about ten days after operation, but this was temporary and did not recur.

*Postoperative History.*—During the past thirteen months the patient has been perfectly well, has suffered no incontinence, even when the bowels were loose, and has been attending school since Sept. 1, 1907. She was recently presented to the Cincinnati Obstetric Society, and it was agreed by the members present that the anus was in a satisfactory position, that the mucoenteric junction was satisfactory, that the perineal body was of sufficient size and solidity, and that the vagina presented a fairly normal appearance. I believe that both patients will be able to satisfactorily perform the functions of wife and mother.

*CASE 3.—History.*—This patient a new-born baby, was seen eight months ago with Dr. Neufarth of Mt. Healthy, Ohio. The child presented precisely the same lesion that has been described in the other two cases. Inasmuch as the stool was discharged satisfactorily and the irritation was kept fairly under control, it was deemed wise to postpone operation until

among 12,000 children who were under his care while director of the Dresden Hospital (Buckmaster). Furthermore, my own experience corresponds with that of Buckmaster, who states that inquiry made among a large number of physicians having extensive practices reveals no cases of this sort. My experience of encountering three cases of this variety within a period of five years is unusual.

A noteworthy fact brought out by a study of collected case reports is that very few successful cases are reported later than a few weeks or months after the operation. A large number of the cases reported are of patients who were not operated on. The failures after operation are to be explained by the fact that all of the earlier operations consisted in simply making an incision down to the rectum at the normal site of the anus and suturing the mucosa to the skin. If the rectum could not be

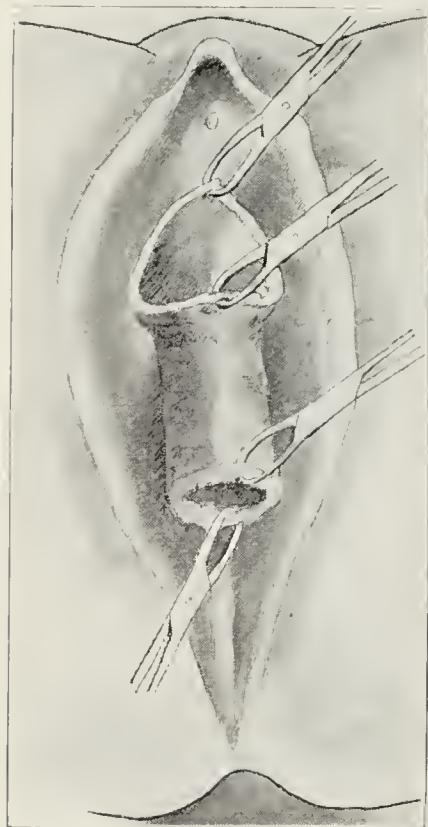


Figure 3.

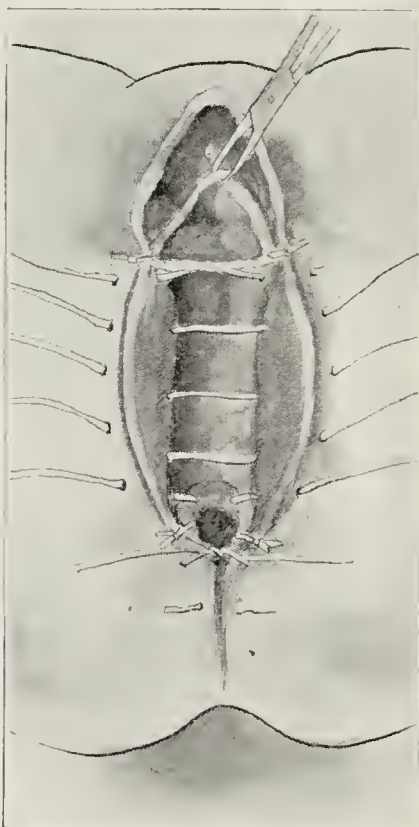


Figure 4.

Fig. 3.—An incision has been made in the median line extending down to the rectal wall; a circular incision has been made around the fistula and the rectum has been dissected free from the vagina in front and from the tissues laterally.

Fig. 4.—Showing the mucosa of the bowel sutured to the skin and the space between the vagina and the new location of the anus closed as in a perineorrhaphy.

the child was older. When the proper time has arrived I shall perform the operation that has been described.

#### RARITY OF THE CONDITION.

I am prompted to report these cases by the rarity of the condition and by the seemingly insufficient presentation of this subject by the text-books. That the condition is a rare one is shown by the fact that in 1894 not more than sixty cases were found on record by Buckmaster.<sup>1</sup> The rarity is further shown by the fact that in 16,000 cases of obstetrics occurring under Collins at the Rotunda Hospital one case of vaginal anus is noted. Bednar saw but one case in 7,154 girls in his foundling asylum, while Winckel does not recall a single case

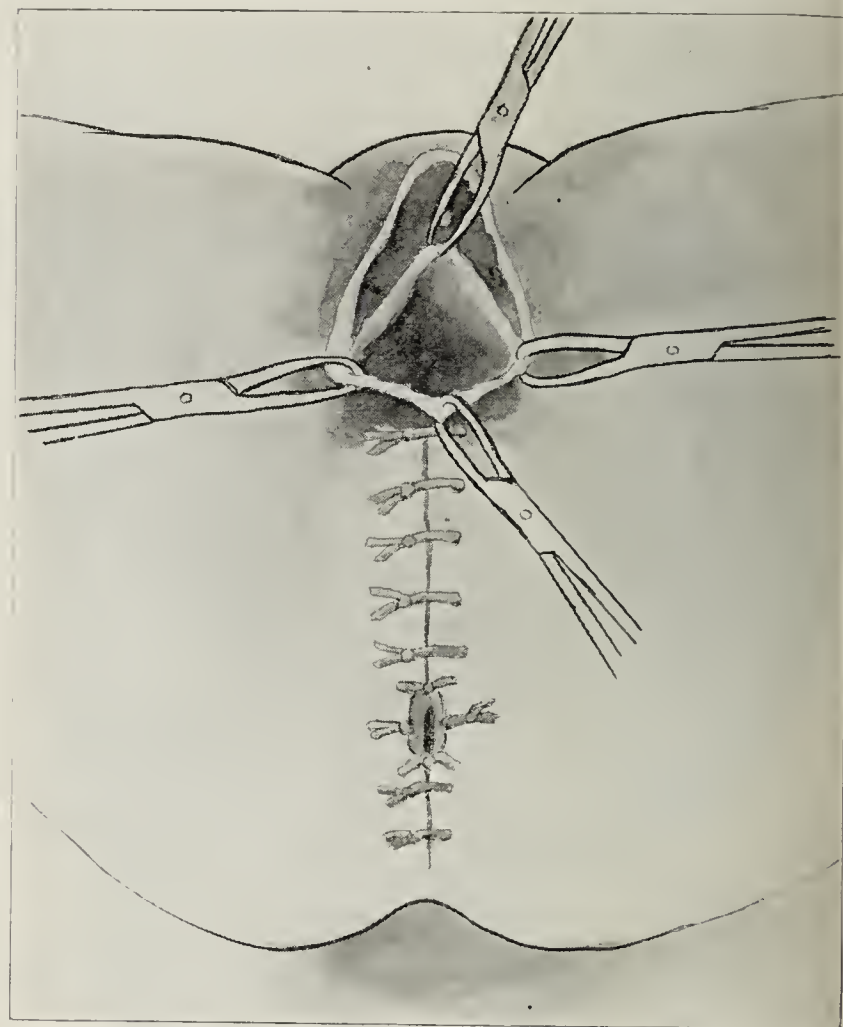


Fig. 5.—Completed operation showing new anus.

brought down to the skin the wound was packed and this channel was kept open by persistent dilatation. The vaginal opening was either closed by suture or left to close spontaneously.

M. Vicq d'Azyr suggested the division of all tissue posterior to the vaginal opening as far as the normal site of the anus. This suggestion was put into practice by Rhea Barton of Philadelphia. Professor Dieffenbach (1826) made an important step in the evolution of the operation when he made a dissection of the rectum and drew it down to the skin and then repaired the perineum by a later operation. He did not dissect out the vaginal opening, however.

Rizzoli performed and described an operation in 1871 which is practically the same that the author has used. Buckmaster<sup>1</sup> has described an operation which is somewhat more complicated and is adapted to cases in which the opening is higher up and incontinence of feces is present. He provides sphincteric action by drawing the bowel through the separated fibers of the levator ani.

1. N. Y. Med Jour., Aug. 11, 1894.



Dr. Paul Puech (Paris, 1890) has collected all reported cases of this type of imperforate anus, has discussed the subject at length in a monograph and has given a complete bibliographic reference list.

#### SUMMARY OF THE TECHNIC.

The lesion has been so uniform in the three cases that have been reported that in each case a typical operation was applicable. I consider that the important points in the technic are:

1. An appreciation of the fact that in my cases the vaginal opening was apparently the termination of the bowel.
2. That this fistulous opening into the intestine was supplied with the usual or a sort of sphincteric muscle which was entirely efficient in the new location.
3. The vaginal opening should be carefully preserved by a circular incision made around it.
4. A dissection of the rectum should be made sufficient to permit the bowel opening to be displaced to about the normal position of the anus, and this dissection should be conducted in a manner which will not too seriously interfere with the nutrition of the rectum.
5. The perineum and vagina are to be closed in front by sutures in a manner exactly similar to that followed in an ordinary perineorrhaphy.
6. The bowels should be managed as in an ordinary case of perineorrhaphy.

22 West Seventh Street.

### A DEVICE FOR FACILITATING TEST-MEAL REMOVAL AND GASTRIC LAVAGE.\*

F. J. DEVER, M.D.

AND

F. A. FAUGHT, MD.

Assistants to the Professor of Clinical Medicine, Medico Chirurgical College and Hospital.  
PHILADELPHIA.

Some years ago Professor Judson Daland adopted, for the purpose of facilitating gastric lavage and test-meal removal, two large open-mouth bottles of more than a liter capacity, a plain gastric tube and a double action Davidson bulb. With this arrangement, aided by an assistant, it was possible to obtain a sample of gastric contents in considerably less than a minute and to immediately follow this procedure with lavage and inflation if desired. This arrangement while marking a distinct advance over other methods in common use, has the decided drawback that its employment required the attendance of an assistant; the complicated nature of the apparatus requiring a second pair of hands to manage bottles and change tube connections during the passage of the tube.

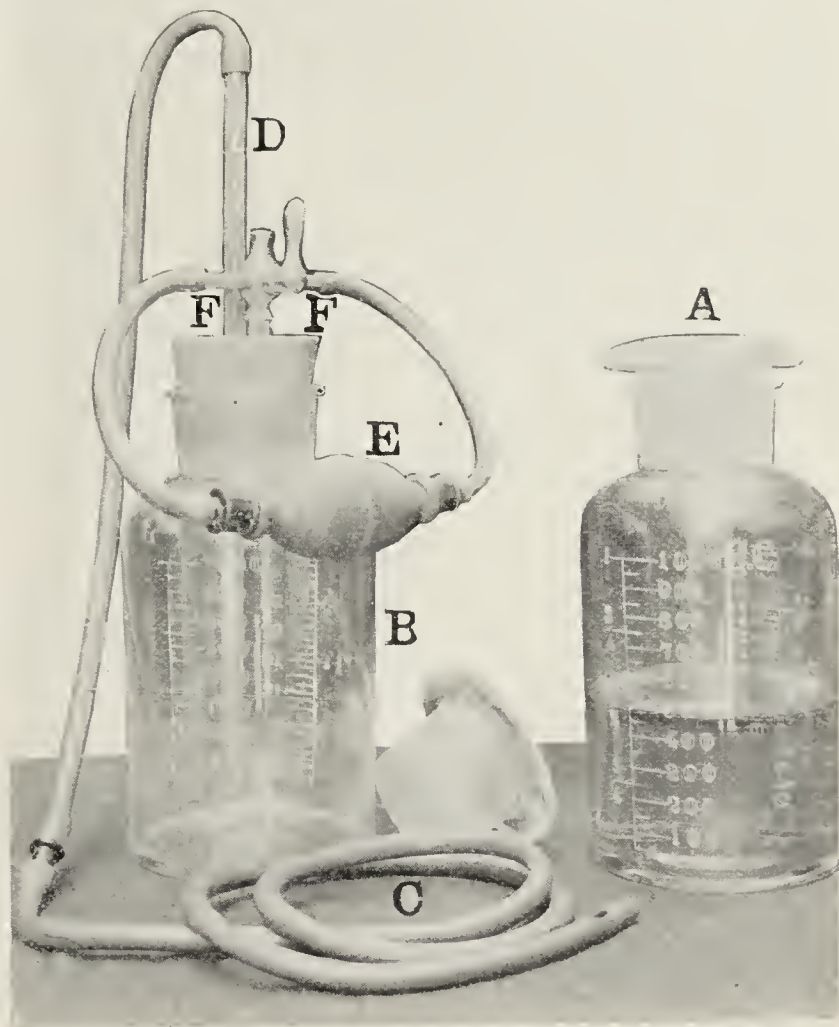
To overcome this difficulty and to render this method more universal in its employment we have devised the reversing valve about to be described. This device is simple in its manipulation, easy to keep clean and in repair, and in practice does away entirely with the necessity for assistance.

Besides the reversing valve (F,F) the following components are required: 1, A plain gastric tube (C) without bulb or funnel; 2, a double-action Davidson hand bulb (E); 3, a large rubber stopper having two perfora-

tions; 4, two wide-mouth bottles (A and B) of more than a liter capacity each and graduated in fractions of a liter;<sup>1</sup> 5, a short length of glass tubing (D) and some quarter-inch tubing. The stomach tube should be of relatively large diameter ( $1\frac{1}{2}$  to  $5\frac{1}{8}$  inch) and should be provided with both a terminal and lateral openings in the gastric end. Such a tube is easier of insertion, less annoying to the patient, and greatly increases the chances of obtaining a sufficient sample without difficulty.

#### TECHNIC.

Fill one graduated bottle (A) to the 500 c.c. mark with warm sterile water. Fit the double-perforated stopper with the reversing valve and with the glass tube. Place the stopper firmly in the empty bottle (B) and attach the gastric tube (C) to the glass tube (D) and the two ends of the double-action bulb (E) to the horizontal tubes of the reversing valve (F,F). Finally, ascertain the direction of the air current



Apparatus for facilitating test-meal removal and gastric lavage. A, bottle of at least 1 liter capacity graduated in c. c. to hold sterile water; B, bottle similar to A, to which aspirating apparatus is attached; C, plain gastric tube without bulb or funnel; D, glass tubing to which is attached the gastric tube and which goes well down into bottle B; E, Davidson hand bulb for producing either negative or positive pressure in bottle B; F, F, reversing valve by which the direction of the air current is changed so as to produce either negative or positive pressure within bottle B and therefore (when in use) within the stomach.

through the valve by making a few pressures on the bulb. Set the valve to make negative pressure within the bottle.

These preliminaries completed, the tube should be passed with the patient preferably in the sitting posture. As soon as the tube enters the cardiac extremity a few quick pressures are made on the bulb, this will develop a slight degree of negative pressure within the bottle

\* Demonstrated before the Philadelphia County Medical Society, June 10, 1908. From the Laboratory of the Department of Clinical Medicine, Medico-Chirurgical College, Philadelphia.

1. These special bottles are not necessary for practical results, as any large open-mouth bottle of sufficient capacity, such as a quart milk bottle, may be substituted. In this event a line around the bottle must be made at the measured 500 c. c. mark.



when the gastric contents will immediately flow up through the tube. Sudden stopping of the flow from occlusion of the tube by particles of food or mucus may immediately be removed by momentarily reversing the lever of the valve. This will cause a small portion of the gastric contents to return through the tube, effectually washing out the obstruction. This simple maneuver may be repeated as frequently as necessary to obtain a sufficient specimen.

In the event of failure to obtain sufficient material by this means, the difficulty will usually be overcome by the introduction of a measured amount of water. To accomplish this the stopper with all its connections is removed from the bottle (B) and fitted into bottle (A) containing the 500 c.c. of warm water. The valve is set to make positive pressure within the bottle, then by means of the bulb about 400 c.c. are run into the stomach. The valve is then reversed and by further compression of the bulb the fluid is withdrawn. It is necessary to recover more than the amount introduced if any determinations of a quantitative nature are to be made. After removal of the test-meal, by either of the above methods, the apparatus is immediately ready for inflation or lavage.

#### INFLATION.

To inflate, after outlining the stomach by auscultatory percussion, the stopper is transferred to the empty bottle and the valve set for compression. A few pressures on the bulb will put sufficient air into the stomach to alter the percussion note without ballooning it sufficiently to alter its position or relation to adjacent viscera. By alternately inflating and deflating it is possible to differentiate absolutely gastric from colonic tympany.

#### LAVAGE.

To perform lavage or to introduce a quantity of mildly alkaline water it is only necessary to repeat the above procedure substituting water for air and then introducing and withdrawing this fluid until the final wash-water returns clear.

With this apparatus under average conditions it is possible to complete the process of removal in less than a minute from the time of introducing the tube, while the whole process as outlined should not occupy more than three or four minutes. As the operator becomes more familiar with the technique the required time naturally becomes less.

### GONORRHEAL ARTHRITIS TREATED WITH ANTIGONOCOCCIC SERUM.

W. C. GAYLER, M.D.

ST. LOUIS.

The following case is of interest because of the prompt and decided relief following the injection of the antigonococcic serum:

*History.*—Miss N., aged 19, a stenographer, came to me May 30, 1908, with copious vaginal discharge, and frequent and painful micturition. She had pain but no swelling in the muscles of the right shoulder. She had intense pain and enlargement at the articulation of the first and second phalangeal bones of the index finger of the left hand. The mucopus from the cervix and the expressed pus from the urethra each contained large quantities of gonococci.

*Treatment.*—The urethra was irrigated daily with a 2 per cent. protargol solution, and the endocervix received a daily application of 6 per cent. protargol, after the surface had been cleaned. The urethral discharge stopped almost at once, and

the cervix showed some improvement. For five weeks the finger grew steadily worse. Local applications were of absolutely no help. Internal remedies, including opiates, gave not even temporary relief. The finger was twice its normal size, red, and so painful that the slightest touch would produce a cry of pain from the patient, who is a strong-minded, intelligent woman. On July 7, 2 c.c. of antigonococcic serum, as prepared from ram's blood by Drs. Rogers and Torrey, was injected into the right arm. Within forty-eight hours the swelling had gone down somewhat, giving the finger a shriveled appearance. There was less pain, and the joint could be manipulated without much discomfort. Three injections were made, at intervals of three days. Three days after the last injection the finger had almost returned to normal size. There was no pain when the finger was at rest, and only slight pain when the finger was manipulated. There is no doubt about the immense change for the better following the injections. The cervix, which was still involved at the time of the injection, did not seem to undergo any change as a result of this treatment. Gonococci were still present in small quantities three days after the injections, as they were before the first injection was made.

### SOAP CONCRETIONS IN CHOLELITHIASIS.

GEORGE RICHTER, M.D.

ST. LOUIS.

Miss M. R., 40 years old, always healthy except occasional catarrhal conditions of the stomach (never had typhoid), fell sick with colicky pains. When an icteric color developed her friends advised her to take salad oil, of which she then swallowed about 750 c.c. from June 4 to June 6.

On June 19 I found her with an intense icteric color, circumscribed painful resistance in the region of the gall bladder, no fever; urine dark brown (bile pigments), free from albumin and glucose, but rich in indican. Calomel produced (June 22) an ample passage containing a large number of rounded white lumps, which, however, were not preserved. Again, on July 5, after an enema of 400 c.c. salad oil, she passed a quantity of large white lumps.

These soap concretions were delivered to me in a clean glass jar after they had been rinsed with water. They were 0.5 to 2 cm. in diameter and of the consistency of hard tallow (at a temperature of 23 C.).

I washed them with distilled water and dissolved about 2.5 grams in alcohol. After adding potassium hydrate I heated and saponified the solution, evaporated it and shook the bulky residue with absolute ether, which then was evaporated. No cholesterol was found.

After about five days I noticed that the white concretions in the jar had been disintegrated, a large layer of oil floating on top. Of this oil 10 c.c. were filtered off, saponified, and the solution evaporated, residue shaken with absolute ether and the ether extracted with water. From the evaporated ether extract remained about 1 or 2 drops of a brown, tenacious fluid, too little for closer examination.

The substance on the filter (about 12 grams) was freed from fat with ether, exhausted with hot water and then with alcohol. To the filtrate from this sulphuric acid was added. There resulted 0.025 grams of fatty acids, showing that but very little soluble soaps had been present. On the filter remained about 0.3 grams of what appeared to be fecal matter.

Evidently the concretions passed by this patient had been either a highly concentrated emulsion from the salad oil by action of the intestinal (pancreatic) secretions, or they had been true soap, afterward split up into oil and alkali by the action of some ferment. It would seem more probable that the soap concretions are in reality thickened emulsions. Lack of fresh material prevented further investigation to decide the question.

The patient was operated on successfully by Dr. Francis Reder of St. Louis, July 18. About 200 gallstones, faceted and consisting of cholesterol, varying from the size of a cherry-stone to that of a hazelnut, were found in the gall bladder, while the ducts were free.



## Therapeutics

### WARTS.

These common and troublesome excrescences belong to that class of epithelial tumors known as papillomata and are generally described as presenting four varieties, each of which is characterized by the variety of epithelium on which it is prone to appear. Verruca vulgaris, appearing on the skin; villous papillomata, on the mucous membrane of the bladder, pelvis of the kidney, and choroid plexuses of the cerebral ventricles; intracystic papillomata, on the inside of cysts of the mammary glands and ovaries; psammomata, on the pia mater of the brain and cord only where they are prone to calcification. The three latter varieties present many interesting anatomic peculiarities, the first variety, verruca vulgaris, the common every-day wart, has also several varieties of form, and as for varieties of treatment, they are legion and range from medieval incantation to the equally efficient proprietary nostrum.

Excepting the "anatomic wart" (verruca necrogenica), which is not a true papilloma but a tuberculous infection and confined to the back of the hand and fingers—small or large, pigmented or not, single or in groups, there is no part of the skin where they may not appear.

Anatomically, they consist of a base of hypertrophied connective tissue surmounted with an hypertrophy of the papillae and rete Malpighii and covered with a thickened corneum, the whole change being accompanied with an increased blood supply.

Etiologically, they appear to follow a mild local irritation; beyond this their origin is uncertain.

Their occurrence is most frequent in children, they are less common during adolescence, and adults have them least, though not infrequently a predisposition to their formation seems to follow through life.

### INTERNAL MEDICATION.

Occasionally they disappear as unaccountably as they appear, but generally some local application to remove them is necessary.

If the warts are numerous or there is a tendency for their reappearance internal medication is advisable at the same time. Arsenic in some form holds first place, perhaps best as:

For a child:

R. e.c.  
Liquoris potassii arsenitis..... [60 or m. x  
Aque cinnamomi ..... ad 150] ad fl3v  
M. et Sig.: A teaspoonful, in water, three times a day, after meals.

For an adult:

R. e.c.  
Liquoris potassii arsenitis..... 6] or fl3ss  
Aque cinnamomi ..... ad 150] ad fl3v  
M. et Sig.: A teaspoonful, in water, three times a day, after meals.

Epsom salt has also been used with success, as:

For a child:

R. gm. or e.c.  
Magnesii sulphatis ..... 1] or gr. xv  
Aque ..... ad 150] fl3v  
M. et Sig.: A teaspoonful, in water, three times a day, after meals.

For an adult:

R. gm. or e.c.  
Magnesii sulphatis ..... 25] or 5vi  
Aque ..... ad 150] fl3v  
M. et Sig.: A teaspoonful, in water, three times a day, after meals.

### EXTERNAL APPLICATIONS.

R. gm. or e.c.  
Hydrargyri chloridi corrosivi..... 1] or gr. xv  
Collodii flexilis ..... 25] fl3vi  
M. et Sig.: Paint on the wart once a day.

*Blakko's Ointment:*

R. gm. or e.c.  
Potassii bichromatis ..... 20] or gr. iii  
Petrolati ..... 30] 5i  
M. et Sig.: Rub into the wart at night.

*Mantellin's Paint:*

R. gm. or e.c.  
Chlorali hydrati ..... 1] gr. xv  
Acidi salicylici ..... 4] 5i  
Acidi acetici ..... 1] or m. xv  
Etheris ..... 5] fl3i  
Collodii ..... 15] fl3ss  
M. et Sig.: Paint on wart once a day.

From the *Bulletin Général de Théraputique*, Feb. 23, 1908:

R. gm. or e.c.  
Extracti cannabis indicæ..... 1] gr. xv  
Acidi salicylici ..... 2] 5ss  
Collodii ..... 40] fl3x  
M. et Sig.: Paint on the wart once a day.

When none of these methods are successful there remains electrolysis, cauterization and curettage. Cauterization may be done with the actual canterry or one of the escharotics. Of the latter, nitric acid is generally the choice, a drop from a glass rod being placed on the wart, being careful not to touch the surrounding skin. This method, however, is not the one of choice, as it frequently results in an unnecessary amount of inflammation and frequently secondary infection.

Electrolysis is perhaps the most elegant method, but if the wart is so situated as to make cosmetic effect desirable it requires considerable experience and skill in the use of the electric needle.

Finally, curettage offers a speedy, certain and, if properly done, painless method of removal. The wart and surrounding skin are thoroughly scrubbed as for any other surgical procedure, and the wart and healthy skin about it for about one-fourth inch are then frozen with ethyl chlorid. A few strokes with a sharp curette will then remove the wart entire, and the resulting tiny wound may be dressed with a simple antiseptic, or perhaps just as well with a dry aseptic dressing.

### ABORTIVE TREATMENT OF BOILS.

The *New York State Journal of Medicine*, December, 1907, quotes the following as effective in absolutely aborting a boil: The inflamed part should be thoroughly scrubbed with soap and water, then washed off with 50 per cent. alcohol, and then an alcohol compress should be applied to the part and allowed to remain until the alcohol has evaporated. The region is then again washed with soap and water and the suds allowed to dry on, no other dressing being applied. If there is no pus, a single treatment is said to abort the furuncle.

**Four-Flap Method of Vessel Anastomosis.**—The *Semana Medica*, July 2, 1908, publishes an illustrated description by A. Pirovano of his "four-flap method" of end-to-end anastomosis of vessels. He has applied it in suturing fifty vessels and states that it surpasses in strength and ease of execution all other methods of which he knows. The technic is readily seen from the illustrations, but he warns that the slits must be exactly in the longitudinal axis and exactly symmetrical. He calls it the *Procedimiento a cuatro colgajos*.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, AUGUST 22, 1908.

## THE DEFENSE OF MEDICAL RESEARCH.

The address of Dr. Cannon on the opposition to medical research<sup>1</sup> is noteworthy in that it takes a line rather out of the ordinary in articles on this subject. We are accustomed to find such articles directed toward an investigation in detail as to the truth or falsehood of the particular assertions made by active members of the antivivisectionist propaganda. Dr. Cannon, however, attacks his subject from a basic standpoint and sets before himself as his objective an inquiry into the reasons for the unfair and irritating conceptions which prevail among the vast mass of those who are so strongly opposed to animal experimentation. This inquiry he divides as follows: 1, the conflicting statements as to the existence and extent of painful experiments; 2, an inquiry which in all matters of controversy necessarily arises, on the appearance of conflicting testimony, as to the experience and characteristics of the contestants; 3, certain assumptions regarding animals; and 4, the question of motives.

Dr. Cannon shows the significance that the term "vivisection" carries in the mind of the antivivisectionist, viz., that of "the cutting or dissection of sentient living animals, bound or restrained, and subjected to the full torture of extensive operation without anesthesia"; and he sets against it the statistical returns of experiments made some time ago in Massachusetts, and the official figures—required by Act of Parliament—in Great Britain for 1906. To these he adds the individual testimony of experimenters of large experience, to the effect that in their many years of work they have never had occasion to perform, and never had witnessed any experiment of the class described. As against this last evidence he quotes the testimony of Mrs. Cook and Mr. Stephen Coleridge before the royal commission, to the effect that they have no confidence in the assertions made by experimenters as to the use of anesthesia. This naturally leads to the second point, the qualifications of the respective witnesses on the score of, first, knowledge, and secondly, character. Dr. Cannon points out that the very training of scientific investigators is of such a kind as to make their work useless unless they are skilled in the arts of accurate observation and care-

ful and definite recording, and that they bring these qualifications to bear directly on the subject under discussion, viz., what actually goes on in the physiologic laboratory. Of their competence to state what actually occurs, there can thus be no doubt; of their necessity for doing so, it is easy to judge when it is remembered that to do otherwise would vitiate the very purpose of their work—for a record of an experiment that did not contain all available data would be useless as a basis for future work; consequently, the two qualities most essential for the scientific investigator to cultivate are accuracy of observation and precision in recording. The antivivisectionists, on the other hand, are not, as a rule, persons whose training is such as to foster these qualities; and even if they were, it is rarely the case that they have ever been so situated that they could have anything either to observe or to record. Their chief characteristics seem to be a keen sensibility and a vivid imagination. Dr. Cannon quotes one instance in demonstration of this fact which would be ludicrously funny were it not so pathetic in its exposition of the calamity of ignorance. A Mr. Peabody, commenting on an experiment (under ether) in which the *peripheral* end of a severed nerve was stimulated, dilates on the amount of agony involved therein, which, he says, must be obvious even to the casual reader. As to the question of character, a remark of Dr. Cannon is very apposite: "It is characteristic of our ways of thinking," he says, "that when a general statement is made, most of us interpret it in those concrete terms with which we are best acquainted." It is in accordance with this, that all animal experimenters possess so low a character in the eyes of the antivivisectionists that such terms as "fiends," "human monsters," "diabolical vivisectionists," and "devilish science" are in vogue as generalizations from the fanciful pictures of novelists and poets, and are applied individually; and that as above stated, prominent antivivisectionists proclaim that they put no credence in the assertions of experimenters as to what was or was not done. Let us quote Mr. Coleridge from the "Appendix to the Third Report of the Commissioners," p. 182:

"Question 10952: We may have inspection, but still we may ask a person of character, when he saw the experiment, what his opinion of it was. You will not accept that? [Ans.]: Certainly not, because I think that all these experimenters have the greatest contempt for the act of parliament. They would deny a breach of this act just as I would deny a breach of the motor car act. I drive a motor car, and when I go beyond the speed limit, and a policeman asks me, I say, 'No, I am not going beyond the speed limit.' Nothing would keep me from going beyond the speed limit except the presence of a policeman in the car; and nothing will keep an experimenter within the four corners of the act except an inspector in the laboratory."

1. Page 635, this issue.



Should we, in our turn, be justified, by parity of reasoning, in assuming every owner of a motor car, not to say every antivivisectionist also, to be a wanton law-breaker and a deliberate liar?

It is unnecessary to pursue this subject in further detail. Dr. Cannon's address will tell its own tale far better than any summary can. It only remains for us to endorse his solutions of the problem, namely, an active campaign of enlightenment of the public as to the actual facts in the case, which are so grotesquely distorted by the vivid imaginations of many undoubtedly estimable people, who are deficient in the knowledge that is necessary to enable them to form a correct judgment on the question. It is to combat this state of things, to spread a greater enlightenment among the public as to the truth of the premises on which they are called ultimately to form a judgment, that the Research Defense Society of Great Britain and the Council on Defense of Medical Research of the American Medical Association have been established.

---

#### INSIDIOUS LEAD POISONING.

For a long time pathologists called attention to the fact that the gouty kidney and the kidney of chronic lead poisoning resembled one another so closely as to be almost indistinguishable. Gradually it came to be realized that other features in the pathologic pictures of gout and lead poisoning bore the same marked resemblance. Out of this came, eventually, the definite conclusion that lead poisoning plays an important rôle in the etiology of gout—a disease which has only too persistently been relegated to that class in which heredity plays the most important part and the causation of which is shrouded in obscurity.

About five years ago as a result of the analysis of the statistics of Johns Hopkins Hospital for twelve years the rather startling conclusion was reached that gout in Baltimore is not much more infrequent than in England, though England is usually considered to be the great home of that disease. The proportionate frequency of the disease in St. Bartholomew's and Johns Hopkins, due allowance being made for the larger number of admissions to St. Bartholomew's, was as four to three. According to this gout occurs only one-fourth more frequently in England than in the United States. At the same time it was pointed out that at least two-thirds of the cases of gout seen in this country were the results of the habits of the individual and not inherited from the family strain. At least one-half of the acquired cases of gout were traced to lead poisoning. This gives an added pathologic significance to an intoxication that is usually thought of as only a casual disturber of health in certain occupations, and very rarely as a serious underlying condition on which chronic ailments are likely to be developed.

Since these Johns Hopkins' statistics were published

lead poisoning has attracted much more attention in this country and its ultimate results have been looked for rather carefully. In the light of recent observations it seems not unlikely that certain persons who have an intense susceptibility for lead may need scarcely more than passing contact with the metal to have the production of definite effects. Dr. Walsh<sup>1</sup> has recently called attention to the extreme susceptibility which some people have to lead intoxication. In one case the lead stoppers of bottles containing carbonated drinks, in another the painting of a flat by a housekeeper, and in a third the drinking of water from an artesian well that flowed through new lead pipes, were enough to produce definite and characteristic symptoms of lead poisoning.

In all these cases there was an immediate reaction against the metal. People who suffer in this way are usually prone to consider that they are unfortunate in having such an immediate reaction produced. It is evident, however, that if this did not happen they would go on absorbing portions of the metal which in the course of time would give rise to the symptoms of chronic lead poisoning before the real nature of the intoxication was recognized. One wonders if there may not be a number of people who, while not possessing immediate susceptibility to lead, or to other related poisons, yet suffer in the long run from the more insidious forms of chronic poisoning. Scientific knowledge proceeds from the generic to the specific, and such a determination of definite causative factors to replace indefinite hypotheses, in the production of gout, would do much to clear up the obscurities of this phase of medicine.

---

#### THE CURE OF LEPROSY.

For a number of years Louisiana has supported an asylum for lepers, one of the foci of the disease in this country being in that region. For six years this institution has been carried on as a hospital and systematic treatment attempted under the general direction of Dr. Isadore Dyer, the well-known dermatologist of New Orleans. The biennial report recently sent out contains some figures rather subversive to our usually held ideas of the resistant and practically incurable nature of leprosy. One patient is reported as discharged cured, five more as practically well but kept for observation, fifteen in whom the disease has been arrested and only twelve as unimproved or in the terminal stages of the disease.

No specific treatment is claimed, unless the use of chaulmoogra oil may be called such, but daily hot baths (104 F.) have been found of great service and strychnin and arsenic appear to have been largely employed. In patients intolerant of the chaulmoogra oil, sweet oil has been used as a substitute but has been found less effective. Much attention is given to diet; the leper, the medical report says, needs all he can eat and should

---

1. *Internat. Clin.*, Series 18, vol. II.



have the best there is. When we consider that the total number under care during the period was only sixty-one, it will be seen that nearly 10 per cent. of practical cures is claimed, improvement in about 25 per cent., and arrest of this hitherto considered inevitably fatal disease in as many more. In the report issued in 1906, three cures are reported.

While there have been occasional announcements of marked improvement and apparent cure of leprosy, such figures as those given here are especially noteworthy. We hear of no such percentage of cures from other leprosariums in which a patient once committed is practically sentenced for life and escape is unknown. Some cases have been reported cured by Tonkin in Jamaica and possibly some others elsewhere in asylums, but these Louisiana statistics are the most encouraging that have yet appeared. As far as we are aware there has been no report of the spread of the disease from the colony, none of the employés or sisters in charge has suffered, or seems to have any fear of it. Such facts as these should put an end to the insane dread shown of isolated imported cases in some sections of the country.

It would be of interest to compare the treatment, dietary and hygienic surroundings of this so apparently successful Louisiana institution with those of other like establishments, but detailed data of the latter are not available. Much of the difference in results can probably be attributed to the hospital methods carried out in the Louisiana institution: the general acceptance of the view as to the hopelessness of the disease has undoubtedly been a factor acting prejudicially to its cure. The failure of introduced Scandinavian leprosy to spread in Minnesota and its asserted gradual disappearance there with improved conditions of living among the immigrants, have a like significance. While leprosy has been regarded in the past as incurable, this view seems no longer tenable.

#### THE UNITED STATES OPIUM COMMISSION.

The letter of Mr. Hamilton Wright on another page<sup>1</sup> of this issue is commended to the attention of our readers. His request for the cooperation of the medical profession in his inquiry we trust will call out the information he desires. There must be a vast amount of facts known only to medical men in regard to the spread of the opium habit in its various forms, and that can be brought out in no other way than through physicians. The figures he gives, however, are amply significant, and can only mean that there is a marked increase in the use of opium for other than medical purposes. The increase in the importation of smoking opium (chandu) is especially significant; a doubling of the amount of the preparation especially manufactured for a particular form of vice, while our Chinese population has actually decreased, must mean that the evil is spreading among other races in this country to a dangerous extent.

We can not take this, moreover, as indicating the full extent of the evil; the figures give no information as regards the amount of crude opium that is manufactured here into smoking opium or the amount that is smuggled into the country. The royal commission adjusting the Chinese claims for damages by the race riots at Vancouver, B. C., had to pass on the claims of two opium manufacturers, each of whom demanded damages for loss of business at the rate of \$100 a day. If the manufacture of smoking opium can be thus extensively carried on in one provincial town, what are the possibilities elsewhere? The condition has certainly caused alarm in Canada where it seems to have been unsuspected and almost suggests the opium panic in South Africa two or three years ago. As regards the increase of opium smoking among the whites in this country we need only cite the modest estimate of Kane, who, in 1882, considered 6,000 as perhaps too small a figure, and those received by Mr. Wright<sup>2</sup> of 5,000 white opium smokers in New York City alone and over 100,000 in the United States at the present time. Conditions are probably as bad in some other countries, especially in the great seaports, and it has been charged that the vice of opium smoking has even extended to the officers in at least one foreign navy, where it has been credited as a cause of some recent disasters.

We have spoken especially of the opium smoking vice because it is one that will be the chief subject to be considered by the international commission, and it is one that no one wishes to see become a living question in the Caucasian races. What it has done in China has been shown by Mr. Merwin in his recent articles in *Success*, and wherever the Chinese go, he says, the curse of opium smoking goes with them. It is a phase of the "yellow peril" that we may have to meet nearer our homes than we have anticipated, and one perhaps far more formidable than many others that have been more dreaded. The morphin and other ordinary opium habits have been, so to speak, always with us, and we know after a fashion, how to deal with them. They are bad enough, but they do not appear to become as universal and pervading a national vice as opium smoking has become in regions where it has prevailed. While this particular use of opium is the international question above all others, it has, as the above figures show, an aspect that European nations may have to consider in their own defense, even at home as well as in their colonies and dependencies. It is to be hoped that the international commission will be able to agree on methods that will be adopted by civilized governments generally, to control effectively the opium traffic. Proper international control will greatly aid the several states in maintaining

2. It is perhaps worth noting here that the figures given by Mr. Wright of the importation of crude opium, include only that containing 9 per cent. or over of morphin. Chinese smoking opium is, in China at least, made mostly, as we believe, of a product much weaker in morphin. Are importations of the weaker Chinese opium excluded in the figures given? If so, how much must we allow from this source?

1. Correspondence Department, page 688.



regulations for the suppression of the opium vice within their own borders. It would be a serious deprivation if the world should lose the medicinal and pain-stilling uses of opium, but its absolute suppression would be a small price to pay if by it only could the evil as it exists in China be checked.

---

#### THE NATIONAL FARM COMMISSION AND RURAL SANITATION.

Irrespective of politics, there will probably be general approval of the action of President Roosevelt in directing attention to the conditions existing on farms, and of his appointment of a commission to report on the possibilities of improving the social, industrial and sanitary aspects of farm life. As medical men we are naturally most interested in the sanitary conditions of farm life and gratified that the need of improvement along this line has been recognized. The commission should experience no difficulty in showing conclusively the need of work on this subject. Every physician with even a limited knowledge of rural life knows the deplorable sanitary conditions which exist in large sections of the country. It is necessary only to refer to the aphorism "typhoid is a rural disease" and to the wide-spread occurrence of malaria and hookworm disease in the South. In fact, the question of sanitation, important in all sections, is of paramount importance in some sections. The need is so obvious and urgent and some measure of relief, at least, so easy that this would seem to be the most tangible problem the commission could consider.

While there is no doubt that the commission will secure expert advice from sanitarians and medical men, the matter is of such importance that we feel that it is unfortunate that the President did not see fit to invite a sanitarian to become a member of the commission. From a humanitarian standpoint there is no brighter chapter in the record of Roosevelt's administration than the sanitary work in Panama. We believe that there is an opportunity for adding an equally bright chapter by beginning work for the farmers and their families similar to that now done for the farmers' live stock.

The President calls attention to the fact that all efforts to aid the farmers have hitherto been directed to improving their material welfare while the man himself and his family have been neglected. Nowhere is this more marked than in the attitude of the general Government in matters relating to sanitation. It is a trite saying that whereas the Government, through the Department of Agriculture, aids the farmer generously in caring for the health of his hogs, sheep, etc., it does nothing for his own health. The Government issues notices to the farmer of the injury done to his crops by the cotton boll-weevil and potato bugs and how to combat it, but the injury the mosquito does in spreading malaria to the people who pick the cotton and hoe the potatoes is not impressed on him. The fact that

horse-flies may carry anthrax to his cattle is dealt with at considerable length, but the diseases which the house-fly spreads to the milk and to the farmer's family attract practically no attention. How to build a hog pen or a sanitary barn is the subject of a number of Government publications but how to build a sanitary privy which will prevent the spread of typhoid, hookworm and many other diseases is regarded as of strictly local interest.

It is hoped that the commission will recommend that some branch of the Government be directed to prepare for the farmers popular sanitary bulletins similar to those issued so freely for the benefit of his live stock. In no way can the "life of the farmer be made richer" than by pointing out how the loss of life and of efficiency from preventable diseases can be diminished. "Improvement of the Social and Industrial Conditions" is a rather vague and difficult problem; "improvement of the sanitary conditions" has a definite, well-defined practical significance.

---

#### SOUTHERN MEDICAL JOURNALS AND CLEAN ADVERTISING.

The medical journals of the South are setting a praiseworthy example in the matter of clean advertising. A little while ago we referred to the *Southern Medical Journal*, a new periodical recently started at Nashville, Tenn., and commented on the high stand taken by it regarding proprietary advertisements. Now comes the *Old Dominion Journal of Medicine and Surgery*, under entirely new management and editorial control, with similar high ideals. It says:

"In the matter of advertisements, this journal endorses to the fullest extent the movement that is now on foot to exclude entirely from the columns of medical publications the announcements of questionable or unethical proprietary preparations. In accordance with this plan, and to insure thoroughly the clean character of this new publication, it is resolved that *no advertisements of any proprietary or 'patent medicine' that has not received the endorsement of the Council on Pharmacy and Chemistry of the American Medical Association, shall be accepted.* In taking this step *The Old Dominion Journal of Medicine and Surgery* desires to place itself on record as being thoroughly in accord with the general endeavor for ethical advertising."

But if the medical journals above referred to and others of equal quality are to be conducted on the high plane outlined and are yet to live, they must receive generous and adequate support from the profession. It takes cash to pay the printer and to meet the other expenses of publishing a medical journal, just as much as any other journal; and without it, success is impossible. There are two sources from which cash is derived—the subscribers and the advertisers. As regards the former it can scarcely be expected that a journal can be supported entirely by the payments of its readers, even supposing all readers paid their subscriptions promptly. An exception might be made in the case of such journals as, being highly specialized and appealing



only to a limited class, are practically indispensable to the members of that class, and are thereby enabled to maintain a high subscription rate. On the other hand, the advertisers have always shown themselves more than willing to pay the bills; and, in the case of very many journals—we say this deliberately—the advertising pages are practically the only source of income. To state it differently: a large number of medical journals are to all intents and purposes supplied gratis by the advertisers. Is it any wonder that the advertisers' desires are granted and their interests guarded more zealously than those of the subscribers, namely, the readers? We hope that physicians of the South, individually, will support the two journals above named, so long as they live up to their promises. These journals ought to be able to look to a paid subscription list for at least the major part of their support. There can be no doubt that the South has problems in medicine peculiarly its own. Enough excellent work is being done, and still more ought to be done, by the physicians of the South, to afford a valid reason for the maintenance of one or two high-class journals to present that work. So long, therefore, as they fill their reading pages with material of a quality as high as that which their initial numbers provide, and continue to live up to the standard they have set regarding advertising, so long will they have a right to look to their readers for such an adequate income from subscriptions as shall permit no excuse for the prostituting of the advertising pages that the literary columns may exist.

#### THE MECHANICAL FACTOR IN THE PATHOGENESIS OF ARTERIAL DISEASE.

Since attention was directed by Amy B. Miles<sup>1</sup> to the prevalence of spontaneous aortic disease in rabbits there has been some uncertainty as to how far such substances as adrenalin, digitalin, etc., are responsible for the arterial changes which have been attributed to them when administered to rabbits. These changes are found almost exclusively in the aorta, and to a less extent in the iliacs, and consist primarily in a degeneration of the muscular tissue of the media with later involvement of the elastic tissue and secondary thickening of the intima. Certain bacterial toxins have been shown by Klotz<sup>2</sup> to favor the development of a process beginning in the intima of the aorta and pulmonary artery. More recently Klotz<sup>3</sup> has endeavored to eliminate the factor of toxins entirely. Rabbits were suspended by the hind legs for three minutes a day during periods of from ninety-two to one hundred and thirty days. Manometric studies had demonstrated that by this means the pressure in the aorta could be easily raised. The five rabbits which were subjected to this procedure all exhibited more or less marked changes in the aorta and in the carotids, subclavian and brachial arteries, the control animals being normal. Curiously enough, the changes in the descending aorta were exclusively of the adrenalin type of degeneration, showing the primary changes in the media, while in the peripheral vessels the intima was evidently

the first part affected. The fact that the extremities by which they were suspended were entirely free from disease seems to indicate that the mechanical factor alone was responsible for the development of these two forms of arterial disease.

#### THE NIGHT CAMP FOR TUBERCULOUS PATIENTS.

The report of Dr. W. C. White, medical director of the Tuberculosis League of Pittsburg, contains a suggestion that is worthy of attention by those interested in the fight against tuberculosis. "Many patients," he says, "feel that it is absolutely impossible for them to give up work, mainly because they are the sole support of a family. These could be cared for in a night camp, where they could sleep out of doors, secure a good supper and breakfast, careful instruction and supervision, and yet continue their labors." The suggestions given by physicians and nurses as to the care of consumptive patients are often unheeded or imperfectly carried out because of the ignorance or carelessness of the other members of the family. The patient who must work is often so tired that he is unable to do those things for himself which the physician advises. He can be under the direct supervision of the physician and nurse but a few hours a week at most. By means of the tuberculosis night camp he could be brought under the control of the antituberculosis agencies for more than half his time, and the regulation of his life could be accomplished much more efficiently than by the occasional visits of the nurse or of the physician. In the neighborhood of every large city there are tracts of land where such camps could be established at small cost, and the workers domiciled there could go to their work in the morning refreshed by the pure air and strengthened by the good food provided by the camp. Not only would such patients be able to fight the disease longer, even if they should succumb eventually, but the danger of contagion to their families would be removed.

### Medical News

#### CALIFORNIA.

##### San Francisco.

**Inspection of Schools.**—A physician and four trained nurses have been employed by the board of health, San Francisco, to inspect the pupils in the public schools.

**Licenses Revoked.**—It is reported that the Board of Medical Examiners has revoked the certificates of Dr. B. Brooks Lee and J. C. Anthony for unprofessional conduct.

**Personal.**—Dr. A. C. Hart and Mrs. Hart, Sacramento, have gone to Europe for a four months' trip.—Dr. Charles H. Bulson, Sacramento, has been appointed assistant surgeon of the California National Guard, with rank of first lieutenant.—Dr. and Mrs. Wislocki, San José, have returned from a trip through the northwestern states and British Columbia.

#### COLORADO.

**New Hospital.**—The Western Federation of Miners is building a hospital to cost \$24,000 at Silverton. It is for the use of members of the organization in the southwestern part of the state.

**Personal.**—Dr. William H. Sharpley has been reappointed health commissioner of Denver for the next four years.—We are informed that the license of Dr. F. L. Crandell has been revoked because of illegal advertising.—Dr. Charles E. Elliott, Victor, was seriously cut and bruised by the overturning of his buggy, August 8.

1. THE JOURNAL, Oct. 5, 1907.

2. Brit. Med. Jour., 1906, p. 1767.

3. Centrbl. für Allge. Path. u. Path. Anat., July, 1908.



## GEORGIA.

**Medical Society Meets.**—At the annual meeting of the Fifth Congressional District Medical Society, held at Decatur, July 20, the address of welcome was delivered by the mayor and was responded to by Dr. H. M. Smith, Edgewood.

**New Medical College Organized.**—A new medical college to be known as the Hospital Medical College has been organized in Atlanta. Dr. J. H. Powell has been elected president; Dr. Giles Hathecock, vice-president; and Dr. Charles N. Field, dean. The faculty will consist of 17 instructors. The college will open on October 5.

## ILLINOIS.

**Cocain Seller Fined.**—C. F. Herleeka, a druggist, arrested charged with illegally selling cocain, is reported to have been fined \$200 and costs.

**Personal.**—Dr. F. W. Searles, New Lenox, one of the oldest and best known practitioners of Will County, was seriously injured in a runaway accident, August 7.

## Chicago.

**Mortality Statistics.**—During the week ended August 15 there were 620 deaths, 363 of males and 257 of females. Causes of death were as follows: Apoplexy, 9; nephritis, 40; bronchitis, 4; consumption, 46; cancer, 25; convulsions, 2; diphtheria, 4; heart diseases, 63; influenza, 1; intestinal diseases, acute, 168; measles, 2; nervous diseases, 11; pneumonia, 32; scarlet fever, 4; suicide, 7; typhoid, 7; violence (other than suicide), 42; whooping cough, 7; other causes, 146.

**Contagious Diseases.** During the week ended August 14, 181 cases of contagious diseases were reported, distributed as follows: Diphtheria, 41; scarlet fever 35; measles, 19; whooping cough, 25; tuberculosis, 37. With the exception of measles and tuberculosis there were fewer cases than in the preceding week. The Isolation Hospital is now empty. It has been thoroughly disinfected and is being painted and otherwise prepared for the reception of scarlet fever and diphtheria patients.

## MARYLAND.

**Tuberculosis Exhibition.**—The Maryland Association for the Prevention and Relief of Tuberculosis will have an exhibit at the Montgomery County Agricultural Fair to be held at Rockville, August 25-28.

**Personal.**—Dr. Joseph C. Clark has been re-elected superintendent of the Springfield State Hospital for the Insane, Sykesville. — Dr. Benjamin Whitely, Catonsville, was operated on for carbuncle at the Union Protestant Infirmary, Baltimore, August 5.

## Baltimore.

**Bequest to Hospitals.** The will of Mrs. Sarah Reinhard provides for the following bequests: Hebrew Hospital, \$200; Jewish Hospital, Philadelphia, \$200.

**Night Tenement Inspectors.** The appointment of night inspectors in tenements to prevent the overcrowding of sleeping rooms is urged by representatives of the Federated Charities. Italian laborers are said to be the chief offenders, and one instance is reported where nearly a score occupied a room intended for two persons. The city authorities approve the suggestion.

**Hospital for Infectious Diseases.**—The Municipal Hospital for Infectious Diseases is practically completed and is being furnished. The ward building cost \$19,000, and will accommodate 35 patients. Smallpox patients will be taken as heretofore to the Quarantine Hospital. A laundry building will furnish heat for the hospital and sleeping apartments. This, with the stable, cost \$7,000. It is intended ultimately to have four such hospitals for infectious diseases. The health commissioner has not yet appointed the resident physician and assistants.

**Personal.**—Dr. James G. Linthicum, who was appointed to succeed Dr. Henry L. Smith as police surgeon, was painfully injured in a collision between his carriage and a street car August 7. — Dr. Henry M. Hurd, superintendent of Johns Hopkins Hospital, has been appointed a member of the state lunacy commission, vice Dr. Charles F. Bevan, retired. — Dr. Frederick W. Taylor sailed for Europe August 3. — Dr. William S. Halsted returned from Europe August 7. — Dr. James H. Chesnut was operated on for appendicitis July 10. — Dr. Arthur P. Herring has been elected secretary of the state lunacy commission. — Dr. James W. Johnson of Newberry, S. C., has been made instructor in medicine in the clinical laboratory of Johns Hopkins University.

**Fever Epidemic Denied.** Dr. James Bosley, health commissioner, denies the statement that there is any typhoid epidemic in Baltimore. He quotes statistics of the health department showing that for the six weeks, July 1 to August 9, inclusive, there were 225 cases. For the same period of last year there were 105 cases. He asserts that 225 cases out of 60,000 population can not be regarded even as a "mild epidemic." During this period there were 39 cases of typhoid in 11 hospitals and in three there was not a single case. For the six weeks there were 32 deaths from this disease. These statements are based on the presumption that all the cases of the disease which occurred in a specified time were reported. During the Methodist general conference in April there was not a case of typhoid or a serious illness among the delegates.

## MASSACHUSETTS.

**Personal.**—Dr. Elizabeth A. Riley, Boston, and Drs. George Rhoads, Walter R. Weiser and Harvey W. Van Allen have gone to Europe for the summer. — Dr. John J. Martin has been elected school physician of Beverly.

**Bequest.**—By the will of the late Patrick Donnelly, Arlington, \$250 is bequeathed to St. Elizabeth's Hospital, Boston. — The late Daniel E. Millerick, in his will, directs his trustees to pay one-eighth of his estate to the Carney Hospital, Boston.

**Boards of Health Meeting.**—At the quarterly meeting of the Massachusetts Association of Boards of Health, held at Gallops Island, Boston Harbor, July 23, papers were presented by Prof. Theobald Smith on "The House Fly as a Carrier of Disease," and by Mr. B. R. Rickards on "The Disinfection of Books."

## MINNESOTA.

**Personal.**—Dr. Thomas Lowe, Pipestone, has been appointed head physician of the Modern Woodmen of America for Minnesota.

**Tuberculosis Hospital.** There are now fifty-three patients in the Minnesota Sanatorium for Consumptives, Walker, and only seven vacancies remain.

**Hospital Annex Opened.**—An annex to the Fairview Hospital, Minneapolis, has just been completed. The building is a two-story brick, fireproof structure, built at a cost of \$70,000, and donated to the association by George H. Christian.

**Communicable Diseases.**—Two cases of diphtheria are reported from Eveleth, and one case has made its appearance at Biwabik. — The State Board of Health reports that during the six weeks ended July 30, 419 cases of smallpox were under treatment in the state, with no deaths. St. Paul had 87 of these cases and Duluth 67 cases.

## MISSOURI.

**Personal.** Dr. Frank P. Norbury, Jacksonville, Ill., has opened an office in North St. Louis. — Dr. Ernest G. Mark, Kansas City, is visiting Louisville.

**Barnes Medical College Granted Mandamus.**—Judge Munch of the Circuit Court of Missouri has granted a writ of mandamus to compel the State Board of Health of Missouri to examine the students who graduated from Barnes Medical College last June. The case will probably be carried to the Supreme Court.

**The State Sanatorium.**—At a recent meeting of the Missouri State Sanatorium for Incipient Tuberculosis it developed that the expense of maintaining the institution would exceed the appropriation by \$5,000 or more, and for this reason the majority of the directors favored closing the institution on August 15. One of the members of the board strongly objecting to this action, guaranteed to make good any deficit, and his proposition was accepted by the board. It is probable with rigid economy the work will proceed to the end of the fiscal year with practically no deficit.

**Societies.**—At the annual meeting of the state medical association, an Association of Secretaries and Councilors of County Medical Societies was organized. A constitution and by-laws were adopted. The following officers were elected: President, Dr. Foster W. Burke, Laclede; vice-presidents, Drs. Marshall A. Smith, Gallatin; Edward N. Chaslain, Rich Hill; and secretary-treasurer, Dr. Charles Wood Fassett, St. Joseph. — At the annual meeting of the North Missouri Medical Society, held recently in Willow Springs, the following officers were elected: President Dr. Ezra C. Grim, Kirksville; vice-presidents, Drs. William L. Brosius, Gallatin, and Godfrey O. Cuppidge, Moberly; corresponding secretary, Dr. E. C. Callison, Kirksville; recording secretary, Dr. O. McEwen, Salisbury; and treasurer, Dr. Robert Haley, Brookfield.



## NEW YORK.

**Society Elections.**—At the annual meeting of the Buffalo Academy of Medicine Dr. Edwin A. Bowerman was elected president; Dr. Harry R. Trick, secretary, and Dr. William I. Thornton, treasurer.

**Fund for New Hospital for Tarrytown.**—Mr. John D. Rockefeller has contributed \$25,000 to the building fund of the new Tarrytown Hospital, on condition that the citizens of Tarrytown raise \$50,000 more.

**A New Tuberculosis Hospital.**—The Rensselaer county board of supervisors has appropriated \$25,000 for the erection of a hospital for the treatment of advanced cases of tuberculosis. Sixty-five patients will be accommodated.

**Personal.**—Dr. Carl G. Leo-Wolf, Niagara Falls, has returned from a two months' trip abroad.—The state civil service commission has appointed Dr. Fred E. Lettice, Schenectady, physician at Sing Sing prison at a salary of \$2,000 a year.

**Donation to Charity.**—It has recently been announced that the donor of the Caroline Rest Home for Mothers at Hartsdale was Mr. George H. F. Schrader. Mr. Schrader has just given a country club for social workers to the Association for Improving the Condition of the Poor, which is also located at Hartsdale. His gift amounts to \$500,000; the club cost \$40,000; the Caroline Rest Home for Mothers, \$105,000, and the remainder of the gift is to be used as an endowment fund for the home. This home will accommodate seventy patients and will be used for mothers convalescing after childbirth.

## New York City.

**Decrease in the Death Rate.**—The health department reports that for the week ended August 10 the death rate of the city was 16.74, as compared with 22.22 of the same week of last year. The total number of deaths in the city was 1,419; last year there were 1,825 for the same week.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ending August 8, 411 cases of tuberculosis, with 137 deaths; 170 cases of diphtheria, with 14 deaths; 130 cases of measles, with 7 deaths; 89 cases of scarlet fever, with 2 deaths; 107 cases of typhoid, with 20 deaths; 23 cases of whooping cough, with 12 deaths; 10 cases of cerebrospinal meningitis, with 6 deaths; and 10 cases of varicella, a total of 950 cases and 198 deaths.

**Street-Car Accidents.**—The public service commission reports that during the month of July there were 239 serious accidents, 63 fewer than in June. There were 169 car collisions, 1,002 persons and vehicles were struck by cars, 633 were injured boarding cars, 1,305 were injured alighting from cars, and 49 were hurt by contact with electricity. Thirty-five persons were killed, 13 persons received fractured skulls, 4 had their limbs amputated and 54 had broken limbs. Included in these numbers were 2,313 passengers, 645 employes and 620 others.

**Red Cross Day Camp.**—A day camp for tuberculous patients will be opened on the roof of the Vanderbilt Clinic in October by the American National Red Cross in cooperation with the clinic. About 40 patients will be cared for the year round at first during the day only and afterward at night also. The clinic will put the roof in condition and furnish medical supervision, while the New York County subdivision of the state board of the Red Cross will defray the expenses of maintenance and nursing. The patients to be received will be those suffering from the disease in an early or moderately advanced stage. This effort marks the entrance of the New York County Red Cross Society into the tuberculosis crusade.

**Recommendations.**—A supplementary report of the State Charities Aid Association of the municipal hospital system contains many recommendations, such as the establishment of emergency relief stations for the better treatment of rush cases, with an ambulance service attached; local hospitals for the relief of acute cases, to be provided especially with vacant wards for the handling of cases following catastrophes and great accidents; general hospitals for the treatment of non-acute chronic diseases, etc. At present the daily number of sick in Greater New York is 135,396, and for every death in the year 1.83 persons are constantly sick. Of every 100 in the population 2.21 are sick of chronic or acute diseases, and of this number 8.4 per cent. are treated in hospitals.

## OREGON.

**State Board Changes.**—At the annual election of the State Board of Medical Examiners Dr. Andrew C. Panton, Portland, succeeded Dr. William S. Mott, Salem, as president; Dr. Robert C. Coffey, Portland, succeeded Dr. Byron E. Miller,

Portland, as secretary; and Dr. Edward B. McDaniel, Baker City, succeeded Dr. Robert C. Coffey, Portland, as treasurer. —Dr. Edward B. McDaniel, Baker City, has been reappointed a member of the State Board of Medical Examiners.

**State Association Meeting.**—The thirty-fourth annual meeting of the Oregon State Medical Association was held in Portland, July 1, 2 and 3, under the presidency of Dr. Robert C. Coffey, Portland, who in his presidential address, entitled "The Conservative Organization of Medicine and Surgery in the Pacific Northwest," advocated the completion of a thorough organization of physicians in the states of Oregon, Washington and Idaho; the consolidation of the two medical schools in Oregon into one; and the combination of the two medical journals of the Pacific northwest. The following officers were elected: President, Dr. William H. Byrd, Salem; vice-presidents, Drs. William Kuykendall, Eugene; Calvin S. White, Portland; and R. C. Yenney, Portland; secretary, Dr. William House, Portland (re-elected); treasurer, Dr. Edna D. Timms, Portland; and councilors, Drs. Samuel T. Linklater, Hillsboro; and Walter T. Williamson, Portland (re-elected).

## PENNSYLVANIA.

**Officers Elected.**—At the regular meeting of the Fifth Senatorial District of the State Medical Society, held at Chambersburg, the following officers were elected: President, Dr. J. J. Coffman, Scotland; vice-president, Dr. A. D. Dalbey, McConnellsburg; secretary and treasurer, Dr. J. Holtzappel, York.

**No Right to Vaccinate.**—The State Health Department has been notified that a person claiming to represent the State Health Department, has been traveling through Chester County insisting on vaccinating farmers and their families. He charged a moderate fee and has collected a large sum of money. This man is not known by the State Health Department.

**Personal.**—Dr. R. G. Covode, Johnstown, was operated on recently as the result of injuries sustained a few weeks ago in an automobile accident.—Dr. J. K. Evans, Malvern, was thrown from his carriage in a runaway accident and seriously injured.—Dr. Warren Royer, Trappe, said to be one of the oldest practicing physicians in this state, recently celebrated his eighty-eighth birthday anniversary.

**State Railroad Accidents.**—The report of the Pennsylvania state railroad commission shows that 5,160 accidents occurred on the railroads of the state during the six months ended June 30. Of this number 525 resulted in death. The average number of persons injured per month was 772, and the month of February heads the list with 866 injured. The average number killed per month was 88, and the month of March heads this list with 102.

**New Society Organized.**—The physicians of Turtle Creek Valley have organized a medical society to be known as "The Valley Medical Society." The following towns are represented: North Braddock, East Pittsburg, Turtle Creek, Wilmerding, Wall, East McKeesport, Pitsaurn and Trafford City. The following officers were elected: President, Dr. Todd, Trafford City; secretary, Dr. Walter R. Shoemaker, Wilmerding, and treasurer, Dr. Frederick L. Muthe, Wilmerding.

**Society Meetings.**—The physicians of the state region organized the State Belt Medical Society at Bangor, August 4. Dr. Albert A. Seem, Bangor, was elected president; Dr. Sydenham P. Uhler, Pen Argyl, secretary; and Dr. Benjamin F. Dilliard, East Bangor, treasurer.—At the annual meeting of the Allegheny Valley Medical Society, held in Cheswick, August 1, the following officers were elected: President, Dr. William A. Arnold, Tarentum; vice-presidents, Drs. William P. McCulloch, Cheswick, and Thomas E. McConnell, Parnassus; secretary, Dr. William T. Hall, Tarentum; treasurer, Dr. Albert S. Kaufman, New Kensington.—The Columbia County Medical Society held a picnic meeting in Columbia Park, July 11, at which the families and friends of members were present. The Rev. Dr. Hemingway made an address on "The Relation of the Ministry and the Medical Profession," and Mr. Bonner of Pittsburg talked on "The Legal Profession as Contrasted with the Ministry and Physicians." On motion, Dr. Luther B. Kline was appointed to prepare a history of the society and to present it at the October meeting.

## Philadelphia.

**Personal.**—Dr. J. LeRoy Wright, Lauraville, Md., has been appointed resident physician to the Chester County Hospital, West Chester, Pa.

**Money to Charity.**—The will of the late Miss Annie Van Reed, Reading, Pa., bequeaths \$6,500 to the Medico-Chirurgical



**Hospital.**—The will of the late Mary E. Abbott contains a contingent bequest of \$5,000 to the West Philadelphia Hospital for Women. This sum is to be used to establish and maintain a free bed, to be known as the Mary E. Abbott free bed.

**Smallpox on Steamship.**—The steamship *Haverford*, from Liverpool to Philadelphia, was detained at the United States quarantine station at Reedy Island on account of the presence of two cases of smallpox. The patients, with several suspects, were transferred to the Isolation Hospital, and after thorough fumigation the ship was allowed to proceed. She carried 140 passengers.

**Dr. Cairns Reinstated.**—Dr. A. A. Cairns, who served for several years as chief medical inspector of the bureau of health and who resigned this position in June last on account of ill-health, was reinstated and resumed his position August 15. Dr. C. A. Groff, who has been acting chief medical inspector, has been made supervising medical inspector. This is a new position in the bureau of health.

**Hospital Ban Withdrawn.**—The ban placed on several city hospitals by the director of public safety, forbidding the police to take trolley-accident cases to these institutions, was lifted August 12. This order had previously been modified so that of the ten hospitals originally named only the Presbyterian, German and Mount Sinai remained under the ban. Every public hospital of standing may hereafter receive trolley-accident cases.

**Night Quarantine Service.**—Dr. Walter Wyman, surgeon general of the United States Public Health and Marine-Hospital Service, announces that an all-night inspection service will be established at the national quarantine station, Reedy Island. It has been the custom to detain vessels entering this port at night until sunrise the following morning for quarantine inspection. Local maritime interests have been striving for the establishment of this service for several years.

**Physician Implicated in Cocain Crusade.**—Dr. J. Philips Bader was arrested and held in \$1,000 bail August 11, charged with the indiscriminate and criminal distribution of cocaine. Dr. Bader, who conducted a small drug store, is looked on by the authorities as the head of a "dope ring" with victims in all sections of the city. Bader's drug store was the headquarters for the sale of this drug and the doctor had several men under his patronage who sold the drug throughout the city in 25-cent packages.

**To Safeguard Health.**—The Department of Public Health and Charities has been greatly exercised over the introduction of transmissible diseases in the various hospitals throughout the city. The department feels that these diseases are largely introduced by outsiders visiting the patients, and with a view of lessening this evil the director of the health bureau will furnish the hospitals daily with a list of the names and addresses of those reported to the bureau of health as having transmissible diseases.

**Health Report.**—The total number of deaths reported for the week ended August 15 was 448, including 242 males and 206 females. This is a decrease of 34 from the number reported in the preceding week, and a decrease of 54 from the number reported in the corresponding week of last year. The principal causes of death were: Typhoid, 6; measles, 2; pertussis, 4; diphtheria, 5; consumption, 44; cancer, 23; apoplexy, 12; appendicitis, 7; Bright's disease, 29; premature birth, 20; heart disease, 37; acute respiratory diseases, 17; enteritis, 8; congenital debility, 17; suicide, 3; accidents, 16, and marasmus, 16. There were 117 cases of contagious disease reported, with 13 deaths, as compared with 84 cases and 13 deaths reported in the previous week.

**Money for Charity.**—By the will of the late Mrs. Annie L. Lowry the Philadelphia Home for Incurables will receive \$10,000; Pennsylvania Society to Protect Children from Cruelty, \$10,000; Home of the Merciful Savior for Crippled Children, \$10,000; Home for Infants, \$5,000; Starr Center Association, \$5,000; Presbyterian Hospital, for Mary L. Davidson memorial bed, \$5,000; German Hospital, for Nathan Davidson memorial bed, \$5,000; Philadelphia Home for Incurables, for Sarah K. Davidson memorial bed, \$5,000; West Philadelphia Hospital for Women, for a free bed, \$5,000; Friends' Asylum for the Insane, \$3,000; Pennsylvania Hospital for the Insane, to be used for poor patients, \$3,000, and the Industrial Home for Blind Women, \$25,000.

**Weekly Health Talk.**—In the weekly public health talk of Dr. Neff, director of public health and charities, it is stated that there has been a decrease of 15 per cent. in the mortality from tuberculosis for the first three weeks of July as compared with the same period of 1907, despite the fact that the regis-

tration of the disease for the first three weeks of July, as compared with the same period of 1907, shows an increase of 56 per cent. The health department acknowledges the interest the physicians of the city are taking in the crusade against tuberculosis. Dr. Neff has issued the following "don'ts" for consumptives:

- Don't spit on the sidewalk; it spreads disease and is against the law.
- Don't spit on the floor of your rooms or hallways.
- Don't spit on the floor of your shop.
- Don't cough without holding a handkerchief or your hand over your mouth.
- Don't kiss a person with a cough or cold.
- Don't live in rooms where there is no fresh air.
- Don't work in rooms where there is no fresh air.
- Don't sleep in rooms where there is no fresh air.
- Don't eat without washing the hands.
- Don't neglect a cough or cold.
- Don't waste your money on nostrums for consumption. Go to a doctor or dispensary.
- Don't drink whisky, beer or other intoxicating drink. If you have consumption it will make it harder for you to get well.

## VERMONT.

**School for Health Officers.**—The tenth annual school for health officers was opened at Burlington, June 29, with addresses by Governor Proctor, Dr. Charles S. Caverly, Rutland, President of the State Board of Health, and Mayor Bigelow, of Burlington.

**Sanatorium Report.**—Dr. Henry Chadwick, superintendent and medical director of the Vermont Sanatorium, West Pittsford, reports that since the opening of the sanatorium in December last, 53 patients have been admitted, of whom 26 have been discharged, leaving 27 under treatment. Of those discharged, 8 are apparently cured, 5 of whom were incipient, and 3 moderately advanced cases; in 9 cases the disease was arrested; 3 of these were incipient and 5 moderately advanced cases. Four patients were improved; 2 of these were far advanced and one moderately advanced; one was a case of chronic bronchitis and not tuberculosis. Five patients were not improved; of these 3 were far advanced, one was moderately advanced and one left the sanatorium after a stay of two days.

**Medical Society Meetings.**—At the annual meeting of Rutland County Medical and Surgical Society, held in Rutland, July 14, Dr. William W. Townsend, Rutland, was elected president; Dr. Herbert S. Martyn, Cuttingsville, vice-president; Dr. William W. Stickney, Rutland, secretary; and Dr. Henry R. Ryan, Rutland, treasurer. At the annual meeting of Caledonia County Medical Society, held in Montpelier, the following officers were elected: President, Dr. John M. Allen, St. Johnsbury; vice-president, Dr. Albertus A. Cheney, Lyndonville; secretary, Dr. Walter J. Aldrich, St. Johnsbury; and treasurer, Dr. John M. Gibson, Melndoe Falls. At the annual meeting of the Addison County Medical Society, held in Middlebury, Dr. George F. Edmunds, Bristol, was elected president; Dr. Frank C. Phelps, Vergennes, vice-president; Dr. Peter L. Dorey, Middlebury, secretary; Dr. Stanton S. Eddy, Middlebury, treasurer; Dr. Merritt H. Eddy, Middlebury, librarian; and Dr. Harold L. Williamson, Bristol, delegate to the state society.

## WASHINGTON.

**Hospital Burned.**—The Hospital of the Roslyn-CleElum Miners' Association, CleElum, was destroyed by fire July 9. All patients were removed without casualty.

**Drinking Cups Abolished.**—By order of the health department of Seattle drinking cups have been abolished in the public schools and bubbling fountains substituted.

**State Board Election.**—At the recent election of the State Board of Medical Examiners, Dr. Elmer D. Olmsted, Spokane, was elected president; Dr. James A. Durrent, Snohomish, vice-president, and Dr. Kenneth B. Turner, Seattle, secretary.

**Fined for Selling Misbranded Drugs.**—A druggist of Seattle was recently fined \$25 and costs for violation of the state law by selling misbranded drugs. The drug sold was a "patent medicine," the label on which did not tell the quantity or proportion of alcohol in it, nor the country of manufacture.

**Personal.**—Dr. James A. M. Henderson, Seattle, has started for Nova Scotia and England.—Dr. C. P. Jento, physician at the federal prison, McNeil Island, has resigned and will practice in Tacoma.—Dr. Jabez A. Mahan, Ellensburg, has been reappointed a member of the board of trustees of the State Normal School.—Dr. Fonda Nadeau, Seattle, has gone to Europe and will remain until December.



**Health of Seattle.**—During June there were 303 births and 155 deaths reported in the city. Chief among death causes were diseases of the circulatory system, 28; accidents (including suicides), 21; genitourinary diseases, 17; tuberculosis, 16; digestive diseases, 15, and nervous diseases, 12. During the month 39 cases of diphtheria, 21 of smallpox, 38 of scarlet fever, 20 of measles, 5 of typhoid fever, and 2 of cerebro-spinal meningitis were reported. The plague laboratory reports that 5,304 rats were killed, of which 4,856 were examined, and but two were found to be infected with plague.

**New Society Organized.**—The Okanogan County Medical Society was organized at Riverside, July 17, and the following officers were elected: President, Dr. H. M. Fryer, Riverside; vice-president, Dr. James B. Couche, Twisp; secretary-treasurer, Dr. Charles R. McKinley, Brewster, and censors, Drs. W. W. Schwabland, Loomis, Clayton P. House, Oroville, and A. M. Polk, Concomully.

#### GENERAL.

**Esperanto and Medicine.** Major P. F. Stranb, Medical Corps, U. S. Army, has been appointed to represent that department at the Esperanto Congress to be held at Dresden, Germany, this month. This would seem to indicate that this new language is regarded as of sufficient importance to be recognized, indirectly at least, by one branch of the government.

**Female Nurses in the Navy.**—Formal orders are being prepared at the Navy Department, organizing a corps of female nurses for the Navy. A woman physician will be chief of the corps, at a salary of \$1,800 a year, and 100 nurses will be engaged with salaries of from \$45 to \$75 a month. Candidates will report in Washington September 1 for a special course at the Naval Hospital Medical School.

**Marine-Hospital Examination.**—A medical board will be convened by the Bureau of Public Health and Marine-Hospital Service on September 24, at 10 a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service. Candidates must be between 22 and 30 years of age, graduates of a reputable medical college, and must furnish testimonials as to their professional and moral character. Information relative to the examination can be obtained by addressing the Surgeon General, Public Health and Marine-Hospital Service, Washington, D. C.

#### INTERNATIONAL CONGRESS ON TUBERCULOSIS.

##### DISTINGUISHED FOREIGNERS TO ATTEND.

This congress, as previously announced, will be held in Washington, D. C., Sept. 21-Oct. 12, 1908. One week of the congress, September 28 to October 3, is to be devoted to section work:

##### PROGRAM OF ORTHOPEDIC SECTION.

Following is the program for Section III, Surgery and Orthopedics, under the presidency of Dr. Charles H. Mayo, Rochester, Minn.: (The programs of other sections appear in the preliminary announcement.)

Construction of Hospitals for Tuberculosis Patients. Mr. Meyer J. Sturm, Chicago.

Tuberculosis of the Larynx: The Type Which is Capable of Recovery, and the Principles of Treatment. Dr. W. E. Casselberry, Chicago.

A Brief Note on the Value of the Ophthalmic-Tuberculin Test in the Question of Surgical Treatment of Orbital Disease. Dr. Charles A. Oliver, Philadelphia.

Tuberculosis of the Choroid. Dr. Sydney Stephenson, London.

Tuberculosis Affecting the Cornea. Dr. Oscar Dodd, Chicago.

Tuberculosis of the Ear. Dr. Clarence J. Blake, Boston.

Tuberculosis of the Cervical Lymph Nodes: Report of 275 Cases Treated by Radical Extirpation. Dr. Chas. H. Dowd, New York City.

Tuberculous Glands in Children. Mr. H. J. Stiles, Edinburgh, Scotland.

Retroperitoneal Tuberculous Glands and Their Relation to the Spinal Symptoms. Dr. C. F. Painter, Boston.

(a) *Traitement des Adénites Tuberculeuses.* (b) *Traitement de la Tuberculose du Testicule.* Dr. Cazin-Chef, Paris.

Surgical Tuberculosis of the Lungs. Prof. Sanerbruch, Marburg, Germany.

Tuberculosis of the Lungs and Pleura. Dr. S. Robinson, Boston.

Tuberculosis of the Breast. Dr. Wm. Rodman, Philadelphia.

Tuberculous Arthritis of the Hip Joint. Dr. Stephen H. Weeks, Portland, Me.

The Treatment of Tuberculous Hip Disease by Weight Bearing and Fixation by the Lorenz Short Hip Spica. Dr. H. Augustus Wilson, Philadelphia.

The Question of Non-Interference in the Passive Abscesses of Tuberculous Joint Disease. Dr. Morton F. Shaffer, New York City.

Vaccine Therapy in Joint Tuberculosis. Dr. E. H. Ochsner, Chicago.

Indications for Operative Treatment of Bony Tuberculosis. Dr. A. Codivilla, Paris, France.

Tuberculous Arthritis of the Knee Joint. Dr. Maclaure, Paris.

*Tuberculose Medio-Tarsienne et Pied Plat.* Dr. A. Jeanne, Rouen, France.

*De la Méthode de Mosetig dans le Traitement de Tuberculose Osseuse.* Dr. Nové-Josserand, Lyon, France.

Tuberculosis of the Vas, Epididymitis and Testicle. Dr. John B. Walker, New York.

Tuberculosis of the Bladder. Dr. Wilhelm Karo, Berlin, Germany.

Tuberculosis of the Bladder. Dr. Bransford Lewis, St. Louis.

Tuberculosis of the Kidney. Dr. Arthur Dean Bevan, Chicago.

Tuberculosis of the Kidney. A Preliminary Study. Dr. Ramon Guiteras, New York City.

Tuberculosis of Intestines and Appendix. Prof. Henri Hartmann, Paris.

Acute Forms of Abdominal Tuberculosis. Dr. D. N. Eisendrath, Chicago.

Tuberculous Adnexa. Prof. Samuel Pozzi, Paris.

Tubercular Peritonitis. Dr. J. B. Murphy, Chicago.

Experimental Testicular Tuberculosis. Dr. Chas. Esmonet.

Surgical Bearings of Tuberculin. Dr. R. W. Philip, Edinburgh, Scotland.

Surgical Tuberculosis. Dr. E. H. Bradford, Boston.

The Prevention, Diagnosis and Surgical Treatment of Tuberculous Sinuses and Abscess Cavities. Dr. Emil G. Beck, Chicago.

The Value of Fresh Air in Conjunction with Artificial Hyperemia in the Conservative Treatment of Surgical Tuberculosis. Dr. Willy Meyer, New York City.

The Importance of, and How the State of Minnesota Cares for Its Indigent Children Suffering from Tuberculosis of the Bones and Joints. Dr. Arthur J. Gillette, St. Paul.

Outdoor Treatment of Surgical Tuberculosis. Dr. De Forest Willard, Philadelphia.

*La Cure d'Attitude et la Cure Solaire de la Tuberculose Chirurgicale.* Dr. Rollier, Lucerne, Switzerland.

Tuberculosis of the Muscles, Fascia and Tendons. Dr. James E. Mitchell, Washington, D. C.

Tuberculosis of the Gall Bladder, Pancreas, Stomach and Liver. Dr. L. W. Hotchkiss, New York City.

Rational Spinal Support. Dr. Henry W. Frauenthal, New York City.

Clinical Contribution on the Pharmacotherapy in the Surgical Tuberculosis by Hypodermic Treatment. Dr. Gualano.

#### International Conference in Philadelphia.

Preceding the section work, and in connection with the congress, will be held the seventh annual meeting of the International Antituberculosis Association, at Philadelphia, September 23-26. This association is a delegate body composed of representatives of the various countries, appointed by their respective governments or antituberculosis associations. The program of the conference is as follows:

September 23, 8 p. m.: "Social Life and Tuberculosis," by Prof. Dr. Pannwitz, Berlin.

September 24, 8 p. m.: "The Evolution of the Treatment of Pulmonary Tuberculosis," by Dr. C. Theodore Williams, London.

September 25: "Provision for Advanced Cases of Tuberculosis," by Dr. Biggs, New York City, and Dr. von Leube, Würzburg; "Prophylactic Measures in Tuberculosis," by Lawrence F. Flick, Philadelphia, and Dr. Nathan Raw, Liverpool; "Hygienic Requirements for Sanatoria," by Dr. Lawrason Brown, Saranac, N. Y., and Dr. Pannwitz, Berlin; "Antituberculosis Education," by Dr. Livingston Farrand, New York City; Dr. G. A. Heron, London; Prof. A. Calmette, Lille, and Dr. Kirchner, Berlin; "Tuberculosis and Traffic," by Dr. Sherman G. Bonney, Denver.

September 26: "Tuberculosis and Legal Rights," by Dr. Samuel G. Dixon, Harrisburg, Pa.; "The Red Cross Society in the Crusade Against Tuberculosis," by Dr. Pannwitz, Berlin, and Miss Mabel T. Boardman, Washington; "Notification of Tuberculosis," by Dr. Walsh, Philadelphia; lecture on "*Les nouveaux procédés de diagnostic précoce de la tuberculose*," by Prof. A. Calmette, Lille.

Each day there will be receptions, banquets and other social functions.

#### FOREIGN.

**Another Sign of Progress.**—The *Gesundheitslehrer* states that the *Frankfurter Zeitung*, an important German daily, has now dropped from its columns advertisements of Bauer's alleged cure for diabetes. He is one of the largest advertisers in Germany.

**Prison Term for Leipsic Irregular.** One of the Ansmeier brothers, a trio of well-known German charlatans, was recently sentenced to four months in prison in a personal injury suit. He treated a sick woman with purgatives after having merely examined her urine; as it was a case of typhoid, serious injury resulted. His appeal to a higher court was thrown out.

**The Moebius Endowment.**—The endowed prize founded as a memorial to the late neurologist, P. J. Moebius, will be offered next year for the first time. The committee in charge includes the presidents of the German neurologic and psychiatric societies. A prize will be awarded every two years for the best work presented in the interval on one of these specialties alternately. A Moebius portrait medallion will accompany the prize. In 1909 the prize will be given for research on the connection between Moebius' "infantile disintegration



of the nuclei" and the anatomic bases of bulbar paralysis. Address Prof. L. Edinger, Frankfort on the Main, Germany.

**Cattle Protected Against Nostrums.**—A letter from Holland in the *Wiener klinische Rundschau*, August 2, states that during an epizootic in Holland last year the State Serum Institute at Rotterdam—at the request of the farmers—investigated the remedies advertised to cure the cattle disease, and published its verdicts in regard to their value or worthlessness. By this means the nostrums and quacks in this line of business were unable to do harm. The writer remarks that the state protects cattle, but lets human beings suffer in consequence of ignorance in regard to fake remedies, etc., without interference. He adds that Professor Kouwer, at the last meeting of the Netherlands Medical Association, called attention to the fact that when women are dying from abortifacient manœuvres they invariably state that they were tempted to the deed by some advertisement in the daily papers, and he denounced the lay press as the "panderer to this bloody business."

#### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Aug. 8, 1908.

#### Annual Meeting of the British Medical Association.

The annual meeting of the British Medical Association was held at Sheffield on July 27-31, and was attended by nearly 1,000 members. The University of Sheffield placed its spacious buildings at the disposal of the association and afforded ample room for housing the seventeen sections. Mr. Simeon Snell, the president, delivered an address in which he dealt with a number of subjects—the history of the association, the part played by Sheffield in this and in the promotion of medical education and science generally, and his own researches on miners' nystagmus. The address in medicine was delivered by Dr. James Kingston Fowler, dean of the faculty of medicine of the University of London and senior physician of the Middlesex Hospital. He took for his subject "Modern Medicine." Discussing the student and practitioner of the future, he said that students in ever-increasing numbers will resort to the universities for the preliminary and intermediate subjects in their education, and that medical schools will simply supply the clinical teaching. He deplored the abuse of hospitals by persons able to pay for medical advice. During 1907 no fewer than 6,000,000 out-patient attendances were recorded by the London medical charities. For thirty years this abuse had been a burning subject. He suggested that in the future the rôle of the consulting physician should be more clearly defined and that some should cease to undertake regular medical attendance. The honorary degree of D.Sc. of the University of Sheffield was conferred on the president and distinguished members of the association and visitors. Among the recipients of the honor was Dr. Murphy of Chicago. The business of the representative meeting of the delegates of the various branches was important. Two special reports attracted much attention. The first dealt with the subjects of the ethics of consultation. A number of rules were set out, the main object of which was to protect the interests of the attending practitioner. From the point of view of the consultant he must be regarded as primarily and continuously responsible for the patient's medical care, the consultant having relatively a temporary responsibility. The relation of the consultant to the attending practitioner was one of trust which considerations for his own honor and of the interests of the profession and public should preclude him from perverting to his own advantage to the detriment of the attending practitioner. An elaborate report was presented by Sir Victor Horsley on behalf of the medico-political committee. The gratuitous treatment of rate-maintained patients and the relations of doctors and insurance and friendly societies were considered. A recommendation to further the introduction of the metric system was adopted.

#### Decline of the Plague in India.

In 1907 the mortality from plague in India reached the appalling total of 1,204,194. But a rapid decline has now occurred and the number of deaths in the twelve months ending June 30, 1908, is only 252,781. The measures adopted for combating the disease include rat destruction, evacuation of infected quarters, improvement of insanitary areas and inoculation. Grants amounting to \$1,000,000 have been made to local governments in this year's budget for expenditure on sanitary improvements for the prevention of plague. During the time

the epidemic prevailed the mortality amounted to 2.1 per 1,000 of the population.

#### Two Notable Octogenarians.

The president and vice-presidents of the Royal College of Surgeons have sent congratulations to two of their ex-presidents, Mr. Thomas Bryant and Mr. Jonathan Hutchinson, on the occasion of their eightieth birthdays. Mr. Hutchinson is still a remarkable example of great intellectual vigor. His weekly clinics at the Polyclinic are as attractive as ever and both by mouth and by pen he teaches and engages in controversy with unabated force. He never tires of fighting for his fish hypothesis of leprosy which, like another Galileo, he has maintained, undeterred in the least by almost universal opposition. This is not to be wondered at, if it is remembered how many of his doctrines he has seen, in a long life of almost unprecedented activity, first received with skepticism and even ridicule, and then gradually accepted. A remarkable fact, showing the accuracy of his observations and conclusions, is that the progress of time has not modified or impaired any of his doctrines. At the Polyclinic he may often be heard quoting from works published by him forty years ago observations which to-day are unmodified by time and as important as ever.

#### Physician Shot at Bedside of His Patient.

Torquay was the scene of a murderous attack on a physician by a member of the patient's family. For some months a local practitioner, Dr. Hamilton Cuming, had been attending a little girl, the only child of a wealthy Russian gentleman, who is a widower. Two operations had been performed on the child, and it is supposed that anxiety for the child to whom he was devotedly attached, mangled the father's mind. At 3 a. m. the physician was at the child's bedside, when the father entered the room suddenly, produced a revolver and fired, the bullet entering at one side of his victim's neck and coming out at the other. The Russian allowed himself to be disarmed while the police were being sent for. It is suggested that he fired at the doctor under the delusion that he was administering poison to the child. The doctor is progressing favorably.

#### Fighting Consumption in Scotland.

The Scottish local government report just issued shows that a very energetic campaign against consumption is being waged by the authorities of that country. Compulsory notification has now been adopted by nine local authorities and voluntary notification by fifty-two. Many authorities hold that if the struggle is to be successful notification must be compulsory and general. Leith now isolates phthisis in spare wards in its infectious diseases hospitals. In Lanarkshire—where the coal miners are specially liable to the disease—the spare wards of the various infectious diseases hospitals are similarly utilized. So successful has the procedure proved that other local authorities are following suit. Another notable success has been achieved by Dundee—the first town in Scotland to adopt a municipal dispensary to combat phthisis. The patients are weighed and visited in their own homes by doctors and nurses. The nurse impresses on the patients the danger of infecting other members of the household and instructs them in the simple measures for preventing this.

#### National Tuberculosis Conference and Exhibition.

A national tuberculosis conference and exhibition will be held in Caxton Hall, London, in November. In accordance with its title the conference is not merely a medical one, but a national one, and its object is to arouse all classes to the importance of securing better methods of prevention and treatment of tuberculosis. As reported in previous letters, the tuberculosis exhibition which is visiting the principal towns of Ireland has been a great success, and it is considered desirable to follow its example and form a similar exhibition in England. Authorities from different parts of the empire, as well as foreign leaders in the anti-tuberculosis movement, will take part in the conference. Arrangements will be made for foreign and country visitors to inspect the chief sanatoriums and hospitals for consumption in and near London.

#### Alleged Tuberculous Infection by Brushes.

An action for damages against employers has been brought by a workman under peculiar circumstances. He was engaged in the manufacture of "camel hair brushes" from the remnants of Russian squirrel skins and pointed the brushes by passing them through his lips so as to get them into the ferrule. He began working for the defendants in 1901 and in 1903 began to feel ill. In October, 1905, he was found to be suffering from pulmonary tuberculosis. In his statement of



claim he said that the danger of infectious disease arising from the hair as manufactured into "camel hair" brushes was known to the defendants and that the hair should have been disinfected before use. The defendants denied that it was necessary to point the brushes by passing them between the lips and also denied that the hair was dangerous. The evidence for the plaintiff showed that in 1905 the defendants issued a circular stating that the hair used in the brushes was sterilized before being made into brushes so as to render it innocuous. In cross-examination the plaintiff admitted that his sister died in 1888 from acute tuberculosis. Dr. Robert Maguire of St. Mary's Hospital gave evidence that there was danger in using these pieces of hair, whether disinfected or not, and that consumption might probably be conveyed in the hair, and was prevalent in the fur trade in Germany. In cross-examination he admitted that the ironing process in the defendants' factory would kill germs of tuberculosis in the hair. If in seven years no person in the factory except the plaintiff had suffered from tuberculosis that would induce him to believe that there was no great danger from the hair. Without hearing the defendants' case the jury intimated that they had heard enough, and judgment was given for the defendants.

#### Graduated Work in the Treatment of Consumption.

An interesting demonstration has been given at the sanatorium of the Brompton Hospital for Consumption on the occasion of the visit of Admiral Sir Bowden Smith, General Walker, Dr. A. F. Downes of the Local Government Board and others interested in hospital work. Among the visitors were several hundred old patients who had been discharged from the sanatorium and were earning their living. They were distinguished by a red rosette which they wore, but they looked so healthy that this was the only way in which they could be distinguished from the other visitors. In the best of spirits they spoke of the sanatorium with affection; they contrasted markedly with the patients who were undergoing treatment. They said that they had never felt in better health and were working the usual number of hours at their trades. The peculiar feature of the sanatorium is that the patients are put to such outdoor work as they are capable of performing. This treatment, which marks an epoch in the treatment of tuberculosis in this country, was introduced by the superintendent, Dr. M. S. Paterson. He begins by ordering walking exercise, which is gradually increased to ten miles daily. Gardening with light tools and other suitable outdoor occupations follow. Nothing but good has resulted from this treatment by "graduated work." An explanation of these results is furnished by Dr. A. C. Inman, superintendent of the laboratories of the Brompton Hospital, who has found that the exercise causes an autoinoculation of tuberculin similar to Wright's vaccine treatment, and that a rise in the opsonic index for the tubercle bacillus is produced. At the inspection the patients unfitted for active exercise were to be seen making mats and mops; in the next class the patients walk from one to six miles daily; after that various-sized baskets of earth are carried; this is followed by the use of a small shovel and by hoeing; later a larger shovel is used, and then grass is mowed; finally trenching is done. When a patient is fit to be discharged he works at his trade for six hours daily for three weeks in order that he may be fit to resume it on discharge. A similar course is followed by women, but the implements are smaller. The women keep their own part of the grounds in order, cultivate a small kitchen garden and take charge of the poultry. What the sanatorium is chiefly proud of is a concrete reservoir which Dr. Paterson is careful that all visitors should see. This measures 180 feet in length, 58 feet in width and 13½ feet in depth, and when complete will hold a half million gallons. This has been built entirely by patients and it is expected that it will shortly be opened by the King.

#### VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, July 28, 1908.

#### Congress on Thalassotherapy.

A congress on thalassotherapy, or treatment of disease by sea air, sea bathing, etc., will be held next September at Abbazia, near Fiume, on the southern coast of Austria, sometimes called the "Nice of the Adriatic." This kind of treat-

ment has been much in favor in Europe of late and the results have been very encouraging. The two kinds of maritime baths—in a tepid, mild sea with a high percentage of salt, and, on the other hand, in a rough, bracing, vigorous sea of the north—have been found to be particularly valuable in certain neurasthenic conditions. In Austria, especially at Grado on the Adriatic, there is a happy combination of warm sea baths with a high percentage of sodium chlorid and iodid, so that rachitic and scrofulous children are sent out in colonies to this place, to return much benefited in health. At the congress there will be a number of eminent thalassotherapists from England, France and Germany, who will read papers.

#### The New Medical Regulations.

The board of health has finally completed the new edition of Medical Regulations (*Aerzte-Ordnung*) for the empire. This is intended to abolish many old grievances of the profession, to give practitioners a modern code of ethics and to impose certain duties on them. In this work the board of health has been guided by suggestions received from various Austrian medical councils. It should be remembered that the present *Aerzte-Ordnung* has attained the venerable age of one hundred and forty years, and that it is eighty years since any attempts were made to modernize it. The two main features of the new regulations, which come into force within one year, are the following: 1. The power of striking a doctor's name off the medical register is transferred from the public courts of justice to the legal representatives of the practitioner, namely, the medical council of his district. Cases of breach of professional ethics or any infringements of medical law, aside from transgressions of general public law, are to be considered by a "board of honor," consisting of physicians residing elsewhere than in the accused doctor's district of practice. This board may suspend the physician from practice by striking his name from the register for a year. If the penalty is to be made permanent in such cases, it will be imposed by the public judge. 2. Except for personal disability from disease or conflicting engagement, a physician must not refuse to render medical aid. Repeated, wilful, misleading abuse of the physician's services on the part of the patient is also an excuse for the physician's refusal to attend. Every practitioner must have his name placed on the medical register. The presence of his name on this register entitles and also obliges him to practice medicine. A diploma from one of the seven Austrian universities granting the degree of M.D. is necessary as a proof of the successful completion of a satisfactory medical curriculum. Diplomas granted by foreign universities are not valid here, but will enable the holders to apply for certain facilities of examination, which must be passed by the foreign physician intending to practice here. This, of course, does not apply to physicians studying in Vienna. Simultaneous practice at two different places no matter what the distance between them, is forbidden unless necessitated by public or private appointment. Notifications of infectious disease, hitherto not paid for by the state, will in future be compensated at a rate not yet determined, probably one crown or 20 cents per case.

#### Two Instructive "Circulating Leaflets."

The *Gesellschaft der Aerzte* (Association of physicians) in Vienna has issued, for distribution in districts where the population is of a class that is negligent about seeking medical advice, two leaflets dealing with the female genitourinary system. One describes the early external manifestations of cancer of the uterus, emphasizes the necessity for distinguishing between ordinary menstrual flow and irregular bloody discharge, and earnestly advises women to resort to a competent medical man at once, if after the age of 35, irregularities of color, smell, or time are noted in the menstrual flow. This leaflet is the result of a great movement, which originated in Germany, for fighting cancer of the uterus by instruction of the people, the midwives and the general practitioners. The other leaflet deals with the subject of genitourinary infection before, during and after pregnancy. The nature of puerperal fever, the various sanitary precautions to be observed during the period of pregnancy, and necessity of medical assistance in any complication are explained. It should be remembered that about 40 per cent. of all labors here are not attended by a physician but by a midwife. The leaflet also explains the destructive effects of gonorrheal affections, their danger for the eyes of the newborn infant as well as for the pelvic organs of the mother, and instructs mothers to seek medical help as soon as any symptoms, acute or chronic, manifest themselves. These symptoms are described in plain language. It is to be hoped that the effect of these leaflets will be beneficial.

1. See, also London Letter, THE JOURNAL, July 27, 1907, p. 338, and Lancet, Jan. 25, 1908, abstracted in THE JOURNAL, Feb. 22, 1908, p. 647.



## Pharmacology

### THE BROADER AIMS OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

TORALD SOLLMANN, M.D.

Member of the Council, Professor of Pharmacology and Materia Medica at the Medical Department of Western Reserve University,  
CLEVELAND, OHIO.

(Concluded from page 614.)

#### XXII. THE FINAL DISPOSITION OF THE PROPRIETARY PROBLEM.

Proprietary remedies are with us to stay, for the present at least. The "proprietary problem" does not mean their suppression, but their regulation. We must insist that we should be told the truth, the whole truth, and nothing but the truth regarding them. This is the sum of the whole matter. We must be told the sincere, honest truth—not merely the technical truth disguised by quibbles, equivocations, implications and reservations. If we but attain this full truth, all the subsidiary problems can be trusted to adjust themselves.

To insure this full and truthful knowledge, three things are necessary:

1. The profession must want it—seriously want it.
2. It must provide and use measures to enforce it.
3. The manufacturers must be willing to grant it.

The Council exists to determine whether the truth is being told. Its rules are merely convenient check-lists for this purpose. Experience has shown that they are feasible and reasonable. The Council is the officially appointed investigating committee of the profession, charged with the duty of applying the measuring rod as exemplified in these rules. It has the best facilities for ascertaining the facts, and for hearing all sides of every case. The manufacturer can lay before it the full details of all the evidence which he possesses, as he would not lay them before the individual practitioner. He has every opportunity to demonstrate that he is telling the truth, in this broad sense. If he succeeds in his demonstration, the admission of his product is at once published. If he can not make good his claims, his product is not entitled to confidence. The attempt to evade the official investigation, the attempt to confuse the profession by meaningless verbiage or by biased half-truths—these are merely further evidences of insincerity.

#### THE DUTY OF THE MEDICAL PROFESSION.

The Council can investigate, inform, advise—and here its direct powers cease. All further power for good is indirect, and is based on the degree of professional opinion, and especially professional action, by which the Council is supported. The Council can not directly force a manufacturer to act sincerely and honorably. It can reason with him; it can reward by admission; it can threaten with rejection or exposure; but the efficiency of the persuasion, the reward or the threat does not depend on the Council. It depends altogether on the individual American practitioner. The manufacturer who exploits an unworthy article is an enemy of the profession, always, and can be dealt with only as such. The manufacturer who has a worthy article should be a friend of the profession; his success depends on a cordial cooperation. This he knows, and he is perfectly willing to conduct his business as the profession wants it conducted—else he would be forced out of business.

Actions speak louder than words. It matters little what we "resolve"; if we encourage dishonest manufacturers by prescribing their wares, we beget dishonesty. Some manufacturers, indeed, keep up a high standard through their own conscience, or through professional pride. All honor to

them. On the whole, however, the exploitation of proprietary remedies is not altruism; it is mainly plain business, to be conducted according to the current rules of the game. What these rules shall be—whether they shall make for fairness or unfairness, sincerity or insincerity, truth or falsehood—this lies mainly if not entirely in the hands of the medical profession.

#### THE RESPONSIBILITY OF THE INDIVIDUAL.

Nor can we escape this individual responsibility by resorting to abstractions. The problem is eminently practical; and we must conceive our professional responsibility as equally practical. The profession in the abstract, the medical societies and journals, the Council, all the agencies of organization can help merely by informing, awakening and sustaining individual sentiment. Tangible results, however, are not the product of sentiment, but of action. In whatever way we look at it, the responsibility always returns to the individual physician—he is the man who carries the arms. It comes to him, not so much on the day when he votes for a resolution, but every day, every time when he writes a prescription. Whenever he picks up his prescription blank, he is not only directing the treatment of his patient; he is also directing the proprietary business, in all its ramifications; and beyond this, he is directing the future of therapeutics. With each prescription, he renders a decision whether truth or falsehood shall prevail; whether therapeutics shall be scientific or unscientific; whether the abuse of indiscriminate self-medication shall continue or not. It is the aggregate of these daily individual decisions which count; the responsibility rests on each of them. It is not our New Year's resolutions, but our daily actions which run this world.

#### PRESCRIBING KNOWN REMEDIES.

What then, can you, the individual physician do to further this movement? Everything! Your first duty is plain and simple: Never prescribe any product until you know the truth about it, at first hand, or through a reliable, and therefore unbiased, source; until you know what the remedy contains, and what it may reasonably be expected to do. It does not suffice to have known this "once"; be certain in your mind that you know it at the moment when you prescribe. This you owe to your patient, to your profession, and to yourself. It is as important with official articles as with the unofficial. As regards the proprietary articles, there is but one method of learning the truth, so far as I know, and this is through the reports of the Council. Until an article has succeeded in complying with the rules and thus gaining admission to the list of the Council, it should not appeal to you, no matter what you learn from blotters, detail-men, disguised or undisguised "house organs," subsidized journals, or other biased parties. Turn to such a deaf ear. If every one would take this course and would altogether cease prescribing any remedy which is to him wholly, or in part, unknown, the dishonest proprietary remedies would disappear with one stroke; the worthy would be given a fair chance; the whole problem would be immensely simplified. Is this too much to ask?

#### TO DETERMINE THERAPEUTIC MERIT.

The next matter would be a judicious selection of the things which remain. A product may be sold in the most proper manner, but it may not be worth much. As I have emphasized so frequently, admittance by the Council implies only honesty, not merit. At some future day, perhaps, there may be sufficient data available to justify a future Council in exacting a high standard of merit—but the time is not yet ripe. At present the Council can help but little in this matter,

1. The reports of the Council as to the admitted products are embodied in its annual book "New and Non-official Remedies," which can be obtained from the American Medical Association, 103 Dearborn Avenue, Chicago. The price of this book, which is sold at cost, is six cents.



and the physician must resort to individual study—study in books, but especially applied study. The latter is the most important. Experiment is the only certain way of progress. Those who have the opportunity can render a most important service by determining the field of usefulness of the more promising of the honest new remedies. The reports of their results, favorable or unfavorable, would also aid the Council in exacting from manufacturers definite scientific proof of therapeutic actions as well as of chemical composition.

In this clinical work, however, it should be remembered that indecisive experiments are worse than none, for they will only tend to confusion. Those who lack the necessary facilities, material, or time, will do better to hold fast by what has been proven, and leave the task of "trying on" new things to others.

In conclusion, if we, each for himself, insist on the highest standard of honesty in our therapeutics—honesty in ourselves, honesty in the manufacturers and honesty in the products—the end, I feel certain, will be an art and science of therapeutics, such as at present is but a Utopian dream.

## Correspondence

### United States Opium Commission.\*

DEPARTMENT OF STATE, WASHINGTON, D. C., July 30, 1908.

*To the Editor:*—In the autumn of 1906 the Imperial Chinese Government issued an edict commanding its viceroys, the Tartar generals and the governors of provinces to join in suppressing the opium habit among the Chinese people. In the previous May the English House of Commons, by unanimous vote, had expressed the opinion that the opium traffic between India and China was morally indefensible.

The British Government entered into an agreement with China, Jan. 27, 1908, to reduce the amount of opium exported from India to China by one-tenth per annum, so that it would be wiped out in ten years. The total amount exported at that time from India to China was about 51,000 chests. That amount is now being reduced at the rate of about 5,100 chests per annum. This agreement is contingent on the Chinese Government being able to show at the end of three years that it has made a sincere and effective effort not only to stamp out the use of opium among the Chinese, but also to stamp out the growth of the poppy. This, of course, will be an immense undertaking for the Chinese Government, as, according to the latest estimate we have, the production of opium in China alone amounts to about 325,000 piculs, while China's importations are about 54,000 piculs, a picul being about 133 pounds.

On March 8 last our very effective prohibition of the illicit use of opium went into operation in the Philippines, as the result of the investigation by the Philippines Opium Commission under the leadership of the Right Rev. Charles H. Brent. While this movement for the suppression of the opium traffic was going on, Secretary Root conceived the idea of helping China, as well as ourselves, by calling an international conference to study the opium question and decide, if possible, on some measure of joint action by the powers especially interested.

The nations invited to this conference were those with territorial possessions in the far east, Great Britain, Germany, France, Portugal, the Netherlands, China and Japan. All these powers consented, in April last, to appoint three commissioners each, to meet the American commissioners Jan. 1, 1909, at Shanghai, China. In the meantime each national commission is to study the question from a national point of view with relation to its social, economic and other sides.

Just before the adjournment of Congress \$20,000 was appropriated in the sundry civil appropriation act to cover the expenses of the commission of the United States; and the President appointed the Right Rev. Charles H. Brent as chairman, Mr. Charles D. Tenney, who was Yuan Shi Ki's right-

hand man in his educational reforms in China and is now the secretary of the American legation in China, and myself. Mr. Tenney is to remain in China and make a thorough study of the opium question there, while I am at present engaged on the study of the question as it affects our national life, and the international aspects of the case.

I am following every method that suggests itself, or is suggested to me, for getting accurate data as to the amount of opium actually needed to supply the legitimate demands of this country. The following table shows our practically net importations of crude opium containing 9 per cent. or more of morphin, of morphin and its salts, and of chandu or smoking opium. Inquiries are being directed to importers, to merchants and to manufacturers of morphin, to retailers, to physicians, to the police departments of our cities, to state and city health boards, in an effort to find out how much opium is licitly and illicitly used.

Years.	Opium crude, containing 9 per cent. or more morphin.	Chandu.	Morphin or its salts.
	Pounds.	Pounds.	Ounces.
1878-1882	1,341,702.44	375,315.83	71,474.75
1883-1887	1,664,712.25	447,329.53	97,264.25
1888-1892	2,353,307.00	351,556.25	128,155.00
1893-1897	3,125,642.00	481,678.90	84,410.50
1898-1902	1,992,693.63	676,675.50	143,660.50
1903-1907	2,436,771.54	783,258.82	59,060.00

I am getting estimates from manufacturers of morphin and from handlers of opium that anywhere from 60 to 75 per cent. of the crude opium is manufactured into morphin and estimates that from 50 to 90 per cent. of the morphin so manufactured is used illicitly, and that its use is on the increase among all classes of people, more especially among prostitutes and their followers, the criminal classes, and what might be termed our fast set. Much of this information is conjectural, of course. If there were some method by which we could get truthful answers from those who sell the drug illicitly, there would be no great difficulty in the question, but such answers are out of the question.

The surprising thing is the immense amount of smoking opium we import, paying our duty of \$6 per pound, and this in spite of the fact that our Chinese population to-day is smaller than it was twenty years ago. It is impossible, judging from answers to inquiries that I have made among the Chinese, to suppose that they are using all of it. I have one estimate that there are over five thousand American smokers in New York city and I have another estimate that there are probably over a hundred thousand Americans who smoke opium.

It is such points as this that must be cleared up and if the members of the medical profession will send to me here in Washington, well considered statements as to the amount of the drug that, in their opinion, is illicitly used, it will aid the commission tremendously in its inquiry. The joint conference at Shanghai will study all the compiled data and our instructions are to try to agree on some joint recommendation to the various governments participating in the conference which will lead to international control of the opium traffic. Just what the lines of such recommendation will be it is impossible to say at present, but I have in mind the international regulations which governed the slave trade.

I sincerely hope that we may get the cooperation of the medical profession in this movement.

HAMILTON WRIGHT,  
Acting Chairman.

### Medical Work in Vienna.

NEW YORK CITY, Aug. 12, 1908.

*To the Editor:*—Your editorial, "Medical Work in Vienna," in THE JOURNAL, July 25, is timely and, in the main, correct though based on resolutions, protests and correspondence originating from the discussions of the little colony of American physicians in Vienna. Under the circumstances, as I happen to be a recent "long-timer"—according to your classification, I

\*See editorial in this issue, page 678.



would add a word of information for the benefit of those who may be interested.

Vienna is the American physician's medical Mecca, and probably will remain so for a long time. In the first place, clinics are practically under one or two roofs—the *K. K. Allgemeine Krankenhaus* and the *K. K. Poliklinik*. Secondly, most of the eminent professors take more interest in teaching and in the scientific side of medicine than in private practice, while the American professor, even if inclined to teach, has not the time to divert from his lucrative practice. Moreover, the Viennese professor's talent is endowed, as it were, as he receives compensation from the Austrian government.

This little "changing" colony of American physicians who make Vienna their temporary home and medical Mecca, by the way, is not so little—as it numbers between 100 and 200, depending on the season. Moreover, the colony appreciating the increased power and influence resulting from organization, in 1904 organized and founded "The American Medical Association of Vienna," electing Dr. Ravold of St. Louis, who originally suggested the need of such a society, as its first president. Recently the association was incorporated, thus placing the organization on a recognized legal status in the Austrian courts. Article 2 of the constitution of the association states: "The objects of the society are to promote the social intercourse and the scientific advancement of its members, to provide information in regard to the scope and relative value of courses, and to furnish data for the rapid orientation of new members in regard to pensions, rooms, restaurants, etc.," and I may add, incidentally, to protect its members from the instructor who designs the course for the American with one eye on the scientific feature of the course and the other on the American's pocketbook.

*Zum Beispiel:* Last winter one or two *docents* and *Geheimrats* raised the price of their courses; however, their conduct was reported to the "A. M. A. of Vienna" and as a result the leaders of said courses promptly got together and saw that the courses were not filled—when the aforesaid professors as promptly capitulated and were glad enough to return to the old rate.

The impression "that a knowledge of German is an essential, hardly a course being given in English," is misleading. The fact is, German is no longer an essential and to-day in Vienna the majority, indeed, most of the courses (aside from the university courses), are given in English. And this brings us to the discussion of the relative advantages of the "short-timer" and the "long-timer."

English courses are a distinct disadvantage to the "long-timer" who wishes to acquire the German since any foreign language is more readily assimilated when one hears and speaks it altogether. It is equally hard to avoid English in the pensions as it is in the courses, another disadvantage for the "long-timer" who is anxious to absorb German. However, the most plausible reason of the numerous English courses is German greed for American gold—for if one instructor gives his course in English and another does not, instructor No. 1 fills his course, gathers in the shekels, and No. 2 goes begging; ergo, Nos. 2, 3, etc., etc., are coerced to learn English and instruct in that language. This condition is a great boon to the "short-timer" and he really is the chief factor in its evolution. For this reason alone the "short-timer" (six to twelve weeks) can gain double or triple the amount of information in Vienna than in any other continental city in the same length of time; or, for that matter, in London or Edinburgh, since in the latter places, especially London, much time is lost between hospitals.

Just one other point in regard to the question of "cut-and-dried courses." Your criticism here is in a measure just; however, the leader of a course is privileged and often does dictate both the subject and duration of the course, and I may state in conclusion that this prerogative is being exercised more and more in consonance with the increased power of "the American Medical Association of Vienna" and therefore, I would advise every American on arriving in Vienna to join its ranks and foster himself by fostering this ever-growing, changing, medical colony.

G. E. DAVIS.

### Bills Regulating Interstate Traffic in Drugs.

FORT COLLINS, COLO., July 28, 1908.

*To the Editor:*—I have read in THE JOURNAL, July 25, page 334, the bills introduced into the House of Representatives by the Hon. James Mann to regulate the transportation of dangerous and habit-forming drugs.

While I heartily approve of the general purpose of these bills and believe they would accomplish a great deal of good if enacted into law, still there is an omission in the second one which if not corrected or amended would be a source of great inconvenience and an injustice to many physicians. The first bill is all right in its provisions because it specifically states that: "Provided, however, the foregoing provisions shall not apply to articles sent in the ordinary course of business from manufacturers, jobbers or wholesale dealers to registered retail druggists, *legally authorized practitioners of medicine, dentistry, etc.*"

The second bill, however, in its list of exceptions from these prohibitory provisions, fails to include legally authorized practitioners of medicine, and unless amended so as to include these words (legally authorized practitioners of medicine), would hamper the physician in securing supplies and restrict his choice of agents necessary for the interests of his patients.

This omission was doubtless an oversight, but as it is one which if enacted into law would work a serious injury to the physician and as on casual reading it may be easily overlooked; indeed, appears to have been by THE JOURNAL writer himself, who says: "The passage of these bills will not in any way interfere with the legitimate business of physician, manufacturer, wholesale druggist, or pharmacist, as all such business is expressly exempt." I desire to call the attention of the profession to this omission and its far-reaching consequences and request that you publish this letter in THE JOURNAL.

E. STUVER, M.D.

VENTURA, CAL., Aug. 6, 1908.

*To the Editor:*—I note what you say in regard to the proposed bills introduced by Congressman Mann. I have read them, and if it is not a scheme to deliver the doctors absolutely into the hands of the retail druggists I am not good at guessing. It may be ignorance on my part to make me see it that way, but such is the case. In regard to the first bill, the reading conveys the impression that the welfare of the people was the prime cause and moving spirit of this enterprising bit of proposed legislation. The second is a bill relating to the transportation of habit-forming and poisonous drugs in interstate and foreign commerce and for other purposes.

The bill recites that it shall be unlawful for any person, firm or corporation to send, carry, ship or bring into any state, territory or the District of Columbia, by freight, express, mail or otherwise, from any other state, territory or the District of Columbia, or from any foreign country, directly to a consumer, or to sell, or furnish, or give away, or have in his or her possession except as provided for in this section in the territories or the District of Columbia, any of the substances named in the bill. It provides that it shall not apply to sales at wholesale, by jobbers, wholesalers and manufacturers to registered retail druggists, or to each other, or to sales made to manufacturers of medicinal remedies, or pharmaceutical preparations for use in the manufacture of such preparations, nor to sales to hospitals, colleges, scientific and public institutions. (*But not a word about the doctor.*)

The bill stipulates that it shall be unlawful for all others, except those excepted above, to introduce or have in possession any of the habit-forming or poisonous drugs, except on the prescription of a legally authorized practitioner of medicine, dentistry or veterinary medicine, and, further, it defines the amount that can be prescribed in each original prescription for a human being. In the case of chloral hydrate it allows only six doses in each original prescription, but in eucain, cocaine and morphin the doctor has the glorious privilege of using 240 doses, and in case he prescribes hyosein he can use 1,200 doses. Why the writer of the bill is so bitterly opposed to chloral hydrate I would like to know.

I note what you say in regard to these bills, and presume that you think the only legitimate way to practice medicine



is to prescribe. I will say that in my practice I prescribe, would rather do so than be troubled with filling prescriptions, but I do not propose (if I can help it) to have taken away from me the privilege of filling my own prescriptions; and I will venture the assertion that 95 per cent. of the physicians of the United States feel the same way.

It is all right to safeguard the health of the public; it is also wise to enact laws to punish sellers of abortifacients and habit-forming drugs when sold or used as such, but to handicap physicians with such legislation is unjust, unwise and a rank piece of class legislation.

J. C. BYNUM.

[The bills referred to by our correspondents appeared in THE JOURNAL, July 25, page 335. The first clause of the bill objected to prohibits the interstate traffic in any of the drugs named except on the original prescription or written order of legally authorized practitioners of medicine, dentistry or veterinary medicine. As stated in our comments, we assume the object of the framers of the bill to be to put a stop to the treatment of diseases by mail-order methods—in other words, by advertising quacks—by the use of dangerous drugs. We are unable to see how this interferes with the physician prescribing or dispensing as he deems advisable. However, certain changes in the phraseology of the bill may be necessary to make its meaning clear and to secure the desired results.—Ed.]

#### Quinin as a Local Anesthetic.

FREDONIA, N. Y., Aug. 10, 1908.

To the Editor:—Allow me to state that at the annual meeting of the Chautauqua County (N. Y.) Medical Society, held July 14, 1896, I reported that: "Quinin is a safe and efficient anesthetic when used hypodermatically and much safer than cocaine."

A report of the proceedings of that meeting in the *Buffalo Medical Journal* of August, 1896, page 32, contains a reference to my report. My attention was called to the matter by an article in THE JOURNAL, August 8, by Dr. E. J. Brown on "Quinin Anesthesia."

V. M. GRISWOLD, M.D.

### Book Notices

WRITINGS OF SIR WILLIAM BROADBENT. Edited by Walter Broadbent, M.D., M.R.C.P. Cloth. Pp. 444. Price, \$3.60. New York: Oxford University Press, 1908.

A volume of carefully selected medical essays by a great man is more valuable than most new text-books, although unfortunately this fact is not so generally appreciated as it should be. For many years, whatever Sir William Broadbent wrote has been read by the profession with avidity, for his authority is undisputed. This volume shows well the breadth of his accurate knowledge. The first seven essays treat of cardiovascular diseases; four of pulmonary diseases; four of renal diseases; fourteen of neurologic subjects and as many more of miscellaneous topics. They have been selected from his contributions to periodical literature and medical societies and date from 1863 to 1907. Although a few were written a generation ago, they have not lost interest in that time.

Many think of Broadbent as especially a writer on diseases of the heart and blood vessels, but this collection and the bibliography appended to it show his literary fecundity and his breadth of knowledge. The first essay in the group of neurologic ones is a reprint of that in which he expounds what is sometimes known as Broadbent's hypothesis, by which he attempts to remove the difficulties attending the application of Dr. Carpenter's theory of the function of the sensorimotor ganglia in the common form of hemiplegia.

These articles are so full of thoughtful criticisms and of practical suggestions, both as to the nature of disease and its treatment that they will be found interesting and useful by studious practitioners of medicine. A few describe curious cases and results; notably, the account of a case of hydrophobia in which the patient recovered and which the author contrasts with a case in which recovery did not take place, and with one that simulated the disease. The brief chapter written in 1866 on a new cure for cancer must also be looked on as a curiosity, but an interesting one.

THE AIX-LES-BAINS THERMAL TREATMENT. By H. Forestier, M.D., Fellow of the Royal Society of Medicine, London. Cloth. Pp. 65. Price, 60 cents. Philadelphia: P. Blakiston's Son & Co., 1908.

The mode of treatment which has been evolved at Aix consists of massage while the douche is playing on the patient. The two are given together, the spout of the douche being cleverly guided by the masseur. The author advises rather copious drinking of a spring water which contains no sulphur and only small amounts of any mineral matter. The spring is known as the *Deux Reines*. A chapter is devoted to the physiologic action of the treatment. Twenty-seven pages consider its adaptability to the treatment of diseases and especially gout, rheumatism and other joint inflammations. The last pages contain information about the excursions from Aix, the amusements and varied practical advice. The best season to visit Aix is from May to October.

GASTRIC SURGERY. Being the Hunterian Lectures, Delivered Before the Royal College of Surgeons of England on Feb. 19-21, 1906, by H. J. Paterson, M.A., M.B., B.C., Hunterian Professor of Surgery and Pathology at the Royal College of Surgeons, Assistant Surgeon to the London Temperance Hospital. Cloth. Pp. 181. Price, \$2.00 net. New York: William Wood & Company.

This little volume consists of the Hunterian Lectures for 1906. It deals chiefly with the end-results of operations on the stomach, for ulcer of the stomach, benign obstruction of the pylorus and cancer of the stomach. The author has displayed a great deal of energy and zeal in personally following up cases, in order to determine the end-result and in getting direct and personal communications from other operators concerning their end-results. The deductions may be accepted, therefore, as a good presentation of the subject up to that time. Symptoms and diagnosis are not touched on, but in a short appendix the author gives his own technic of preparing a patient for operation, of performing the operation and of the after-treatment.

THE TECHNIQUE OF VAGINO-PERITONEAL OPERATIONS. By E. Wertheim and Th. Micholitsch. Translated into English by Cuthbert Lockyer, M.D., B.S., M.R.C.P. (Lond.), F.R.C.S. (Eng.), etc. With 138 Illustrations. Cloth. Pp. 323. Price, \$7.50. MacMillan & Co., Ltd., St. Martin's Street, London, 1907.

Vagino-peritoneal surgery is the most difficult branch of operative gynecology to describe; likewise, also, it is difficult to understand from a written description of the operations. Hence the fact that the English translation of Wertheim and Micholitsch is now obtainable will be welcomed by those who know of the original work in German and of its practical value. The book consists of but little text—just enough to explain the cuts; but the illustrations are so satisfactory that descriptive matter is unnecessary. There are 138 full page illustrations covering all the operations included in the title, from ordinary colpotomy to complete hysterectomy with the removal of the adnexa. The illustrations include each detail of the operation and are arranged to demonstrate each operation step by step. The book will prove of great value to those who do not have the necessary knowledge of the details of such operations, and who find it necessary to perform them.

### Miscellany

Rat Leprosy.—Passed Assistant Surgeon G. W. McCoy reports (Public Health Reports, U. S. P. H. and M.-H. S.) the finding of a leprosy-like disease among the rats of San Francisco in the proportion of 1 in 614 rats examined, and it is probable that it is even more frequent. The essential lesion or at least the one invariably found, has been a more or less general infiltration of the subcutaneous tissue and the peripheral lymph glands with an enormous number of fine white or slightly yellowish granules. This layer of tissue is usually mistaken for fat. The peripheral lymph glands on section are seen to contain a number of whitish points corresponding in appearance to the granules found in the subcutaneous tissues. The pelvic and mesenteric glands were in one instance decidedly enlarged and showed numerous leprosy-like bacilli in smear preparations. Alopecia, more or less extensive, was present in 55.5 per cent. of the cases; ulceration in 63.6 per cent. The discharge from the ulcers was usually of a mealy,



ish character, and consisted of enormous numbers of the bacilli and a few remnants of cell debris. In one rat only were lesions found in the internal organs, consisting of granules on the serous membranes, in the liver and the spleen. These lesions were made up almost entirely of masses of the peculiar bacilli. Many bacilli were found in the bladder, but none in the intestinal contents, nor in the nasal mucus. The organs in general were normal, but a nephritis was generally found which is not, however, attributable to the leprosy, as it is found in rats not affected by this disease and appears to be due to the action of poisons which have been used with a view to the destruction of the pests. The bacilli were acid and fast and were morphologically indistinguishable from the bacillus of Hansen. They were found in the protoplasm of the cells which they had, in some cases, replaced entirely, so that the nucleus of the cell was seen lying in a mass of bacilli giving the shape of a cell. The cell nuclei contained in these material masses retained their staining properties well. The disease corresponds closely with previously published descriptions. In the opinion of Dr. W. R. Brinckerhoff the geographic distribution of the disease indicates that it is not identical with human leprosy, but related to it in some such way as syphilis is to human tuberculosis.

**Sprayed Milk: Homogenization to Increase Digestibility of Milk.**—This is the term applied to a physical-mechanical means of rendering cow's milk more digestible for infants. The milk is transformed into an emulsion of the fatty elements, rendering it impossible for them to separate off into cream. The milk is forced under pressure through a spout with extremely fine perforations. This breaks up the globules of fat into minute particles, and as the cream-rising property is proportional to the size of the fat globules it is very low with this sprayed milk and the clots are light, porous and readily acted on by the gastric juice. In the *Bulletin Général de Thérapeutique*, May 30, 1908. H. Bouquet relates his experiences with this sprayed emulsionized milk in infant feeding, citing a few typical examples to show the exceptional digestibility of milk thus treated, as manifested in the rapid changes in the stools and the increase in weight.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### PROTEID IN URINE. THE CAMMIDGE REACTION.

CHEYENNE AGENCY, S. DAK., Aug. 5, 1908.

*To the Editor:*—1. Recently I had occasion to examine a specimen of urine which contained a large quantity of proteid. Most of it could be separated by saturation with magnesium sulphate. The filtrate gave only a very slight precipitate on adding acid and boiling, showing that the larger portion of the proteid consisted of globulin. Is anything known of the conditions under which this proteid appears in the urine? von Jaksch, Halliburton and Greene give very little information. The patient was suffering from chronic osseous tuberculosis. I looked for casts, but did not find any. However, as I could obtain only one specimen and have no centrifuge, I do not look on that finding as conclusive. The liver was not enlarged.

2. If possible please give the Cambridge reaction in chronic pancreatitis.

S. W. SMITH.

*ANSWER.*—1. It is generally stated that serum globulin accompanies serum albumin in the urine in varying proportions, but little is known of any special significance to be attached to serum globulin. Globulin has been found in large quantity in amyloid infiltration of the kidney, acute nephritis, pyonephrosis and in the severe hyperemia induced by cantharides poisoning. Cloetta (*Cor.-Bl. f. Schweiz. Aerzte*, April 15, 1903) concludes that the amount of globulin varies with the acuteness of the process. In acute nephritis the ratio of albumin to globulin might stand as three to one, while in contracting kidney it would be found as great as nine to one and in parenchymatous nephritis the proportion would vary between these two extremes.

2. We have already published the details of the Cambridge reaction, but repeat them here:

A specimen of the twenty-four hours' urine, or of the mixed morning and evening secretions, is filtered several times through the same filter paper and examined for albumin, sugar, bile, urobilin and indican. A quantitative estimation of the chlorids, phosphates

and urea is also made, and the centrifugalized deposit from the urine examined microscopically for calcium oxalate crystals. If the urine is found to be free from sugar and albumin, and of an acid reaction, 1 c.c. of strong hydrochloric acid (specific gravity 1.16) is mixed with 20 c.c. of the clear filtrate, and the mixture gently boiled on the sandbath in a small flask, having a long-stemmed funnel in the neck to act as a condenser. After ten minutes' boiling the flask is well cooled in a stream of water, and the contents made up to 20 c.c. with cold distilled water. The excess of acid present is neutralized by slowly adding 4 grams of lead carbonate. After standing for a few minutes the flask is again cooled in running water and the contents filtered through a well-moistened, close-grained filter paper until a perfectly clear filtrate is secured. The filtrate is then well shaken with 4 grams of powdered tribasic lead acetate and the resulting precipitate removed by filtration, an absolutely clear filtrate being obtained by repeating the filtration several times if necessary. The large amount of lead in solution is removed either by treatment with a stream of sulphuretted hydrogen or by precipitating the lead as a sulphate. For this purpose the clear filtrate is well shaken with 2 grams of finely-powdered sodium sulphate, the mixture heated to the boiling point, then cooled to as low a temperature as possible in a stream of cold water, and the white precipitate removed by careful filtration: 10 c.c. of the perfectly clear transparent filtrate is made up to 18 c.c. with distilled water and added to 0.8 gram of phenylhydrazin hydrochlorate, 2 grams of powdered sodium acetate and 1 c.c. of 50 per cent. acetic acid contained in a small flask fitted with a funnel condenser. The mixture is boiled on a sandbath for ten minutes, and then filtered hot through a filter paper moistened with hot water into a test-tube provided with a 15 c.c. mark. Should the filtrate fail to reach the mark, it is made up to 15 c.c. with hot distilled water. In well-marked cases of pancreatic inflammation a light yellow, flocculent precipitate should form in a few hours, but it may be necessary to leave the preparation to stand over night before a deposit occurs. Under the microscope the precipitate is seen to consist of long, light yellow, flexible, hair-like crystals, arranged in sheaves which, when irrigated with 33 per cent. sulphuric acid, melt away and disappear in from ten to fifteen seconds after the acid first touches them. The urine employed for the experiment should be fresh, and not have undergone fermentative changes. If alkaline in reaction it should be made acid with hydrochloric acid before the test is commenced; any glucose that may be present should be removed by fermentation after the urine has been boiled with the acid, and the excess neutralized.

### BOOKS ON TUBERCULOSIS.

SALINAS CITY, CAL., Aug. 7, 1908.

*To the Editor:*—Please suggest to me some short book or pamphlet on tuberculosis, which would be suitable to place in the hands of a lay-tuberculous patient. I should prefer something encouraging, giving statistics of the cures that have been made and a general idea of the pathologic condition present and the aims of treatment, particularly in a case of laryngeal tuberculosis. Can you also refer me to statistics showing the probability of recovery from tuberculosis after a certain attained age, treatment to be given in a sanitarium?

N. E. RICHARDSON.

*ANSWER.*—There are few suitable short books in English giving accurate information to consumptive patients. Most are too technical and dwell more on the general crusade against the disease than on the most important practical points of value to a patient. Excellent popular articles appear in the monthly *Journal of the Outdoor Life* (Trudeau, N. Y.), the official organ of the National Association for the Study and Prevention of Tuberculosis. The following three small volumes may be recommended for popular reading:

Knopf, S. A.: "Tuberculosis as a Disease of the Masses," Prize essay, 4th Am. ed., 1907. M. Freestack, New York. Paper, 25 cents; cloth, 50 cents.

Flick, L. F.: "Consumption a Curable and Preventable Disease," 1903. David McKay, Philadelphia. \$1.

Gardiner, C. F.: "Care of the Consumptive," 1900. G. P. Putnam's Sons, New York. \$1.

These books give in simple language the main facts about the statistics, prevention and treatment of the disease, including laryngeal tuberculosis, and are preferable for lay readers to the many pamphlets which are issued officially or privately and which often contain incorrect and misleading information. Much harm is often done by such literature.

A commendable little volume has lately been written by a layman, (Price, G. B., "Gaining Health in the West," 1907, New York, B. W. Henbsch), which although dealing particularly with the management of the disease in remoter climates, treats the subject in a hopeful and thoroughly practical manner.

The best recent statistics on results of sanatorium treatment can be found in the excellent report by H. T. Bulstrode, on "Sanatoria for Consumption," London, 1908.



## THE FOLIN METHOD FOR ESTIMATING THE QUANTITY OF AMMONIA IN THE URINE.

CHICAGO, June 27, 1908.

*To the Editor:*—When I saw the above heading over an article by Dr. Buhlig in THE JOURNAL, June 27, I thought: Well, finally, I shall know what Folin's method is. I read the article twice and when I had finished, I knew just as much about the Folin method as I knew before, *i. e.*, practically nothing. Will you give a detailed description of the test? S. K.

*ANSWER.*—It is to be regretted that an omission was made in the publication of the article by Walter H. Buhlig on "The Folin Methods of Estimating the Quantity of Ammonia in the

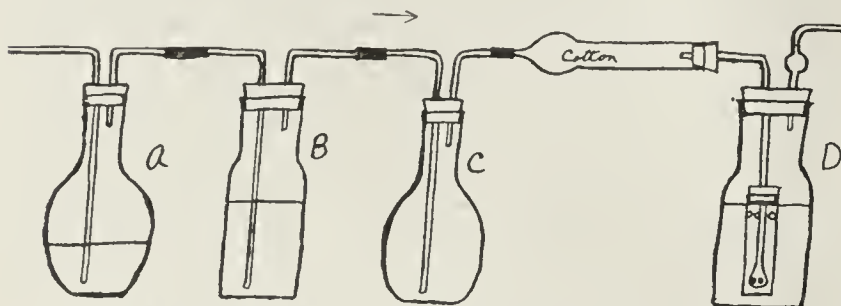


Fig. 1.—Apparatus used in the Folin method of determining the ammonia content of urine, with the addition of an air-filled flask, C: A, dilute  $\text{H}_2\text{SO}_4$ ; B, 50 c.c. urine, 20 gm. NaCl, 20 c.c. petroleum, 20 gm.  $\text{Na}_2\text{CO}_3$ , added last; C, air flask; D, 30 c.c.  $\text{n}/5 \text{H}_2\text{SO}_4 + \text{distilled H}_2\text{O}$ .

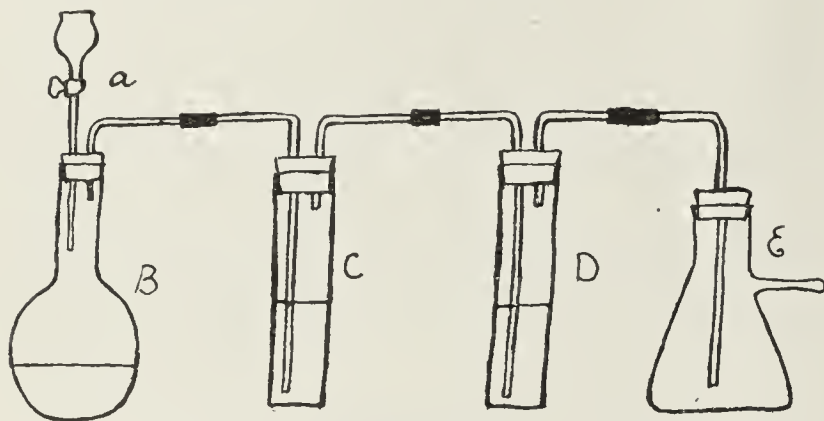


Fig. 2.—Apparatus used in Shaffer's vacuum distillation method: B, 50 c.c. urine, 15-20 gm. NaCl, 50 c.c. methyl alcohol, 1 gm.  $\text{Na}_2\text{CO}_3$ ; C, 25-50 c.c.  $\text{n}/10 \text{H}_2\text{SO}_4$ ; D, small amount  $\text{n}/10 \text{H}_2\text{SO}_4 + \text{H}_2\text{O}$ .

Urine" in THE JOURNAL, June 27, 1908. Part of the legend was omitted by mistake; it should have appeared as given here. This makes clear the reference to reagents mentioned in the body of the original article by Dr. Buhlig. It might be added that a suction pump is attached to the right hand end of each apparatus, in the Folin apparatus (Fig. 1) to draw air through and to carry the liberated ammonia from bottle B into the standard acid, and in the Shaffer apparatus (Fig. 2) to make a low pressure so that the liberated ammonia will distill over from flask B into the bottles of standard acid.

## TREATMENT OF AMEBIC DYSENTERY.

WAKE FOREST, NO. CAROLINA, Aug. 10, 1908.

*To the Editor:*—What is the best treatment for amebic dysentery? What is the prognosis as to cure?

WATSON S. RANKIN.

*ANSWER.*—In the treatment of amebic dysentery a careful regulation of the diet and a cleansing of the alimentary canal by magnesium sulphate or other saline, are rational preliminary measures. Ipecac should then be given according to the precautions instituted by those who practice in tropical regions. (See abstract of Cantlie's article in THE JOURNAL, Sept. 7, 1907, p. 863.)

The use of quinin sulphate or bisulphate in injections, is a local measure, which is sometimes promptly successful. The solution can only be expected to act on amebæ in the lumen of the intestine and will naturally be most efficient when mucus has been washed away from the walls and the surfaces of ulcerated patches. The strength of the solution should be from 1 to 5,000 to 1 to 2,500 and the quantity introduced should be sufficient to fill the intestine as high as ulcers are probably present. Thymol, 1 to 2,500, has been used for the same purpose. For high injections it is not necessary to introduce the colon tube more than six inches, as it can not be pushed beyond the sigmoid, but it is possible by elevating the hips to make the liquid reach even to the ileocecal valve. Too great distention of the bowels should be avoided.

When a case of ulcerative dysentery has persisted more than six

months the rational treatment is to perform appendicostomy or a right inguinal colostomy and by maintaining an artificial anus give rest and permit thorough local treatment of the colon through the artificial anus.

The prognosis of amebic dysentery should be reserved, but the disease is not necessarily fatal, even though abscess of the liver has occurred. The latter complication, however, greatly increases the seriousness of the outlook.

## USES OF APOCODEIN, CAULOPHYLLUM AND SODIUM SUCCINATE.

ALDEN BRIDGE, LA., Aug. 11, 1908.

*To the Editor:*—1. I have seen the statement made in current literature, that apocodein is a reliable and efficient purgative when administered hypodermically. Will you kindly state whether there have been reports of clinical observations substantiating this claim and if so, give references. 2. Is there any proof to support the claim that caulophyllum is a reliable parturifacient? 3. What is the status of the sodium succinate treatment for gallstones?

JOHN H. SCALES.

*ANSWER.*—1. This action of apocodein appears to be established. The British Codex (page 13) says: "In the case of healthy people it is generally efficient in producing one or more stools within ten minutes after the injection; but it is only likely to be valuable in therapeutics, for those patients in whom constipation is due to excessive inhibition. When constipation is caused by inertia of the muscle it is not likely to be of use."

2. The evidence as to the parturifacient action of caulophyllum is insufficient to warrant such a claim.

3. Sodium succinate is not mentioned by standard text-books as useful for the treatment of gallstones.

## IDENTITY OF THYMIC ACID.

SPRINGFIELD, MASS., Aug. 7, 1908.

*To the Editor:*—Is thymic acid identical with thujetic acid of arbor vitæ or some other organic acid? I am unable to find any such acid named in any book on materia medica in the U. S. or National Dispensatories or elsewhere. I only find thujetic acid from arbor vitæ. Dr. E. Schmoll, of San Francisco, in his paper on gout in THE JOURNAL, April 29, 1905, mentions it as helping to keep uric acid in solution in the blood.

DANIEL E. KEEFE.

*ANSWER.*—Thymic acid is a product of the hydrolysis of thymonucleic acid, which is obtained from the nucleoprotein of the thymus gland. Thymic acid is a body containing nitrogen and phosphorus and having the formula  $\text{C}_{16}\text{H}_{25}\text{N}_3\text{P}_2\text{O}_{12}$ . It is easily soluble in cold water. It is precipitated from its acetic acid solution by peptone and albumin. The precipitate is soluble or insoluble with difficulty in hydrochloric acid. Thymic acid combines with albuminates to form bodies which are not identical with paranucleins. By further hydrolysis it is reduced to thymine, which has the formula  $\text{C}_5\text{H}_8\text{N}_2\text{O}_2$ . So far as we know, thymic acid is not in the market as a therapeutic agent. Thymic acid derived from thymus must not be confounded with thymol obtained from thyme, which is sometimes called thymic acid and is referred to under this name in the U. S. and National Dispensatories. Thymic acid is quite distinct from thujetic acid.

## ANSTIE'S RULE FOR ALCOHOLICS.

WALLACE, IDAHO, July 7, 1908.

*To the Editor:*—Where can I find "Anstie's rule for alcoholics" as used in connection with insurance examinations.

HERBERT H. JUDD.

*ANSWER.*—Anstie's rule concerning the use of alcohol, we believe, was first enunciated by Dr. Francis Edmund Anstie, a London physician, in his monograph on "The Uses of Wine in Health and Disease" (J. S. Redfield, N. Y., publisher), 1870. Briefly, it is to the effect that the maximum amount of absolute alcohol which can be taken by an adult without injury is one and a half ounces daily. This is equivalent to about three ounces of whisky, brandy, gin or rum, about four wineglassfuls of sherry, or other strong wine, to one pint of claret, champagne or other light wine, to three glasses of strong ale or porter, or five glasses of beer or light ale.

## LANTERN SLIDES TO ILLUSTRATE SPREAD OF CONTAGIOUS DISEASES.

A correspondent desires information as to where he can purchase lantern slides with which to illustrate a lecture to be given before laymen on "The Prevention of the Spread of Contagious Diseases." Similar queries have been received several times and we should be very glad to get information for publication relative to where such slides can be obtained. Reaching the laymen through lectures illustrated by lantern slides is happily becoming more and more common and undoubtedly individuals here and there have secured slides as means of illustration that could be put to a wide use if such illustrations could be made obtainable by others. We repeat, we shall be glad to get information from physicians regarding the subject.



## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, for the week ended Aug. 15, 1908:

Blanchard, Robert M., capt., M. C., leave of absence for ten days is extended twenty days.

Heysinger, James D., capt., M. C., granted leave of absence for fourteen days.

Scott, George H., capt., M. C., granted leave of absence for one month after return of troops from maneuver camp.

Reynolds, Charles R., capt., M. C.; Huber, Edward G., first lieutenant, M. C.; Lambie, John S., Jr., first lieutenant, M. C., left camp at Chickamauga Park, Ga., for camp at Fort Riley, Kan.

Crabtree, George H., capt., M. C., left Ancon, Canal Zone, on leave of absence for fifty-four days.

The following named first lieutenants, M. R. C., ordered to active duty at the stations where they have been serving as contract surgeons:

Dade, Waller H.                      Jordan, Edward H.  
de Quevedo, Luis G.                Warringer, Benjamin B.  
Wallace, George S.                Hull, Alva R.

Suggs, Frank, first lieutenant, M. R. C., ordered from Fort Niagara, N. Y., to Fort Washington, Md., for temporary duty during the absence of Capt. Samuel J. Morris, M. C.

Trotter-Tyler, George, first lieutenant, M. R. C., ordered from Fort Adams, R. I., to Fort Monroe, Va., for temporary duty.

Hammond, William G., dental surgeon, ordered from Fort Logan, Colo., to Denver, Colo., for temporary duty.

Gunkel, George L., dental surgeon, ordered to Fort Oglethorpe, Ga., for temporary duty.

Hill, Eben C., first lieutenant, M. R. C., ordered to active duty and assigned to Fort Porter, N. Y.

Tignor, Edwin P., dental surgeon, granted twenty-four days' leave of absence.

Birmingham, H. P., lieutenant-colonel, M. C., detailed member of examining board, appointed in par. 28, S. O. 98, April 25, 1908, War Department, *vice* Col. Charles B. Byrne, M. C.

So much of par. 5, S. O. 152, June 29, 1908, War Dept., as directs the officers therein named to report to Col. Charles B. Byrne, M. C., as president of the examining board, is amended so as to direct them to report to Col. Valery Havard, M. C., president of the board, *vice* Colonel Byrne.

Raymond, Henry L., Kendall, William P., Morris, Edward R., Harris, H. S. T., majors, M. C., ordered to report in person, on Sept. 21, 1908, to Col. Valery Havard, M. C., president of the examining board at the Army Medical Museum, Washington, D. C., for examination to determine their fitness for promotion.

Anderson, E. H., first lieutenant, M. R. C., ordered to return to station, Fort Wingate, N. Mex., from duty in field.

Koerber, C. E., capt., M. C., granted leave of absence from Cuba, to commence about September 11 and ending October 7, with permission to visit the United States.

### Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the two weeks ended Aug. 15, 1908:

Carpenter, D. N., surgeon, detached from the naval station, Cavité, P. I., and ordered home to wait orders.

Morris, L., surgeon, detached from the naval torpedo station, Newport, R. I., and ordered to the naval station, Cavité, P. I., sailing from San Francisco, Cal., about September 5.

Peck, A. E., P. A. surgeon, ordered to the naval torpedo station, Newport, R. I.

Minter, J. M., asst.-surgeon, ordered to the naval recruiting station, Cincinnati, Ohio, when discharged from treatment at the naval hospital, Mare Island, Cal.

Hermesch, H. R., asst.-surgeon, detached from the naval recruiting station, Cincinnati, Ohio, and ordered to the *California*.

Farwell, W. G., P. A. surgeon, detached from duty at Camp Elliott, Isthmus of Panama, and ordered to the naval recruiting station, Philadelphia, Pa.

Mann, W. L., Jr., acting asst.-surgeon, ordered to the naval hospital, Newport, R. I.

Urle, J. F., surgeon, placed on the retired list from Aug. 1, 1908, in accordance with section 1453, Revised Statutes.

Boyd, J. C., medical director, detached from command of the Naval Medical School Hospital, Washington, D. C., and ordered to continue duties as President of the Naval and Medical Examining Boards at that school.

Urle, J. F., surgeon, retired, ordered home when discharged from treatment at the Naval Hospital, Mare Island, Cal.

Turner, H. W. B., asst.-surgeon, appointed asst.-surgeon from July 20, 1908.

Harmon, G. E. H., medical director, ordered to command the Naval Medical School Hospital, Washington, D. C.

Haywood, A. B., asst.-surgeon, detached from duty with the marine detachment at Camp Elliott, Isthmian Canal Zone, Panama, and ordered to the Naval Recruiting Station, Pittsburg, Pa.

Cohn, I. F., asst.-surgeon, ordered to the Naval Hospital, Mare Island, Cal.

Shepard, G. W., asst.-surgeon, detached from the Naval Hospital, Mare Island, Cal., September 1, and ordered to the Naval Medical School, Washington, D. C., October 1, for instruction.

### Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and other officers of the Public Health and Marine-Hospital Service for the seven days ended Aug. 12, 1908:

Mead, F. W., surgeon, granted leave of absence for one month, from Aug. 26, 1908.

Woodward, R. M., surgeon, granted leave of absence for 13 days, from Aug. 24, 1908.

Cobb, J. O., surgeon, directed to proceed to Chicago, for special temporary duty, on completion of which to rejoin his station at Milwaukee, Wis.

Goldberger, J. P. A. surgeon, detailed to represent the service at the International Fishery Congress, to be held in Washington, D. C., Sept. 22-26, 1908.

Vogel, C. W., P. A. surgeon, relieved from special temporary duty at San Juan, Porto Rico, and directed to report at Bureau, Washington, D. C.

Sweet, E. A., asst.-surgeon, granted leave of absence for 2 months, from Aug. 18, 1908.

Miller, W. W., asst.-surgeon, granted leave of absence for 6 days, from July 27, 1908, under paragraph 191, Service Regulations.

Dunn, James, acting asst.-surgeon, granted leave of absence for 30 days, from Aug. 17, 1908.

Gustetter, A. L., acting asst.-surgeon, granted leave of absence for 2 days, from Aug. 10, 1908.

Hicks, B. L., acting asst.-surgeon, granted leave of absence for 23 days, from Aug. 14, 1908.

McGinnis, R. H., acting asst.-surgeon, leave of absence granted July 17, 1908, for 15 days, from Aug. 17, 1908, revoked.

Seavey, L. T., acting asst.-surgeon, leave of absence granted amended so as to grant him 21 days from Aug. 3, 1908.

Tarbell, B. C., acting asst.-surgeon, excused from duty without pay, Aug. 31 to Sept. 30, 1908, inclusive.

Wakefield, H. C., acting asst.-surgeon, granted leave of absence for 12 days, from Aug. 8, 1908.

Gahn, H. E., pharmacist, granted leave of absence for 11 days, from Aug. 10, 1908.

#### PROMOTION.

Comfort, Newton C., pharmacist, promoted to pharmacist of the second class.

#### APPOINTMENT.

Stowe, Dr. Leroy M., appointed an acting asst.-surgeon, for duty in the office of the American Consul at Tampico, Mexico.

#### BOARDS CONVENED.

A board of medical officers was convened to meet at Baltimore, Aug. 12, 1908, for the purpose of making a physical examination of a surfman of the Life-Saving Service. Detail for the board: P. A. surgeon J. T. Burkhalter, chairman; Asst.-Surgeon H. J. Warner, recorder.

A board of medical officers was convened to meet at San Francisco, Aug. 14, 1908, for the purpose of making a physical examination of an officer of the Revenue-Cutter Service. Detail for the board: Surgeon H. W. Austin, chairman; P. A. surgeon W. W. King, recorder.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Aug. 14, 1908:

#### SMALLPOX—UNITED STATES.

California: San Francisco, July 18-25, 2 cases; San Diego County, June 1-Aug. 3, 98 cases.

Illinois: Chicago, July 25-Aug. 1, 2 cases.

Indiana: Fort Wayne, July 26-Aug. 1, 1 case; Indianapolis, July 26-Aug. 2, 1 case; La Fayette, Aug. 27-Aug. 3, 1 case; South Bend, July 25-Aug. 1, 2 cases.

Iowa: Burlington, July 15, 1 case.

Michigan: Detroit, July 25-Aug. 1, 1 case.

Missouri: St. Joseph, July 18-25, 4 cases.

Ohio: Dayton, July 25-Aug. 1, 1 case.

Texas: San Antonio, July 18-Aug. 1, 3 cases.

Washington: Spokane, July 18-25, 7 cases.

Wisconsin: Milwaukee, July 1-Aug. 1, 5 cases.

#### SMALLPOX—FOREIGN.

Arabia: Aden, June 30-July 13, 6 deaths.

Canada: Halifax, July 25-Aug. 1, 1 case.

China: Shanghai, June 21-28, 2 cases, 1 death.

Egypt: Cairo, July 1-15, 9 cases, 6 deaths.

India: Bombay, June 23-July 7, 34 deaths; Calcutta, June 6-20, 16 deaths.

Italy: General, July 5-19, 72 cases; Naples, July 4-18, 35 cases, 3 deaths.

Java: Batavia, June 13-27, 9 cases.

Portugal: Lisbon, July 11-18, 1 case.

Russia: Moscow, July 6-11, 14 cases, 14 deaths; Riga, July 11-18, 5 cases; St. Petersburg, July 4-11, 47 cases, 13 deaths;

Warsaw, May 30-June 6, 7 deaths.

Spain: Valencia, July 11-18, 7 cases, 2 deaths.

Turkey: Constantinople, July 5-12, 5 deaths.

#### YELLOW FEVER.

Brazil: Manaus, June 29-July 11, 5 cases, 7 deaths.

Mexico: Veracruz, Aug. 8, 1 case, Aug. 10, 1 case.

#### CHOLERA.

China: Amoy, Aug. 11, present; Hongkong, July 13-27, 5 cases, 4 deaths.

India: Bombay, June 23-30, 1 death; Calcutta, June 6-20, 90 deaths; Rangoon, June 13-20, 6 cases.

Russia: Batoom District, Aug. 10, present; Moscow, present; Rostov, present.

#### PLAGUE.

Azores: Fayal, to Aug. 10, 7 cases, 2 deaths; Terceira, 17 cases, 10 deaths.

Brazil: Rio de Janeiro, July 11-25, 7 cases, 7 deaths.

Chile: Antofagasta, July 4, 3 cases; Iquique, 4 cases.

China: Hongkong, June 13-27, 160 cases, 120 deaths.

Egypt: General, July 8-14, 22 cases, 9 deaths; Alexandria, July 10-16, 4 cases, 2 deaths; Port Said, July 11, 2 cases, 1 death.

India: General, June 21-27, 563 cases, 483 deaths; Bombay, June 23-July 7, 54 deaths; Calcutta, June 6-20, 71 deaths;

Rangoon, June 13-20, 40 deaths.

Pern: General, July 6-11, 47 cases, 28 deaths; Callao, 3 cases, 1 death; Lima, 6 cases, 3 deaths.



## Marriages

SAMUEL C. NIEMANN, M.D., to Miss Carrie M. Frank, both of Dayton, Ohio, August 6.

HENRY T. CUMMINGS, M.D., to Miss Laura Madelyn Dowling, both of Chicago, July 7.

JAMES M. BONNAR, M.D., to Miss Jennie L. Forsyth, both of New Bedford, Mass., August 4.

GEORGE W. DAINY, M.D., to Miss Bessie Mabel Albee, both of Somerville, Mass., August 5.

JOHN BUCHANAN WILSON, M.D., to Miss Emily May Trotter, both of Ottumwa, Iowa, August 5.

CHARLES B. DIRKS, M.D., La Grange, Ill., to Miss Alice A. Thompson of Madison, Wis., August 1.

RICHARD GLENN KIBBEY, M.D., Trenton Falls, N. Y., to Miss Agnes Doherty of Utica, N. Y., August 4.

HENRY G. WESTPHAL, M.D., Polar, Wis., to Miss Nellie Countryman of Birmingham, Iowa, August 5.

EDWARD MILTON BROWN, M.D., Chicago, Ill., to Miss Harriet Chamberlain Drew of Brooklyn, N. Y., August 11.

MONROE M. GHENT, M.D., St. Paul, Minn., to Fräulein Rosa Wilser of Vienna, Austria, at Chicago, Ill., August 12.

THOMAS PUGH McCORMICK, M.D., Baltimore, Md., to Miss Leonora Clifton Franklin of San Antonio, Texas, in New York City, August 5.

ARCHIBALD HODGE LOGAN, M.D., Pittsburg, Pa., to Miss Amy H. Dunlap of Washington, Pa., at Hamills Point, Muskoka, Ont., Canada, August 6.

## Deaths

Victor H. Coffman, M.D. Jefferson Medical College, Philadelphia, 1866; surgeon of the Thirty-fourth Iowa Volunteer Infantry for three years during the Civil War; and brevetted lieutenant-colonel for meritorious services at the battle of Mobile; a member of the American Medical Association; and vice-president of the Jefferson College Alumni Association; one of the founders, at one time president, and for many years professor of theory and practice of medicine in Omaha Medical College; for many years chief of staff of St. Joseph's Hospital; said to have been the first practitioner in Nebraska to apply a plaster-of-Paris dressing for curvature of the spine; the first to perform ovariectomy in Nebraska; and the first to perform thyroidectomy in America; died at his home in Omaha, August 4, from multiple neuritis, after an illness of 28 months, aged 68.

George Michael Edebohls, M.D. College of Physicians and Surgeons in the City of New York, 1875; a member of the American Medical Association, American Gynecological Society, and fellow of the New York Academy of Medicine; secretary of the New York Pathological Society, and a member of the German Medical Society; professor of diseases of women at the New York Post-Graduate Medical School and Hospital; attending gynecologist to St. Francis and the Post-Graduate hospitals; and consulting gynecologist to St. John's Hospital, Yonkers, and Nyack Hospital; a specialist in abdominal surgery, whose most noteworthy recent work was the operation of decapsulation of the kidney for the relief of nephritis; died in his apartments in New York City, August 8, from Hodgkin's disease, after an illness of four months, aged 55.

William T. Peyton, M.D. Louisville National Medical College, Medical Department, State University, Louisville, 1889; professor of pathology in that institution from 1890 to 1892, professor of physiology from 1892 to 1894, and professor of principles and practice of medicine from 1894 to 1900; of Louisville; while under arrest charged with performing a criminal operation, is said to have shot himself in the head, and died from the injuries in the Louisville City Hospital, August 10, aged 56.

Frederick Russell Cummings, M.D. Medical School of Harvard University, Boston, 1898; a member of the American Medical Association; member of the assistant staff of the Margaret Pillsbury General Hospital, Concord, N. H.; and medical director of the State Security Life and Accident Company, Concord; died at the Concord City Hospital, August 8, from septicemia, aged 35.

Walter Hurst, M.D. Medical College of Georgia, Medical Department of University of Augusta, 1905; B.S.C. London, 1883; L.S.A. 1889; associate of Owens College, Manchester, England; fellow of the Anthropological Institute and member of the British Association for the Advancement of Science; died at his home in Detroit, Mich., from cerebral hemorrhage, August 6, aged 51.

Wallace Reverdy Bishop, M.D. Medical Department of the Tulane University of Louisiana, New Orleans, 1895; a member of the Medical Association of the State of Alabama; sometime president and secretary of the Talladega County Medical Society; and twice alderman of Talladega; died at his home in that city, August 4, after an illness of several months, aged 35.

Lawrence H. Brundage, M.D. Medical College of Ohio, Medical Department University of Cincinnati, 1890; a member of the Ohio State Medical Association; local surgeon for the Pennsylvania System, and health officer of Xenia; died suddenly from heart disease at his home, August 1, aged 42.

Edwin Augustus Jelks, M.D. Medical College of the State of South Carolina, Charleston, 1860; a surgeon in the Confederate service throughout the Civil War, and one of the most prominent and beloved practitioners of Quitman, Ga.; died at his home, July 28, aged 72.

John Harvey Borden, M.D. College of Physicians and Surgeons in the City of New York, 1903; of Tarrytown, N. Y.; physician to the City Hospital; died August 10, at his home, from an overdose of morphin and strychnin taken to induce sleep, aged 35.

Alexander Hamilton Laidlaw, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1861; formerly professor of anatomy in the New York Homeopathic Medical College; died at his home in New York City, July 29, from senile debility, aged 80.

David Eugene Southwick, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1857; for more than half a century a practitioner of Ogdensburg, N. Y.; died at his home in that city, August 1, from senile debility, after a long illness, aged 76.

Aaron T. Miller, M.D. Cincinnati College of Medicine and Surgery, 1879; a member of the American Medical Association; of Shanesville, Ohio; died in Colfax, Wash., August 7, from septicemia, following a carbuncle of the neck, aged 53.

Russell H. Croxford, M.D. Medical School of Maine, Medical Department of Bowdoin College, Brunswick, 1892; United States pension examining surgeon; died at his home in Brewer, Maine, August 5, after an illness of several months, aged 50.

William E. Pounders, M.D. Chattanooga Medical College, Medical Department Grant University, 1905; a member of the Arkansas legislature in 1901; died suddenly at his home in Sidney, Ark., July 28, from heart disease, aged 33.

Lewis C. Anderson, M.D. Miami Medical College, Cincinnati, 1874; of Greenville, Ohio; a member of the American Medical Association; was stricken with cerebral hemorrhage while operating in Greenville, and died July 24, aged 58.

John A. Morehouse, M.D. Physio-Medical Institute, Cincinnati, 1870; for 46 years a practitioner of Indiana; died at his home in College Park, Huntington, August 1, from cancer of the stomach, after an illness of six years, aged 64.

William H. Webster, M.D. Pulte Medical College, Cincinnati, 1894; of Dayton, Ohio; died at Weller's Camp, on the Stillwater River, north of Dayton, August 10, from valvular heart disease, after a prolonged illness, aged 39.

Thomas Wylie Long, M.D. Columbus (Ohio) Medical College, 1893; of Byesville, Ohio; died in the Keenan Hospital, Cambridge, Ohio, July 29, after an illness of 17 days, from septicemia, due to an operation wound, aged 46.

Lester C. Gates, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1888; a member of the Missouri State Medical Association; was killed in a runaway accident near his home in Jerico Springs, Mo., August 4, aged 40.

Clyde E. Wideman, M.D. Medical College of the State of South Carolina, Charleston, 1884; formerly of Pelzer, S. C.; died in a sanitarium in Asheville, N. C., April 29, from paralysis, after an illness of more than a year.

James Francis Brown, M.D. Dartmouth Medical School, Hanover, N. H., 1865; a member of the New Hampshire Medical Society; died at his home in Manchester, July 29, from anemia, after an illness of several weeks, aged 69.



**Harry R. Bowers, M.D.** Medical College of Ohio, Medical Department University of Cincinnati, 1884; of Columbus, Texas; died in Hot Springs, Ark., where he had gone on account of ill health, July 29, after a long illness.

**Norris Freeman Kelly, M.D.** Missouri Medical College, St. Louis, 1870; a member of the Missouri State Medical Association; died at his home in Kennett, Mo., August 4, after an illness of nearly four months, aged 58.

**Orlando T. Pratt, M.D.** Missouri Medical College, St. Louis, 1875; of Compton, Cal.; assistant surgeon to the Pacific Electric Railroad; died suddenly from heart disease in Los Angeles, August 5, aged 55.

**K. Akin Smith, M.D.** Atlanta (Ga.) Medical College, 1891; of Gainesville, Ga.; a member of the Medical Association of Georgia; was drowned while swimming in the Chattahoochee River, August 7, aged 38.

**Anna S. Morgan, M.D.** Gross Medical College, Denver, Colo., 1895; one of the staff of visiting nurses of Toledo; died at her home in that city, July 30, from heart disease, after an illness of a few days, aged 42.

**John Wickliffe Steeves, M.D.** Baltimore University School of Medicine, 1892; of Mardela Springs, Md.; was found dead in his room in Washington, D. C., August 2, presumably from heart disease, aged 58.

**Ulof Oscar Robertson, M.D.** Hygeio-Therapeutic College of New York, New York City, 1867; of Atlanta, Ga.; died at his country home Roxborough, Ga., August 4, after an illness of six months, aged 62.

**T. Brook Thomas, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1888; of Portland, Ore.; died at the home of his brother in Aims, Ore., July 27, after a long illness, aged 50.

**Shelby L. Lenox, M.D.** American Medical College, Eclectic, St. Louis, 1894; died at his home in Eureka Springs, Ark., August 1, from ptomain poisoning after an illness of two weeks, aged 38.

**W. Mumford Ellis, M.D.** University of Louisville (Ky.) Medical Department, 1881; died at his home in Riverton, Ala., July 19, from senile debility, after an illness of 23 days, aged 85.

**Samuel Eisenbeiss** (License, Indiana); for 53 years a practitioner of the state; died at his home in Elkhart, July 20, from carcinoma of the colon, after an illness of four months, aged 74.

**Samuel S. Horne, M.D.** Medical College of Ohio, Medical Department, University of Cincinnati, 1869; died at his home in Jonesboro, Ind., August 9, after a long illness, aged 65.

**Alva Reynolds, M.D.** College of Physicians and Surgeons, Keokuk, Iowa, 1882; died at his home in Bussey, Iowa, July 30, from heart disease, after a brief illness, aged 48.

**Charles N. Cook, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1870; died at his home in Philadelphia, August 1, from heart disease, aged 65.

**F. Clarke Mewburn, M.D.** College of Physicians and Surgeons of Ontario, Toronto, 1866; one of the oldest practitioners of Toronto; died at his home July 30, aged 91.

**B. N. Patterson** (Years of Practice, Ky., 1893); for 45 years a practitioner of Ohio County, Ky.; died at his home in McHenry, August 3, from senile debility, aged 80.

**William Zimmerman, M.D.** University of Würzburg, Germany, 1863; for many years a practitioner of Quincy, Ill.; died at his home in that city July 27, aged 67.

**John Haydock Shotwell, M.D.** New York Homeopathic Medical College and Hospital, New York City, 1877; died at his home in Belmar, N. J., August 4, aged 80.

**Thomas C. McMillan, M.D.** College of Physicians and Surgeons, Keokuk, Iowa, 1882; died at his home in Falls City, Neb., March 9, after a brief illness.

**Lewis Emerson Wheat, M.D.** Jefferson Medical College, Philadelphia, 1888; was found dead at his home in Philadelphia, August 12, aged 45.

**George E. C. Kelly, M.D.** New York University Medical College, New York City, 1892; died at his home in New York City, July 29.

**Absalom B. Hostetler, M.D.** Eclectic Medical Institute, Cincinnati, 1855; died at his home in Covina, Cal., July 18, aged 82.

Deaths Abroad.

**Sir Thomas Stevenson, M.D., R.C.P.** University of London, 1864; senior scientific analyst to the home office; an acknowledged authority on medical jurisprudence in Great Britain, and lecturer on that subject in Guy's Hospital Medical School for many years; died at his residence at Streatham, July 27, from diabetic coma, aged 70.

**John Talfourd Jones, M.B.** University of London, 1863; ex-president of the Medical Society of University College; died at Tunbridge Wells, July 25, aged 71.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, Sept. 8-10. Secretary, Dr. Edwin B. Harvey, Boston.  
Iowa State Board of Medical Examiners, Capitol Building, Des Moines, September 16-18. Secretary, Dr. Louis A. Thomas, Des Moines.

STATE BOARD REPORTS.

State.	Date of Exam.	Journal Page.	Journal Date.	With Examination Questions.
Arizona	October, 1907	234	January 18	No
	January, 1908	386	February 1	No
	April, 1908	519	August 8	No
Arkansas	October, 1907	61	January 4	No
	January, 1908	1449	May 2	No
	April, 1908	63	July 4	No
California	December, 1907	1070	March 28	No
	April, 1908	153	July 11	No
	January, 1908	908	March 14	No
Colorado	April, 1908	64	July 4	No
	March, 1908	1212	April 11	No
	December, 1907	234	January 18	No
Connecticut	June, 1908	426	August 1	No
	April, 1907	632	February 22	No
	July, 1907	632	February 22	No
Delaware	October, 1907	632	February 22	No
	January, 1908	1143	April 4	No
	November, 1907	234	January 18	No
Dist. of Columbia	April, 1908	242	July 18	No
	May, 1908	153	July 11	No
	October, 1907	146	January 11	No
Florida	April, 1908	153	July 11	No
	January, 1908	988	March 21	No
	April, 1908	242	July 18	No
Georgia	May, 1908	519	August 8	No
	October, 1907	61	January 4	No
	September, 1907	632	February 22	No
Idaho	December, 1907	632	February 22	No
	March, 1908	1839	May 30	No
	October, 1907	1142	April 4	No
Illinois	October, 1907	795	March 7	Yes
	December, 1907	153	July 11	No
	May, 1908	713	February 29	No
Indiana	March, 1907	713	February 29	No
	July, 1907	713	February 29	No
	November, 1907	713	February 29	No
Iowa	March, 1908	1212	April 11	No
	December, 1907	714	February 29	Yes
	November, 1907	146	January 11	No
Kansas	March, 1908	64	July 4	No
	May, 1908	154	July 11	No
	January, 1908	1071	March 28	Yes
Kentucky	April, 1908	1840	May 30	No
	June, 1908	427	August 1	No
	November, 1907	386	February 1	No
Louisiana	May, 1908	65	July 4	No
	October, 1907	520	August 8	No
	April, 1908	234	January 18	No
Maine	October, 1907	64	July 4	No
	November, 1907	473	February 8	No
	February, 1908	1072	March 28	No
Maryland	May, 1908	426	August 1	No
	February, 1908	988	March 21	No
	May, 1908	243	July 18	No
Massachusetts	January, 1908	1071	March 28	No
	January, 1908	242	July 18	No
	April, 1908	242	July 18	No
Minnesota	June, 1907	794	March 7	No
	January, 1908	386	February 1	No
	April, 1908	1840	May 30	Yes
Mississippi	December, 1907	713	February 29	No
	June, 1908	519	August 8	No
	January, 1908	908	March 14	No
Montana	June, 1907	551	February 15	No
	December, 1907	551	February 15	No
	January, 1908	387	February 1	No
Nebraska	April, 1908	64	July 4	No
	July, 1907	908	March 14	No
	January, 1908	908	March 14	No
Nevada	October, 1907	234	January 18	No
	July, 1907	233	January 18	No
	October, 1907	233	January 18	No
New Hampshire	January, 1908	988	March 21	No
	January, 1908	909	March 14	Yes
	December, 1907	988	March 21	No
New Mexico	April, 1908	64	July 4	No
	January, 1908	989	March 21	No
	February, 1908	989	March 21	No
North Carolina	October, 1907	234	January 18	No
	July, 1907	233	January 18	No
	October, 1907	233	January 18	No
North Dakota	January, 1908	988	March 21	No
	January, 1908	909	March 14	Yes
	December, 1907	988	March 21	No
Ohio	April, 1908	64	July 4	No
	July, 1907	908	March 14	No
	January, 1908	908	March 14	No
Oregon	October, 1907	234	January 18	No
	July, 1907	233	January 18	No
	October, 1907	233	January 18	No
Pennsylvania	January, 1908	988	March 21	No
	January, 1908	909	March 14	Yes
	December, 1907	988	March 21	No
Rhode Island	April, 1908	64	July 4	No
	July, 1907	908	March 14	No
	January, 1908	908	March 14	No
South Dakota	October, 1907	234	January 18	No
	July, 1907	233	January 18	No
	October, 1907	233	January 18	No
Texas	January, 1908	988	March 21	No
	January, 1908	909	March 14	Yes
	December, 1907	988	March 21	No
Utah	April, 1908	64	July 4	No
	January, 1908	989	March 21	No
	February, 1908	989	March 21	No
Vermont	October, 1907	234	January 18	No
	July, 1907	233	January 18	No
	October, 1907	233	January 18	No
Virginia	January, 1908	988	March 21	No
	January, 1908	909	March 14	Yes
	December, 1907	988	March 21	No
West Virginia	April, 1908	64	July 4	No
	January, 1908	989	March 21	No
	February, 1908	989	March 21	No
Wisconsin	October, 1907	234	January 18	No
	July, 1907	233	January 18	No
	October, 1907	233	January 18	No
Wyoming	January, 1908	988	March 21	No
	January, 1908	909	March 14	Yes
	December, 1907	988	March 21	No



College.	PASSED.	Year. Grad.	Per Cent.
College of P. & S., Chicago.	(1903) 88; (1907) 76; (1908)		77
Rush Med. Coll.	(1907)		78
Dearborn Med. Coll.	(1906)		75
Northwestern Univ. Med. School.	(1908)		80
Keokuk Med. Coll., Coll. of P. & S.	(1904) 85; (1908)		76
University of Iowa.	(1907)		87
University of Louisville.	(1908)		84
University of Minnesota	(1903) 86; (1907)	85,	88
Dartmouth Med. Coll.	(1903)		89
University of Wooster, Cleveland.	(1891)		89
Starling-Ohio Med. Coll.	(1908)		86
Jefferson Med. Coll.	(1908)		84
Milwaukee Med. Coll.	(1908)		86
University of Christiania, Norway.	(1902)		83



## FAILED.

- Bennett Coll. of Ecl. Med. and Surg. (1907)\*  
Keokuk Med. Coll., Coll. of P. and S. (1908)\*

## LICENSED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with.
College of P. and S., Chicago...	(1906)	Illinois; (1907) Minnesota
Chicago Coll. of Med. and Surg.	(1907)	Illinois
Detroit Coll. of Med.	(1906)	Michigan
University of Vermont	(1899)	Vermont
Wisconsin College of P. and S.	(1907)	Wisconsin

\*Percentage not given.

## PHYSIOLOGY.

Answer any six questions.

1. Describe the process of digestion from beginning to end.
2. How do the products of digestion find their way into venous blood?
3. Define tidal, complementary, reserve and residual air.
4. Describe the mechanism of voice production, naming the principal organs brought into action.
5. Describe the fetal circulation.
6. Distinguish between paralysis of cerebral and spinal origin in (a) reflexes, (b) nutrition of muscles, (c) electric reactions of muscles.
7. Give the origin and function of the anterior and posterior roots of the spinal nerves.
8. Describe the process of reproduction.
9. Define (a) colostrum, (b) emmetropia, (c) atavism, (d) lochia, (e) osmosis, (f) aphasia, (g) meconium.
10. What are the principal fluids excreted from the body?

## HISTOLOGY.

1. Name the different kinds of connective tissue and state where each is found.
2. Give the histology of the lining of the stomach.
3. Describe striated muscle.
4. Give the histology of nerve trunk.
5. Give the histology of the duodenum.
6. Describe minutely a medium sized artery.

## CHEMISTRY AND TOXICOLOGY.

1. Define analysis and synthesis as used in chemistry and mention two synthetic organic productions.
2. Give chemical test for pus and mucus in urine.
3. Define acid, base and salt.
4. Your treatment for carbolic acid poisoning.
5. Symptoms of chronic lead poisoning.
6. Treatment of poisoning by bichlorid of mercury.

## PRACTICE OF MEDICINE.

1. Give the characteristic differences between diabetes insipidus and diabetes mellitus.
2. Differentiate between cerebral vomiting and gastric vomiting.
3. What are the causes of endocarditis?
4. Give the etiology, symptoms and treatment of cirrhosis of the liver.
5. Give treatment and prognosis of erysipelas.
6. What is prognosis as to the cure of epilepsy? Give the treatment of epilepsy.
7. What are the complications and sequelae of whooping cough?
8. What are the complications and sequelae of scarlet fever?
9. What causes cerebrospinal meningitis and how should it be treated?
10. How should endocarditis be treated?

## PREVENTIVE MEDICINE.

1. What two methods can we employ to prevent the occurrence of disease?
2. If you were in charge of troops in the field how would you prevent them from contracting diarrhea and dysentery during the hot months?
3. If the water used was the apparent cause of paroxysmal fevers, how remedy it and from whence your supply?
4. How obviate the danger of infection in communities where smallpox is feared?
5. Assuming that scarlet fever in a patient was contracted in the public schools, how protect the rest of the children? What would you do at the home?
6. Is tuberculosis preventable, and if so how?
7. How prevent the spread of syphilis, if contracted; what strictures would you put on marriage and when only should a person who had gonorrhea marry, and why?
8. Outline a safe water supply system for a community living in a prairie country.
9. Outline a course of treatment to prevent the occurrence of scurvy on land or sea.
10. Typhoid fever, how propagated and your method of prevention?

## SURGERY.

1. Describe the different methods of producing local anesthesia.
2. Describe each of the varieties of fracture and give treatment for compound fracture of the leg.
3. Give diagnosis and treatment of hydrocele.
4. What is your treatment for infected wounds?
5. Give etiology and diagnosis of intestinal obstruction.
6. Give diagnosis and treatment of oblique inguinal hernia.

## OBSTETRICS.

1. Define the following terms: (a) caput succedaneum, (b) catamenia, (c) galactorrhoea, (d) liquor amnii, (e) meconium, (f) sapremia.
2. Give a detailed description of your management of a normal labor.
3. How would you conduct a case of transverse presentation?
4. Give symptoms and treatment of phlegmasia dolens.
5. What are the causes for retained placenta, and how would you treat a case?
6. State the difference between podalic and cephalic version and also the indications for each operation.

## EYE AND EAR.

1. Define blepharitis, give causes and treatment.
2. Give diagnosis, cause, treatment and prophylaxis of ophthalmia neonatorum.
3. Enumerate three common errors of refraction and describe their correction.
4. Give causes, symptoms, sequelae and treatment of otitis media.
5. How do you treat impacted cerumen and furuncles of the external auditory canal?

## WOMEN AND CHILDREN.

1. How would you treat gonorrhea in the female?
2. What are the indications for curettage of the uterus, and how would you perform it?
3. What symptoms follow displacements and how would you treat them?
4. Give symptoms and diagnosis of cancer of the cervix.
5. Give your treatment for salpingitis.
6. What is the incubation period for scarlet fever; chicken pox; measles?
7. Give your treatment for scarlet fever.
8. How prepare cow's milk for an infant three months old?
9. How would you treat a case of rickets?
10. Give treatment for diphtheria.

## MATERIA MEDICA.

1. What mechanical remedies are employed in the practice of medicine?
2. Define materia medica, therapeutics, pharmacy, pharmacopoeia.
3. What circumstances modify the effects of medicine?
4. What medicines are administered in the form of powders, and why?
5. Differentiate between infusions, decoctions and tinctures?
6. What are syrups, watery extracts, alcoholic extracts; strength of a fluid extract compared with a tincture?
7. Give a practical rule for graduating the doses of medicine to different ages.
8. Dose of arsenic or iodids for an adult and what time of day administer them and why; when and why employ hypodermic medicine?
9. What are narcotics and what is their therapeutic efficiency?
10. When is opium contraindicated; give indications for its use; how are dilute mineral acids classed and what is their use; what are the vegetable astringents?

## NERVOUS DISEASES.

1. Differentiate between: (a) cerebral hemorrhage, (b) cerebral embolism, (c) cerebral tumor, (d) uremic coma.
2. Give etiology, morbid anatomy, symptoms and treatment of tabes dorsalis.
3. Give common names for the following diseases: (a) paralysis agitans, (b) exophthalmic goiter, (c) chorea, (d) graphospasm, (e) posterior spinal sclerosis, (f) tetanus, and give symptoms in full of last named.
4. What is Bell's paralysis? What cranial nerves may be involved? Give symptoms and treatment.
5. Define the following: (a) globus hystericus, (b) megrim, (c) petit mal, (d) ptosis, (e) torticollis, (f) paranoia.
6. Name some of the causes of insomnia and how would you treat it?

---

## Medical Economics

---

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

### A Recognized Authority on Medical Quacks.

Champe S. Andrews, for eight years counsel for the New York County Medical Society, under whose legal management the prosecution of quacks in New York was conducted for some time, is delivering an instructive lecture on "Medical Quacks, Their Methods and Dangers," in which he reviews the history of quackery from ancient times down to the present, especially of the last ten years, in which so much has been done to expose and punish frauds, deception and corruption of all sorts. Mr. Andrews' lecture is particularly valuable on account of the fact that it is the result of eight years' experience in hand-to-hand conflict with various quacks. The dangers of quackery, as well as the shamelessness and skill in crime of the charlatan, are shown from actual records of cases which he has prosecuted in New York and Kings County.

### POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.

BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

### SUGGESTIONS FOR THE USE OF THE POSTGRADUATE COURSE OF STUDY.

1. Attention is called to the rearrangement of the outline for this year. There are only ten months, instead of twelve, as last year. Each month's outline consists of only four weekly meetings, the fifth weekly meeting in any month to be used for public meetings or a joint meeting with some related society.

The skeleton program which preceded the elaborated weekly outlines for each month has been omitted this year, the leaders and spacing showing the topic for each teacher, who will find the elaboration immediately following the topic. The program for the monthly meeting is added for those societies meeting monthly. A list of suggested reference books is added to each month's outline.

2. *Essentials to a Successful Meeting:* Meet promptly. Arrange that only those who are prepared shall lead in any subject. Allow 45 minutes to teacher, if only one; 25 minutes each, if two; 15 minutes each, if three. Allow five minutes to each member to discuss the subject or to ask questions. Each teacher should quiz on his topic of the preceding meeting as a review and to stimulate a general study of the subject.

3. *Anatomy:* Discuss those structures that will undergo morbid changes as a result of the particular disease under consideration, exhibiting gross and microscopic specimens when possible. Demonstrate fresh specimens from the lower animals, if those from the human are not obtainable.



**Society Proceedings**

## COMING MEETINGS.

American Public Health Association, Winnipeg, Can., Aug. 25-28.  
 American Acad. of Ophthal. and Oto-Laryng., Cleveland, Aug. 27-29.  
 Wyoming State Medical Society, Sheridan, Aug. 28.  
 New Mexico Medical Society, Albuquerque, Sept. 2-3.  
 South Dakota State Medical Assn., Yankton, Sept. 2-4.  
 Washington State Medical Association, Walla Walla, Sept. 2-4.  
 Medical Society of the Missouri Valley, Council Bluffs, Sept. 3-4.  
 Colorado State Medical Society, Denver, Sept. 8-10.  
 Med. Soc. of the State of Pennsylvania, Cambridge Spgs., Sept. 14-17.  
 American Assn. of Obstet. and Gynecol., Baltimore, Sept. 22-24.  
 Kentucky State Medical Association, Winchester, Sept. 23-25.  
 American Dermatological Association, Annapolis, Sept. 24-26.  
 Con. of State and Prov. Bds. of N. A., Washington, Sept. 25-26.  
 Internat'l Congress on Tuberculosis, Washington, Sept. 21 to Oct. 12.

## MICHIGAN STATE MEDICAL SOCIETY.

*Forty-third Annual Meeting, held in Manistee,  
 June 24-25, 1908.*

## Election of Officers.

Officers were elected as follows: President, A. I. Lawbaugh, Calumet; first vice-president, J. W. Bosman, Kalamazoo; second vice-president, J. A. Christenson, Manistee; third vice-president, Sarah Chase, Traverse City; fourth vice-president, J. D. Bruce, Saginaw; state secretary, B. R. Schenek, Detroit; treasurer, George W. Moran, Detroit. Delegates to the American Medical Association: A. M. Hume, Owosso; T. A. Felch, Ishpeming; F. W. Robbins, Detroit; S. C. Graves, Grand Rapids. Alternate delegates: A. W. Crane, Kalamazoo; H. E. Randall, Lapeer.

The next meeting of the Society will be held in Kalamazoo in September, 1909.

## Problems in Preventive Medicine.

DR. HERMAN OSTRANDER, Kalamazoo, in his presidential address, laid stress on the growing attention of the profession to matters of public health and the increasing tendency to interest the laity in this direction. The education of the people was most needed, and the physician must be responsible for whatever progress was made. The strong movement against tuberculosis, the occasional attacks on unsanitary sections of large cities, the purification of water supplies, the laws providing for meat and milk inspection, child labor, etc., were all problems closely involving the medical profession, but they aroused action only sporadically, instead of leading to some comprehensive scheme of attack. The country needed a healthier race of human beings and the need could be fulfilled by attention to details of hygiene which would promote good physical and mental attributes. There was a large "degenerative" class in the United States, comprising 14 per cent. of the population; this included the insane, feeble-minded, epileptics, criminals and tuberculous. Add to these the neurotic, semi-insane and the semiresponsible, and the percentage appeared formidable. All members of this class were unfit to have progeny, because they transmitted tendencies to deviation and disease. The influence of heredity, great as it was, should not, however, be exaggerated, and the gloomy outlook taken by some was unjustifiable. The repetition, for instance, of neurotic traits, of epilepsy, of tuberculosis, in the offspring was more often due to environment, to imitation, injury or infection than to direct transmission. The attempt to reduce the transmission of constitutional weakness by emasculation or the interdicting of marriage was irrational, because the conditions still existed for creating new members of the unfit class. Preventable causes of weak progeny were as follows: Physical and emotional disturbances of the mother during gestation; prolonged or difficult labor and the unskillful use of forceps; improper diet, bad air, undue nervous stimulation; inconsistent precept and noxious example; encouragement of precociousness; failure to exercise restraint and to develop a sense of responsibility. These factors were insufficiently realized, and yet were preventable. Agitation to enlighten the public medically was commendable. Knowledge was more necessary than legislation.

4. *Physiology*: Study the functions of those organs which undergo changes.

5. *Pathology*: Study the pathologic anatomy and physiology, and their relations to the symptoms presented.

6. *Bacteriology*: Study the morphology and biology of bacteria, and the methods of recognizing and differentiating them.

7. Present clinical cases or brief reports, bearing on the subject, whenever possible.

8. *Treatment*: Study materia medica, pharmacology and therapeutics, exhibiting crude drugs and their U. S. P. and N. F. preparations. Encourage members or classes to carry out experiments on animals in regard to the effects of drugs. Emphasize the work of the Council on Pharmacy and Chemistry. Prescription writing, with blackboard demonstrations, should be made a prominent feature of the course whenever practicable.

9. *Reporter*: It is insisted that there should be a reporter for every society, whose duty it shall be to present a digest or review of the recent literature of the subject of study for that month.

10. Adjourn promptly one and a half hours after the time for the meeting to be called to order.

## First Month.

## FIRST WEEKLY MEETING.

## Diseases of the Heart:

## ANATOMY OF THE HEART.

Exhibit gross and microscopic specimens.

Pericardium. Shape, layers, relations. Structure, fibrous and serous layers.

Heart. Size and weight. Right and left heart, auricles, ventricles, grooves. Right auricle: atrium, appendix auriculæ; openings, superior cava, inferior cava, coronary sinus, foramina Thebesii, auriculo-ventricular; valves, Eustachian, coronary. Right ventricle: size and shape; openings, auriculo-ventricular, pulmonary artery; valves, tricuspid, semilunar; chordæ tendineæ, columnæ carneæ. Left auricle: size, walls; openings, pulmonary veins, auriculo-ventricular; musculi pectinati. Left ventricle: shape, size, walls; openings, auriculo-ventricular, aortic; valves, mitral, semilunar; chordæ tendineæ, columnæ carneæ.

## PHYSIOLOGY OF THE HEART.

The Heart Beat.—Musculature of heart: arrangement of fibers, auriculo-ventricular bundle. Auricular and ventricular diastole and systole. Contraction wave in the heart: origin, course, dependence on musculature, velocity. Change in form of (a) auricle, (b) ventricle during systole. Apex beat: position, causes. Heart sounds: location, duration, pitch, of each; causes of each. Cardiac cycle; events occurring during cycle, action of valves, papillary muscles. Causes of heart beat: (1) neurogenic theory, (2) myogenic theory, factors in favor of each; automaticity of heart, effect of inorganic salts in blood and lymph. Properties of heart muscle: rhythmicity, excitability, contractility, conductivity, tonicity; "maximal contraction," "refractory phase." Cardiac nerves. (1) Inhibitory nerves: vagus, origin, course, kinds of fibers, distribution, effect of stimulation on rate, on force, of heart beat; effect on auricle, on ventricle; heart block; "inner stimulus"; effect on heart metabolism. Reflex inhibition, cardio-inhibitory center, reflex arc, effect on heart "tone." (2) Accelerator nerves: origin, course, distribution, effect of stimulation on rate, on force, of heart. Reflex acceleration, accelerator center.

## REFERENCE BOOKS FOR FIRST MONTH.

Babcock: Diseases of the Heart and Arterial System.

Broadbent: Heart Disease.

Nothnagel's Practice: Diseases of the Heart.

Osler: Practice of Medicine.

Tyson: Practice of Medicine.

Anders: Practice of Medicine.

Hare: Practice of Medicine.



and the latter was useless unless the public was aware of its necessity. The functions of health boards must be increased, as well as their cash appropriations. Endowments to study and prevent disease were needed. All the movements in this work, sporadic and disconnected at present, should be correlated and brought under one comprehensive scheme, with consistent purpose and organized administration.

#### Lymphatic Leukemia.

DR. WILFRID HAUGHEY, Battle Creek, said that lymphatic leukemia was rarer than the splenomedullary form, being reported in Heidelberg and Stockholm hospitals from 8 to 9 times among 10,000 patients. In Barcelona but one instance was found among 59,940 patients. Males were more commonly affected than females. The disease had been found in horses, oxen, dogs, cats, hogs and mice. The etiology was unknown. Malaria and syphilis had been mentioned as probable factors. Lowit described an *Hamatamabum leukemia parva intra-nuclearis* as the cause, but this was not accepted. The first symptoms of chronic lymphatic leukemia were usually bleeding from the nose and throat, followed soon by gastrointestinal disturbances. The bleeding soon ceased, and the cervical, axillary, inguinal and mesenteric glands became enlarged, soft, distinct and movable. They varied in size at different times, becoming smaller and harder as the disease progressed. The spleen was sometimes enlarged and the liver usually so. Lymphatic leukemia must be differentiated from Hodgkin's disease. The glands in Hodgkin's disease were harder and larger, and the blood had none of the characteristic changes of leukemia. The number of white and red blood cells showed great variation, but the whites were never so abundant as in splenomedullary leukemia. The lymphocytes were greatly increased in relative proportion, while the other leucocytes were decreased. Eosinophiles and normoblasts were rare. The diagnosis must rest on repeated blood findings. Haughey then reported a case at length, giving a long series of red and differential leucocyte counts, and showing a marked reduction in the number of leucocytes under Fowler's solution, from 68,000 at first to under 20,000. The percentage of lymphocytes had increased and varied between 80 and 90 per cent.

#### Treatment of Exophthalmic Goiter.

DR. JEANNE C. SOLIS, Ann Arbor, stated that there were three principal theories as to the etiology: (1) Toxic, the toxins being derived from disturbances of the digestive tract; (2) thyroid, the symptoms being due to hypersecretion of the thyroid gland; (3) neurotic, there being a disturbance in the relations between the sympathetic nervous system, the pituitary gland and the thyroid. There was a certain amount of pathologic, experimental, clinical and therapeutic evidence to support each of these theories. From the pathologic findings we were inclined to direct most attention to the thyroid, an increased vascularity being practically always found. A review of the literature showed that in all the successful methods of treatment the decisive factor was the restriction of the vascularity of the thyroid. The pros and cons of operation were discussed. The author advocated the use of electricity, emphasizing the benefit derived from the direct current. This contracted the walls of the blood vessels, thus reducing the amount of blood which flowed through the thyroid, as well as having a nutritive effect on the glandular tissues. Dr. Solis applied electricity in the following manner: The cathode is placed on the back of the neck, while the anode is applied to the gland and to the vessels of the neck. The current is gradually increased from 15 to 25 milliampères. The anode is held in one spot from three to four minutes and then moved. Treatments are fifteen minutes in length and given daily at first; later every other day or three times a week as long as the rapid pulse, enlarged gland and exophthalmos continue. The pulse is usually decreased from 15 to 20 beats, which diminution lasts for an hour or more. Three illustrative cases were cited.

#### Diagnosis of Esophageal Obstruction.

DR. GEORGE DOCK, Ann Arbor, said that obstruction of the esophagus occurred oftener than was generally believed. Due

attention to points of diagnosis would reveal the condition oftener and earlier and save more lives than in the past. The condition was most commonly mistaken for phthisis, cancer of the stomach and gastric catarrh. Careful history-taking was important; there was nearly always a definite complaint of difficulty in swallowing; later regurgitation usually ensued, though sometimes it was the first symptom; regurgitation was frequently described as vomiting and one should question carefully in this regard; it occurred usually ten or fifteen minutes after eating, and in advanced cases mucus might be present in large amounts. The occurrence of either dysphagia or regurgitation should suggest, first, an examination to determine whether the trouble was caused by a tumor of the neck, lordosis, mediastinal tumor, aneurism, pericardial effusion, congenital, traumatic, or caustic stricture, or a neurosis; second, an instrumental examination. In the latter procedure the flexible stomach tube was the first instrument to be used, but always with caution, especially if aneurism be suspected. If obstruction be met, its distance from the teeth was measured by the tube; gentle efforts should be made to reach the stomach; if this be impossible, aspiration should be done to obtain any material that might collect above the obstruction, for chemical and microscopic analysis. If the tube revealed nothing or insufficient information, bougies were employed, the largest first. One should attempt to determine the caliber of the lumen and the length of the obstruction, as well as the existence of spasm, which frequently added to the constriction of organic lesions. The nature of the obstruction, if not already plain, should be sought in careful details of history: hysterical stigmata or history of shock, trauma, etc., accompanied esophagismus; cachexia and emaciation accompanied cancer; sex and age were factors. The esophagoscope was an excellent aid to diagnosis and ought to be used whenever possible. The existence of dilatations and diverticula was always a possibility to be considered.

(To be continued.)

#### MEDICAL SOCIETY OF NEW JERSEY.

*One Hundred and Forty-second Annual Meeting, held at Cape May, June 18-19, 1908.*

(Continued from page 620.)

#### Prevention and Treatment of Tetanus.

DR. J. HARRIS UNDERWOOD, Woodbury, considered the most reliable germicide in these cases to be a solution of bichlorid of mercury. Pure carbolic acid should not be used, because it sealed up the bacilli by coagulating the albumin of the tissues. Patients with superficial wounds should at once receive an injection of 10 c.c. of antitetanic serum. The treatment after the development of the disease was directed to controlling spasm, overcoming the toxins, and supporting the patient's strength until the symptoms subsided. For the first, chloral and bromids were valuable; for the second, the serum. Two cases of cure in patients with very severe attacks were reported. In the Cooper Hospital, Camden, the mortality had been from 80 to 90 per cent, before the use of antitetanic serum; and 40 per cent, since.

#### DISCUSSION.

DR. GEORGE E. READING, Woodbury, said that the value of the serum treatment for tetanus was best shown by the statistics of the St. Louis Hospital, where, prior to 1907, injections were not used until the symptoms of the disease had developed. In that year they began to inject 10 c.c. of antitetanic serum in every suspicious case. Formerly there had been many cases followed by death after every Fourth of July; but this year no cases of tetanus developed. Even negative evidence as comprehensive as this, said Dr. Reading, acquired a great deal of weight. He thought it would be well for all hospitals to adopt the plan of giving a preventive injection to each patient whose case may be open to suspicion. In cases in which serum treatment was not available, Dr. Reading had seen good results from carbolic acid treatment. The statistics from its use



abroad were good; and he thought that if it were more generally tried here they might be good in this country. He had seen a number of suspicious cases treated by thoroughly washing out the wound with peroxid of hydrogen, and none were followed by tetanus.

DR. J. H. BRADSHAW, Orange, considered it unfortunate that in the treatment of tetanus after the symptoms have developed, the remedies given are almost as dangerous as the disease. The large doses of morphin, chloral, and other drugs administered would often kill a person in good health.

DR. JAMES S. WRIGHTSON, Newark, said that the use of the serum certainly does cure some patients. In one patient treated at the City Hospital of Newark, he had no doubt that the outcome without this treatment would have been fatal. The cost of the serum used in this one case was \$375.

#### Acute Intestinal Obstruction.

DR. ROBERT M. CURTS, Paterson, confined himself to a few interesting points: The importance of early recognition of the condition and of surgical treatment within thirty-six hours; the relative frequency of the condition, there being one death from it in every 300 to 500 deaths from all causes; the helpfulness of having a good mental picture of the intestines; the mortality in the various forms of acute obstruction; the ages of the patients in the various kinds; and where the knowledge of the physician ends and that of the surgeon begins. The prognosis was always grave, the only hope being in surgical treatment. Researches had given little clinical aid to the diagnosis. Acute intussusception was the form most readily diagnosed, being the only one in which the pathologic and anatomic relations could be made out with any degree of certainty. The treatment was immediate abdominal section. It was impossible to make a diagnosis of any particular type before operation, and quite unnecessary. Attempts to do so only delay what should be an early procedure. The two most important symptoms were severe abdominal pain and inability to pass flatus. The first was common in other visceral diseases, but the second was true only of acute intestinal obstruction.

#### DISCUSSION.

DR. J. W. HARVEY, Orange, said that no condition required more accurate and certain diagnosis or more generous early surgery than acute intestinal obstruction. The diagnosis was made much less frequently to-day than twenty years ago, and operations for its relief were less common now than formerly. Many cases of abdominal diseases that were formerly allowed to go on to obstruction were now cured before that symptom appears, and the proper treatment of others relieved the obstruction. On the other hand, a new fruitful cause of obstruction was presented by the effects of laparotomy. Dr. Harvey agreed with Dr. Curts that operation, to be successful, must be done in the first twenty-four hours; and he did not see the advantage of first attempting any other method of forcible reduction. The most important point to decide was whether one shall do a complete or an incomplete operation. Another point was what shall be done to insure the return of normal peristalsis; and just how much evacuation of the bowel would be required to relieve the obstruction.

DR. JAMES S. BROWN, Montclair, said that a phase of the treatment of intestinal obstruction was that of distension. A Moynihan tube was placed in the intestines, which were then strung on it. By this means, instead of there being a mass of distended loops of intestine, the bowel was flat. The abdomen could then be entered with comparative ease to seek for the cause of the obstruction.

#### Remote Pain Following Abdominal Operations.

DR. WILLIAM E. DARNALL, Atlantic City, confined his attention to the pain that persisted after the patient had left the hospital and come under the care of the attending physician, who was worried because the operation had not relieved the patient as he had hoped. This pain usually disappeared gradually, but sometimes persisted indefinitely. When a second operation becomes necessary, observation would show that the condition was due to adhesions. In trying to remove pathologic structures, the surgeon sometimes forgot that it was important to consider the future welfare of the patient and

to try to prevent the occurrence of these symptoms following the operation. The bowels should be handled as little and as gently as possible, and should be protected with compresses moistened with hot salt solution. Every effort should be made to eliminate the possibility of the formation of postoperative adhesions. Every clot left might become an organized adhesion or the focus of infection. Abdominal surgery should not be attempted unless the muscles were relaxed and pliable. The incision should be made so long that it would not need be stretched with retractors. Any raw surface in the abdomen left exposed should be carefully covered. Patients measured the gravity of their condition by the amount of pain they suffered; and if the adhesions produce more pain than did the original condition, they felt that the operation had done no good.

#### DISCUSSION.

DR. E. STITES, Bridgeton, said that in estimating the intensity of pain or its diagnostic value, one must remember that reaction to it varied almost indefinitely in different individuals. It seemed to him that one should consider whether the pain was a continuation of a previously existing one or an entirely new symptom developed postoperatively. He thought that its character should likewise be considered, and its location, together with the presence or absence of fever. Severe pain of any other than the neurotic form seldom presented itself as a sole symptom; and it seemed to him that when other symptoms of the presence of adhesions were absent, operation for the relief of postoperative pain should not be undertaken. The stimulus of an operation added to the already unstable nervous centers could not help but awaken many reflexes.

DR. W. E. DARNALL said that all must appreciate the fact that pain was too big a subject to make a single reference to it; for it would take too long to consider even a single group of its causes. The subject took in the whole field of medicine and surgery. Neurotic pain was a very wide field, particularly that associated with hysteria and that in morphin habitues.

DR. E. J. ILL, Newark, said that his experience had been that such operations never produce pain unless they displaced an organ so as to impair its mobility.

#### Acute Anterior Poliomyelitis.

DR. DAVID T. BOWDEN, Paterson, considering the etiology, the symptoms, the different stages, the diagnosis, prognosis and treatment. In conclusion he emphasized the fact that no operation should be performed, except possibly a tenotomy, until some years after the primary infection, when all possible chance of recovery had passed. No operation should be attempted without a thorough electrical test having been made and a possible destruction of the muscle demonstrated.

#### DISCUSSION.

DR. F. D. GRAY, Jersey City, speaking for Dr. H. J. Bogardus, gave statistics of 872 cases of infantile paralysis treated at the clinic of the New York Orthopedic Hospital in the period from Jan. 1, 1897, to Dec. 31, 1906. He stated that it had been estimated that half the crippled children wearing braces were doing so as the result of this disease. It had been hoped, he said, that by a study of an epidemic of the disease occurring in a crowded American city, much might be learned concerning it; but, unfortunately, little had been added to the sum total of the previously existing knowledge regarding infantile paralysis.

DR. D. E. ENGLISH, Wilburn, said that for some time he had suspected anterior poliomyelitis to be an infectious disease, although this had not yet been proved to be the case. The few instances of the disease that he had seen had borne out the hypothesis of Dr. Bowden that it had some connection with acute or chronic digestive troubles. Dr. English's patients had been very much constipated. In one case there was fecal impaction, and he extracted from the intestine a quantity of chestnut shells, peanut shells, and pieces of coal. He thought that it would be interesting to know whether or not this depraved appetite had any connection with the disease. In all the few cases in babies that he had seen the infants had been fed with beer; and he thought that the effect of the alcohol



on the infantile or childish system might have some bearing on the case.

DR. THOMAS P. PROUT, Summit, said that the results of nerve grafting do not carry out the expectations that were formed regarding it in the first place; and he thought that probably the best that could be reported about it was simply an improvement in the general nutrition of the limb, which, of course, was worth something. Associated with this improvement there was often for a long period an added palsy, on account of the engrafting of dead nerve tissue into living structure. He thought it wrong to torture these children with electricity. In the early stages, he said, the cases partake largely of the nature of a neuritis; and to stimulate the surface of the body with electrical currents during the course of a neurotic process had a torturing effect. Electrical treatment, therefore, should not be employed until four weeks have elapsed. He thought that it would be found that these cases belong to the great number of latent infectious processes that become active only through lowered vitality and resistance on the part of the child, due to various causes.

DR. MARTIN J. SYNNOTT, Montclair, referred briefly to one case that seemed to him to have some bearing on the etiology of the disease. The symptoms in this case pointed strongly to typhoid infection. A blood examination disclosed an enormous number of malarial parasites of the estivoautumnal variety. The paralysis developed on the third day of the fever, and the subsequent course clearly pointed to poliomyelitis. Dr. Synnott wondered whether or not the malarial parasites could have had any bearing on the poliomyelitis. His experience had been that these cases improve as rapidly under the stimulation of vibratory massage as under either galvanism or faradism, and with less discomfort to the patient.

DR. W. M. LESZYNSKY, New York, said that anterior poliomyelitis seemed to him a bad name for the cases that occurred during the recent epidemic, because a large number did not correspond to the usual type of this disease. A number showed the characteristics of an encephalitis or a myelitis and, to a slight extent, of a neuritis. He agreed with Dr. Prout in regard to the treatment. He did not think it necessary to examine thoroughly by means of galvanism in order to determine the presence of the reaction of degeneration. He scarcely considered it wise to wait until deformity had developed before instituting the orthopedic plan of treatment. One should accept the fact that a child with paralysis of the foot was likely to have foot-drop, and should immediately place the foot in an apparatus to prevent the stretching of the anterior group of muscles.

DR. J. C. EDWARDS, Williamstown, said that, when used at all, electricity should be applied in its mildest form. If the muscle should refuse to respond after half a minute, the current should be stopped, as the already weakened muscle had been tired out. A few months ago he had a patient who would eat peanut shells, chalk and coal, and relish them, but he had a good deal of gastric trouble.

DR. D. T. BOWDEN said that he had thought that he had indicated in his paper that electricity should not be used until tenderness has subsided. An amount sufficient to produce contraction should be applied. The idea of the therapeutic effect of electricity was merely massage of the muscles. This was why the orthopedic treatment had been recognized as of more importance than the electrical or neurologic; it placed the child in a position to use any voluntary power that it might have. In the chronic stage, as soon as the child was able to carry a supporting apparatus, it should be put on. Dr. Bowden thought that no one could reasonably question the benefit of electricity.

#### Modern Methods of Treatment of Posterior Displacements of the Uterus.

DR. J. WATSON MARTINDALE, Camden, pointed out the advantages and disadvantages of each operation and the conditions under which the various operations were indicated. The objects of operations for posterior displacement of the uterus were repair of the pelvic floor and the bringing forward of the uterus into a position of anteversion.

#### DISCUSSION.

DR. A. F. STAHLIN, Paterson, said that in complete procidentia in a woman beyond the menopause he would recommend vaginal hysterectomy, rather than the procedure recommended by Dr. Martindale. Dr. Stahlin considered chlorosis an important factor in the production of retroflexion. He believed the Gilliam operation gave the best satisfaction as a method of restoration, and always employed it. He did not think so much of the Alexander operation as of any of the others mentioned, and wished to know whether in performing it Dr. Martindale cuts off the round ligament after it is fastened.

DR. MARTINDALE said that he cuts off the redundant portion.

DR. STAHLIN suggested that it be left, giving as his reason that if, after it has been removed, anything should happen to the ligature, more trouble would be caused than was present in the natural state before operation. He then referred to the difficulty of finding an adequate means of restoring the pelvic floor. From the fact that there are so many methods of restoring the perineum, he thought it might be inferred that few of these were adequate. A superficial tear down the median line might be easily overcome; but when the tear was lateral and very extensive, there was a tendency to procidentia. In order to have a successful result, the perineum should be restored in an anatomic way. He considered preliminary amputation of the cervix a good point, and thought that the sound had proved to be a pernicious instrument. If a perforation be present, he believed in awaiting developments; as he felt convinced that in many cases of rupture of the uterus followed by small perforation the wounds have healed spontaneously.

DR. E. J. ILL, Newark, said that he did not believe that the anatomy of the condition is thoroughly understood. In his experience, retroposition of the uterus had produced a large number of pelvic symptoms with a pathologic interest. He considered the Alexander operation ideal, so far as anatomic condition goes, but thought the Gilliam the most practical. By his own modification of this procedure, Dr. Ill and his assistants had operated on about 500 of these patients, with less than 1.5 per cent. of failures, and he thought that no other operation could show so small a percentage. Gilliam had told Dr. Ill that he was about to give up the operation that goes by his name, on account of the large number of suppurative cases that he had had. Dr. Ill's modification overcomes this tendency, and he thought that its only possible danger was that the ligament might not be pulled out far enough. If it is pulled out so far as to prevent the tube from coming near the opening of the peritoneum and forming an adhesion there will be no subsequent pain. Dr. Ill has seen a great many labors following his operation. He said that he had seen more damage done by ventral fixation than could be made good in a hundred years.

DR. GRAY said that he had wondered at not having heard some mention of the Webster operation, which had appealed to him as being satisfactory, simple and effective. He made a plea for more sections in cases of posterior displacement.

DR. J. M. RECTOR, Jersey City, said that Dr. Martindale did not seem to consider the fact that other things cause displacement besides gravity, such as chronic metritis and salpingitis, with adhesions. In order to relieve these conditions, something else than the procedure described by Dr. Martindale was necessary. All the operations mentioned were successful when applied to the proper conditions. The operation must be suited to the case. Dr. Rector also remarked that Dr. Martindale had not stated that one must take into consideration the outlying conditions that have brought about the changes giving rise to the retroverted uterus, and said that if we were to advise looking into these conditions and treating them before operation the results would be better.

DR. CHAVANNE remarked that it is the duty of the surgeon to make sure that his diagnosis is correct before inducing a patient to submit to operation. He thought that many physicians have not sufficient sympathy with patients suffering from hysteria. He was satisfied that displacement of the uterus is often caused by the prudery of American women.



Any medical man who does not take into consideration the history of the patient, her susceptibility, her emotions, and her occupation, before making a diagnosis, is committing an error.

DR. HARVEY said that he had not heard the part of the paper in which Dr. Martindale had mentioned the beneficial effect of pregnancy on retrodisplacements. He thought that the general practitioner would bear him out in the statement that pregnancy has often cured retrodisplacements that have existed for some time.

DR. E. J. ILL, Newark, stated that Munde had published statistics in relation to this point, showing that only 3 per cent. of such patients recover after pregnancy.

DR. MARVEL said that in every retrodisplaced uterus there is a prolapse, and the fundus is lower than it should be. An operation that will elevate the fundus of the uterus should be done. He admitted having had one accident whose cause Dr. Ill had cleared up for him, that of getting necrosis in fastening the round ligament in the Alexander operation. The stump of the ligament was, however, fastened sufficiently to the fascia of the rectum to hold the uterus in position. In ventral suspension this difficulty is corrected, and the danger of its occurrence is much reduced in Dr. Ill's modification of the Gilliam operation. If adhesions were formed between the anterior surface of the abdomen and the fundus of the uterus, these adhesions could, Dr. Marvel thought, be limited. All things being equal, he considered Dr. Ill's modification preferable to the original Gilliam operation. The fact that it elevated the uterus from its displacement made it the one in which there was the least likelihood of hernia or necrosis.

DR. DRAKE, Tennessee, said that imaginary diseases were real, material entities with a pathologic basis, and the trouble could often be removed by diverting the patient's attention from the conditions that give rise to the material images in the brain. The reason for the existence of so many operations for procidentia and for appendicitis in modern times and so few in old times was that attention was now called to these particular organs. If the attention of patients could be turned away from the internal organs, Dr. Drake thought there would be fewer pathologic conditions.

DR. JOHN P. REILLY, Elizabeth, said that the discussion ought not to be closed without further consideration of the shortening of one or both uterosacral ligaments, and that he would be glad to hear more from Dr. Ill on this subject, because unmarried patients had persistent dysmenorrhea, and married patients dysmenorrhea with sterility. All the suspensions done to relieve ordinary displacements would not cure this class of cases. All the ligaments on the front may be shortened and the floor repaired, but the patient would not be cured. Dr. Reilly thought it strange that silk had continued to be used so long in suspensions, as catgut would give rise to much less suppuration and afford all the fixation necessary. It had occurred to him that in the method spoken of by Dr. Ill the posterior parietal peritoneum was lifted from the fascia below more than was necessary, and that this might do harm. He wished to know whether the posterior parietal peritoneum was stripped from the round ligament as it was brought through. He had stripped the peritoneum back so that he had the clear round ligament. By so doing he thought that the pushing upward of the peritoneum could be avoided.

DR. E. J. ILL, Newark, said that removal of the ovaries was the operation most commonly performed for a short uterosacral ligament. In the physical examination the finger was passed into Douglas' cul-de-sac until it strikes the tense cord, which was slightly pressed on and found to be sensitive. In the pelvic cavity there should be no organ sensitive to slight pressure. When the patient was put under ether, a finger was introduced into the vagina behind the uterus. The uterosacral ligament was caught on the end of the finger and gradually brought outside. By massage the ligament was lengthened, so that it was no longer tense and sensitive. As an additional safeguard against contracting it was kept on the stretch for a few days by thoroughly dilating the uterus. Dr. Ill always suggested that for two months following the operation the patients should use douches while on the knees

and elbows, so as to keep up a little stretching of the ligament. Sometimes a second operation was necessary, and once a third one. Two symptoms that should lead to a guarded prognosis were sensitive spines and coccygeal pain. The pain on either side of the back and inability to walk were overcome by the treatment.

DR. RICHARD C. NORRIS, Philadelphia, said that sufficient stress had not been laid on preliminary treatment of the supports of the uterus and of the uterus itself. He stated that years ago Emmett cured many displacements by careful plastic surgery followed by the use of the pessary. Dr. Norris was inclined to think that these operations to correct displacement had but temporary effect. In regard to the selection of the operation for this purpose, he agreed that the round ligament was the essential factor to be used, and that the portion of it that was the thickest and the nearest to the uterus was best fitted to accomplish the work. At the Preston Retreat, in Philadelphia, there have been 3,500 confinement cases during the last fifty years, and Dr. Norris had found that in patients in whom ventral fixation had been used complications frequently occurred. This had led him to believe that the operation ought to be abandoned. Even the technic that prepares for suspension, he said, might eventuate as fixation. It was his opinion that an operation for holding the uterus in position by means of the round ligaments would be devised that would not fasten the uterus to the abdominal wall. He had had no difficulty in regard to sloughing or hernia in either the Gilliam or the Simpson operation. He had used the procedure suggested by Dr. Ill, which had appealed to him surgically and clinically as the most satisfactory. He was surprised that the Alexander operation was not appreciated, as he believed that there exists a class of uterine displacements in unmarried women in whom this operation found a wide field of usefulness. When performed with careful technic, there was no danger of sloughing or of infection.

DR. J. W. MARTINDALE said that if vaginal hysterectomy were done in cases of procidentia the condition would not be cured. It was absolutely necessary to do the plastic work before attempting any of these operations. He said that he would feel a little hesitation about employing the method of treating the tender and shortened uterosacral ligament advocated by Dr. Ill unless it were done by a skilled operator, as some other structure might be mistaken for the ligament and damage produced by the massage. Dr. Martindale thought that the proper treatment for a case of chronic metritis or salpingitis with adhesions would be supravaginal hysterectomy, which was a safer procedure than double oöphorectomy with an oöphorosalphingeotomy. He had seen cases of inflammation of the broad ligaments and the ovaries in which, when the finger was pushed into the body of the uterus, the whole structure was found to be broken down. Dr. Martindale had seen the good effect of pregnancy on backward displacement of the uterus exemplified. One of the disadvantages of ventral suspension, he said, consisted in the use of silk sutures. In the clinic he employed catgut exclusively. He believed that danger from premature absorption of catgut was less than that from the presence of a foreign body, such as silk in the abdominal cavity. He thought that the reason women formerly did not appear to have procidentia was that they did not then consult physicians for this trouble, and that if they had they would not have obtained relief. He took exception to the attitude of both speakers in regard to ventral fixation, which he believed to be the operation par excellence in women beyond the climacteric, although he considered it criminal to do this operation on a woman during the child-bearing period. The suspension that takes in one or two strands of the muscle he thought more effective than the ordinary suspension in which merely the peritoneum was used. In a patient with large uterus and with lax vaginal and abdominal walls, better support was afforded by ventral fixation than by any of the other operations mentioned. The sixth operation described by him was not the Simpson operation, but a modification devised by Dr. Charles P. Noble, of Philadelphia, and was quite similar to the operation described by Dr. Ill. If the ligament were taken up and drawn through



the abdominal cavity, the inlet to the pelvis would be divided into three distinct artificial compartments. Dr. Martindale said that this was not anatomic and was likely to produce strangulation of the bowel.

#### Other Papers.

The following papers were also read: "Diagnostic Importance of Vomiting in Children," Dr. Arthur Stern, Elizabeth; "Present Status of the Milk Question," Dr. Alexander McAlister, Camden; "Influence of Overweight and Underweight on Vitality," Dr. Brandreth Symonds, New York; "Report of a Case of Excision of the Stomach for Carcinoma," Dr. Edward Stachlin, Newark; "Review of Hernia as Understood and Treated at Different Epochs by Past and Present Masters of Surgery," Dr. Thomas Mackenzie, Trenton; "Clinical Features and Treatment of Acute Perforating Gastric Ulcer," Dr. Ellsworth Elliot, Jr., New York; "Reflex Gastric Symptoms as a Factor in Surgical Disease of the Abdomen," Dr. John P. Reilly, Elizabeth; "The Psychic Element in Medical Practice," Dr. L. Emerson, Chicago; "The Drink Habit and Its Treatment," Dr. Charles A. Rosenwasser, Newark.

#### WISCONSIN STATE MEDICAL SOCIETY.

*Sixty-second Annual Meeting, held at Milwaukee,  
June 24-26, 1908.*

*(Continued from page 525.)*

#### Open-Air Treatment of Pneumonia.

DR. ARTHUR J. PATEK, Milwaukee, stated that the open-air treatment of pneumonia was mentioned nearly 150 years ago; that it had been resurrected, and in 1904, W. P. Northrup presented his first account of the method he had been pursuing for eleven years in treating bronchopneumonia in children. Access of cold air to the body, well protected, is devoid of danger. Puerperal fever, surgical sepsis, typhoid fever, pneumonia, meningitis and other acute inflammatory conditions had been successfully combated by the method. Even temperature, instead of being desirous, is a menace in the sick room, and fresh air currents and changing temperature are essential. People should cultivate fresh air for twenty-three out of twenty-four hours. Oxygen is inferior to fresh air in disease. The results of the latter day open-air treatment of pneumonia were apparently very favorable. The distress signals in pneumonia were due to the intensity of the pulmonary invasion or to failure of the heart, and these conditions were invariably relieved by the cold-weather treatment. He concluded that fresh air, unpolluted, unheated, cold if possible, was the purest stimulant and best prop to a sick, badly functioning lung.

#### DISCUSSION.

DR. L. F. JERMAIN emphasized the importance of prevention in pneumonia, stating that while tuberculosis was decreasing, pneumonia was increasing. More attention should be paid to prophylaxis, and the care of the sputum in pneumonia was as important as in tuberculosis. He endorsed the open-air treatment. In the absence of a specific antitoxin serum, treatment must necessarily be eliminative and supportive.

#### Other Papers Read.

The following papers were also read: "Anaphylaxis," Dr. Karl Smith, Madison; "Ophthalmia Neonatorum," Dr. F. R. Boyce, Madison; "Modern Operation for the Cure of Inguinal Hernia," Dr. E. Wyllys Andrews, Chicago; "Chronic Auriculoventricular Heart Block in the Dog," Dr. Joseph Erlanger, Madison; "Present Status of Medical Expert Testimony on Insanity; a Plea for Corrective Legislation," Dr. F. C. Studley, Milwaukee; "The Medical, Ethical and Forensic Aspects of Criminal Abortion," Dr. Wilhelm Becker, Milwaukee; "Causes of Monsters," Dr. C. R. Bardeen, Madison; "Actinomycosis," Dr. Louis Falge, Manitowoc.

#### Proceedings of the House of Delegates.

##### REPORT OF THE EXECUTIVE COMMITTEE ON MEDICAL DEFENSE.

DR. G. E. SEAMAN presented the report and a discussion followed on the general question of medical defense, especially as regards giving the committee discretionary power as to the

subjects to be defended, and the solution of the problem was that all defensible cases would be defended. Objection was made that a man might get no defense. The reason given for not making the matter more definite was that if it were compulsory that all cases should be defended other than those of a criminal or immoral character, an innocent man might be accused of some offense of that character which would need defense to a greater degree than the ordinary malpractice case.

##### REPORT OF COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

DR. A. W. GRAY, chairman, presented his report. A discussion followed, and resolution was carried to assess the membership \$2 next year, the assessment to be voluntary and not obligatory on the members, for the purpose of prosecuting the cases now pending in the courts against quack medical institutes. The facts were shown to be that the state through its district attorney, was unwilling, or unable to take charge of these cases. The Board of Medical Examiners had no money to take care of them. While it is the duty of the medical examiners of Wisconsin to prosecute these cases, it was agreed by all that it was a proper obligation for the members of the society to assume, and it was the opinion of the delegates that an effort should be made in all the societies to raise as much as possible for action in that direction.

##### THE REPORT OF THE COMMITTEE ON THE PREVENTION AND CURE OF TUBERCULOSIS.

DR. M. P. RAVENEL, Madison, presented this report, which was adopted. It stated that it seemed to be now universally admitted that the chief source of infection for mankind lay in the sputum of consumptives. The second source of infection was bovine tuberculosis. The report gave the most important measure of prevention as destruction of the sputum, burning being the best method, and when this was not available the use of strong germicides. The committee favored the extension of the tuberculin testing of cattle. It recommended careful training of children in well-ventilated rooms, proper hours of rest, exercise and use of plain but abundant food. The three agents of utmost value in the cure of tuberculosis are fresh air, good food and rest; the use of drugs should be limited; medication should be avoided so far as possible; early diagnosis should be made; the physician should be master of the situation and insist on rigid discipline and routine of life. As an aid to early diagnosis in doubtful cases, the report recommended the use of tuberculin, and stated that the hygienic laboratory at the University at Madison was at the service of physicians for advice and the examination of sputum, free of charge.

##### REPORT OF THE DELEGATE TO THE COUNCIL ON MEDICAL LEGISLATION OF THE AMERICAN MEDICAL ASSOCIATION.

DR. GILBERT E. SEAMAN presented this report. The Council on Medical Legislation of the American Medical Association adopted the report of the Committee on Uniform Medical Legislation, declaring in favor of a standard and uniform bill regulating the practice of medicine and reciprocity in medical license, and also passed a resolution in favor of legislation providing for physical examination and re-examination of railroad employes having to do with the operation of trains on railroads doing an interstate commerce business, and a committee was appointed to draft a bill and present the same to Congress at the next session. The Committee on Uniform Vital Statistics of the National Council made an exhaustive report and presented a bill regulating the collection and preservation of vital statistics for adoption in the various states, which was approved. The report of the committee on Uniform Food and Drug Laws of the national council recommended the drafting of a standard law for all the states where such law does not exist, and the report was adopted. Dr. Seaman recommended hearty cooperation and support on the part of the Wisconsin State Medical Society.

##### NATIONAL DEPARTMENT OF HEALTH.

The secretary, Dr. Charles S. Sheldon, then read a communication from the Committee of One Hundred on National Health, asking for the support of the society in the effort to organize a board of national health or a department of national health; and also a communication from the Secretary



of the American Medical Association with reference to the organization of branch societies. A motion was made that both matters be referred to a committee and suitable resolutions drawn up, which motion was unanimously carried. The resolutions, which were presented later, were as follows:

WHEREAS, We believe that the government should devote more attention to the application of hygiene to public health, and

WHEREAS, The Committee of One Hundred of the American Association for the Advancement of Science has taken active part in the movement looking toward the establishment of national control over all matters relating to public health; therefore be it

*Resolved*: That the Wisconsin State Medical Society heartily indorses this movement and desires to put itself on record to that effect.

#### CONTROL OF MIDWIVES.

DR. CHARLES S. SHELDON read a resolution drawn by a committee of the Milwaukee County Medical Society:

*Resolved*, That the Committee on Public Policy and Legislation of this Society be and hereby are directed to use all possible efforts to secure the enactment of a law by the next legislature providing for the licensing and control of midwives by the State Board of Medical Examiners."

The resolution was unanimously adopted.

#### PREVENTION AND CURE OF TUBERCULOSIS.

A resolution from a committee from the second district on "Proposed Legislation for the Prevention and Cure of Tuberculosis. Looking to the Formation of a Bureau at Madison," was read by Secretary Sheldon, and after some discussion, was referred to the Committee on Public Policy and Legislation for consideration.

#### Election of Officers.

The following officers were elected: President, Dr. G. E. Seaman, Milwaukee; first vice-president, Dr. H. J. Stalker, Kenosha; second vice-president, Dr. J. M. Dodd, Ashland; third vice-president, Dr. H. B. Fears, Beaver Dam; delegates to the American Medical Association, Drs. Carl Doege, Marshfield, and C. A. Richards, Rhinelander.

A motion to refer the proposition of making the state assessment (exclusive of any county dues) \$4 annually, was referred to the various county societies for a referendum vote.

Madison was chosen the next place of meeting.

## Medicolegal

### Proper Explanations Bearing on Physician's Bill.

The Supreme Court of New York, Appellate Division, Third Department, says that action in the case of *Louis vs. Du Bois* was brought by a physician to recover for services in attending Lucy Du Bois, a sister of the defendant. The plaintiff's evidence tended to show that he performed the services for the defendant on the latter's undertaking to pay therefor. The defendant's evidence, while practically admitting that the funds would in the end be furnished by him, contended that he was not primarily liable for the bill, and did not employ the plaintiff. The defendant put in evidence a bill rendered to him, the charge being made to Lucy Du Bois for professional services rendered her. This, unexplained, seemed somewhat antagonistic to the plaintiff's claim, and had a tendency to show that the employment was by Lucy Du Bois, or that the services were being rendered on her account. The plaintiff was asked, with reference to this bill, whether he ever had any conversation with Lucy Du Bois about it in any way for his services; whether there was ever any agreement or talk with the patient with reference to his being engaged to attend her or perform services for her; whether he ever charged, on his book or otherwise, the services to Lucy Du Bois; whether the bill was intended as a charge against Lucy Du Bois or was intended to indicate the party to whom the services had been actually delivered; and whether the defendant stated or indicated to plaintiff at any time that the patient was to pay or adjust the bill. These various questions were objected to and excluded, to which the plaintiff excepted. The plaintiff clearly had the right, by answering these questions, to rebut so far as his answers might any inference to be drawn from the manner in which the bill was made out.

### Construction of Georgia Medical Practice Act as to Whom It Covers—About "Magic Healers" and Others—Physician Not Liable for Malicious Prosecution.

The Court of Appeals of Georgia says that the plaintiff in the case of *Bennett vs. Ware* was arrested on a warrant sworn out by the defendant charging the plaintiff with practicing medicine without a license, in violation of the statutes of that state. On a preliminary investigation the plaintiff was discharged, and thereupon he brought this suit against the defendant for malicious prosecution and false imprisonment. In his petition he alleged that at the time of his arrest and incarceration in the common jail he was engaged in the "profession of healing diseases without the use of medicine, commonly and better known as a 'magic healer'"; that he had healed the sick without the use of medicine in any form or manner whatever by placing his hands on that portion of the body which was affected by pain; that this gift or magic power was given him direct from the Lord; that he made no charge for his services, but accepted such compensation as the gratitude of his patients induced them to offer voluntarily; that, as a result of his arrest and prosecution for practicing medicine without a license, he suffered great humiliation and mortification, lost two days' compensation in "gifts," amounting to \$25 per day, was put to an expense of \$15 in employing a lawyer to defend him against the untruthful accusation and, in fact, "lost almost his entire practice"; that his prosecution was malicious and without probable cause; and that he had been damaged in the sum of \$5,000. A demurrer was filed to this petition on the ground that the allegations showed that the plaintiff was in fact practicing medicine and suggesting remedies for the sick and afflicted, and receiving compensation therefor, without complying with the statutes of the state regulating the practice of medicine, and therefore that there was probable cause for his arrest and prosecution. The demurrer was sustained.

The direct question for determination was whether the plaintiff, under the facts set out in his petition, was engaged in the practice of medicine as defined by the statutes of Georgia. By virtue of its police power, the state has enacted legislation to protect the public against unfit and incompetent practitioners of medicine, and to prevent the results of malpractice.

In construing these statutes it is apparent that the law of this state recognizes only three systems or schools of medicine—the "regular," the homeopathic and the eclectic schools. It is impossible for one who desires to practice any other system to do so in this state as a practitioner of medicine, because under the law he can not procure a license. In other words, the law only proposes to grant a license to practice medicine to the allopath, the homeopath or the eclectic. It is true the statute provides that, "if the applicant desires to practice a system not represented by any of the" three boards, "he may elect for himself the board before which he will appear for examination"; but this is a barren privilege, for none of the three boards can or will examine any applicant except one who has a diploma from a regular medical college, or who proposes to practice one of the three systems. It would be absurd to say that one who practiced the healing art by magnetism, Eddyism, spiritualism, hypnotism, mesmerism or any other form for the treatment of disease based on a supernatural agency would be entitled to be examined by any one of the medical boards of the state; for the science of medicine is based on natural agencies. The court, therefore, concludes that only those who propose to practice medicine by one of the schools or systems recognized by the statutes of the state are required to have a license.

It was said that section 1478 of the Political Code of Georgia of 1895 undertook to define the practice of medicine, and that this definition embraced the particular practice of the plaintiff. According to his statement, his method consisted simply in laying his hands on the sick at the point or place of pain or disease, and the healing which followed was by a direct divine agency. Do the words in the statutory definition "or other agency, whether material or not material, for the cure, relief or palliation of any ailment or disease of the mind or body" embrace an agency of this character? It may be conceded that the words "material or not material" are sufficiently broad to include at least every human or natural agency. But



the court can not believe that the legislature intended to include in the practice of medicine what may be called psychotherapeutics, or any form of the treatment of the sick which makes faith the curative agency. The words "other agency," "material or not material," should be construed in obedience to the maxim, "*Noscitur a sociis*" (it is known from its associates), and the meaning of the word "agency" must be limited by the associated words "drug, medicine, appliance, apparatus." In other words, the word "agency," even as qualified by the words "material or not material," was intended by the legislature to mean a substance of the general character of a drug or medicine, or surgical apparatus or appliance, the obvious purpose being to protect society against the evils which might result from the use of drugs and medicines by the ignorant and unskilful.

The purpose of the act is clearly indicated by its title, "to regulate the practice of medicine." It was not intended to regulate the practice of mental therapeutics, or to embrace psychic phenomena. These matters lie within the domain of the supernatural. Practical legislation has nothing to do with them. If they are a part of a man's faith, the right to their enjoyment can not be abridged or taken away by legislation.

However the so-called wisdom of this world may regard these things, it can not be denied that long before the Savior told His disciples that in His name they should heal the sick and prevent all manner of diseases by the laying on of hands, the practice of healing by means of prayers, ceremonies, laying on of hands, incantations, hypnotism, and other forms of psychotherapeutics existed. To the iconoclast who denounces these things as the figments of superstition, or to the orthodox physician who claims for his system all wisdom in the treatment of human malady, the court commends the injunction of Him who was called "the Good Physician," when told that others than His followers were casting out devils and curing diseases: "Forbid them not." What matters the system, if, in fact, devils are cast out, and diseases are healed?

The court deduces: That the practice of medicine, defined by the code, is limited to prescribing or administering some drug or medicinal substance, or to those means and methods of treatment for prevention of disease taught in medical colleges and practiced by medical practitioners; that the purpose of the act regulating the practice of medicine was to protect the public against ignorance and incompetency by forbidding those who were not educated and instructed as to the nature and effect of drugs and medicine, and for what diseases they could be administered, from treating the sick by such remedial agencies; that the law is not intended to apply to those who do not practice medicine, but who believe, with Dr. Holmes, that "it would be good for mankind, but bad for the fishes, if all the medicines were cast into the sea," nor to those who treat the sick by prayer or psychic suggestion.

The court is clear that the plaintiff was not a practitioner of medicine in the sense of the statute or in the popular sense; and the fact that he received fees and compensation for treatment in the shape of gifts could not make what would otherwise not be the practice of medicine a violation of the statute regulating such practice, for it must be apparent that, if the mere laying on of hands amounts to the practice of medicine in any sense, it is so without reference to fee or reward.

But while the court holds that, under the allegations of the petition, the plaintiff was not engaged in the practice of medicine, and therefore was not violating the law regulating such practice in this state, it does not think that he was entitled to recover damages for malicious prosecution from the defendant physician who swore out the warrant against him. The question of law involved was sufficiently in doubt, in its application to his practice, fully to warrant a legal investigation of the question; and, in taking out the warrant, the defendant was fully justified by the existence of the probable cause; his act was without malice, and in behalf of the public. Besides, the court thinks that the practice of the plaintiff, while not in violation of the statute regulating the practice of medicine, was presumptively an imposition on the credulity of the public, which might in its consequences result in much injury, and that he was exercising a pretended power of magnetic healing to the deception of the people, and was obtaining their money in the shape of gifts under false pretenses, and the court does

not think that the law should permit him to recover damages resulting from a legitimate effort on the part of a citizen to test the legality of his practice. The court therefore affirms the judgment of the court below in sustaining the demurrer and dismissing the plaintiff's petition.

#### Death After Fall Against Timbers and What Constitutes "Infection."

The Supreme Court of Kansas says that the injury to the insured in *Continental Casualty Company vs. Colvin* was received on January 9 from a fall which precipitated him against the edge of timbers, whereby he was bruised on the left side of his chest with sufficient force to cause external soreness and discoloration of the skin. He did not regard the injury as serious when it was received, although quite painful, and, except for a loss of six days, he continued at work with the occasional assistance of his fellow-servants, up to January 29. January 31 he called a physician, who pronounced the ailment to be pneumonia, or pleurisy, and gave treatment therefor. On February 14, there being no improvement, another physician was called, who, on examination and consultation with the first physician, decided that the former diagnosis was incorrect. The insured was then removed to a hospital, where, on February 16, an operation was performed by which it was ascertained that the chest cavity contained a large accumulation of pus. This was liberated and the cavity drained. The patient was very much exhausted, however, and on March 7 he died. The court affirms a judgment in favor of the beneficiary on an accident insurance policy which provided that the company should pay indemnity in the event that said insured should receive personal, bodily injury which was effected directly and independently of all other causes through external, violent and purely accidental means and which caused at once total and continuous inability to engage in any labor or occupation, which was followed by the further provision that if within ninety days from the date of the accident loss of life should result the company would pay the principal sum stipulated. The court holds that in an action by the beneficiary named in such a policy to recover the stipulated indemnity for the death of the insured, who died from an accidental injury, the condition that such death must have resulted "necessarily and solely" from such injury would be satisfied by showing that the injury was the predominating and efficient cause of the insured's death. The fact that other conditions were set in motion by the injury which may have contributed to such result was immaterial. The court also holds that the word "infection" as used in such a policy in providing for special indemnities "where the loss is occasioned or contributed to in any way by erysipelas, blood poisoning or infection," relates to external injuries, and does not include internal inflammations where pus is formed by the presence of pus germs.

### Current Medical Literature

#### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Boston Medical and Surgical Journal.

August 6.

- 1 \*Some Aspects of Gonorrhea. F. Forchheimer, Cincinnati.
- 2 Stenosis of the Pylorus in Infancy. A Surgical Emergency. Report of Four Patients Operated on with Recovery. End Results. C. L. Scudder, Boston.
- 3 The Tonsils and Their Relation to the General Health. C. P. Sylvester, Boston.
- 4 \*The Demonstration of the Spirochæta Pallida by the Method of Dark Field Illumination. W. C. Quinby, Boston.

1. **Gonorrhea.**—Forchheimer discusses the history of our knowledge of gonorrhea and reproduces various statistical tables showing the morbidity in various armies, the United States Navy and in civil life in Germany, a comparative analysis of alcohol and gonorrheal morbidity in the United States Army, and finally on his own results in Cincinnati, of strict examination of patients as to gonorrheal history. He takes up the question of sterility in relation to gonorrhea, but follows a course different from that pursued by Erb in his researches. Forchheimer has taken three generations, the histories of which are all known to him, whom he has attended in all kinds of



illnesses, 42 couples or 82 persons in number. He recapitulates his results practically as follows:

1. The morbidity of gonorrhea is diminishing.
2. The American army and navy are exceptions to this rule.
3. The present mathematical methods of deducing incidence of gonorrhea in all men from morbidity lead to fallacious results.
4. Of all males, 54.1 per cent. have gonorrhea during their lifetime.
5. We have not sufficient knowledge of the facts to state how many women have had gonorrhea during their lifetime.
6. The small number of his cases of sterility does not justify any positive conclusion.
7. Prevention of conception is the cause of "one child sterility" in the majority of instances. . . . Whenever his figures have shown anything it is always that the propagandists have greatly overestimated the frequency, the complications, and the dangers of gonorrhea. This has been notably the case with specialists in genitourinary disease in the male and in the female. . . . That there is much damage done by gonorrhea is abundantly shown by all statistics; therefore, it is a righteous cause to fight for its reduction. But no righteous cause is aided by such lurid statements as have been made in connection with gonorrhea.

4. **Demonstration of *Spirochæta Pallida*.**—Quinby describes the method of dark field illumination for the demonstration of *Spirochæta pallida*, and draws the following conclusions:

1. It should be a routine practice to examine all suspicious lesions for the *Spirochæta pallida*.
2. The organism has a definite morphology and can be differentiated from other spirochetes by careful microscopic examination.
3. This is best done by the method of dark field illumination, with or without subsequent examination of a stained specimen.
4. Since the organisms are not always numerous on the surface of the lesion, the method of obtaining them is of importance. A most satisfactory way is that of suction, as described above, and the case should not be pronounced negative until some such method has been used.

#### Medical Record, New York.

August 8.

- 5 \*Darwinism and Diabetes. R. G. Eccles, Brooklyn, N. Y.
- 6 Symptomatology of Recurrent and Abductor Paralysis of the Larynx. C. C. Rice, New York.
- 7 Mechanical Vibration in the Treatment of Constipation and Pelvic Conditions. M. L. A. Snow, New York.
- 8 Physiologic Action of the Mount Clemens Mineral Baths. R. Leuschner, Mount Clemens, Mich.
- 9 Use of Bacterial Vaccines. H. Britenstool, New York.

5. **Darwinism and Diabetes.**—Eccles continues his consideration of the nature of diabetes from a former article (*Medical Record*, May 9, 1908, abstracted in *THE JOURNAL*, May 23, p. 1753). He discusses the theory that heredity is a cause of diabetes, and argues that no tissue and no organ has ever been convicted of spontaneously starting disease. True heredity is a heritage of health and health-protecting appliances only. The idea of heredity as transmitting disease or tendencies to particular disease is to reverse the law of natural selection. Heredity is through and through but one mass of accumulated fitnesses. Such apparent maladjustments as we discern are but relative weaknesses toward conditions over which natural selection has had insufficient play. In seeking for the etiology of diabetes there are many more things to explain than a supposed loss of glycolytic power, or the results of the impaired functioning of any single organ of the body. Any satisfactory theory of diabetes must give some sort of explanation of many facts: Why the apparent waste of sugar occurs; how transient glycosuria is related to diabetes mellitus in causation; why pancreatic and transient glycosuria can occur in nearly all vertebrates; why diabetes patients are most common among the rich proteid users; why injuries are the common precursors of diabetic attacks; why extirpation of the duodenum produces as severe a diabetes as ablation of the pancreas; why in cold-blooded animals there is no glycosuria in ablation of the pancreas if the liver is removed at the same time; why the protoplasm of the muscles is damaged in all severe cases of diabetes; why glycogen disappears from the liver and muscles; why the heart, leucocytes, renal epithelium, cerebrum, etc., accumulate unusual amounts of glycogen; why the kidneys have increased their impermeability toward sugar but have not done so toward any other substance; why the body converts other kinds of food into sugar when carbohydrates are withheld; why, in starvation, the body consumes its own tissues in order to supply sugar to the blood and keep up the glycosuria; why approaching coma can be arrested by feeding with carbohydrates; why serious cases can be mitigated by feeding the patients with oatmeal and potatoes; why diabetes can exist with the pancreas in a perfectly healthy condition; why antiseptics produce a transient arrest of the glycosuria.

The author then suggests that a microbial explanation of diabetes would be essentially a Darwinian one, and would explain more facts than any other. In brief, he suggests that diabetes is an infection of the blood with some very common microbe, e. g., the colon bacillus, which thrives on sugar for choice, but is capable of proteolytic action when sugar is no longer available. With a deficiency of sugar in the intestinal canal, the organism finds its way through the blood stream to the source of glycogen and there sets up an irritation to which the liver responds by giving all the sugar it can possibly supply. The muscles, too, constitute other centers of sugar supply. A chemotactic optimum having been arrived at, the bacterium drifts away from the source of sugar, landing in a condition of surfeit at the kidneys, unless engulfed by phagocytes on the way. Arrived in the kidneys, the cells there would have to be protected against them so that a further protective overflow of sugar into the urine would keep the organism surfeited until either killed or expelled from the body. Eccles concludes by referring to the new potato cure and the oatmeal cure, which, he says, have their basis in the slow hydrolyzing of the substances into sugar, thus keeping up a supply of that substance within the intestinal canal. This would have no effect on the number of parasites already in the blood, but would lessen the accessions to it; while phagocytosis and kidney activity would lessen the numbers in the circulation.

New York Medical Journal.

August 8.

- 10 \*The Tonsil from an Evolutionary Point of View. J. Wright, New York.
- 11 \*Confessions of a Yeoman Prostatectomist. J. R. Eastman, Indianapolis.
- 12 \*Real Conservatism in the Treatment of a Prostatic. G. M. Muren, Brooklyn, N. Y.
- 13 Anterior Poliomyelitis. I. D. Steinhardt, New York.
- 14 Acute Anterior Poliomyelitis in the Adult. L. Archambault, Albany, N. Y.
- 15 Malaria in Greece. A. Rose, New York.
- 16 \*Prostitution. J. L. Nascher, New York.
- 17 How Plague is Spreading in Venezuela and Trinidad. J. F. Donnelly, New York.

10. **The Tonsil.**—Wright discusses the tonsil from an evolutionary standpoint, and argues the possibility that the enlarged tonsil in children is a protective condition. He says: "From various clinical facts, to some of which I have alluded, it seems likely that it is the small sunken, ragged tonsil, and not the large tonsil, which lets through the dangerous germ. Whether it is a septic or a tuberculous germ, the lymph nodes below swell up as a result of a local or systemic reaction, which seems calculated to retard the passage of the germ to the vena cava. Increase in size of the cervical lymph nodes can hardly be accepted as evidence of an increase in the filtering efficiency of their lymphoid structure without ascribing as much or more to the lymphoid structure of the tonsil and its coverings. The surgeon knows how much the absorption of cocaine is retarded on the inflamed surface. Swelling of the tonsil, then, appears to some extent as a closing of the gate in acute conditions. Chronic enlargement seems clinically a sequence, but may it not be regarded physiologically as a continuation of the reaction? Does it not seem, keeping in mind the blind sort of way protoplasm varies, that it is an awkward move to keep the gate partly closed? It is certainly awkward, for it deepens the pits and narrows the air and food way; but then, protoplasm has had no university education in physiology."

11. **Prostatectomy.**—Eastman discusses the various methods of the principal noted prostatectomists, and concludes that operative treatment has now reached the point at which we are justified in saying that all cases of prostatic hypertrophy should be treated by prostatectomy, partial or complete, as soon as the condition has begun to produce annoying symptoms. It is important that we should not wait until the last word has been said on technique before we unanimously and with emphasis plead for early operation in this as in other painful and fatal maladies. When the profession generally appreciates the importance of early prostatectomy, before serious complications have developed, then the prostatectomist of average skill, the yeoman, may be able to approach more nearly to the standards of the masters.

12. **Treatment of the Prostatic.**—Muren is in favor of the removal of the gland whenever the patient's condition justi-



ies the risk. While suitable cases for operation must be selected, too little consideration has hitherto been given to those unfortunates who can not be classed as select cases. In many of these the two-stage operation may be well borne—preliminary drainage of bladder, and later, after sufficient improvement, complete removal of the gland. Muren recently has drained suprapubically. It is more rapid, disturbs the patient less, and affords sufficient improvement, the suprapubic fistula may be made permanent. Local anesthesia is all that is needed. He discusses the operation and protests against the routine use of the cystoscope in enlarged prostate without adequate indication, as needlessly painful and distressing to the patient.

16. **Prostitution.**—Nascher comments on Knopf's paper in the *New York Medical Journal*, May 2, 1908, abstracted in *THE JOURNAL*, May 16, page 1649. He compares the responsible factors in this country and abroad, instancing in particular Edinburgh, London, Paris and Vienna. He does not consider insufficient wages a marked cause in this country, save among those brought up amid vicious surroundings. He holds the stage much responsible for prostitution, and particularly accuses the lowering of the moral tone by the use of alcohol. Bad housing he regards as really of less importance than the racial traits of the dwellers, and instances the ghetto, where the housing is bad, but sexual immorality is not common. He says: "There should be severe punishment, not a fine, but imprisonment, for the employer, foreman or superior who assails an employé's virtue, though it be with her consent. This is a potent factor in the etiology of prostitution among working girls." Nascher especially condemns the pander, whom, however, the law unfortunately can not reach.

#### The Lancet-Clinic, Cincinnati.

August 1.

- 18 \*The Unreasonable Traditions of Medicine. B. Holmes, Chicago.  
19 What Subjects Can Be Practically Included in a Year's Work in Chemistry, Physics and Biology? W. F. Mercer, Athens, Ohio.  
20 \*Baby Farms. L. M. Cusher, Cincinnati.

18. **Traditions of Medicine.**—Holmes refers to the difficulty of abolishing exploded traditions from the minds of many. He cites the doctrine of tuberculosis heredity, the "adenoid fad," the use of non-committal terms, e. g., synovitis, cystitis, etc., and urges a return to rational nomenclature that means something nosologically definite.

20. **Baby Farms.**—Cusher considers the abomination of baby farming, and while admitting that some institutions of the kind are necessary in large cities, urges their supervision by the board of health, the employment of trained nurses and reputable physicians, and compulsory registration with the consent of some incorporated charitable institution of the state. He reproduces the bill before the Ohio legislature.

#### The Medical Fortnightly, St. Louis.

July 25.

- 21 Acute and Chronic Rheumatism. R. W. Webster, Chicago.  
22 Glimpses of Early St. Louis Medical History. John J. McDowell, W. B. Outten, St. Louis.  
23 Laryngeal Stenosis Treated by Laryngoscopy. R. H. Johnston, Baltimore.  
24 \*Gastroptosis. J. M. Bell, St. Joseph, Mo.

24. **Gastroptosis.**—Bell says that during the lying-in period more attention should be paid to proper bandages for weakened recti muscles and a slower return to a full diet, while the stomach walls, as well as all intra-abdominal ligaments are weak. Rest cures that compel patients to lie in bed with forced feeding to deposit fat in the abdomen, cure gastroptosis, providing serious relaxation of the abdominal muscles is not present. He recommends meals small, frequent and dry, the less weight the better; hence soups, broths, etc., are interdicted, as they contain so little nourishment for their weight. Carbohydrate diet is preferable because of its shorter sojourn in the stomach. It begins to pass the pylorus in thirty minutes, and within an hour is gone, while proteids require from one and a half to three hours or even four. Next to diet and rest comes proper scientific massage of the abdominal muscles daily for at least two weeks, after that at greater intervals for a month or two longer. The effect of cold abdominal douches is perceptibly tonic. Electricity has a psychic, and

perhaps some real influence. Lavage is not generally recommended, still he finds it of material assistance in establishing tone to the motor function—peristalsis. In acute cases the patients will recover in four or six weeks; in chronic ones longer. Such patients should be kept under observation for several months after all symptoms have disappeared, to guard against relapse.

#### Virginia Medical Semi-Monthly, Richmond.

July 24.

- 25 \*Some Anomalies of the Stigmata of Degeneracy. M. R. Hughes, St. Louis, Mo.  
26 Postoperative Ileus. I. S. Stone, Washington, D. C.  
27 Personal Experiences and Observations on Hernia and Herniotomy. R. C. Bryan, Richmond, Va.  
28 Scarlet Fever. Report of a Case Developing Acute Nephritis and Treated by Sparstein Sulphate. W. A. Lewis, Enterprise, Ala.  
29 Diagnosis and Treatment of Empyema. M. E. Nuckols, Richmond, Va.  
30 Dysentery. W. F. Waugh, Chicago.  
31 The Choice of an Anesthetic in Anal Surgery. J. M. Lynch, New York.  
32 Principles of Surgery. S. McGuire, Richmond, Va.

25. This article was published in the *Medical Fortnightly* Nov. 11, 1907, and abstracted in *THE JOURNAL*, Dec. 14, 1907, p. 2037.

#### Surgery, Gynecology and Obstetrics, Chicago.

July.

- 33 Perineorrhaphy for Complete Lacerations. T. J. Watkins, Chicago.  
34 Primary Carcinoma of the Appendix. Case Report. J. J. Coons, Columbus, Ohio.  
35 \*Transplantation of Ovaries. F. H. Martin, Chicago.  
36 \*American Gynecological Society, President's Address. J. M. Baldy, Philadelphia.  
37 \*Cesarean Section Versus Sections of the Pelvis in Dealing with Mechanical Obstructions to Childbirth. A. L. Smith, Montreal, Canada.  
38 \*Immediate vs. Delayed (Expectant) Operation in Case of Ectopic Gestation. E. H. Grandin, New York.  
39 \*Report of Fifty-two Pregnancies and Labors Following Ventrosuspension of the Uterus for Retrodisplacements. J. O. Polak, Brooklyn, N. Y.  
40 \*Suggestions in Teaching Gynecology, with Demonstrations of Special (Mechanical) Charts as an Aid in this work. J. A. Sampson, Albany, N. Y.  
41 \*Ventrosuspension an Unsafe Operation for Posterior Displacement of the Uterus During Child-bearing Age. E. B. Cragin, New York.  
42 Acute and Chronic Appendicitis. A. H. Barkley, Lexington, Ky.  
43 \*So-Called Phlebitis of the Left Leg Following Appendicitis Not Operated On, with Some Theoretical Considerations of the Etiology of Postoperative Phlebitis. W. H. Buhlig, Chicago.  
44 The Factor of Mortality in the Operation of Hysterectomy. Report of 105 Cases. M. Willis, Richmond, Va.  
45 \*The Pathogenesis of Ganglia, with a description of the Structure and Development of Synovial Membrane. W. C. Clarke, New York.  
46 \*Immediate vs. Deferred Operation for Intra-abdominal Hemorrhage Due to Tubal Pregnancy. H. N. Vineberg, New York City.  
47 \*Deferred Operation for Intra-abdominal Hemorrhage Due to Tubal Pregnancy. F. F. Simpson, Pittsburg, Pa.

35. **Transplantation of Ovaries.**—Martin repeats the histories of his first two cases of heteroplastic ovarian grafting (published in the *Chicago Medical Recorder*, July, 1903, and abstracted in *THE JOURNAL*, Aug. 1, 1903, p. 337) and gives the subsequent histories of the patient. To these reports he adds a third case of heteroplastic grafting done in December, 1905, and reported on in May, 1906. He also reports five cases of homoplastic grafting, in which small portions of sound tissue from ovaries that had to be removed in their entirety were replanted in the patient.

In Cases 1 and 2 there was unquestionably a revivifying influence on the menstrual apparatus. This was shown by appearance of vaginal discharge at intervals of thirty days for a considerable period, the discharge of blood on several occasions, and in the prompt elimination in Case 1 of the nervous symptoms which are observed in a menopause. In Case 3 the patient unfortunately has neglected to report. Martin believes that more ideal results might be expected if the transplantation in these cases could have been done sooner after the primary removal of the ovaries, before all the effects of the ovarian secretion had been eliminated from the patient's tissues and thereby terminated the rhythm or habit of menstruation and thoroughly established the changes of the menopause. Four of the five patients of homotransplantation reported regular and apparently normal menstruation. The other patient did not report after the operation. He reviews



the literature of ovarian transplantation, both in human beings and in animals, and from it, with his own personal experience, he draws the following conclusions:

1. The operation of homoplastic or heteroplastic transplantation of the ovaries in women, or in lower animals, is no more dangerous if accomplished aseptically than any other small plastic operation on the appendages. (Morris, Dudley, Fish, Griegorieff, Frank, Arendt, Ribbert, Rubenstein, Glass, Maclaure, Amico Roxar, Monprofit, Foa, Knauer, Martin.)
2. Homotransplantation of ovaries on women, or in lower animals, will prevent the atrophy of the genitalia which usually follows castration. (Morris, Fish, Dudley, Griegorieff, Knauer, Lukaschewitsch, Foa, McCone, Maclaure, Martin.)
3. It is not yet satisfactorily demonstrated that heterotransplantation of the ovaries in a considerable number of cases will give permanent relief from the nervous symptoms produced by the menopause or prevent atrophy of the genitalia otherwise following castration. (Basson, Martin.)
4. Heterotransplantation of ovaries in women, or in lower animals, may prevent the atrophy of the genitalia which usually follows castration. (Glass, McCone, Maclaure, Schultz.)
5. Transplantation of ovaries from one species into another may result in preventing the ordinary changes in the genitalia resulting from castration. (McCone, Lukaschewitsch, Schultz.)
6. Menstruation will continue in women and monkeys after homoplastic transplantation of ovaries. (Morris, Glass, Dudley, Frank, Maclaure, Hoiban, Martin.)
7. Conception has followed homotransplantation in animals. (Griegorieff, McCone, Amico-Roxar, Maclaure, Magnus.)
8. Conception has followed heterotransplantation in animals. (McCone, Maclaure, Guthrie.)
9. Conception has followed homotransplantation of the ovaries in women. (Morris, Frank.)
10. Conception has been reported following heterotransplantation of the ovaries in women. (Morris.)
11. Heterotransplantation of the ovaries should be accomplished as soon after the primary operation in which the receptor's ovaries have been sacrificed as possible, before the menopause has become established and the genitalia atrophied. (Martin.)
12. Transplanted ovaries in other localities than the normal will maintain their vitality, will functionate, and will prevent ordinary sequelæ of castration.

36 and 38. Abstracted in THE JOURNAL, June 20, 1908, p. 2100.

37. Abstracted in THE JOURNAL, July 4, 1908, p. 70.

39. **Ventrosuspension and Pregnancy.**—Polak enumerates the complications in pregnancy and labor that may follow ventrofixation, as they have been tabulated by Kelly, and says that his personal experience with pregnancy and labor following ventrosuspension enables him to deny that they hold true for that operation. In the literature little distinction has been made between fixation and suspension operations. Polak defends the operation of ventrosuspension on a basis of 687 suspensions done in the course of operations for almost all forms of tubo-ovarian and appendicular disease associated with retro-deviation of the uterus. He modifies Kelly's technique by substituting No. 1 ten-day chromicized gut for the silk suspension suture, and by not going so low on the posterior wall of the uterus in transfixing that organ. An examination of his statistics shows that ventrosuspension has not complicated or influenced any of the pregnancies or labors in this series, and he is convinced that a properly performed suspension leaves the uterus in as good a position and is as free from the possibility of relapse as any of the several procedures advocated for a permanent cure.

40 and 41. Abstracted in THE JOURNAL, July 4, pp. 70 and 71.

43. **Phlebitis Following Unoperated Appendicitis.**—Buhlig reports a case of so-called phlebitis of the left leg in a patient with appendicitis not operated on, beginning about the tenth day of the illness. The onset of the complication and its clinical features tally so exactly with those of many of the postoperative cases that, in Buhlig's opinion, they are of like nature. He then compares the possible factors present in this case with those suggested in the numerous theories that have been advanced in explanation of postoperative phlebitis. All relating to the actual operation and preliminaries can, of course, be discarded; also numerous factors—heavy bandages, sigmoid pressure, tumor, etc.—producing local or general abdominal pressure. Even the hot water bag was eschewed for fear of disturbing limiting adhesions. There had been no previous exhausting disease, no demonstrable feeble circulation and no anemia. Buhlig further cites Welch's observation, in discussing venous thrombosis of the heart, that the small liability to thrombosis under the conditions of heart disease (in which slow, feeble and irregular venous current would be the paramount factor) is one of many evidences that mere slowing of the blood current is not an efficient cause. Ruling out any undetermined changes in the blood state with a subject still in a problematic stage, the chief factor remaining is

any infection which might produce changes in the vessel. He considers infection the cause, and can not see how appendectomies and hysterectomies can possibly be made strictly aseptic. The lymphatic route of infection is the one that appeals to the writer. Buhlig promises to show elsewhere that "many of the reported cases of postoperative phlebitis are really phlegmasia alba dolens, and are, therefore, lymphatic in origin." And of the infectious nature of true phlegmasia alba dolens, Buhlig says, there can certainly be no question.

45. **Pathogenesis of Ganglia.**—Clarke concludes his article practically as follows: In summing up the theories of the pathogenesis of ganglia, evolved from the various hypotheses considered in regard to the hernial theory, it would be presumptuous, in the face of Pick's observations, to assert that no such synovial protrusion has ever existed, causing a ganglion; but it must be added that the condition is exceedingly rare. As to the remaining theories he is positive that many ganglia are distended anatomic or adventitious bursæ, but the majority are connective tissue cysts, formed by degeneration, excited by unknown factors. In other words, he is convinced that ganglia are, very rarely, hernial protrusions of synovial membranes; frequently distended anatomic or adventitious bursæ; most frequently degeneration cysts.

46 and 47. Abstracted in THE JOURNAL, June 20, 1908, p. 2100.

American Journal of Medical Sciences, Philadelphia.

July.

- 48 \*Congenital Pyloric Spasm and Congenital Hypertrophic Stenosis of the Pylorus in Infancy. H. Koplik, New York.
- 49 \*Therapeutics of Self-Repair. S. J. Meltzer, New York.
- 50 \*Safeguards of the Heart Beat. H. Sewall, Denver.
- 51 \*Cardiac Arrhythmia. G. W. Norris, Philadelphia.
- 52 \*Peculiarities of the Symptomatology of Rheumatism in Children. C. H. Dunn, Boston.
- 53 Statistics of Seventy Cases of Gastroscopy. C. Jackson, Pittsburgh, Pa.
- 54 \*Myelogenous Leukemia and Its Treatment with X-Rays. H. Harris, San Francisco.
- 55 Pyelonephritis Complicating the Puerperium. C. G. Cumston, Boston.
- 56 Anatomy and Pathology of the Carotid Glands. L. P. Gomez, Chicago.
- 57 Congenital Unilateral Absence of the Urogenital System and Its Relation to the Development of the Wolffian and Müllerian Ducts. H. E. Radasch, Philadelphia.

48. **Congenital Pyloric Spasm.**—Koplik writes his paper to show that this is a disease which is rather vacillating at times in its symptomatology; that the men who insist that the patients recover spontaneously are correct when their material is analyzed, and that those who insist on operative procedures in certain cases might be correct if their material were analyzed in a like manner. Both parties are possibly correct, but they have both been looking at opposite sides of the shield. With this end he publishes and critically analyzes cases of his own, and takes up the question whether in these cases there is a spasm, or a distinct stricture of the pylorus, or stenosis. He believes that there is a certain set of cases in which at a certain period of the illness there occurs a spasm of the pylorus and stomach, which later subsides and the children recover. In other cases to this pyloric spasm is added a distinct anatomic condition in which the structure of the pylorus is abnormal, causing a distinct stricture, which in many cases, however, is susceptible of improvement, while in a third set the spasm of the pylorus may subside, the lumen remaining narrow, yet the children may improve with correct diet. In this way only can he reconcile the conflicting theories found in the literature, viz.: that of Thompson, who insists that a muscular hypertrophy is superinduced by disordered co-ordination and contracture of the muscular coats of the stomach, due to swallowing some irritating substance—e. g., liquor annii—at birth so that a functional hypertrophy due to overwork of the stomach develops; second, that of Pfaunder, who insists that all these cases are spasm cases and that the so-called new tissues of the hypertrophied pylorus are the result of postmortem or postoperative contraction; third, that some of the individuals are born with a congenital anomaly at the pyloric end, consisting of a form of hypertrophy or new growth. Koplik endeavors to show that all these theories are in a sense possibly true of many of the cases published. He reports cases of his own in three groups tending to confirm each of the three propositions. He discusses the diagnosis, prognosis and treatment of the condition.



49. Abstracted in *THE JOURNAL*, June 13, 1908, p. 2019.

50. **Safeguards of the Heart Beat.**—Sewall's considerations end to strengthen the conception that regurgitation from the auricles, thus preventing overstrain, is an occurrence so frequent that it can not be regarded as a pathologic event. Also, the indications are unmistakable that regurgitation from one or both ventricles, not caused by excessive dilatation of the auriculoventricular rings, but due to valvular insufficiency produced in another way, is an early and habitual sign of heart weakness. The therapeutic importance of the recognition of such signs of enfeeblement, he says, hardly needs an advocate.

51. **Cardiac Arrhythmia.**—Norris discusses juvenile arrhythmia, extrasystole, perpetual arrhythmia, heart block, and depression of contractility—pulsus alternans—and draws the following conclusions as to the prognostic importance of arrhythmia: Arrhythmia of muscular origin is more serious than that due to nervous causes. We can determine the presence of the latter by deep breathing and by the effect of the atropin test. Further, the time and cause of an arrhythmia will much modify our opinion of its seriousness. The respiratory type of irregularity is generally of trivial consequence. Extrasystoles, although often insignificant, require careful investigation, especially if they occur in middle-aged or elderly people. Perpetual arrhythmia is always serious, and the same may be said of that rare condition, pulsus alternans. Auriculoventricular heart block also is unfavorable, for, although in some individuals the attacks may be precipitated by the injudicious administration of digitalis and disappear after withdrawal of the drug, and others may live for a number of years despite its presence, the symptom always indicates a disturbance of muscular functioning.

52. **Rheumatism in Children.**—Dunn bases the following division on the character of the onset and the severity of the case:

1. The mild arthritic type. These are cases with slight and brief fever and joint symptoms only, of a mild and brief, even fleeting character, confined to one or few joints. 2. The severe arthritic type, occurring in older children, with a severe polyarthritides resembling the adult type. 3. Latent type. In these cases there is at the onset a period with fever as the only symptom. Later may occur cardiac or arthritic symptoms, which may be so mild as to escape notice, or which may at any time become severe. 4. Mild primary endocarditis. These cases are characterized by fever and slight dyspnea, palpitation or precordial pain, the symptoms being of brief duration. Slight joint symptoms may develop in the course of the disease. 5. Severe primary endocarditis. These cases are characterized by fever and the whole train of the symptoms of cardiac incompetency. They usually run a prolonged and obstinate course, recovery occurring very gradually. At times death occurs from failure of the heart. 6. Mild pericarditis. In these cases precordial pain is the most prominent symptom, accompanied by fever and the other signs of cardiac weakness. They usually run a fairly long course. Effusion may or may not occur, and—a notable point—it may occur without increase in the severity of the cardiac symptoms. Cases of pericarditis almost invariably show endocardial murmurs also. 7. Severe pericarditis. In this type the fever is high, long-continued, and obstinate, and precordial pain is severe at the onset. Effusion always occurs. The symptoms of cardiac insufficiency become very marked and their severity usually shows little relation to the amount of effusion, although at times a sudden increase in their severity occurs in parallel with a sudden increase in the extent of the effusion. Recovery is slow, and death, when it occurs, is due to cardiac weakness.

54. **Myelogenous Leukemia.**—Harris discusses 4 cases of myelogenous leukemia observed at the Cooper Medical Clinic and one seen in private practice, and draws from them the following conclusions: 1. At present it is best to consider myelogenous leukemia a malignant neoplastic disease. 2. The x-rays are effective in treatment as a palliative measure. 3. The action of the x-rays is associated with the production in the patient of a leukolytic body or bodies.

#### Interstate Medical Journal, St. Louis.

July.

- 58 \*Unilateral Dislocation of the Cervical Vertebrae. M. B. Clopton, St. Louis.
- 59 \*Serum Disease as a Clinical Manifestation of Anaphylaxis. E. W. Saunders, St. Louis.
- 60 Arthritis Deformans in Children. I. A. Abt, Chicago.
- 61 \*Differential Diagnosis Between Complete and Incomplete Uterovaginal Fistula. E. Jonas, St. Louis.
- 62 Puerperal Fever. E. Runge, Berlin, Germany.
- 63 Richet: His Life, Researches and Character. A. Eycleshymer, St. Louis.

58. **Dislocation of Cervical Vertebrae.**—Clopton discusses the frequency, pathology, symptoms, diagnosis, etiology and treatment of dislocation of cervical vertebrae by means of a critical

summary of the literature under each head, and describes the following method of treatment elaborated by Walton from similar plans proposed by Richet and Hurter: The anesthetized patient sits in a chair. The operator stands behind and using both hands grasps the head, which is rocked without traction, for traction only lessens the effectiveness of the fulcrum on the sound side. Slight rotation to carry the dislocated process forward to free it is first practiced. The head and neck are then tilted to the sound side and backward (that is, if the patient with a left dislocation is facing north the head is tilted southeast). This makes the dislocated articular facet rise above the facet below. The last motion is the rotation of the column backward into place, and the reduction is complete. The method is styled "retrolateral flexion with rotation." He reports a case successfully treated by this method.

59. **Serum Disease.**—Saunders deduces the following rules for his consideration of serum disease as a clinical manifestation of anaphylaxis: Curative sera are not the harmless substances we originally supposed. Immunizing injections of serum should not be employed when isolation will prevent the disease with a reasonable degree of certainty and the children can be watched. Serum should not be used in asthmatics, or those suffering from Graves' disease or the lymphatic constitution, except in developed diphtheria. The use of bactericidal sera of doubtful value should not be encouraged, without careful consideration of all the possible bad effects from anaphylaxis. If a second dose of serum must be given during the few weeks following a primary injection, small repeated doses are preferable to a large single dose. On the other hand, one large initial dose is probably less harmful and far more effective than several small doses given over several days.

61. **Uterovaginal Fistula.**—Jonas summarizes the deductions from his paper as follows: 1. Leergehen (empty contraction) of the ureter is an important point for differential diagnosis between a lateral opening and complete interruption of the continuity of the ureter in uterovaginal fistula. 2. Operative interference in uterovaginal fistula, when there is only a lateral opening in the ureteral wall, is not advisable until there has been a chance for spontaneous healing.

#### Illinois Medical Journal, Springfield.

July.

- 64 \*The Medical Profession and the Public. W. L. Baum, Chicago.
- 65 Self-Administration of Drugs: Or Does it Pay to Have a Doctor? C. L. Mix, Chicago.
- 66 \*Importance of Early Diagnosis and Prompt Surgical Treatment of Injuries to Diaphragm. J. Y. Brown, St. Louis.
- 67 \*Treatment of Joint Tuberculosis. E. H. Ochsner, Chicago.
- 68 \*Treatment of Tuberculous Sinuses, Fistulous Tracts and Abscess Cavities. E. G. Beck, Chicago.
- 69 Treatment of Gallstone Diseases. T. C. Kennedy, Shelbyville, Ind.
- 70 \*Vertebral Auscultation in the Diagnosis of Bronchial Adenopathy. E. A. Gray, Chicago.
- 71 \*Skimmed Milk as a Temporary Food for Infants. H. W. Cheney, Chicago.
- 72 The Nostrum and Proprietary Medicine Problem from the Standpoint of a Country Doctor. H. A. Pattison, Beul, Ill.

64, 66 and 68. Abstracted in *THE JOURNAL*, June 13, 1908, pp. 2016 and 2017.

67. Abstracted in *THE JOURNAL*, June 27, 1908, p. 2152.

70. **Vertebral Auscultation.**—Gray describes the normal auscultatory phenomena of the postcervical and upper dorsal regions. Not all normal individuals, however, present the same resonant characteristics; even as voices are different, so are the tracheal and bronchial notes as regards intensity. Departures from the normal are: (1) bronchophony, (2) whisper-concomitant, (3) extension downward of tracheal resonance, (4) cessation of vocal resonance at the level of the sixth or seventh cervical vertebra, (5) distant tone at some point between the occiput and the fourth dorsal vertebra. He discusses each of these departures, and says that as to the value of vertebral auscultation in adults more reliance will, of right, be placed on the usual methods of diagnosis, physical and laboratory. But in children, in whom the glands are so often primarily affected, it is obvious that any diagnostic which promises us the opportunity to discover deep-seated adenopathy must be of prime importance. Long before the frank signs of open, or so-called incipient, tuberculosis present themselves begins the period of latency, for which read tuberculous glands.



71. **Skimmed Milk.**—Cheney draws the following conclusions in his paper and urges a trial of the principles involved, even though they seem at first sight contrary to experience: 1. The theory that the proteids of cow's milk cause the principal difficulty in its digestion by infants, in the light of recent research and clinical investigation, is untenable and should no longer be taught. 2. Skimmed milk is a valuable temporary food in digestive disturbances of infants, is nutritious and easily digested.

#### American Medicine, New York.

July.

- 73 Health Department Methods for Supervision of the Milk Supply. W. C. Woodward, Washington, D. C.
- 74 The Autointoxications. E. E. Smith, New York.
- 75 \*Hypertonia Vasorum Cerebri. W. F. Dutton, Pittsburg, Pa.
- 76 The Submerged Tonsil with Special Reference to Cervical Adenitis and Systemic Infections. L. M. Hurd, New York.
- 77 Sunlight and Solar Therapy in Relation to Tuberculosis. S. A. Knopf, New York.
- 78 Case of Gangrene of the Fingers. J. A. Cutter, New York, and H. G. McDonald, Hackensack, N. J.
- 79 Diagnosis of Tuberculosis by von Pirquet's Cutaneous Reaction. F. L. Christian, Elmira, N. Y.
- 80. Recent Literature on Dermatology and Syphilis. F. C. Knowles, Philadelphia.

75. **Hypertonia Vasorum Cerebri.**—Dutton discusses the pathologic conditions ascribed to hypertension of the cerebral vessels, their etiology, pathology, symptoms, diagnosis, prognosis and treatment. The factors in essential hypertension are (a) arteriosclerosis, (b) renal disease, (c) angiosclerosis. He discusses these in detail. He illustrates his modification of the Riva Rocci instrument for estimating blood pressure of the cerebral vessels, and points out that the eye frequently presents the first proof of hypertension therein, so that the ophthalmoscope should be constantly in mind. The treatment consists of dieting, restriction of liquids, avoidance of tea, coffee, alcoholics and tobacco, enforcement of complete mental and physical rest, massage, tepid baths in a warm room, the Schott method, electricity and vibration. As regards drugs, Dutton begins with 2 grains (0.13 gm.) of calomel at bedtime, with a saline aperient before breakfast, repeated daily for a week; then he gives potassium iodid, 3 grains (0.20 gm.) three times a day and gradually increases the dose to physiologic effect, and then reduces it to 5 grains (0.32 gm.), with 3 drops of Fowler's solution, three times a day after meals. Potassium being irritant should not be too long continued. Other remedies are nitroglycerin, aconite in four-drop doses, sodium nitrate, the theobromin and caffein group of diuretics, digitalis, squills, potassium citrate, apocynum and jalap as indicated. Dutton advises all subjects of hypertonia to carry 3-drop perles of amyl nitrite.

#### Journal of Cutaneous Diseases, New York.

July.

- 81 \*Dermolysis—An Undescribed Dissolution of the Skin. C. J. White.
- 82 Ichthyosis or Acanthosis—Which? W. W. Roblee, Riverside, Cal.
- 83 Case of Acne Agminata. W. B. Trimble, New York.

81. **Dermolysis.**—White proposes this name for a condition of the skin found in a Russian baker, who during his apprenticeship had to sleep in a low-ceiled room on top of the heated brick and mortar oven. The process was limited to the elbows and the suprapatellar regions of the thighs. The lesions varied from 3 to 10 mm., were cherry colored, round and dome-shaped, firm, rather tense and freely movable in the skin. White discusses the possible diagnoses, but all were discarded after full discussion at the Boston Dermatological Society. A nodule was excised and examined by Mallory's hematoxylin-phosphotungstic acid method (8 sections), hematoxylin-eosin (32 sections), eosin-alkaline methylene blue (8 sections), and acid orcein (7 sections). Clinically were found pea-sized, dome-shaped, cherry-colored papules, which apparently evolved into hitherto undescribed, flattened, muddy-white lesions, isolated or grouped around a relatively depressed, bluish-red, velvety center. These features were of long standing, developed originally on non-exposed areas of a boy's skin and had remained unassociated with all subjective symptoms. Histologically there were noted conspicuous epidermal changes: endarteritis; perivascular, perifollicular, and periglandular lymphocytic infiltration; basophilic collagen; collastin; general diminution of collagen and elastin, and, lastly, gradual disappearance of

all these structures focally. In conclusion, he says: As histologically in colloid degeneration and often in senile skin we find basophilic collagen, collastin and a relative persistence of the cellular elements, etiologically the result of long-continued exposure to the action of light, heat and possibly cold, so here we find the same chemical microscopic changes due perhaps to the subjection of the skin, during the boy's apprenticeship, to the extraordinary and intimate exposure to heat while sleeping night after night on a glowing oven, and, in later years to the possible further action of heat plus light in the recurring blasts from the open doors of the hot baker's ovens. And furthermore, as we note endarteritis in chronic x-ray dermatitis, so here we find a similar pathologic change in a skin exposed by habit to intense light and heat.

#### Maryland Medical Journal, Baltimore.

June.

- 84 Growth of Our Knowledge of Infectious Diseases. J. H. M. Knox, Baltimore.
- July.
- 85 Social Prophylaxis. Results Accomplished—The Outlook for the Future. P. A. Morrow, New York.
- 86 Epithelial Tumors of the Skin and Exposed Mucous Membranes. A. McGlannan, Baltimore.
- 87 \*Physicians and Public Affairs. C. O'Donovan, Baltimore.

87. Abstracted in THE JOURNAL, May 16, 1908, p. 1633.

#### Journal of the Arkansas Medical Society, Little Rock.

June 15.

- 88 \*Some Fallacious Notions Concerning Medical Organization. C. C. Stephenson, Little Rock.
- 89 \*Getting Practice. Henry Thibault, Little Rock.
- 90 \*Public Health, Education and Legislation. J. P. Sheppard, Little Rock.
- 91 \*Some Problems of Childhood. H. P. Routh, Hackett, Ark.
- 92 \*Sexual Hygiene. C. P. Meriwether, Little Rock.
- 93 \*The Arkansas Surgeon. A. G. Dickson, Paragonid.

88 to 93. Abstracted in THE JOURNAL, July 18, 1908, pp. 248-250.

#### The Journal of the Kansas Medical Society, Kansas City.

June.

- 94 \*Kansas City Medical Society, Its Mission, Its Needs, and Its Purposes. J. E. Sawtell, Kansas City.
- 95 Colitis. Possible Anatomic Causes; Surgical Treatment; Report of Case. H. L. Snyder, Winfield, Kan.
- 96 \*The Physician's Relation to Mental Healing Systems and Methods. S. S. Hilscher, Iola, Kan.

94. Abstracted in THE JOURNAL, May 30, 1908, p. 1828.

96. Abstracted in THE JOURNAL, May 30, 1908, p. 1823.

#### FOREIGN.

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

#### Lancet, London.

July 25.

- 1 The Psychology of Success. T. C. Shaw.
- 2 \*Inborn Errors of Metabolism. A. E. Garrod.
- 3 \*Importance and Significance of Chemical Examination of Gastric Contents After a Test Meal; with New Method for Estimating the Ferment Activity of the Gastric Contents. W. H. Willcox.
- 4 \*Motor Functions of the Stomach (a) in Normal Cases, (b) after Gastroenterostomy, as Demonstrated by X-Rays. H. M. Gray.
- 5 Intermittent Claudication, or Intermittent Limping, and Obstructive Arteritis, with Illustrative Cases. B. Bramwell.
- 6 Successful Removal of a Stone Weighing Two Pounds. O. Richards.
- 7 Diagnosis of Diseases of the Stomach and Intestines by X-Rays. C. J. Morton.
- 8 Ascites and Tumors of the Ovary. E. Emrys-Roberts.
- 9 The Individual Plasma. R. Fick.
- 10 Latah and Crime. W. Fletcher.

2. **Metabolism.**—Garrod, in the fourth Croonian Lecture, concludes his consideration of cystinuria, with the statement that we are far from being in a position to formulate a satisfactory theory of it. Before this can be done it will be necessary to accumulate many more data, and, above all, quantitative data, by patient investigation of individual cases. Finally he takes up pentosuria, with regard to which he concludes that the racemic arabinose of pentose urines is derived from some substance formed within the organism, and that glucose is not this parent substance. Neuberg has suggested that d. galactose is the substance, but Garrod considers the subject



and holds that no conclusive evidence is forthcoming to support this view. In pentosuria, also, he holds that much further patient research is necessary before our knowledge of this remarkable anomaly can be placed on a satisfactory footing.

**3. Gastric Contents.**—Willcox deals with the importance and significance of results obtained by a method of chemical examination of the gastric contents after a test meal, and he describes in detail a new method of estimating the ferment activity of the gastric contents. The test meal Willcox prepares is a pint of very weak China tea with a little milk and sugar, and a round of thin buttered toast, the contents of the stomach being drawn off in from an hour to an hour and a half later. He discusses the general appearance of the contents and the result of analysis as regards total acidity, hydrochloric acid, organic acid, mucin, sulphocyanids and ferment activity. Regarding the last he gives a summary of the coagulated egg-albumin test, the carmin fibrin test, Leube's method and Metts' method, and then describes a new method not hitherto published. It is based on the fact that the amount of rennin present in the gastric contents is usually proportionate to that of the pepsin. Gradually increasing quantities of filtered gastric contents are run from a graduated pipette into narrow test tubes ( $\frac{3}{8}$  inch in diameter, 5 in. long) containing 5 c.c. of fresh unboiled milk and heated in a water bath at 40 C. The minimum quantity of gastric contents to cause complete clotting, so that the contents of the test tube do not flow out on inversion, gives an accurate measure of the rennin activity. The author illustrates the method. The conditions in which he has used the investigation of the gastric contents in diagnosis are as follows: 1. Gastric ulcer and hyperchlorhydria; 2, gastric carcinoma; 3, mucous colitis; 4, stomach normal; 5, chronic gastritis; 6, gastric ulcer before and after gastroenterostomy, and in children; 7, congenital pyloric stenosis; 8, pyloric spasm (acid dyspepsia); 9, marasmus.

**4. Motor Functions of Stomach.**—This is a supplementary paper to Gray's paper in the *Lancet*, Feb. 22, 1908 (abstracted in THE JOURNAL, March 21, p. 996) for the purpose of illustrating the principles there laid down. He submits 14 radiographs demonstrating the points involved, and concludes: 1. The stomach is, naturally, not of the usually accepted shape. 2. It is an organ of two compartments, cardiac and pyloric, the division between these being a physiologic sphincter. 3. These two compartments act in great part independently. 4. During digestion the cardiac portion maintains to a great extent its saccular form, its distal part only being affected by visible peristalsis, while the pyloric portion is tubular and affected by strong peristaltic waves along its whole extent. 5. In order to maintain or to restore physiologic conditions so far as possible, the stoma in the operation of gastroenterostomy should be made in the pyloric tube. 6. He is inclined very strongly to doubt that food prefers to pass through the pylorus rather than through the lateral stoma some time after gastroenterostomy has been done in cases in which there is no actual obstruction of the pylorus.

British Medical Journal, London.

July 25.

- 11 \*Coxa Valga. A. H. Tubby.
- 12 Removal of Lymph Glands. R. Parker.
- 13 \*Action of Chloroform Administered by Different Channels. D. N. Paton and Dorothy E. Lindsay.
- 14 Administration of Ether by the Open Method. G. H. Colt.
- 15 \*Rectal Drainage in Pelvic Abscess Due to Appendicitis. B. Pollard.
- 16 \*Method of Treating Fracture of the Femur in the Newly Born. J. Edmondson.
- 17 \*Case of Aphasia During Whooping Cough. J. S. Sewell.

**11. Coxa Valga.**—Tubby defines the various terms used in connection with this condition and gives diagrammatic illustrations. He then considers the condition in its congenital and acquired forms, with illustrative cases. He says that, arguing from the analogy of coxa vara, in which the deformity is readily remedied by the removal of a wedge of bone with its base outward in the subtrochanteric region, it ought to be the right thing in coxa valga to remove a wedge with its

base inward. This, however, may be a troublesome proceeding, on account of the immediate proximity of the vessels, particularly the internal circumflex and superior perforating arteries. Galeazzi has obtained good results in his cases by performing a linear osteotomy well outside the joint and at the base of the neck. He is convinced that in all anomalies of direction of the neck the proper site of operation is here, and not in the subtrochanteric region. He has further pointed out that if the section is made at the spot indicated the pull of the great muscular masses, whose tendons are inserted into the great trochanter, is to drag the shaft of the femur upward and lessen the angle of inclination. Afterward he applies sufficient traction to the leg to prevent a great displacement of the fragments without limiting the gradual ascent of the trochanter. By means of x-ray photographs he follows, step by step, this upward movement of the trochanter and stops it at the proper moment by means of a firm plaster-of-Paris spica. According to his figures, his treatment is successful. He points out that Nathaniel Allison divided the bone just below the trochanter, and remedied the external rotation and abduction and caused the angle of inclination to be diminished. Tubby gives the preference to Galeazzi's method, provided that the ascent of the trochanter is carefully watched and arrested at the right moment.

**13. Chloroform Administration.**—Paton and Lindsay refer to late poisoning by chloroform and endeavor to throw light on the etiology of the condition by a study of the changes produced in the protein metabolism of the body, with special reference to any interference with hepatic metabolism. Such an interference is indicated by disturbances in the distribution of the waste nitrogen excreted in the urine, and chiefly by a decreased conversion of ammonia into urea; hence the proportions of these two constituents have been more especially studied, although in the later experiments the nitrogen in uric acid and in creatinin also has been determined, as well as the sulphur in the oxidized and in the non-oxidized condition. The authors detail the results of their experiments on dogs, with the administration of chloroform by inhalation, by the stomach and by the hypodermic route, and discuss its assimilation and elimination by the blood. The rarity of late chloroform poisoning, they say, seems to be due to its rapid elimination and the absence of fixation in liver tissue.

**15. Pelvic Abscess Due to Appendicitis.**—Pollard asserts that in dealing with a well-localized appendix abscess in any situation it is, in his opinion, unwise to do more than is absolutely necessary for the efficient evacuation and drainage of the abscess. In these cases the appendix should not be removed at the time the abscess is drained, for its complete removal involves the breaking down of limiting adhesions and the risk of peritoneal infection. Holding this view, he is very averse to removal of the appendix in the original operation for pelvic abscess when this is done through an abdominal incision, and so he is not deterred from using the rectal route on account of the impossibility of removing the appendix through it.

**16. Fracture of Femur in New-born Infants.**—Edmondson has had two such patients whom he treated successfully as follows: The thigh was flexed on the abdomen with the knee extended, the foot naturally coming to the opposite side of the body. The triangular interval between the front of the leg and the abdomen and thorax was firmly packed with lint folded into a suitable shape. A narrow binder was then passed round the child's body and round the back of the leg extending from a little above the knee to the ankle, leaving the seat of fracture and the foot uncovered. This was readjusted occasionally when required, and at the end of three weeks removed altogether; perfect union had occurred.

**17. Aphasia During Whooping Cough.**—Sewell reports the case of a boy, 6 years old, who was previously able to talk well, in whom complete aphasia occurred during an attack of whooping cough with bronchopneumonia and lasted five weeks. Then the child began to make inarticulate noises, and six months later the aphasia and the accompanying right-sided paresis had entirely disappeared.



## Medical Press and Circular, London.

July 22.

- 18 \*Intestinal Intoxications. W. L. Brown.  
19 Diet in Infancy and Childhood. J. S. Wallace.  
20 Administrative Control of Anthrax. F. W. Eurich.  
21 \*Case of Pneumonia Treated by Continuous Inhalation of Oxygen. G. Stoker.

18. Intestinal Intoxications.—Langdon Brown says that gastrointestinal intoxication may conceivably occur from: 1, Inorganic poisons, e. g., lead; 2, organic poisons, e. g., cyanids; 3, intermediate products of digestion, e. g., peptones, purins; 4, products of putrefaction, e. g., indol; 5, products of abnormal pathogenic bacteria present in the intestine. The first two are irrelevant to his paper. He discusses the remaining three individually and at length, and draws the following conclusions:

1. There is no satisfactory proof of intoxication by the ordinary disintegration products of digestion.
2. Putrefactive processes mainly affect the aromatic, i. e., benzin groups of the protein molecule; there is no evidence that these can lead to symptoms of intoxication. Occasionally the sulphur in the protein molecule appears to be able to cause chemical changes in the hemoglobin, with resulting cyanosis. But as sulphur must always be set free in the putrefactive changes ordinarily occurring, we shall probably find that here, too, some abnormal bacterial agent is at work.
3. Careful examination has failed to reveal the presence of ptomaines as the cause of any of these chronic intoxications.
4. It is clear that it is often difficult, if not impossible, to draw a hard and fast line between an infection and an intoxication in these cases. Hamilton's researches provide us with an explanation. The microbe may sometimes be able to establish itself in the blood stream, thereby producing an infection, while sometimes it is rapidly destroyed by the blood, but has been able, nevertheless, to disseminate its soluble toxins in sufficient quantity to produce definite symptoms.

Brown believes that we shall ultimately be able to refer all the real intestinal intoxications to the presence of actively pathogenic bacteria among the ordinary saprophytes of the intestine. He summarizes the points of treatment in a case of proved intestinal intoxication as follows: 1. A simple diet in which milk (reinforced with lactic acid if desirable) plays a large part. 2. Ordinary regulation of the bowels, without any drastic purgation. 3. Use of naphthalen tetrachlorid as an intestinal antiseptic. 4. Attention to septic conditions of the mouth. 5. Identification of the microbe responsible and preparation of the appropriate vaccine.

21. Oxygen in Pneumonia.—Stoker discusses the inhalation of oxygen in pneumonia and insists that to obtain the best results from the continuous inhalation of oxygen in pneumonia, etc., it is necessary to begin as soon as the disease has declared itself. The inhalation should be continuous, night and day, and carried out according to the method described by him. It should be continued as long as any symptoms remain. It is useless and worse than useless to wait until the patient is cyanosed and moribund before administering oxygen. Though it may give some temporary relief, it is then too late to save life.

## Clinical Journal, London.

July 22.

- 22 Case of Hemophilia. D'A. Power.  
23 Acute Abdominal Lesions of Pelvic Origin. T. G. Stevens.  
24 Enchondroma in the Tendon Sheath of the Finger. R. R. Walker.

## Journal of Tropical Medicine and Hygiene, London.

July 15.

- 25 \*Flies as Carriers of Contagion in Yaws. A. Robertson.  
26 \*Health in Tropical Countries. J. F. Toomer.  
27 Climate and Diseases of Brazil. A. Peixoto.

25. Flies and Yaws.—Robertson reports an experiment from which he concludes that the house fly can carry the virus of yaws on its limbs and inoculate it into any abraded surface in a non-immune, and that by washing the bodies of yaws patients twice daily with warm water and smearing the papules with mercurial ointment the fly can be prevented from carrying infection. Experience at the Jarawa Central Hospital, where not a single case has occurred for three years, although it is only 50 yards distant from the yaws compound, proves this.

26. Health in Tropics.—Toomer gives a series of simple health rules and quotes some of the sanitary regulations in the Canal Zone.

## Annales de Dermatologie et de Syphiligraphie, Paris.

June, IX, No. 6, pp. 321-384.

- 28 Frequency of the Microsporum Caninum or Lanosum in Man and in the Dog. (Fréquence du microsporum caninum ou lanosum chez le chien et chez l'homme.) R. Sabouraud, A. Suis and F. Suffran.

## Annales de Gynécologie et d'Obstétrique, Paris.

July, XXXV, pp. 386-448.

- 29 \*Extrauterine Pregnancy with Healthy Child at Term. (Grossesse extra-utérine à terme.) Potocki.  
30 \*Pregnancy and Childbirth with Congenital Mitral Stenosis. (Grossesse et accouchement dans les rétrécissements congénitaux de la valvule mitrale.) Audebert and H. Dupont.  
31 Obliteration of the Tube after Resection. (Oblitération de la trompe après résection.) I. Ronsse.

29. Tubal Pregnancy at Term.—Potocki delivered a healthy child in an extrauterine pregnancy without much loss of blood by double clamping the utero-ovarian artery and the uterine artery at its termination in the cornu of the uterus. The child has developed normally and is now 3 years old. The false labor was characterized by intermittent pains coinciding with contractions of the uterus, which relaxed afterward as in normal labor. The large tumor, however, containing the fetus did not change its consistency, only the uterus in front of the tumor. It is evident that the uterus begins to contract when the ovum is ripe for expulsion, whether it is inside or outside the uterus. The fetal heart-sounds were inaudible, but active movements were evident. The cyst should always be opened at the farther end from the placenta, and this can be determined by the maternal souffle. The vessels of the placenta in tuboabdominal pregnancy at term receive blood only from the vessels of the tube. In more than a hundred cases of ectopic pregnancy he has never encountered a case in which the placenta was not located on the tube, and hemostasis by the technic described is bound to be successful.

30. Pregnancy in Congenital Mitral Stenosis.—Audebert and Dupont report the cases of 5 women who have passed through a total of 13 pregnancies, including 10 at term, and without mishap, notwithstanding congenital mitral stenosis. They review 10 other cases from the literature, with a total of 43 pregnancies, 38 at term. Only one of the 15 women died, and the fetal mortality was only 7.5 per cent. Their experiences demonstrate anew that congenital lesions of the mitral valve do not have the grave prognosis in respect to pregnancy which accompanies acquired mitral defects. They consent to the marriage of patients with congenital mitral stenosis, and advise the women to nurse their infants, believing that the valvular trouble is merely the result of arrested development, which age and the power of adaptation to function will finally compensate in most cases and sometimes entirely correct.

## Annales de l'Institut Pasteur, Paris.

June, XXII, No. 6, pp. 465-560.

- 32 Anaphylaxis and Toxogenins. C. Richet.  
33 Mechanism of Anaphylaxis in Respect to Horse Serum. Besredka.  
34 Problem of Etiology of Cancer. Borrel.  
35 Microscopic Diagnosis of Human Trypanosomiasis. G. Martin and Leboeuf.  
36 Biology of Bacillus of Epizootic Abortion. (Bacille de Bang et sa biologie.) J. Nowak.

## Annales de Médecine et Chirurgie Infantiles, Paris.

July 15, XII, No. 14, pp. 469-504.

- 37 Retention of Urine in Typhoid Fever in Children. E. Gauthoux and V. Ros.  
38 Caustic Stenosis of Esophagus Cured by Esophagoscope. Guisez.

## Bulletin de l'Académie de Médecine, Paris.

July 7, LXXII, No. 27, pp. 1-47.

- 39 "Enamel Pearls." (Perles d'émail.) L. Malassez and Galippe.  
40 \*Causes of Decline of Mortality from Tuberculosis in Berlin. London, New York, Vienna and Paris in Last Twenty Years. Armaingaud.

July 15, No. 28, pp. 49-75.

- 41 Frequency of Tuberculosis in Employés of Sugar Refineries. (Raffineurs et tuberculose.) S. Bernheim, Dieupart and Netter.  
42 \*Toxic Origin of Arteriosclerosis. (Causes, la nature et le traitement de l'artério-sclérose.) H. Huchard.

40. Causes of Declining Tuberculosis Death Rate.—Armaingaud's long statistical study concludes by ascribing to the progress of private and public hygiene the declining tuberculo-



is mortality, but he adds that the reduction is much less in Paris than in the other cities investigated. The Academy adopted a resolution calling the attention of the authorities to this fact and urging them to send a commission to study conditions in other large cities and to suggest measures for improvement at Paris—the commission to include members of parliament and of the Academy, of the National Board of Public Health and of the permanent Antituberculosis Commission.

**42. Arteriosclerosis.**—Huchard deprecates the practice of defining a disease by the anatomic findings rather than by the clinical course. This applies especially to arteriosclerosis, the clinical course of which is dominated by toxic symptoms causing fluctuation in the arterial tension, whence the absolute necessity for treatment addressed to the kidneys and other means of getting rid of the toxins. He remarks that there are many contradictory statements in regard to this disease, but few contradictory facts: Scientific Truth is the daughter of Time, he quotes. In looking over 15,000 cases of arteriosclerosis in his practice, he has analyzed the data in 1,835 and found a history of gout in 323, of rheumatism in 332, of syphilis in 209, of abuse of tobacco in 181, of infectious diseases in 67, of diabetes in 48, of alcohol in 27, of malaria in 14, the menopause in 12, and moral and nervous causes in 19. In 555 cases he was unable to discover any special cause for toxic action. He remarks that the dyspnea with angina pectoris is due to the kidneys, the angina being the work of the coronaries, while the dyspnea comes from the kidneys, and can be promptly arrested by an exclusive milk diet.

Presse Médicale, Paris.

July 11, XVI, No. 56, pp. 441-448.

**43 \*Overdistention and Overwork of Stomach when Food is Eaten too Rapidly.** (Surdistention et surtravail gastriques d'origine tachyphagique.) L. Jacquet and Debat.

July 15, No. 57, pp. 449-456.

**44 \*Thyroid Rheumatism.** (Rhumatisme chronique, progressif et déformant, par insuffisance thyroïdienne.) E. Sergent and P. Ménard.

**45 Light-Colored Liver Cells.** (Etat clair des cellules hépatiques.) L. Bernard and L. Laederich.

**43. The Evil Harvest of Tachyphagia.**—Jacquet and Debat say that the pathologic harvest from rapid eating is much larger than is generally realized. Every one has a vague idea that it is injurious to eat too rapidly, but tables and skiagrams are given here which show the direct evil results from it, and the indirect injury from sympathetic reflexes. Their skiagrams show that a meal eaten in forty-five minutes causes a natural distention of the stomach, but the organ rapidly recedes to its normal size. When a similar meal, with the same amount, weight and composition of the food, is eaten in from twelve to fifteen minutes, it causes greater distention, and this distention persists to some extent. It is still pronounced at the end of five hours. The stomach tries to make up for the lacking fine division of the food from inadequate mastication, and in order to do this the stomach functions are overexerted, the local temperature and the blood pressure rise, the entire functional strain on the organ being abnormally high. The stomach in trying to do the work that should have been done in the mouth does it very inefficiently and at tremendous sacrifice. Recent test-tube research confirms the assumption that fine division of the food is by far the most important factor in its digestion; the chemical composition, etc., being comparatively subordinate. This overexertion imposed on the stomach three times a day is the indirect cause, by reflex action, they say, of a notable part of the ills to which flesh is heir. They use the term "tachyphagia" and "bradyphagia" to designate habitual fast or slow eating. The former is pathogenic in many hitherto unsuspected directions, and its suppression, they find, has a preventive and curative action in unsuspected ways.

**44. Deforming Rheumatism from Thyroid Insufficiency.**—Sergent and Ménard describe a form of chronic, progressive and deforming rheumatism which seems to be the effect of defective or perverted functioning of the thyroid. It is evidently a primary affection, most frequent in women, especially

in those who have had numerous pregnancies or dysmenorrhea. There is frequently a history of acute articular rheumatism. Vincent has lately pointed out the involvement of the thyroid during acute articular rheumatism, with tumefaction of one or both lobes and tenderness of the gland. He calls this the "thyroid sign," stating that it is the result of exaggerated functioning of the gland, and that it is observed, although to a less extent, in most infectious diseases. It is absent in the very mild and in the very severe cases. In acute articular rheumatism, when the thyroid sign is absent, the disease usually is extremely protracted. In this case thyroid treatment shortens the course of the disease. The thyroid sign is generally transient, but it may persist and increase and terminate in exophthalmic goiter. They have recently reported some cases of this sequence. A thyroid origin for deforming rheumatism is suggested by concomitant symptoms suggesting a tendency to myxedema, such as desquamation, hypertrophy of the nails, scleroderma and psoriasis, edematous infiltration of the tissues, somnolency and headache, and exacerbation of these symptoms with the joint attacks. The most characteristic feature of the trouble is that it is benefited by thyroid treatment. Deforming rheumatism is generally rebellious to medication, and the improvement under thyroid treatment confirms the theory of thyroid origin. They advise a trial of thyroid treatment in every case of this disease, suspending it at the least symptom of intolerance, examining the urine every two or three weeks, and noting the quantity every day and the blood pressure and pulse every second day, and taking the weight every week. Thyroid treatment is contraindicated in active tuberculosis and in heart disease. If the pulse reaches 100, the blood pressure drops to 14, the amount of urine surpasses two liters, and the nitrogen proportion falls below 80 per cent., it is best to suspend the thyroid treatment for a few days. Iodin may also prove effectual. Among the cases reported is that of a woman of 28 given Roentgen treatment for excessive growth of hair on chin and neck. Under the influence of this treatment, chronic deforming rheumatism developed and signs of a tendency to myxedema. Suspension of the treatment and administration of thyroid extract restored conditions to normal. Rheumatism from thyroid insufficiency has a slow and progressive evolution, subject to remissions or even spontaneous retrogression. In one case all the symptoms vanished as exophthalmic goiter developed.

Semaine Médicale, Paris.

July 15, XXVIII, No. 29, pp. 337-348.

**46 Anemia from Deficient Production of Blood.** (Les anémies par anhématopoïèse.) C. Aubertin.

July 22, No. 30, pp. 349-360.

**47 The Lipoids in Hemolysis.** L. Ambard.

Archiv für klinische Chirurgie, Berlin.

LXXXVI, No. 3, 575-587. Last indexed July 25, p. 355.

**48 \*Gastroduodenoscopy and Diaphanoscopy.** T. Rovsing.

**49 Hirsch Technik for Weight-bearing Stumps.** (Erzielung tragfähiger Amputationsstümpfe durch Nachbehandlung nach H. Hirsch im japanisch-russischen Kriege 1904/05.) V. Hashimoto and M. Saito.

**50 \*Pathogenesis of Cholelithiasis.** A. Exner and H. Heyrovsky.

**51 \*Operation for Cleft Palate by Suturing over Plates.** (Operation der Gaumenspalte mittelst Plattennaht.) A. Winternitz.

**52 \*Lightning Treatment of Cancer.** (Blitzbehandlung der Krebse.) V. Czerny.

**53 \*Endemic Deforming Osteoarthritis in Eastern Siberia.** E. Beck.

**54 \*Operative Treatment of Embolism of Pulmonary Artery.** F. Trendelenburg.

**55 \*Stretching the Prostate.** (Prostatadehnung.) C. Bayer.

**56 \*Ganglioneuroma.** H. Braun.

**57 Case of Aleukemic Lymphadenia of Endotheliomatous Nature.**

G. Parlaviccio.

**58 \*Permanent Cure of Mammary Cancer.** (Dauerheilung des Brustkrebses.) Steinthal.

**59 \*Injury of Nerves During Extirpation of Glands in the Neck.** (Nervenläsionen bei Drüsenexstirpation am Halse.) M. Westergaard.

**60 \*Cauterizing Gastroenterostomy.** Crédé.

**61 Operative Treatment of Fractures and their Consequences.** (Operative Behandlung der Knochenbrüche.) S. Peltessohn.

**48. Improved Direct Visual Inspection of the Stomach.**—Rovsing applies the gastroscope and diaphanoscopy when the stomach has been exposed by a laparotomy. He uses a gastroscope like a very large cystoscope, with a passage for blowing in air, of which he gives an illustration. He reviews the find-



ings in 24 cases, especially comparing the diagnosis before the operation, the diagnosis after external inspection and palpation of the stomach after it has been exposed, and, finally, the diagnosis after diaphanoscopy and again after the gastroscope has been introduced through a buttonhole into the stomach. The first stage in the investigation is the diaphanoscopy: the gastroscope is introduced through a buttonhole in the stomach wall, which is then sutured airtight around it, and the stomach is inflated with air blown in through the gastroscope. He describes and illustrates the characteristic findings, which are instructive. This procedure shows conditions much better than direct visual inspection. It reveals the source of a hemorrhage which otherwise might escape detection, as he shows by several examples. With care there is no danger of infection, he declares, while for differentiating purposes this technic is unsurpassed.

50. **Pathogeny of Cholelithiasis.**—Exner and Heyrovsky report research from Hochenegg's clinic which demonstrates that bacteria have a decomposing action on the bile salts with precipitation of cholesterol. This is the nucleus for the gallstone.

51. **Plates for Suture of Cleft Palate.**—Winternitz gives an illustrated description of the method of closing cleft palate by taking the sutures over silver or aluminum oval plates, 1 cm. long by 4 mm. wide. As children are more inclined to catarrh in the winter, he always performs this palate operation in the summer, and has the teeth carefully attended to beforehand.

52. **Lightning Treatment of Cancer.**—Czerny's article was presented at the German Surgical Congress in April, and relates his experiences with the Keating-Hart method of fulguration or lightning treatment of cancer. He thinks it has opened a new field for treatment not only of cancer, but also of lupus, tuberculous ulcers and possibly also of goiter, enlarged prostate and hemorrhoids, besides nevi, etc. He regards it as a powerful, easily regulated means for destroying cancer tissue, able to cure in so far as the malignant disease is accessible to the knife, the eurette and fulguration. Unfortunately, the destruction of the cancer cells is not so complete that it devitalizes them entirely. Mouse cancers, although apparently destroyed by the fulguration, yet retain their vitality enough for transplantation, unless the fulguration was carried to the point of complete desiccation—this shows the limits of the treatment.

53. **Endemic Deforming Osteoarthritis.**—Beck describes an affection of the bones and joints which he encountered in from 6 to 46 per cent. of the inhabitants of the villages in the Transbaikal district in Siberia. He found 1,009 persons in 11 villages, with a total population of 3,153. Children between 8 and 13 were principally affected, and he believes that the drinking water is responsible for the affection which is increasing in frequency.

54. **Operative Treatment of Embolism of the Pulmonary Artery.**—Trendelenburg describes his theoretical premises and his technic for the operation which he has successfully applied in the clinic.

55. **Stretching of the Prostate.**—Bayer has been applying to the prostate the principles of Récamier's method of stretching the sphincter in cases of painful spasmodic contraction. He describes a little instrument he has devised for the purpose, a curved metal catheter something like a lithotripter, with the difference that the halves of the beak spread apart as the thumb screws turn. The prostate bears this stretching without harm, and no anesthetic is required. In the four cases reported the ideal restoration of the bladder functioning shows that the dilatation of the contracted prostatic part had a large share in the success. He advises this dilatation after failure of other measures in chronic prostatitis and enlargement of the prostate, with retention and tenesmus without threatening complications. His method of sagittal dilatation cures the kinking of the posterior wall of the neck of the bladder.

56. **Ganglioneuroma.**—Braun reviews the literature on the subject of these tumors—a total of 26 cases—and reports a

case from his own experience, with successful extirpation. He thinks that it is the first case on record in which the abdominal aorta was successfully sutured with a circular suture.

58. **Permanent Cure of Mammary Cancer.**—Steintal states that 44 patients have been permanently cured out of 142 on whom he operated for mammary cancer from 16 to 3 years ago. He tabulates this material under various headings. The size of the tumor does not affect the outcome decisively, but he mentions that in none of the permanently cured patients had the tumor grown to the skin and tissues below. A family tendency was apparently evident, and in these cases the cancer seemed to be especially malignant. Good results can be counted on only in those cases with slow growth in which the tumor is no larger than a plum, and is still confined to the gland.

59. See abstract in THE JOURNAL, April 18, 1908, page 1315.

60. **Cauterizing Gastroenterostomy.**—Credé gives an illustrated description of a method of gastroenterostomy which he has applied in 8 cases. He believes its simplicity and harmlessness commend it, especially in cases of incipient carcinoma of the pylorus. Just before tying the suture, the actual cautery is applied to the stomach wall, cauterizing through to the mucosa without opening the latter. The intestine is treated in the same way, and the two defects thus made are coaptated. The great advantage of this method is that neither the stomach nor the intestine is actually opened. The suture is simple and stout, and the scared tissues grow together firmly over a comparatively large area. He claims also that the technic is simple and requires less time than others, while it excludes all danger of the vicious circle, etc.

#### Berliner klinische Wochenschrift.

July 20, XLIV, No. 29, pp. 1345-1388.

- 62 Postscarlatinal Gangrene of the Skin. (Hautgangrän bei Scharlachrheumatoid.) Heubner.
- 63 Antitryptic Power of Human Blood Serum, Especially in Cancer Patients. (Antitryptische Kraft des menschlichen Blutes.) L. Brieger and J. Trebing.
- 64 Diagnostic Puncture of Brain. (Hirnpunktion.) F. Krause.
- 65 \*Scopolamin-Morphin Anesthesia. (Morphium-Scopolamin-Narkose.) B. Korff.
- 66 Roentgen Treatment of Oily Seborrhea. II. E. Schmidt.
- 67 Discovery of Typhoid Bacilli in Cerebrospinal Fluid in Typhoid. (Aufindung der Eberth-Gaffky'schen Bacillen in der Cerebrospinalflüssigkeit bei Typhus abdominalis.) L. Silberberg.
- 68 Preventive Medicine on an Extensive Scale. (Seuchen und Rettungswesen.) S. Alexander.
- 69 Guaiac Test for Blood. (Guajakprobe für Blut.) K. Schroeder. Id. O. Schumm.
- 70 \*Surgical Treatment of Exophthalmic Goiter. (Chirurgische Behandlung der Basedow'schen Krankheit.) A. Hildebrandt.

65. **Scopolamin-Morphin Anesthesia.**—Korff is the father of this technic, and he here discusses its present status. He maintains that this method is peculiarly adapted for the longer and more serious operations, citing in particular Krenner's experience in a hundred cases in which he made two injections, instead of three, completing the operation under chloroform, with no postoperative pneumonia or bronchitis. Korff is convinced that several anesthetics, in small amounts, are less toxic and do less harm than a single one in large doses, as in simple ether or chloroform anesthesia.

70. **Surgical Treatment of Exophthalmic Goiter.**—Hildebrandt discusses the history and ultimate results of surgical treatment of exophthalmic goiter. His figures show that the mortality of the operation is no greater than that of the disease under internal treatment alone. Internists and surgeons must work with courage side by side in this promising field.

#### Correspondenz-Blatt für Schweizer Aerzte, Basle.

July 15, XXXVIII, No. 14, pp. 449-480.

- 71 \*Etiology and Treatment of Vomiting of Pregnancy. (Schwangerschaftserbrechen.) E. Schwarzenbach.
- 72 Gangrenous Appendicitis and Early Operation. T. Kocher. Commenced in No. 13.
- 73 Roentgen Treatment. E. Sommer.

71. **Treatment of Vomiting of Pregnancy.**—Schwarzenbach reports success in the treatment of pernicious vomiting of pregnancy based on the assumption that the supposed pregnancy toxin is eliminated in the stomach, as is the case with morphin. In the morning the fasting stomach must contain



unusually large amounts of the poison, and it must exert its toxic action most intensely when there is nothing in the stomach to dilute or absorb it. Lavage of the stomach on first waking is the ideal, and this can be accomplished by copious drinking. If the ingested fluid is vomited, the stomach is thus prepared for breakfast, part of which the patient can generally retain. In order to stimulate the appetite he suggests dishes outside the ordinary menu, merely avoiding greasy and indigestible articles, but even these may at times be permitted if there is longing for them. More or less of this food is retained, and the vicious circle is broken. The patients are taught never to let the stomach be empty long. Something must be taken every two or three hours, always before sleeping and during the night if the patient wakes spontaneously, and always the first thing in the morning. As in case of seasickness, the horizontal position is favorable, especially in the morning, and everything that works against anemia of the brain, which has such an influence on the tendency to vomit. Reflex action from the stomach may also induce or aggravate the anemia in the brain. After apparently complete cure he has observed recurrence only in a few instances when, for some casual reason, the patient went unusually long without eating. He adds that those who ascribe his success to pure suggestion must at least acknowledge that this method is harmless, simple and cheaper than institutional treatment.

#### Deutsche medizinische Wochenschrift, Berlin.

July 16, XXXIV, No. 29, pp. 1257-1296.

- 74 To Obtain Typhus Toxin with Lecithin, and its Immunizing Action. (Gewinnung von Typhustoxin durch Lecithin.) R. Bassenge
- 75 Specific Treatment of Pulmonary Tuberculosis. Ritter.
- 76 Marmorek's Serum. P. Glaessner. Id. F. Köhler.
- 77 Pancreatic Ferments in Therapeutics. (Trypsin und Amylopsin.) A. Pinkuss.
- 78 \*Experiences with Injuries from Lightning and Electricity. (Verletzungen durch Blitz und Elektrizität.) Pfahl.
- 79 \*Surgical Treatment of Sciatica. (Chirurgische Behandlung der Ischias.) A. Pers.

78. Electric Accidents.—Pfahl has had occasion to examine nine victims of electric accidents. All but three had been struck by lightning. In all the accidents from lightning or from a very powerful electric current, unconsciousness was observed, of longer or shorter duration. Organic injury was evident in every case, and in all the electric accidents there were functional nervous disturbances. In five of the nine victims the eyes were injured; in one case detachment of the retina in one eye followed. He warns of the urgent necessity for examination of the eye by an ophthalmologist as soon as possible after injury from lightning or any form of electricity. The German Imperial Council of Health has issued a guide for first aid in electric accidents, which he recommends, and he cites recent German legal decisions to the effect that accidents from lightning, in the open air or in buildings, affecting a person at his work, are injuries calling for an indemnity if he is insured against industrial accidents, whether the circumstances favor attraction of the lightning or not.

79. Surgical Treatment of Sciatica.—Pers states that he has treated 47 patients with sciatica of from a few months to 45 years' duration, including 13 who had long been bedridden on this account. His treatment is based on the assumption that the trouble is the result of inflammation around the nerve or resulting adhesions. Loosening the inflamed nerve arrests the inflammation, and detaching the adhesions removed the conditions responsible for the pain. In every case—whether the sciatica was of recent or very old development—the patients awoke from the anesthetic entirely freed from their old pains and disturbances. In the 42 cases free from complication, recurrence was observed in 3 instances, but it yielded to a repetition of the neurolysis. He advises this treatment for every case of sciatica rebellious to ordinary measures. He exposes the nerve at its emergence from the sciatic foramen, and runs his finger under the nerve, mobilizing the parts that are found pink, and the adhesions, working from above downward. The nerve must be inspected at once to see if it is pink before the manipulations have induced hyperemia. The benefit can be regarded as constant and permanent—the few recurrences were undoubtedly the result of incomplete release-

ing of adhesions. The inflammation and adhesions may develop anywhere along the course of the nerve, but their most frequent site is at or near its point of emergence.

#### Jahrbuch für Kinderheilkunde, Berlin.

July 4, LXVIII, No. 1, pp. 1-139.

- 80 Behavior of Child's Organism in Response to Foreign Albumin, and its Ability to Produce Antibodies. (Verhalten des jugendlichen Organismus gegen artfremdes Eiweiss.) L. Moll.
- 81 \*Physical Determination of Enlarged Bronchial and Mediastinal Glands. (Physikalischer Nachweis vergrößerter Bronchial- und Mediastinaldrüsen.) M. Nagel.
- 82 \*Rheumatism as After-affection of Chorea. (Rheumatismus als Nachkrankheit der Chorea minor.) E. Ferraris-Wyss.

81. Physical Signs of Enlarged Bronchial and Mediastinal Glands.—Nagel gives an illustrated description of various methods of diagnosing enlarged glands in the chest, based on the literature and considerable clinical and anatomic research. Among the chief signs are the loud tracheal breathing, audible between the first and fourth thoracic vertebrae, and the bronchial breathing sounds over the manubrium; palpation findings, especially tenderness to pressure of the spinous processes and Neisser's sound percussion. The sound is introduced into the esophagus and inflated, with tests of the tenderness of the swollen bronchial glands. Inspection frequently shows distention of the visible veins in the neck and upper chest, from hindrance of the blood stream passing into the superior vena cava or into the innominate artery. Roentgen examination is also useful in diagnosis of this condition, as also percussion of the spine. The latter gave positive findings in 14 out of 26 children with enlarged bronchial glands, the results being confirmed in 7 cases by Roentgen examination. In another group of 50 children with enlarged bronchial glands, percussion of the spine gave positive findings in 16. Injection of paraffin to simulate enlarged bronchial glands in a cadaver gave exactly similar findings. Dulness over the fifth, sixth and seventh vertebrae may be produced by tumors as well as by enlarged glands. This spinal dulness may also be induced by a mitral defect, but the dulness in this case is lower than with swollen glands.

82. Rheumatism as an After-Affection of Chorea.—Wyss studied 51 cases of chorea minor at Zurich, 1874-1907. In 41, that is in 80.4 per cent., a certain connection between chorea and acute articular rheumatism or endocarditis was evident, either in the patients themselves or in their parents, brothers or sisters. Rheumatism had preceded the chorea in 16 of the 51 children, that is in 31.3 per cent., while rheumatism followed the chorea later in 40 per cent. of the 35 children whose later history was known. Endocarditis was observed at the time or later in 54.3 per cent. of the 51 choreic children. He calls chorea, rheumatism and endocarditis the three acts of a single drama.

#### Medizinische Klinik, Berlin.

July 19, IV, No. 29, pp. 1093-1136.

- 83 \*Roentgen Detection of Incipient Pulmonary Tuberculosis. (Wert der Roentgendagnostik der Früh tuberkulose der Lunge.) P. Krause.
- 84 Balneotherapy in Ear Affections. (Indikationen und Kontraindikationen für balneotherapeutische Massnahmen bei Erkrankungen des Gehörorgans.) O. Brieger.
- 85 Results at Hochenegg's Clinic of Operations on Biliary Passages. (Resultate unserer Operationen an den Gallenwegen.) R. Bachrach.
- 86 \*Ankylosis of the Jaws. (Ankylosis mandibulae.) F. Kirstein.
- 87 Technique of Peroral Intubation. F. Kuhn.
- 88 Atropin in Treatment of Incipient Myopia. (Atropinkuren bei Kurzsichtigkeit.) Schnitz-Zehden.
- 89 \*Etiology of Asthma in Children. A. Stegmann.
- 90 Unreliability of Complement-binding Reaction for Diagnosis. Especially of Syphilis. H. Much. Commenced in No. 28.

83. Roentgen Diagnosis of Incipient Apical Tuberculosis.—Krause presented this article at the German Roentgen Congress at Berlin last spring. He states that the x-rays show apical infiltration as much more extensive than would be supposed from the percussion findings. When the percussion findings are negative or dubious, fluoroscopy or, better still, a skiagram will frequently reveal an apical process. Simple catarrhal processes in the early stages cast no shadow. When long protracted, the apex may not grow light during inspiration, and a skiagram will sometimes reveal an incipient apical process which escapes detection by other means. The apex



may be abnormally high, but this has differential value only with a difference of from 1 to 1.5 cm. The width of the apex has not yet been studied with the x-rays enough to be applied in diagnosis. Ossification of the first costal cartilage shows up well in a skiagram, and may be accepted as a sign of incipient tuberculosis in Freund's sense. The apex does not grow lighter during inspiration as in health. The movement of the diaphragm is sometimes defective, although restriction of its movements on the affected side can not be accepted as a special symptom. All this applies only to adults. In children the apical findings are generally negative; but all the more important is the finding of changes in the shadow cast by the hilus and bronchial glands enlarged by induration, caseation, calcification, and processes of infiltration in the vicinity of the hilus and bronchi. Mixed infection from the pneumococcus frequently casts a shadow as of central pneumonia, but the x-rays show the process slowly progressing after defervescence, and a few weeks later percussion and auscultation may reveal its tuberculous nature.

**86. Ankylosis of the Jaw.**—A young man fell on his chin and in a few days the movements of the lower jaw were limited and in the course of years complete bilateral ankylosis developed. Kirstein reports the case and reviews the literature, citing a total of 118 cases, 34 of traumatic origin. In operating, preparations must be made, he says, for eventual tracheotomy. The results of operation have been satisfactory, although recurrence has been observed in 12 out of 103 operations.

**89. Asthma in Children.**—Stegmann is a neurologist and he reports three cases of severe asthma in children, from 5 to 9 years old, in which he succeeded in curing the asthma and enabling the children to develop a normal physical and mental life. In all these cases, as in others of which he knows, the mothers were extremely nervous and anxiously solicitous to protect the child from catching cold. Two were only children, and the grandmothers suffered from asthma. He ascribes the first attack in one case to the peculiar suffocating odor of feather beds as used in the rural district where the child was visiting for the first time. When the first attack occurred and the diagnosis of asthma had been made and its incurable nature discussed, or if the child had noted the anxiety and depression of the parents, the foundation was laid for the perpetuation of the nervous trouble. In these three cases the children were under constant medical care for years, and incredible precautions were taken against their "catching cold" and exposing themselves to infectious influences. In treatment he found the essential factor to be the treatment of the parents, that is, to tranquilize them and give the child peace. This was most rapidly accomplished by hypnosis. After the first sitting the attacks of asthma subsided, and the children were then released from the solicitous precautions previously systematically enforced, and the parents could sleep at night. This alone would have justified the psychic treatment, even if it had not benefited the asthma; he was surprised at the favorable influence on the asthma from the suggestion. The hypnosis treatment, he believes, is only of subordinate importance for the final results. It served mainly to tranquilize the patient and the parents at once, and to make the child more amenable to the medical suggestion. He adds that this psychic treatment is required fully as much in cases with an organic element as in those without. He reports his cases in detail, as he thinks that such experiences are important for a better understanding of the way in which asthma becomes fastened on adults, and that they point the way to prophylaxis.

**Monatsschrift für Geburtshilfe und Gynäkologie, Berlin.**

July, XXVIII, No. 1, pp. 1-130.

- 91 \*Primary and Ultimate Results of Ovariectomies for Anatomically Malignant and Dubious Tumors. (Ovariectomien bei anatomisch malignen und zweifelhaften Geschwülsten.) C. Schmidlechner.
- 92 \*The Larynx and Pregnancy. (Larynx und Schwangerschaft.) J. Hofbauer.
- 93 Kraurosis Vulvæ. W. Rosenfeld.
- 94 \*Etiology and Treatment of Dysmenorrhea. P. Mathes.
- 95 \*Correction with the Sound of Displacement of Uterus. (Sondenaufrichtung.) A. Goenner.
- 96 \*Intrauterine Tents and Drains. (Intrauterinstifte.) Id.

**91. Ovariectomies for Tumors.**—Schmidlechner states that in the ovariectomies performed at the clinic for women's diseases at Budapest, 1880-1904, a primary cure was obtained in 82.86 per cent. of 35 cases of carcinoma and 14.2 per cent. permanent cures; primary cures in 96.67 per cent. of 60 cases of serous adenocystoma and 82.5 per cent. permanent cures; primary cures in 88.89 per cent. of 27 cases of sarcoma of the ovary and 85 per cent. permanent cures. He says that after removal of a tumor from one ovary it seldom develops in the other; the prognosis is more unfavorable with bilateral growths. The best prognosis is given by localized growths; papillary proliferations on the surface do not influence them much. The prognosis is least favorable in case of implantation on the peritoneum, although these grafts may vanish after removal of the tumor.

**92. The Larynx and Pregnancy.**—A singing teacher called Hofbauer's attention to the great change in the singing voice during pregnancy, saying that as a rule the voice becomes harsh and loses its richness and timbre, but in a few cases the voice becomes richer and softer. The changes in the pitch and tone may persist after the confinement. Hofbauer has since made a special study of the behavior of the larynx during pregnancy. The clinical and histologic findings confirm in every respect the assertions of professional singers in respect to the correlation between the genital processes and the larynx. His findings throw light on the refractory behavior of laryngeal catarrh during pregnancy, and the graver prognosis of laryngeal tuberculosis. Küttner has recently reported a fatal outcome in 200 out of 231 cases of laryngeal tuberculosis during pregnancy. During pregnancy the larynx loses most of its ciliated epithelium, and thus opposes less resistance to invading infection.

**94. Dysmenorrhea.**—Mathes calls attention to the large group of cases in which the dysmenorrhea is the direct result of asthenia and enteroptosis. Vague symptoms of appendicitis should always suggest a search for enteroptosis before operating. Enteroptosis may simulate acute peritonitis in some cases. All these symptoms, including tenderness, diffuse pain at the slightest touch, coated tongue, vomiting, obstipation, etc., subside during rest in bed and appropriate treatment.

**95 and 96. Correction of Uterine Displacements.**—Goenner advocates the gentle use of a sound to straighten the uterus free from adhesions in case of failure of bimanual reduction. It is especially useful for obese women and for virgins. In regard to uterine tents and drains he remarks that a forward curve is preferable to a straight tent. Hard rubber dipped in boiling water can be bent to this shape. Tents are contraindicated by inflammation of any kind, but may prove useful in dysmenorrhea and in sterility, the result of defective development. A curving intrauterine tent or profusely perforated drain soon proves effectual. He prefers a tapering metal drain, 3½ inches long, with four rows of three large openings, the diameter 4 or 5 mm. at the tip and 6 or 8 mm. below. The mucosa sucks into the holes and holds the drain firm. He first uses a tent and then inserts the drain, removing it every three or four days in case of much secretion, otherwise only at menstrual periods.

**Münchener medizinische Wochenschrift.**

July 14, LV, No. 28, pp. 1473-1520.

- 97 Hemolysins, Bacteriolysins and Opsonins. v. Baumgarten.
- 98 Structure of Opsonins: Research on Typhoid and Meningitis. A. Böhm.
- 99 \*Spinal Anesthesia for Gynecologic Operations. (Rückenmarksanästhesie für die gynäkologischen Bauchoperationen.) E. Holzbach.
- 100 \*Periodic Acetonemia in Older Children. Hecker.
- 101 Determination of Blood in Urine by Spectroscopic-Chemical Methods. (Nachweis von Blut im Harn.) O. Schumm.
- 102 \*Pulmonary Emphysema and Asthma. (Rückwirkung des Lungenemphysems auf den Verlauf des Asthmas.) M. Saenger.
- 103 Results of Modern Treatment of Scoliosis. (Was dürfen wir von der heutigen Skoliosenbehandlung erwarten?) K. Wahl.
- 104 Menthol Poisoning. A. Schwenckenbecher.
- 105 Milk Periods in Course of Treatment of Obesity. (Milchstage bei Entfettungskuren.) L. Roemheld.

**99. Spinal Anesthesia for Gynecologic Laparotomies.**—Holzbach reviews his experience with 250 laparotomies done under



spinal anesthesia. He regards the spinal technic as far from being an ideal method of anesthesia, but it is so superior to general anesthesia in many respects, he declares, that he prefers it for gynecologic operations, and is confident that the technic will soon be perfected.

**100. Periodic Acetonemia in Children.**—Hecker has observed five cases of gastric disturbances accompanied by elimination of acetone and acetic acid; the breath had the peculiar odor of acetone at times. Only a few of the children had fever during these attacks. The children were between 3 and 11 years old. He ascribes the vomiting to the effort of Nature to throw off the acetone bodies. He believes that the trouble is the result of some constitutional anomaly, probably defective development of the function of breaking down of fats. The disturbance in this function has probably some connection with disturbances in the leucocyte system. Ehrlich believes that the lymphocytes originate in the lymph glands, and Poulain has determined that the lymph glands have a great influence on the absorption of fat by their fat-dissolving ferment. Hecker ascribes periodic acetonemia, therefore, to some developmental defect, predominant in the lymphatic system. The blood in these cases should be examined during an attack and during the intervals. Treatment may be by suggestion (preparations for saline infusion, etc.). Fasting for two days may be beneficial, cautiously resuming food with little fat and albumin. He has found small pieces of chocolate and dry bread very useful, with alkalies. The latter proved especially beneficial in one of his more chronic cases. In the intervals, general hygiene, hydrotherapy, hot packs and little meat, with occasional use of hydrochloric acid and pepsin, may be useful.

**102. Treatment of Asthma.**—Saenger advocates exercises to train the respiratory center and organs to get along, at need, with a small amount of air. Just as a person can train himself to stay under water a long time, so he thinks that persons with a tendency to asthma and the resulting pulmonary emphysema can train their organs so that they can stand the stress of the attack of asthma. They should exercise themselves in voluntary restriction of their breathing, learning to breathe exclusively or predominantly by means of the abdominal muscles engaged in respiration. This not only rests the lungs, but closes the small bronchi during expiration, as by a valve, and thus prevents acute inflation of the lungs. Persons thus trained are freed from their paroxysmal suffocation and bronchial catarrh, although the emphysema may persist.

#### Wiener klinische Wochenschrift.

July 9, XXI, No. 28, pp. 1005-1042.

- 106 Connection Between Antitoxin Content and Curative Potency of Antitoxic Sera. (Beziehungen des Antitoxingehaltes antitoxischer Sera zu deren Heilwerte.) R. Kraus.
- 107 Bacterial Anaphylaxis. R. Kraus and R. Doerr.
- 108 Percutaneous Tuberculin Reaction by Moro's Technic. H. Kanitz.
- 109 \*Dangers of Ocular Reaction to Tuberculin. (Gefahren der Ophthalmoreaktion.) R. Polland.
- 110 Modern Methods of Diagnosing Typhoid. W. Spät.
- 111 Simple Instrument for Endovesical Operations. V. Blum.
- 112 \*Method of Dissolving Foreign Bodies in the Bladder. (Endovesikale Auflösung von Fremdkörpern.) E. Pollak.
- 113 Bilirubin Content of Pneumonic Sputum. H. Popper.

July 16, No. 29, pp. 1043-1078.

- 114 Pathologic Importance of Tuberculin Reaction. F. Hamburger.
- 115 Influence of Atoxyl on Leucocytes. W. L. Yakimoff.
- 116 Role of the Antibodies in Tuberculin Reaction. E. Weil and W. Strauss.

**109. Ocular Tuberculin Reaction.**—Polland urges that the ocular tuberculin reaction should be restricted to cases in which differentiation by other means is impossible, as his experience in three cases shows that it is by no means a harmless procedure. None of the patients had ever had any eye affection, but suppurative inflammation followed instillation of the tuberculin, requiring weeks of specialist treatment, and leaving a defect in the cornea in two cases with considerable impairment of vision in one.

**112. Method of Dissolving Foreign Bodies in Bladder.**—Pollak removed a wax taper from the bladder of a man of 28 by injecting 20 c.c. of benzin after emptying the organ. The

benzin was left in the bladder for thirty minutes, and it was then rinsed out with salt solution, the procedure repeated several times with smaller amounts. The wick, 7 inches long, was spontaneously expelled in the urine the next day. The wax collected from the urine weighed 50 grains. In Lohnstein's case, previously mentioned in these columns, the patient had introduced a stick of tallow and its unsuspected presence in the bladder for several months had caused severe hematuria and other symptoms. Nearly 75 grains of tallow were recovered. The benzin caused no disturbances in either case, and allowed the removal of the foreign body safely and promptly. Hoehenegg has recently reported still another case. The bladder was much inflamed from the presence of the wax, and to reduce the irritation from the benzin the bladder was partly filled with water, on which the wax and benzin floated, thus reducing the amount of contact with the walls of the organ, while the benzin was still acting on the foreign body.

#### Zentralblatt für Chirurgie, Leipsic.

July 11, XXV, No. 28, pp. 841-872.

- 117 \*"Milkers' Felon." (Panaritium der "Melker.") A. Peiser.
  - 118 \*Prevention of Vomiting During First Whiffs of Ether. (Mittel gegen Erbrechen beim Aetherrausch.) C. Ritter.
- July 18, No. 29, pp. 873-904.
- 119 Etiology of Congenital High Shoulder. (Ätiologie des angeborenen Schulterblatthochstandes.) H. Teske.
  - 120 Osteoplastic Mediotarsal Emecleation. C. Bayer.

**117. "Milkers' Felon."**—Peiser calls attention to the sanitary importance of the chronic felon on the hands of dairy employees. Inflammation is maintained by penetration of small hairs from the cow's udders. The lesion will not heal unless the hair in the depths is removed. He has encountered a number of such cases.

**118. Constriction Hyperemia to Prevent Vomiting from Anesthetic.**—Ritter presents a number of arguments to prove that ether acts much more powerfully on the brain when it is anemic than when it is congested. He describes experiments on dogs and 62 clinical cases which prove that a constricting band applied to the neck materially reduces the harmfulness of poisons for the brain. Especially with operations done during the first whiffs of ether (Aetherrausch) the Bier constricting band applied to the neck, immediately after the close of the operation and left in place for half to one hour, while the patient reclines, has put an end to the vomiting which previously was the almost invariable accompaniment of the ether anesthesia. He suggests that the constriction hyperemia might also prove beneficial in vomiting from other causes, in pregnancy or in inflammation of the brain.

#### Zentralblatt für Gynäkologie, Leipsic.

July 11, XXXII, No. 28, pp. 905-936.

- 121 Acute Peritonitis Before and During Childbirth. (Akute Peritonitis vor und in der Geburt.) G. Leopold.
- 122 Acute Paralysis of Stomach with Secondary Occlusion of Duodenum. (Akute Magenlähmung mit sekundärem Duodenalverschluss.) H. Albrecht.
- 123 Two Cases of Hydrorrhea of Amniotic Fluid. (Hydrorrhea uteri gravidii amnialis.) W. Ruth.

July 18, No. 29, pp. 938-968.

- 124 Cesarean Section by the "Extraperitoneal" and the "Suprasympyseal" Technics. (Der "extraperitoneale" und der "suprasympysäre" Kaiserschnitt.) M. Hofmeier.
- 125 Improved Instrument for Perforation. (Perforatorium.) Nacke.

#### Gazzetta degli Ospedali e delle Cliniche, Milan.

July 5, XXIX, No. 80, pp. 841-856.

- 126 Various Localizations of Murmur from Mitral Insufficiency. C. P. Goggia.
- 127 \*Cerebellar Syndrome Cured by Antisymphilitic Treatment. E. Greggio.
- 128 \*Improved Technic for Antityphoid Vaccination. (Studi sul tifo.) A. Bruschetti and A. Paccanaro.
- 129 Technic of Specific Antituberculosis Treatment. (Trattamento specifico antitubercolare.) G. Ghisellini.

July 12, No. 83, pp. 873-888.

- 130 \*Pathology and Clinic of Tuberculosis in Light of Recent Conquests. E. Maragliano.
- 131 \*Rheumatism of Brain. (Reumatismo cerebrale.) U. Silva.
- 132 Behavior of Elastic Tissue in Experimental Intestinal Stenosis. (Genesi delle alterazioni del tessuto elastico.) M. Biagi.
- 133 Spinal Anesthesia. (Rachianalgesia lombare con la tropocaina.) G. Monzardo.
- 134 Wire Suture of Fractured Clavicle. (Riunione operatoria nelle fratture della clavicola.) A. Cianni.



127. **Cerebellar Syndrome Cured During Antisyphilitic Treatment.**—Greggio's patient was a robust man of 34 with a gradually developing syndrome suggesting a tumor in the cerebellum. Before the final decision to operate, antisyphilitic treatment was given a trial—although there was nothing to suggest syphilis—and all the symptoms gradually retrogressed, the patient returning to work completely cured.

128. **Improved Technic for Immunization Against Typhoid.**—Bruschettini and Paccanaro announce that guinea-pigs resisted otherwise fatal doses of typhoid toxin after a preventive injection of vaccine to which had been added one-tenth part of an extract of leucocytes obtained from the pleural cavity after injection of an irritating substance. The animals showed no signs of disease fifty days later, although the controls had all died in the first forty-eight hours. They think that the leucocyte extract has the power to render the vaccine absolutely harmless without detracting from its specific properties.

130. **Tuberculosis in Light of Recent Research.**—In the course of this postgraduate address by Maragliano he calls attention to the difference in the fever due to the action of tuberculous toxin and that from the toxin of pyogenic germs, and from the fever caused by the toxins generated by diseased and dying tissue cells. This toxic action of cells undergoing destruction has been shown by experimental injection of extracts of solutions of various dying tissues and blood corpuscles. Carbone declares that the pneumococcus acts more by the toxins produced by the tissues it devitalizes than by its own toxins. Bruschettini has recently announced that guinea-pigs succumbed much more rapidly to typhoid toxin when to it had been added the products of the degeneration of the intestinal epithelium. Barlocco's research has shown that under the hemolytic action of the endotoxins, toxic and pyrogenic substances derived from the destroyed blood corpuscles pass into the circulation. Extract of tuberculous lung tissue has a much more pronounced hemolytic action than extract of healthy lungs. Mircoli has shown that red corpuscles desiccated and then injected in solution into animals cause fever and cachexia. This result is more pronounced if the red corpuscles came from sick or ailing subjects. All these facts show the importance of the phenomena resulting from the disintegration of the cells, superposed on the initial infection. Especially in tuberculosis, the primary influence of the tubercle bacillus becomes gradually subordinate to the results of the other pathogenic elements which in time dominate the situation, transforming the primary disease into a new morbid process which has its new laws and may require its own special therapy, and explains the failures in specific treatment of tuberculosis.

131. **Rheumatism of the Brain.**—Silva reports three cases, in hard drinkers, of acute rheumatic fever assuming the meningeal form with extremely high fever. When the intense hyperpyrexia developed, the joint symptoms disappeared. Application of ice gave only transient benefit. After death the temperature continued to rise for about fifteen minutes, reaching nearly 108 F. The autopsy findings were not specially positive.

#### Policlinico, Rome.

June 28, XV, *Practical Section*. No. 26, pp. 805-836.

135 Filtrability of Trachoma Virus. L. Marongiu.

July 5, No. 27, pp. 837-868.

136 Familial Dystrophic Infantilis. L. Ettore.

July 12, No. 28, pp. 869-900.

137 \*Differential Diagnosis Between Transudates and Exudates by Rivalta Test. W. Janowski.

138 Another Case of Osteomalacia Cured by Suprarenal Preparations. G. Rocchini.

139 Nervous Affections Among the Poor at Rome. (Malattie del sistema nervoso dominanti nelle classi povere de Roma.) G. Baschieri Salvadori.

137. **Differentiation of Transudates and Exudates.**—Janowski has examined the effusion in 122 cases by Rivalta's technic; one or more drops of the effusion are added to 100 c.c. of water containing two drops of glacial acetic acid. As a drop of exudate makes its way down through this fluid it leaves a bluish trail like a puff of cigarette smoke in the water, each

drop leaving a separate trail. The fluid remains clear and unaltered when the added drop is that of a transudate. He has found this test delicate and reliable.

#### Norsk Magazin for Lægevidenskaben, Christiania.

July, LXIX, No. 7, pp. 641-736.

140 Experiences with Iron Splinters in Eyes. (Jernsplint i øiet.) H. Lystad.

141 \*Artificially Induced Hyperemia in Treatment of Nasal Affections. (Bier's stasebehandling anvendt i rhinologien.) R. Gording.

142 Pathologic Embryology. V. Magnus.

141. **Suction Hyperemia in Rhinology.**—Gording writes from the rhinologic clinic at Christiania to extol the benefits of the mask devised by Sonderrmann for applying suction to the nose and accessory cavities. Suction up to a negative pressure of 120 mm. mercury can be obtained even in the maxillary sinus. The cavities are evacuated, healing hyperemia is induced and completed by the reaction after the mask is removed. Several instructive cases are related, showing its advantages, particularly in the after-treatment of sinusitis. Sonderrmann's application of this principle of aspiration to the urethra was mentioned in THE JOURNAL, Dec. 16, 1905, page 1913, and for purulent rhinitis, Sept. 23, 1905, page 953.

### Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

**A MANUAL OF MIDWIFERY.** By Thomas Watts Eden, M.D., C.M. Edin., F.R.C.P. Lond., F.R.C.S. Ed., Obstetric Physician with Charge of Out-Patients and Lecturer on Practical Midwifery and Gynecology, Charing Cross Hospital. Cloth. Pp. 555, with illustrations. Second Edition. Price, \$3.50. Chicago: W. T. Keener & Co., 1908.

**ESSENTIALS OF DIETETICS.** By Amy Elizabeth Poper, Instructor in Dietetics in the Schools of Nursing of the New York Hospital, and Mary L. Carpenter, Director of Domestic Science of the Public Schools, Saratoga Springs, New York. Cloth. Pp. 249. New York: G. P. Putnam's Sons, 1908.

**ARBEITEN AUS DEM PHARMAZEUTISCHEN INSTITUT DER UNIVERSITÄT BERLIN.** Herausgegeben von Dr. H. Thoms, Professor und Direktor des Pharmazeutischen Institutes der Universität Berlin. Cloth. Pp. 340. Vol. V. Report for 1907. Berlin: Urban & Schwarzenberg, 1908.

**PULMONARY TUBERCULOSIS AND ITS COMPLICATIONS.** By Sherman G. Bonney, A.M., M.D., Professor of Medicine, Denver and Cross College of Medicine, Denver. Cloth. Pp. 778, with illustrations. Price, \$7.00. Philadelphia: W. B. Saunders Co., 1908.

**PRINCIPLES OF PATHOLOGY.** By J. George Adami, M.A., M.D., LL.D., F.R.S., Professor of Pathology in McGill University. Vol. I. General Pathology. Cloth. Pp. 948, with illustrations. Price, \$6.00. Philadelphia: Lea & Febiger.

**POINTS OF PRACTICE IN MALADIES OF THE HEART.** By James Sawyer, Knt., M.D. Lond., F.R.C.P., F.R.S. Ed., F.S.A., Consulting Physician to Queen's College. Cloth. Pp. 96. Birmingham: Cornish Brothers, 1908.

**MEDICAL GYNECOLOGY.** By Samuel Wyllis Bandler, M.D., Fellow of the American Association of Obstetricians and Gynecologists. Cloth. Pp. 675, with illustrations. Price, \$5.00. Philadelphia: W. B. Saunders Co., 1908.

**OPHTHALMIC SURGERY.** By Dr. Josef Meller, Privat docent and First Assistant K.K.11, University Eye Clinic, Vienna. Cloth. Pp. 262, with illustrations. Price, \$3.00. Philadelphia: P. Blakiston's Son & Co., 1908.

**CONSUMPTION.** By N. S. Davis, A.M., M.D., Professor of Principles and Practice of Medicine, Northwestern University Medical School. Cloth. Pp. 171. Second Edition. Price, \$1.00. Philadelphia: F. A. Davis Co., 1908.

**THE EIGHTEENTH ANNUAL REPORT of the Eye, Ear, Nose and Throat Hospital of New Orleans, La., 1907.** Paper. Pp. 72. New Orleans: L. Graham Co., 1908.

**THE CHAILLE JUBILEE,** also Annual Report of the Dean of the Medical Department of Tulane University of Louisiana, May 20, 1908. Paper. Pp. 27.

**ESSENTIALS OF SURGERY.** By Alwyne T. Compton, F.R.C.S. Cloth. Pp. 428, with illustrations. Price, \$1.50. Chicago: W. T. Keener & Co., 1908.

**DIE PRÜFUNG NICHTOFFIZIELLEN PRÄPARATE.** Part I. Von Dr. Gustav Mossler. Cloth. Pp. 133. Part 1. Vienna: Carl Fromme.

**CATALOGUE of the Officers and Fellows of the Massachusetts Medical Society.** Paper. Pp. 166. Boston: D. Clapp & Son.

**TRANSACTIONS OF THE AMERICAN SOCIETY OF MORAL PROPHYLAXIS.** Vol. II, 1908. Paper. Pp. 246.

**PROCEEDINGS of the Delaware County Institute of Science.** Vol. III. No. 4. July 1908. Paper. Pp. 180.

**WOODCROFT, Hospital for Nervous and Mental Diseases.** Paper. Pp. 12.

**FIRST ANNUAL REPORT, Tuberculosis League.** Paper. Pp. 24.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOLUME LI

CHICAGO, ILLINOIS, AUGUST 29, 1908

NUMBER 9

## Original Articles

### CHRONIC PERITONITIS WITH COMPLETE OBSTRUCTION,

CAUSED BY NUMEROUS CONSTRICTIONS, OF A PREVIOUSLY  
UNDESCRIBED CHARACTER, THROUGHOUT THE  
INTESTINE.\*

MILES F. PORTER, A.M., M.D.

Surgeon of Hope Hospital, Professor of Surgery in Indiana Uni-  
versity School of Medicine.

FORT WAYNE, IND.

*Patient.*—Dr. L. A. H., aged 35, married, was admitted to  
Hope Hospital May 24, 1907.

*History.*—Grandmother died of cancer. One aunt died of  
consumption, and an uncle had "white swelling." Aside from  
children's diseases, the patient had had an attack of pneumonia  
in 1886, followed by empyema for which a rib was resected  
and drainage instituted. Complete recovery followed but the  
diseased chest still remained considerably contracted. Drank  
excessively whole of 1903, but is a total abstainer now. In  
December, 1906 (six months before admission), after a full  
meal of sausage, he was taken with severe abdominal cramps  
and vomiting, for relief from which he took  $\frac{3}{8}$  gr. of morphin  
hypodermatically. The pain was worse in the lower abdomen,  
and especially on the right side, and some tenderness, localized  
over the painful area, followed. This attack caused him to  
quit work for one day. Six weeks later he had a similar at-  
tack, accompanied by vomiting of a light, bright green fluid  
and a more severe one occurred March 28, 1907. The bowels  
were constipated. A few days before coming to the hospital  
he had a formed, putty-colored stool. No elevation of tem-  
perature was present during those attacks. Patient stated  
that abdomen was sore when he was jolted and complained of  
accumulation of gas in the stomach, which was relieved by  
belching or the use of the stomach pump. Frequently vomited  
bright green fluid, and complained of a metallic taste in the  
mouth. Very difficult to get the bowels to move; the stools  
were not formed.

*Examination.*—Fairly nourished, good color, dark complexion.  
Abdomen rather retracted and boggy. An indistinct mass  
was felt in right pelvic region, both on rectal and abdominal  
palpation. Examination of the chest was negative. Pulse 62;  
temperature 97.6 F. Up to two days prior to operation the  
case was in charge of Dr. G. W. McCaskey, to whom I am  
indebted for the following clinical facts: The blood picture  
was normal. Urine normal in character but reduced in amount,  
only 18 ounces being passed in the twenty-four hours. Bacteriologic  
examination of vomitus was made by Dr. Rhamy. He reported  
that he found a bacillus which culturally and microscopically  
gave characteristics of the *Bacillus typhosus*. Widal reaction  
positive. Opsonic index to autogenous bacilli, 47. No reaction  
to two injections of old tuberculin of 5 and 10 mg., respectively.  
Permeability of the intestinal tube was demonstrated by the  
charcoal test. No diagnosis could be made other than that  
of a low grade, wide-spread peritonitis with incomplete ob-  
struction of the bowels. An exploratory

operation was thought advisable and accordingly done May  
26, 1907, two days after his entrance into the hospital.

*Operation.*—Ether anesthesia. Midline incision. Practically  
universal close adhesions were found between contiguous bowel  
surfaces. A little fluid was found. Very little adhesion be-  
tween visceral and parietal peritoneum was found. The ap-  
pendix was freed and removed but presented nothing abnormal.  
The bowel adhesions were fairly completely broken up. The  
small intestine seemed abnormally short and nowhere con-  
stricted, but on the contrary seemed unusually large in its  
transverse diameter, and on palpation felt as though it were  
filled with fish worms. Attempts to empty sections of the  
bowel by stripping were ineffectual. The surface of the bowel  
was grayish-white, and the non-adherent surfaces perfectly  
smooth. An incision was made into the ileum. No escape of  
feces or gas. Bowel seemed full of mucous membrane arranged  
in accordion-like folds. A probe could not be made to pass in  
either direction. The finger could be made to pass in either  
direction by carefully working the folds aside. It was con-  
cluded that the case was hopeless, even temporary relief being  
out of the question. Accordingly, the intestine was closed by  
a line of through-and-through catgut sutures and over this a  
line of continuous linen sutures, and the wound in the abdomen  
closed by buried catgut and adhesive plaster. The patient left  
his room for the operating room at 9 a. m. and returned at  
11:45 a. m. Just before the operation his pulse was 70, and  
temperature 97.6 F. Twelve hours after the operation his pulse  
was 102 and his temperature 98.2 F. Sixteen hours after the  
operation a catheter was inserted and the bladder found empty.  
From the time of the operation until his death, which occurred  
on the morning of May 29 (three days after the operation),  
but eight ounces of urine were secreted. It will be remem-  
bered that the urine was reduced in quantity when he came into  
the hospital, owing, no doubt, to the frequent vomiting. There  
was no vomiting for twenty-four hours after the operation,  
when it commenced again and continued until his death, which  
occurred 72 hours after the operation. At first the vomitus  
was green as before, but later became dark and brown. The  
temperature gradually rose until it reached 102 F. before  
death, while the pulse became gradually more frequent and  
more feeble and death occurred from a gradual failure of the  
vital powers 72 hours after the operation.

*Autopsy.*—No record was made of the exact time intervening  
between the death and autopsy, but it was about two hours.  
Both the wound in the abdomen and that in the intestine were  
found to be healing normally. No evidence of recent peri-  
toneal infection. The stomach presented nothing abnormal ex-  
cept some adhesions to the abdominal wall. The whole of the  
small intestine and all of the large except the rectum was  
covered by a layer of grayish-white, rather strong, plastic  
material, about  $\frac{1}{16}$  of an inch in thickness, which could be  
stripped off, leaving the underlying peritoneum looking, to the  
naked eye, normal. This membrane was smooth on the free  
surfaces of the bowel but ragged where it had been adherent.  
This adventitious coat did not reduce the transverse diameter  
of the bowel, but shortened it by actual measurement between  
70 and 80 per cent. Closely placed parallel incisions around  
the bowel would allow it to be drawn out to its normal length,  
as would stripping off the false membrane (Fig. 1). Mesen-  
tery and omentum were normal. The liver, spleen, and peri-  
toneal surface of the bladder were covered, as were the bowels,  
by this membrane, but not diminished in size. Transverse sec-

\* Read in the Section on Surgery and Anatomy of the American  
Medical Association, at the Fifty-ninth Annual Session, held at  
Chicago, June, 1908.



tion of the bowel shows its lumen to be occluded by transverse folds of mucous membrane (Fig. 2).

Specimens were given to Dr. B. W. Rhamy, the pathologist of Hope Hospital, and also to Dr. W. H. Welch of Johns Hopkins. The two reports agree except that Dr. Rhamy found bacilli corresponding to the *B. typhosus*, as did those he found in the vomitus during the life of the patient, while Dr. Welch found no bacilli save those which "were probably the result of post-mortem contamination." It was endeavored to eliminate postmortem contamination from the specimen examined by Dr. Rhamy, while no such care was taken of the specimen sent to Dr. Welch. This perhaps explains the difference in the opinions expressed as to the cause of the peritonitis. Dr. Rhamy's diagnosis was chronic plastic peritonitis due to typhoid infection. Dr. Welch's report is as follows:

PATHOLOGIC REPORT BY DR. W. H. WELCH.

*Gross Appearances.*—The specimen, which had been preserved in formalin and alcohol, was a portion of the small intestine, evidently jejunum, which had been severed from the mesenteric attachment except at one end, where a small piece of the mesentery was retained. The specimen measured 21 cm. (8 in.) in length opposite to the mesenteric border, and 15 cm. (6 in.) in length along the mesenteric border. For a distance of 13 cm. (5 in.) from one end the intestine had been cut open along the mesenteric margin, the remaining 8 cm.

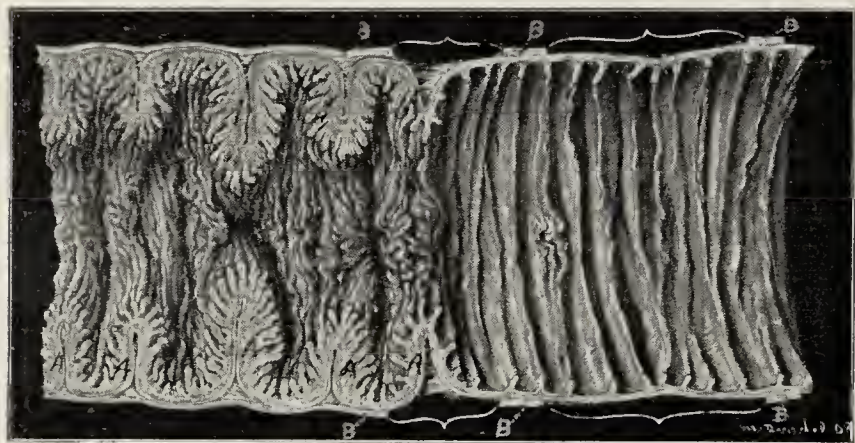


Fig. 1.—Showing inner aspect of bowel as seen on section. To the left at A A A are seen infoldings; to the right the false membrane B B B has been cut, allowing the bowel to be drawn out to normal length. Brackets show bowel pulled out after division of false membrane; length before division  $\frac{1}{2}$  inch, after division  $2\frac{3}{4}$  inches. Infolding only partly obliterated under short bracket.

(3 in.) being unopened. The unopened part of the intestine measured 10 cm. (4 in.) in external circumference, was not collapsed and felt from the outside as if filled with a rather elastic and moderately firm material. The transverse section presented by the cut end of this solid, unopened part of the intestine showed no recognizable lumen, but in its place a complicated mass of folded mucous membrane. Only with difficulty and after much twisting and turning could a metallic probe be passed from the lumen corresponding to the opened part of the intestine through the lumen of the unopened part; after inserting the probe this latter part was cut open opposite to the mesenteric attachment, when it is seen that the obstruction was due entirely to infoldings of the intestinal wall occurring at short intervals and kept in place by an organized false membrane attached to the peritoneal surface. This false membrane covered the entire peritoneal surface of the intestine, but over the opened part of the specimen, as stated in Dr. Porter's letter accompanying the specimen, "closely placed parallel incisions around the bowel, made through the false membrane," had permitted this part of intestine to be stretched to its normal length and had effaced the involutions of the intestinal wall, so that here the lumen was free from obstruction and the mucous surface showed no especial abnormality. It was evident that by a similar procedure the same result could be

obtained in the remaining part of the specimen. There were no contents found in the lumen of the obstructed intestine after opening it as described.

As has already been stated above the entire outer surface of the intestine was covered with a false membrane. This membrane which was from 0.5 to 1 mm. ( $\frac{1}{50}$  to  $\frac{1}{25}$  in.) in thickness, was grayish in color, of firm consistence, almost cartilaginous in translucence over most of its extent, and smooth over the greater part of its free surface, although careful inspection showed that much of this surface was finely granular or slightly shaggy as would result from a thin coating of fibrinous exudate on an organized fibrous membrane. No remnants of fibrous threads or bands projected from the free surface of the false membrane. This dense and nearly uniform false membrane, consisting apparently of organized fibrous tissue with superficial fibrinous exudate, was attached to the underlying wall of the intestine by fibrillated connective tissue, which was evidently also of new formation. This attachment was in general so loose that there was no difficulty in peeling the dense false membrane off from the intestine, the surface thus exposed appearing smooth in consequence of the delicacy of the severed threads of tissue. The attachment of the false membrane was firmer and more intimate over the intestine situated between the infoldings of the wall, while it was very loosely attached directly over these infoldings. No

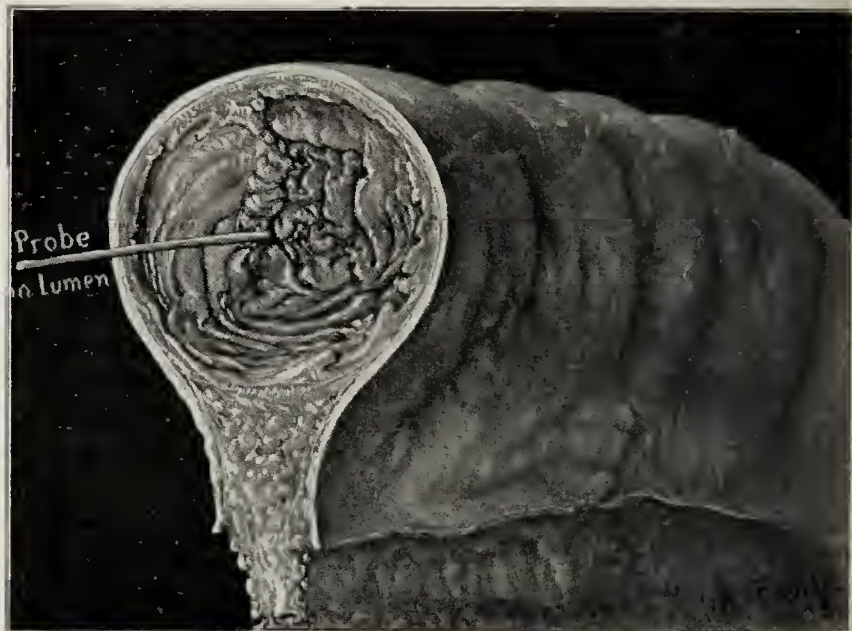


Fig. 2.—Showing occlusion of lumen by infolding of the bowel coats.

tubercles could be seen with the naked eye in the outer covering of the intestine or elsewhere.

In this examination the greatest interest attached to the infoldings of the intestinal wall which have filled up and obstructed the lumen of the bowel. As these infoldings had been entirely obliterated in the opened part of the intestine they could be studied only in the eight centimeters of the intestine which had not been cut open previous to the reception of the specimen. The folds were the result of a sharp bending inward of all the coats of the intestinal wall from a direction parallel to the long axis of the intestine to one perpendicular to this axis, much as if a contraction of a narrow band of the circular muscular coat had occurred and persisted or been held in place. These segmental, transverse constrictions of the intestinal wall followed each other longitudinally at short intervals, as many as eight being present in a length of 8 cm. (3 in.) of intestine. Each of the infoldings extended as a rule transversely nearly around the circumference of the intestine, but some were shorter. There was a certain alternating arrangement of the folds such that the shallower part of one fold fitted in between the deeper parts of adjacent folds, whereby a spiral-like arrangement of the intestinal ridges on the mucous surface resulted. This arrangement suggested that each infolding corresponded to the course of the larger vessels which run transversely around the bowel, and in many of the folds it was possible to see these vessels in the lax tissue bridging the depressions. The depth of the folds averaged from



1 to 2 cm. ( $\frac{3}{8}$  to  $\frac{3}{4}$  in.), the tendency was for each fold to become shallower in its course and to disappear before it had completely encircled the bowel. The thickness of the folds was about 1 cm. ( $\frac{3}{8}$  in.), the adjacent muscular coats on each side of a fold being nearly in apposition in the deeper part of the depression and separating slightly above, so as to approximate a V-shape. Between successive folds the lumen appeared of normal dimensions, but this lumen was evident only on stretching the intestine longitudinally, as the folds were so close together and so deep as to obstruct it completely. The dense false membrane which covered the outer surface of the intestine did not follow the involution of the intestinal coats into the folds, but it extended bridge-like over the depressions, and it was evident that it was these bridges of false membrane which kept the folds in place. By incising these bridges transversely over the folds the latter were readily obliterated on stretching the bowel longitudinally. There was little evidence of the existence of the constrictions on inspection of the outer wall of the unopened intestine, which appeared merely invested in a uniform grayish coat of false membrane; still, careful inspection showed frequent slight external furrows corresponding to the constrictions. The delicate loose connective tissue already noted as present beneath the denser part of the false membrane was, however, present in the depressions, stretching between the adjacent sides of an infolding. It was evident that the existence of the constrictions or folds described must have caused an extraordinary shortening of the intestine. By actual measurement of the part of intestine in which the constrictions were in place (not having been obliterated by transverse cuts through the false membrane) there was found to be a shortening of from 70 to 80 per cent. of the normal length. The inner or mucous surface of the intestine showed no abnormalities other than the ridges resulting from the constrictions. Valvulae conniventes were high and numerous as in the jejunum. There was no ulceration, necrosis or hemorrhage to be detected with the naked eye. The small tag of mesentery which still remained attached to one end of the intestine was moderately rich in adipose tissue and contained two or three small lymphatic glands, free from any abnormality.

*Microscopic Examination.*—The mucous membrane was well preserved and appeared entirely normal. The submucosa also was free from any pathologic change. The circular muscular coat appeared somewhat thicker in the part of the intestinal wall included in the constrictions than in that between these, but this was probably due to the obliquity of the section of the muscle in the former situation. The spaces between the muscular bundles of the circular coat appeared rather wider than normal. The longitudinal muscular coat also appeared somewhat thicker near and in the depressions, but the same explanation probably applies here also. This coat was in places moderately invaded by new connective tissue extending in from the peritoneal surface. The existence of the constrictions was sharply defined on the microscopic sections by the abrupt change of direction of the mucous, submucous and muscular coats, the angle of the bend being almost a right angle, but with its apex rounded off. The distance between the muscular coats on each side was about 2 or 3 mm. at the angle and became less as they approached the point of union of the muscle at the bottom of the constriction. The peritoneum was entirely replaced by organizing exudate and connective tissue. The original subperitoneal tissue could be made out as a layer firmly connected with the longitudinal muscle. Over this was, first, a layer of richly vascularized fibrillated connective tissue, containing many fibroblasts, plasma cells and lymphocytes. This layer was very lax, with wide meshes and numerous blood vessels over and between the layers of the infoldings of the subjacent coats, whereas it was denser and more intimately connected with the adjacent tissues between the successive constrictions. This layer passed gradually into a dense layer of organizing connective tissue of a rather sclerotic or, in places, hyaline appearance, containing fibers and long fibroblasts, disposed mostly parallel to the longitudinal axis of the intestine, leucocytes and developing capillaries. In this layer, old fibrin in process of substitution by connective tissue was enclosed. On the free surface was a fibrinous exudate, in

places old, dense and hyaline in character, and in other places fresh, with fibrillated fibrin and many polymorphonuclear leucocytes, with fragmenting nuclei. The layer described under the gross appearances as "false membrane" consisted mainly of the organizing connective tissue and exudate. Corresponding to the constrictions in the intestinal wall the denser part of the organizing exudate stretched across the interval between the walls of a fold, and did not follow the intestinal wall as it bent abruptly inward. The subjacent delicately fibrillated, very vascular, lax, newly formed connective tissue extended down in long threads which appeared to be stretched and which ran perpendicularly from the under surface of the dense membrane into the depressions, which were thus occupied by this lax tissue with wide meshes. Corresponding to the tops of many of the constrictions the denser texture of the bridges of false membrane extended down for perhaps 3 or 4 mm. ( $\frac{1}{8}$  in.) as a wedge shaped mass from the under surface of a bridge into the depression, the apex of the wedge lying in the center of a depression. No tubercles were seen in any of the sections. Sections stained for bacteria (for tubercle bacilli, Gram's stain, and methylene blue) showed various bacilli and cocci on the surface of the exudate, but these resembled bacteria found on the surface of the mucous membrane, and were probably the result of postmortem contamination.

*Pathologic Diagnosis.*—Chronic organizing peritonitis of unrecognized etiology. Intestinal obstruction resulting from numerous transverse infoldings or constrictions of the intestinal wall, these being held in place by bridges of dense, organizing false membrane.

#### COMMENTS BY DR. WELCH.

After completing the foregoing examination and description I received from Dr. Porter two other parts of the intestine from the same case. These were both of small intestine. One measured 48 cm. in length, and the folds had been largely obliterated by transverse cuts through the false membrane. The other piece was still unopened. The appearances and pathologic changes in these parts were identical with those already described, the same obstruction from infoldings of the intestinal wall existing as in the specimen already described.

The mode of production of intestinal obstruction in this case is most remarkable and quite unfamiliar to me, and, so far as I am aware, previously unrecorded, although I have not searched the literature. The peritonitis was of the organizing, proliferative type associated with fibrinous exudation. It was probably the primary lesion. Anatomic features of interest relating to the peritonitis were the uniformity of the false membrane enveloping the bowel, the absence of fibrous adhesions to any notable extent, the laxity of the layer of connective tissue connecting the dense false membrane with the intestinal wall where the constrictions occurred, and the bridging of the tops of the constrictions by the dense false membrane of such a nature that when these bridges were cut through around the bowel the constrictions could be completely obliterated and the intestine restored to its normal length and appearance, save for the evidences of peritonitis. Most remarkable were the extent of intestine implicated in this unusual form of intestinal obstruction, all of that submitted for examination being similarly affected, the great shortening of the intestine in length resulting from the myriads of transverse constrictions, and the symmetry and regularity of the segmental constrictions entirely unlike the nicks and puckerings of the intestinal wall resulting from peritoneal adhesions.

It is evident from the description that the dense false membrane was responsible for keeping the constrictions in place. A further question is whether it was also responsible for their original production. If it be assumed that in process of organization of a progressive fibrinous exudate a false membrane, composed partly of connective tissue, was formed, that this surrounded the bowel uniformly, and was firmly adherent around the bowel at intervals, then it would seem that contraction of this false membrane in a longitudinal direction in consequence of the growth of cicatricial tissue would draw the intestinal wall into transverse folds at the situations where the contracting membrane is loosely attached. Mr. Brödel, who has kindly contributed the drawings (Figs. 1 and 2) accompany-



ing this report, and who is not only an admirable artist but also a skilled anatomist, has called my attention to the possibility of explaining such a disposition of the false membrane and the situation and regularity of the constrictions by taking into account the arrangement of the intestinal vessels. On an injected and moderately distended small intestine, slight transverse furrows can be seen, each corresponding to the course of an artery which passes from the mesenteric border over the side of the intestine, these arteries alternating as they pass now to one, now to the other, side of the intestine.

As already noted the constrictions seemed to correspond to the situation of these arteries. The suggestion is advanced, therefore, that the situations where the false membrane was loosely attached and where, therefore, the constrictions occurred, correspond to these arterial furrows, and that the constrictions themselves were due to contraction in a longitudinal direction of the organizing false membrane which was firmly adherent to the intestinal wall between the furrows. The distinguishing feature of the process in accordance with this view and as seems supported by the histologic characters described, is the peculiar mode of organization of a peritoneal exudate whereby the resulting membrane is firmly adherent in places to the intestinal wall and only loosely adherent in intervening places. As already noted the fibers and fibroblasts in the organizing membrane had a prevailing direction parallel to the long axis of the intestine, and this arrangement may account for preponderance of contraction in this direction.

The mechanical explanation which is offered is advanced as an hypothesis without strong proof. Other hypotheses have suggested themselves which take into account the participation of muscular contraction during life in producing the constrictions. In the stage of chronic peritonitis represented in this case, at which the acute exudate is far removed by intervening newly formed connective tissue from the muscular coats there is no reason to assume paralysis of these coats during life.

While it is apparent that the anatomic condition in this case was in no sense intussusception, the possibility may be entertained that muscular contractions causing the bowel contractions may have been such as would initiate intussusception, but that the dense false membrane covering the intestine was an obstacle to the production of actual intussusception.

Nothing was found to indicate the cause of the peritonitis by examination of the specimen sent me.

Dr. Welch's report was written Aug. 14, 1907. Up to the present time, April 8, 1908, he has been unable to find among several of his pathologist friends of wide experience any one who had ever seen or heard of a similar case. My search of the literature has been extensive but not exhaustive and I have found no similar case. Further investigation of the literature is now being made for me and the result will be reported later.

The strange thing to me in this case is not that the bowel should be infolded, shortened and hence obstructed, as it is, by a false membrane of such character and distribution as we have here, but that we have a membrane of this character so generally and evenly disposed. Given a membrane of the quality of the one found, disposed as it was, and it seems to me that the infolding, shortening and obstruction such as found in the case reported is the natural and almost necessary result. The natural tendency to contract, which is inherent in tissue such as that composing this membrane, would, under the circumstances, be enhanced by the contraction of the longitudinal fibers of the intestine. The tendency to circular constriction would be combated by the bowel contents and the infolding of the bowel coats.

In other words, in a case such as this the contracting force of the false membrane and the longitudinal fibers of the bowel worked together without resistance, whereas the tendency to circular contraction or constriction was opposed by the bowel contents and the infolding. The

outer surface of this false membrane is older and, therefore, firmer than the inner surface. This permitted the circular fibers to pull away from the false membrane, thus forming the folds, which finally filled the bowel and prevented circular constriction by the false membrane. In other words, the conditions found seem to me to illustrate the result of comparatively equal forces acting in opposite directions, the one meeting with resistance and the other with none.

#### DISCUSSION.

DR. G. W. McCASKEY, Fort Wayne, Ind.: It was my privilege to observe this patient for two or three weeks prior to turning him over to Dr. Porter. The case presented features of extraordinary interest. The complaint at the outset, when the patient first consulted me, was general abdominal pain and persistent green vomitus. I thought at first that I had to deal with a pyocyaneus infection. I made a culture and found an organism which corresponded morphologically to the *Bacillus pyocyaneus*. I turned it over to a bacteriologist, who said that it was the Eberth bacillus. Since then I have corresponded with the patient's family, but could get no history of anything even simulating typhoid fever.

I think that tuberculosis can be fairly excluded from the case. I had two injections of tuberculin given, first 5 mg. and then (time not permitting larger injections) 10 mg., but could not get any reaction whatever. I am sorry that I did not have the tuberculo-opsonic index taken. I did, however, have a pure culture made of the bacillus found, and the opsonic index for this organism was about 0.43. I then had an autovaccine made from this, gave several injections, bringing the opsonic index up to about 1, but, of course, the case went on just the same. We may have an organism which overcomes the blood resistance and to which the opsonic index will be low, yet that organism may possibly not have anything to do with the pathologic conditions with which we have to deal, although I think it quite possible in this case that this organism was the cause of the lesion. Whatever the infection was, it was progressive at the time of the operation. Dr. Welch says that the plastic exudate did not cover the mesenteric peritoneum, but was limited to that portion covering the intestine. This circumstance, I think, points to the conclusion that the exudate was due to an intraintestinal process, and in all probability was bacterial in character.

From the exclusion of tuberculosis and the finding of a bacillus resembling the Eberth bacillus I think that we may possibly have had to deal with an atypical chronic typhoid infection. It might be alleged in this case that we had a latent tuberculosis to deal with, and consequently no reaction was obtained to the tuberculin injections. The process was not latent, however. Dr. Welch says that there was continual new formation of plastic exudate, so that it is fair to say that the infectious agent was active at the time, and, inasmuch as the patient did not respond to 10 mg. of tuberculin, I think we can with considerable probability exclude tuberculosis as an etiologic factor in this case. At first it looked like a case of intestinal obstruction, but I used the charcoal test, and the charcoal passed through, which I think extraordinary, since Dr. Welch could scarcely introduce a probe. The case, so far as I know, is absolutely unique. A study of the gastric contents threw no light on the case. There were about 30 or 40 degrees of free hydrochloric acid. The leucocyte count was within the normal range. Although we concluded that there was plastic peritonitis, neither of us had any idea of the real pathologic findings at the autopsy.

---

**Lip Reading for the Partially Deaf.**—A society has been founded in France to teach the principles and technic of lip reading. In a communication in the *Revue de Laryngologie*, July 18, the society appeals to physicians to urge the partly deaf to learn this simple art. It relieves their ears of the strain of their efforts to hear, which fatigues or exhausts the auditory nerve and aggravates the condition of the ears, constantly working against the tendency to heal.



## ROENTGENOLOGY IN NEUROLOGY.\*

MIHRAN K. KASSABIAN, M.D.

Director of the Roentgen Ray Laboratory of the Philadelphia  
General Hospital.  
PHILADELPHIA.

My object in presenting this paper is to emphasize the diagnostic value of the Roentgen rays in certain neurologic affections in which the etiologic factors constituting the nervous symptoms may be traced back to some obscure pathologic condition. Or, again, when the value of the rays has been abundantly proved as a corroborative measure in the etiology of the symptomatology of some special neurologic condition.

I do not claim that the Roentgen rays will supplant the skilled neurologist in offering a diagnosis; I repeat that this special agent acts most happily for its confirmatory value. In treating of this subject I will follow the Roentgenographic findings rather than the method usually pursued in accordance with the neurologic manifestations.

enced by one of my patients. Examinations with the Roentgen rays revealed a periosteal inflammation corresponding to the area of exquisite tenderness.

*Fractures and Dislocations.*—Old and unredressed fractures and dislocations are often responsible for the presence of certain neurologic conditions. It should not be forgotten that fractures at the middle of the humerus may be the cause of wrist-drop.

*Synostoses.*—Excessive callus formation may manifest itself either by pressure on, or by inclusion of the nerve.

*Supernumerary Ribs and Vertebrae.*—Before the advent of the x-rays the diagnosis of the above conditions was beset with many difficulties and was rarely discoverable during life. It seems advisable to recall something of the symptomatology: Pain, shooting or neuralgic in character, usually first occurring in the neck and darting along the arm, not infrequently running as far as the elbow; again the pain may be felt as low down as the hand, or it may radiate to the head and



Fig. 1.—Roentgenogram of epiphysitis of the right os calcis; 1 shows the absorbed portion of the os calcis while 4 shows the healthy remnant of that bone. F, fibula; T, tibia; A, astragalus; S, scaphoid; O. C., os calcis; C, cuboid. The illustration on the left shows the normal os calcis in the patient referred to me by Dr. H. Augustus Wilson.

## THE OSSEOUS SYSTEM.

*Epiphysitis* may simulate a neuritis, as the following case well illustrates: A girl, 4 years of age, complained of constant pain in the heel. The diagnosis seemed to establish the presence of irritation produced by an ill-fitting shoe. A subsequent Roentgenogram, however, showed an inflammatory condition and a partial absorption of the epiphysis of the os calcis (Fig. 1).

*Osteitis and Periostitis.*—Periostitis, especially in the course of a nerve or its vicinity or along the path of a neural groove, may produce pressure symptoms on the nerve, or, extending, give rise to a neuralgia or neuritis. In one case periostitis of the lower third of the radius was accountable for the excruciating suffering experi-

enced by one of my patients. Muscular exertion (hard work) is prone to augment the suffering, and, indeed, many believe it to be the cause of it. These supernumerary ribs and vertebrae may closely simulate aneurism, causing aphonia, dysphagia, wasting of the muscles, etc.; but a single x-ray examination of the neck or spine will clearly establish a diagnosis (Fig. 2).

*Osseous Tumors.*—Whether these be malignant or benign, their pressure on adjacent nerves will occasion among the various other symptoms pronounced pain, etc.

*Exostoses.*—Exostoses, both congenital and gonorrheal, are often recognizable by means of the x-rays. In exostoses involving the lumbar vertebrae, pressure symptoms, whether produced in the cord itself or by the vertebrae, would be difficult or impossible of detection, except through the diagnostic agency of the x-rays.

*Hypertrophy and Atrophy.*—Unilateral enlargement of the articular surfaces of bones are frequently noticed

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



in such diseases as tabes dorsalis, syringomyelia, etc., dependent on certain trophic nerve changes. Atrophy of the osseous structures is best illustrated in the bones of the upper and lower extremities, where the atrophic condition may be the result of disease, of brachial palsies, etc. In bony atrophies, contractures of the muscles occur, the bones subsequently becoming rarefied and smaller, the process of growth being delayed either unilaterally or bilaterally.

*Acromegaly.*—This disease is best studied by observing the osseous changes occurring in the skull, chest, hip, knee, etc. (Fig. 3). Acromegaly needs to be differentiated from osteitis deformans, congenital bony enlargements, and the so-called giant growth, common only to single members, etc. In acromegaly the long bones, i. e., the femurs, are laterally hypertrophied, the articular ends of the tibia and fibula are rarefied, while the cancellous portion of the long bones is hypertrophied. On making an *x*-ray examination the bony structures of the

occurs a premature union of the sutures and the epiphyses, causing the small length and peculiar contour of the skull. It has been shown that there is a variable time for the growth of bone and the union of cartilage. The arrest of bony growth is variable; this may lead to alteration taking place in special cartilages, which is frequently designated as chondro-dystrophy of thyropriva.

In cretinism in young subjects the *x*-rays will readily reveal a short diaphysis and the absence of osseous articulating surfaces; instead we see the space between the diaphysis and the epiphysis to be clear and transparent to the rays, proving that the growth of the epiphysis has been arrested and has remained cartilaginous.

Not only are the centers of ossification delayed, but also the ossification of the epiphyses and the juxta-



Fig. 2.—Roentgenogram of a supernumerary right cervical rib. That the delicate shadows in the original Roentgenogram may not be lost in reproduction, the supernumerary rib has been lightly outlined. Patient of Dr. Solis Cohen, a girl, aged 17, showed a slight prominence over the right supraclavicular space. She complained of a radiating pain extending along the left side of the neck. The Roentgenogram shows the additional rib springing between the interval of the sixth and seventh cervical ribs. This supernumerary rib is about 3 inches long, one portion of 2 inches being separated from the remaining portion by a slight interval.

hands and feet at once arrest attention. The epiphyses of the phalanges are enlarged and deformed, the spots noted on the bony surfaces being osteophytes. The anterior extremities of the metatarsal bones are less opaque than in the normal state. In a sagittal view the characteristic shape of the skull, of the frontal ethmoidal and sphenoidal sinuses point unmistakably to the diagnosis; the sella turcica is widened and the occipital protuberance is enlarged and rarefied.

*Cretinism.*—It has long been known that an intimate relationship exists between pathologic changes in the thyroid gland and cretinism. In the latter disease there



Fig. 3.—Roentgenogram of a knee-joint of a patient with acromegaly. The case was referred to the author by Dr. Dercum and the Roentgenograms of the skull, chest and hip show, as well as does the knee-joint, the characteristic bony changes. The above illustration shows osteoporosis and alterations in the articular ends of the bones, hypertrophy of the cancellous portion of the femur, etc.

epiphyseal cartilages may persist for a long time, thirty or forty years, or even longer, and often never unite. By the administration of thyroid extract the growth of bone and the process of ossification have been hastened, proving the true pathogenesis of cretinism, as I have observed skiagraphically.

#### ARTICULAR SYSTEM.

The value of the *x*-rays is well attested in differentiating various arthritic conditions. Thus we can readily determine whether the changes present are: (1) Intra-articular, peri-articular, intra- or extra-capsular, tuberculous, simple or infectious, hypertrophic or atrophic, etc. (2) The existence of arthropathies



(nervous in origin) such as tabes, syringomyelia, rheumatoid arthritis, arthralgias of hysteria (Brodie's joints) traumatic neuroses, neurasthenia and psychasthenia. (The painful joints of psychoneurotics.) The knee joint is most frequently affected (gonalgia), the shoulder joint quite frequently so, while the talocrural and the intertarsal joints are only occasionally thus affected. Not infrequently the cervical portion of the spinal column may be the symptomatic region when the condition may be confused with that of cervical caries.

The diagnosis of arthropathies by the Roentgen rays obviates the former error of believing these changes, in so many instances, to be illustrations of neurotic joints; nevertheless, there is still danger of looking on the psychoneurotic joint as an organic disorder, and even today it is the skilled neurologist whose interference is so often necessary to prevent the surgeon employing the



Fig. 4.—Roentgenogram of an advanced type of tabetic arthropathy of the left knee joint. P, the patella is adherent to F, the femur. The letters F and T accompanied by arrows, indicate bony excrecences of the femur and tibia.

knife, saw or cast on these troublesome cases in the neurologist's category. Let me casually remark that the most brilliant studies and results bearing on the relation between diseases of the joints and of the nervous system had its inception and elaborate development in America.

*Tabetic Arthropathies.*—Ever since Charcot's brilliant researches on joint lesions occurring in tabes (1868) the study has received a new impetus. And while the clinical picture of the tabetic arthropathies is a familiar one, nevertheless the many obstacles arising not infrequently make a differential diagnosis a matter of difficult accomplishment. In the early stages the Roentgenogram will show a hazy joint due to fluid in

the capsule of the joint, or to the initial stages of a gonorrheal gonitis or a tuberculous arthritis, unless these facts are cleared up by the history and clinical symptoms.

In mild cases there may be distention of the capsule of the joint (especially well shown in the knee joint), with very little change in the peri-articular ligaments. In the advanced cases there may be discernible certain nodules of bone or cartilage (semi-opaque masses). In the severer types of arthropathies these fibrous structures become thinned and fused with neighboring structures, forming general fibrous masses in which bony and cartilaginous nodules frequently appear (Fig. 4).

*Tabes Dorsalis.*—In tabes dorsalis there occurs an osteoporosis and finally disappearance of the articular extremities; at this time there is evidenced the presence of exuberant osseous vegetations forming osteophytes and likewise calcareous deposits on the articulating surfaces, on the capsule of the joint, and even in the neighboring muscles and ligaments. The destructive process consists of cartilage disappearance, while the osseous structure rarefies. This invisible rarefaction is due to the superimposition of the calcareous deposit in the periarticular space.

#### SYRINGOMYELIA.

The joint affections in syringomyelia resemble very closely those that occur in tabes, but I have noticed that the upper extremity is more frequently affected: the shoulder, the elbow and especially the wrist; on the contrary, in tabes the lower extremity is mostly affected.

In syringomyelia the pathologic process in the development of arthropathies is slightly different. In advanced cases we notice hypertrophic enlargement of the extremities of the bones entering into the formation of the joint, which is usually a striking feature. The capsule is thickened, often ossified in places, and erosion of the cartilage or changes in the synovial membrane takes place. In other instances, instead of hypertrophy, atrophy is the result, and the bone is absorbed, spontaneous dislocation is noticed and exostoses are developed around the joint.

In tabes we but slightly observe exuberant ossification, the lesions will end in a complete destruction of the articulation, and in the disappearance of the osseous extremities. In shoulder affection the humeral head is deformed and dislocated and gradually absorbed. Metacarpal bones and the phalanges show clear disseminated spots.

*Arthritis Deformans.*—From tabetic arthropathies we differentiate arthritis deformans as follows: Arthritis deformans affects the small joints (rarely the knee), it exhibits hypertrophic varieties, the dislocation occurring is lateral, the osteophytes are sharp, pointed or curved, the extremities are absorbed and pointed, consequently displacement and overriding are very prone to occur.

#### IN MISCELLANEOUS CONDITIONS.

*Brain Tumors, Clots and Cysts.*—Roentgen ray diagnoses of nervous affections in the softer tissues are not so satisfactory and are very difficult of accomplishment for the following reasons:

1. Soft tissue tumors do not cast very dense shadows (cysts containing fluid often throw denser shadows).
2. Tumors, cysts, etc., are situated within thick bony structures as the skull and vertebral column.
3. The new growth may be far from the plate.



Tumors of the spinal cord are difficult to reproduce on the photographic plate because of the irregularity and thickness of the vertebrae and of the irregularity of the processes of the body of the vertebrae. Of course, tumors of bony growth are often noticeable on the plate. The portion of the cord between the plates of cartilage being transparent, the shadow of the cord may be visible on the plate; this is especially true in the lumbar region.

*Pachymeningitis.*—Pachymeningitis may show a slightly increased shadow less dense than the bones of the skull.

*Aneurism.*—I have frequently diagnosed, skiagraphically, paralysis of the recurrent laryngeal nerve which was causing aphagia or aphonia, in no way indicating the presence of an aortic aneurism.

*Mediastinal Tumors.*—Mediastinal tumors may often produce similar troubles in the larynx, the laryngoscope failing to reveal the cause of the condition. In these cases the Roentgen rays will readily establish the diagnosis.

*Foreign Bodies.*—The presence of foreign bodies may produce various neurologic disturbances. Their detection and localization will assist the surgeon in their removal, thus revealing to the neurologist the true cause of the disturbance. The presence of a foreign body may cause most serious trouble as the result of pressure symptoms.

*In Dentistry.*—Many dental affections are responsible for manifold neurologic symptoms, which are now readily diagnosticated by means of the *x*-rays. Unerupted teeth, malpositions, the presence of a fragment of broken instrument, etc. Not infrequently these conditions produce headache, neuralgias, epileptic seizures, etc.

#### THERAPEUTIC VALUE.

Microscopic examination of irradiated tissues has amply proved that the Roentgen rays exert a marked and peculiar action on those areas with which they are brought in contact. In neuralgias, whether of the acute or chronic type, marked alleviation of the suffering and of the lengthening of the intervals between the seizures has been noted. In some cases permanent cures have been attained. The analgesic action of the *x*-rays is now an indisputable fact.

On neoplasms the action of the *x*-rays has been proved by the clinical and microscopic changes occurring in the growth. Pressure exerted by the growths may assert itself as pain, neuralgia or some other neural manifestation. The irradiation of these neoplasms will not infrequently result in the absorption or lessening of the size of the growth, with relief of the pressure symptoms and a material improvement in the patient's condition. Roentgenology in neurology is still in its infancy. The future alone can reveal the possibilities of the Roentgen rays in the domain of neurologic diagnosis and therapeutics. With advances in the apparatus and increased skill on the part of the operator, many obscure and possibly unknown conditions may yet unfold themselves as pathologic states, heretofore unrecognizable.

#### SUMMARY.

1. The Roentgen rays have been invaluable in detecting the etiology of nervous manifestations, the result of disease of the osseous system. The rays are not a substitute for, but only an adjunct to, the neurologist's investigations.

2. Changes occurring in the osseous system (resulting in neurologic symptoms) are readily detected by the rays.

3. The differential diagnosis between epiphysitis and neuritis is readily accomplished.

4. Osteitis and periostitis are readily differentiated and diagnosed by this agent.

5. Neurologic conditions dependent on old and unreduced fractures and dislocations, and pressure symptoms from excessive callus formation, are now readily diagnosticated.

6. Supernumerary ribs and vertebrae formerly so rarely diagnosed during life are easy of detection by the *x*-rays, as is their differentiation from aneurism.

7. Osseous tumors and exostoses are easily discernible. Troublesome pressure symptoms are thus readily accounted for.

8. Osseous atrophy and hypertrophy are recognizable by the *x*-rays, and their study is important because of the diseases with which these conditions are associated.

9. The osseous changes occurring in acromegaly and cretinism are well brought out skiagraphically and are easy of differentiation.

10. The value of the Roentgen rays is of paramount importance in determining changes occurring in the articular system, whether due to pathologic states in, near or around a joint, as in the study of arthropathies, spinal-joint affections, etc.

11. The arthropathies of the tabes and dementia paralytica form an interesting study from a Roentgen-ray viewpoint. The early, mild, advanced and severe types of arthropathies present varying Roentgenograms.

12. The differential diagnosis between tabes dorsalis and arthritis deformans presents a widely contrasting picture by the use of the rays.

13. Brain tumors, clots and cysts are more difficult of interpretation. Soft tissues do not cast shadows so dense as do the harder tissues, the growth is within a bony cage and may be far from the plate.

14. Similarity of symptoms arising from aneurisms and mediastinal tumors are frequently differentiated by a skiagram.

15. The skiagraphic detection, localization and extraction of foreign bodies will frequently explain existing neurologic manifestations.

16. Dental studies have greatly progressed since the introduction of the *x*-rays. The headaches, neuralgias, etc., so often dependent on unerupted teeth, malpositions, etc., are now readily detected and remedied.

17. The therapeutic action of the Roentgen rays is evidenced in their analgesic action, in their palliative and often curative effects in neuralgia, and in their causing an absorption or decrease in size of various growths and neoplasms. Painful pressure symptoms are thus mitigated.

18. Future research, increased skill in manipulation, and greater improvements in the apparatus employed, may open up new paths in neurologic studies and investigations.

#### DISCUSSION.

DR. GEORGE A. MOISEN, Denver: I believe that the greatest value of the Roentgen ray in nerve work lies in the revealing of the impingement on nerves by exostoses and other deformities. The *x*-ray is very valuable in the depiction of brain tumors which are localized clinically, but I find that I can not rely absolutely on the shadow in deep-seated tumors. If a tumor happens to be deep-seated the shadow will be faded out and not sharp in outline. If the tumor is near the



surface, however, the outlines are sharp and the *x*-ray evidence is more reliable. This applies more often to tumors of the cerebellum. Of course, if the tumor happens to be soft in character the shadow will not be so dense. I met a curious case of a cyst which I had localized in the superior parietal convolution of the right side. I had some doubt about the location, and had a skiagram taken; but strangely enough the shadow covered almost the entire side of the skull. I determined, however, after careful clinical study of the case, that I must be correct in my original diagnosis, and therefore the skull was opened, disclosing first, a small cyst, then a dilated lateral ventricle five and one-quarter inches long and four and one-half inches in width, filled with a straw-colored fluid resembling cerebrospinal fluid. Why the skiagram reproduced the shadow I don't know, but sometimes, I presume, fluids, by reason of refraction, will give shadows which may be misleading. I think that the value of the *x*-ray for the diagnosis of nervous diseases in exostoses and other deformities causing nerve impingement, and also especially in localizing brain tumors which are not too deep-seated, can not be overestimated.

DR. S. J. WRIGHT, Akron: The medical profession is not always ready to receive new discoveries. Roentgen was very adroit in keeping his discovery absolutely secret for several months until he was prepared to exhibit to the medical profession skiagraphs. Dr. Robert Morris of New York City, at the Ohio State Medical meeting at Columbus, presented his views on obliterative appendicitis, described by Nicholas Senn of revered memory, and defended surgeons who had been criticized for operating in this condition. Dr. Morris discovered the fact that while obliterative appendicitis destroys the mucous membrane of the appendix the muscular layer and peritoneal coat and leave scar tissue, it does not destroy the nerves, but is likely to pinch them. This condition is an indication for operation or treatment to relieve the nerves, which can readily be done. Dr. Morris says that ablation of the scar tissue removes all symptoms. I had such a case, one of a man about 40, who had repeated attacks of catarrhal appendicitis. He had almost constant pain in the appendiceal region and distention with gas, and a classical history of catarrhal appendicitis at intervals of weeks or months for several years. I told the patient that he probably had no ordinary appendicitis and no appendix, but that there might be scar tissue pinching the nerves. I used an *x*-ray, released the nerves, and a complete recovery followed; and I hold that every surgeon who has been criticized for removing the fibrous condition resulting from the obliteration of an appendix can defend himself in the absence of pus or infection on these grounds.

## EXPERIMENTS ON AN ASH-FREE DIET AND SALT METABOLISM

WITH ESPECIAL REFERENCE TO EDEMA IN DIABETES  
MELLITUS.\*

ELLIOTT P. JOSLIN, M.D.

AND

HARRY W. GOODALL, M.D.  
BOSTON.

The rôle played by the inorganic salts in diabetes mellitus has not attracted much attention. It was therefore a matter of considerable interest when Taylor<sup>1</sup> noted the presence of acetone and diacetic acid in the urine and acetone in the breath while he was living on an ash-free diet. The question was thus raised whether the withdrawal of salts from the diet might lead as a rule to the production of an acidosis in a healthy individual or accentuate an acidosis already existing in

a diabetic patient. We have investigated the former of these points during the last year and have accumulated some information bearing on the latter point.

Two healthy students were placed on Taylor's ash-free diet, consisting of the whites of eighteen eggs, 200 gm. sugar and 120 gm. olive oil. After twelve and nine days respectively the chlorin excretion in the urine fell to 0.17 gm. Tests for acetone and diacetic acid in the urine were invariably negative. The results of these experiments showed no marked changes in metabolism, but rather represented the withdrawal of accessory salts from the body. They confirmed the views of earlier writers that it is practically impossible to diminish the chlorin of the body by more than 10 to 14 per cent., and demonstrated that the loss of water was proportionate to this. No remarkable symptoms appeared and those that occurred were less than would be expected from such a diet, even though it contained a normal quantity of salts. They gave no support to the view that the withdrawal of salts from the diet gives rise to an acidosis of the acetone type. A full account of these experiments will be found elsewhere.<sup>2</sup>

Evidence against the accentuation of an acidosis by the withdrawal of salt (not salts) was afforded by observations on a case of diabetes. This patient showed on the first few days of observation a positive carbohydrate balance of 60 gm. During a febrile attack this positive carbohydrate balance changed to a minus carbohydrate balance of the severest degree, not only all the carbohydrate in the diet appearing in the urine, but nearly all the carbohydrate as well which theoretically could be formed from the protein metabolized in the body. On account of the severity of the case and the febrile condition of the patient the diet was of very simple character, and accidentally contained a very small quantity of salt. The chlorin was estimated repeatedly during the course of the case and on the fifteenth day was found to amount to but 1.7 gm. in twenty-four hours. Two days later it fell to 0.63 gm. and on the following day was 0.64 gm. Neither the symptoms nor the degree of acidosis, as determined by the ammonia, gave evidence of increased acid poisoning despite this low chlorin. We would not attach too much importance to these results, because the excretion of chlorin may be so variable a factor when there exists, as in this case, trouble with the kidneys. Details of this case are given in the article above mentioned.<sup>3</sup> In Case 135, later described in this present paper, diabetic coma appeared when the salt was lowered in the diet, but the connection between the two phenomena would appear to be indirect, though by no means unimportant. Before entering further on the discussion of salt in diabetes, however, we wish to refer to the occurrence of edema in this disease.

The occurrence of edema in diabetes mellitus finds scant mention in the literature. Naunyn<sup>3</sup> says that edema is not a seldom occurrence in cachectic patients with severe diabetes, and is often an early symptom with patients having arteriosclerosis and myocardial degeneration, with or without the presence of albumin. It is occasionally present without cause. He mentions one case in which the edema disappeared as the patient became sugar-free on a diet containing 60 to 100 gm. bread. It is his impression (p. 261) that arteriosclerotic patients with diabetes mellitus seldom suc-

\* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Taylor: Studies on an Ash-Free Diet, Univ. Calif. Pub. Pathology, 1904, i, No. 7, p. 71.

2. Arch. Int. Med., July, 1908, i, 615.

3. Naunyn, B.: Diabetes Mellitus, ed. 2, 1906.



cumb to progressive dropsy, and very seldom present the picture of venous cardiac failure with its signs of passive congestion—persistent dyspnea, marked cyanosis, anasarca and fluid in the cavities of the body.

Von Noorden<sup>4</sup> writes: "In a few cases the patients have developed edema during the oat treatment, whereas otherwise, as we all know, the diabetics rarely exhibit edema." In another place<sup>5</sup> he makes this same statement apply to diabetics, even in the presence of valvular disease. Williamson<sup>6</sup> has observed anasarca in more than 5 per cent. of his diabetic patients. He records one case in particular in which it was not associated with albumin or cardiac or vascular trouble and cites Frerichs as having noted the same phenomenon in twenty-five out of four hundred cases. Roberts (cited by Williamson, p. 22) attributed the slight pitting over the tibiae to the atonic state of the subcutaneous tissue rather than to true edema; but Ebstein<sup>7</sup> ascribes it in a case of his own to the influence of the vascular nervous system.

Seven of our own diabetic patients have shown edema of greater or less extent, although at the time they presented very slight or no evidence whatsoever of disease of the kidneys or heart. In only two instances did the arteries present even moderate sclerosis. The cases were all of the severe type of diabetes. This was shown by the marked acidosis, minus carbohydrate balance, and the loss of forty to forty-six pounds during the previous course of the disease. Four of these patients have since died in typical diabetic coma; one of the remaining showed 7 gm. ammonia in the urine for twenty-four hours, and another 3.7 gm. ammonia. The edema in these patients occurred during a period in which there was a considerable restriction of the diet with a consequent fall in the excretion of sugar. Under such circumstances a simultaneous rise in the degree of acidosis was to be expected and such in fact took place. Along with the restriction of the diet sodium bicarbonate was administered either for the first time or in doses larger than those previously given. None of the patients died for some months after the edema was observed, although two showed distinct, clinical, premonitory signs of coma at this time. A brief summary of the various cases follows:

CASE 40.—The patient was a woman, aged 57, whose weight had fallen from a maximum of 152 pounds to 92 pounds. She then gained 21 pounds in twenty days in the spring of 1904 and presented edema. During this period the carbohydrates were restricted so that the excretion of sugar fell from a total of 141 gm. to 104 gm. There was a minus carbohydrate balance and diacetic acid was present in excessive amount. Sodium bicarbonate 12 or more gm. daily. There was a slight trace of albumin in the urine and occasionally casts. Premonitory signs of coma were present throughout, but death in coma did not take place until two months later.

CASE 79.—The patient was a man, aged 43, whose weight had fallen from 180 pounds to 139 pounds. He gained 5½ pounds in ten days in September, 1904, and edema appeared. Five days before the first weight was taken there were 253 gm. sugar in the urine, but on the last days the sugar had fallen to 36 gm. There was a minus carbohydrate balance which persisted except for a few days later when the patient became sugar-free temporarily on a protein fat diet and the employment of vegetable days. Diacetic acid was absent at first, but soon appeared with the restriction of carbohydrates.

Sodium bicarbonate was probably given in doses of 4 to 8 gm. The urine showed no casts and only the merest trace of albumin. One year and a half later, during a period of strict dieting and increase of alkali, the patient told me that his weight rose in the course of a few days 25 to 30 pounds and that there was general dropsy. The diacetic acid was then present in the urine in excessive quantities. Death occurred about six months later in coma.

CASE 101.—The patient was a man, aged 57 years, whose weight had fallen from 175 pounds to 132 pounds. He gained 13 pounds in twenty-two days in the autumn of 1905. Edema was marked at the time of maximum weight, but was not present before. In this interval the sugar in the urine decreased from 154 to 26 gm., and during the middle portion of the period there was a great increase in diacetic acid, and a minus carbohydrate balance. Sodium bicarbonate was given 8 to 12 gm. daily. The urine was usually free from casts and contained only a slight trace of albumin. Death occurred in coma a year and a half later.

CASE 132.—The patient was a man, aged 42, whose weight had fallen from 182 pounds to 128 pounds. He gained 4¾ pounds in ten days, November, 1907, only to lose the same in the following twenty-four hours. Edema was slight. During this period the sugar in the urine fell from 220 gm. to 60 gm. and the carbohydrates in the diet were lowered in about the same proportion. On admission the diacetic acid was recorded with a single + sign, but after ten days with ++++ signs. There was a minus carbohydrate balance. No sodium bicarbonate was given the first five days, but the latter five days it averaged 18 gm. There was a very slight trace of albumin and no casts.

CASE 164.—The patient was a man, aged 43, whose weight had fallen from 198 pounds to 132 pounds. He gained 11½ pounds in nine days in September, 1908, showing much edema. During this time the sugar in the urine fell from 180 gm. to 137 gm. and there was a corresponding lowering of carbohydrates. Diacetic acid was recorded as ++ at the start but on the last day was ++++. There was a minus carbohydrate balance. Sodium bicarbonate was given, 20 gm. daily. There was the merest trace of albumin in the urine and no casts.

CASE 147.—The patient was a man, aged 42, whose weight had fallen from 185 pounds to 151 pounds. He gained 12 pounds in twelve days in June, 1907, and edema appeared. During this time the sugar in the urine fell from 215 gm. to 51 gm. on the eleventh day, and diacetic acid increased from ++ to ++++. There was a minus carbohydrate balance. Sodium bicarbonate was given, 12 gm. daily. The urine showed the merest trace of albumin and no casts. Thirteen months later the patient returned to the hospital in a much worse condition. For convenience the case will be discussed later, but the data are recorded here.

TABLE 1.—CASE 147.

Date	Urine.		Diet.				Weight	Remarks.
	Diacetic acid.	NH <sub>3</sub> gm.	Total Sugar gm.	Carb. gm.	NaHCO <sub>3</sub> gm.	lbs.		
1908.								
2/25	+++	6	300	...	20	127½		
2/27	++++	5	118	92	20	127½		
2/28	++++	...	96	92	20	127½		Nausea, vomiting and threatening coma.
2/29	++++	...	113	68	24	127		
3/1	++++	...	149	123	24	122½		
3/2	++++	...	136	108	20	121½		
3/3	++++	...	131	103	20	124½		
3/4	++++	...	181	110	20	128		
3/5	++++	...	126	86	20	132½		Salt restricted.
3/6	++++	...	141	86	20	133½		
3/7	++++	5.6	166	...	20	133½		Patient allowed to visit a friend.
3/8	+++	7	229	...	20	133		

CASE 162.—The patient was a man, aged 30, whose weight had fallen from 154 to 113 pounds. He gained 8½ pounds in fourteen days in June, 1907, and edema appeared. The sugar in the urine amounted to 345 gm. about ten days previously, but was much less during the interval between the two dates on which he was weighed. Ammonia was present, 5 gm. Sodium bicarbonate was given, 16 gm. daily. The urine contained a slight trace of albumin and a moderate number

4. von Noorden, Carl: Diabetes Mellitus. E. B. Treat & Co., 1905, p. 193.

5. Die Zuckerkrankheit, ed. 2, 1907, p. 169.

6. Diabetes Mellitus and its Treatment, 1898, p. 227.

7. Diabetes Mellitus, Unterleibskoliken und Oedeme in ihren Wechselbeziehungen, *Ztschr. f. klin. Med.*, 1900, xl., 181.



of casts. Death occurred in coma five and one-half months later.

The factors which appeared most intimately connected with the development of edema in our seven cases were two—the restriction of carbohydrates and the administration of sodium bicarbonate. In our experience, however, the restriction of carbohydrates has never caused the appearance of edema in a mild case of diabetes. We have had an excellent opportunity to collect evidence on this point, because it has been our custom to weigh patients daily during the early period of observation, which is usually a period of restriction of diet as well. If the edema is dependent on restriction of carbohydrates, this must apply only to those cases like ours, which are of a severe type. To this aspect of the question we will later return.

The other factor—sodium bicarbonate—was considered by several of the patients themselves to be the cause of the edema, and for a time this seemed to us to be the most probable explanation. The first observation which threw doubt on this explanation occurred in the course of the treatment of Case 132. This patient gained, between November 14 and November 16  $5\frac{1}{4}$  pounds, although no sodium bicarbonate was administered. During this time the diet was restricted from 215 gm. carbohydrate to 130 gm. Between Nov. 19, 1907, and Dec. 1, 1907, an average of 22 gm. of sodium bicarbonate was given daily, but the weight rose from only 129 to 129 $\frac{3}{4}$  pounds.

much more rapid rate, namely, 3 $\frac{1}{4}$  pounds in the second four days. The quantity of carbohydrate was not reduced in the diet, but the amount of fats and protein was lowered because of the inability of the patient to take so much food. In the alkali period the quantity of liquids ingested was about 50 per cent. greater than during the first period, and exceeded the quantity excreted in the urine by 25 per cent. This was in contrast to the first period, when the quantity of liquids ingested and the volume of urine voided were approximately the same. Plenty of liquid was available, therefore, for the production of edema, yet it did not occur in the presence of sodium bicarbonate and a failing heart. The analytical data are presented in Table 2.

One of the points of interest in Table 2, and one which may have a bearing on the question of edema, is furnished by the chlorine excretion. This changed markedly as soon as sodium bicarbonate was administered, falling from an average of 6.3 gm. daily during the first period to 2 gm. daily in the second period. The constancy in the excretion of nitrogen and phosphates up to the alkali period was notable. As often occurs, the ammonia did not increase even in the presence of coma. The giving of 25 gm. sodium bicarbonate was certainly not sufficient reason for the lack of rise of ammonia with the need of the body for so much more alkali. The acetone and diacetic acid and the  $\beta$ -oxybutyric acid showed well the increasing acidosis,

TABLE 2.—CASE 135.

Intake.							Urine.								
Date.	NaHCO <sub>3</sub> gm.	Carb. gm.	Protein gm.	Fat gm.	Alcohol gm.	Liquids c.c.	Vol. c.c.	N gm.	NH <sub>3</sub> gm.	Acetone and diacetic acid gm.	$\beta$ -oxy. acid gm.	P <sub>2</sub> O <sub>5</sub> gm.	Cl. gm.	Sugar gm.	Weight lbs.
1908.															
1/26	0	135	110	185	..	3500	3720	21.8	4.2	7.9	29	4.4	8.2	160	88 $\frac{1}{4}$
1/27	0	135	110	185	..	3500	3940	19.6	4.3	7.8	29	4.5	6.3	165	89 $\frac{1}{4}$
1/28	0	135	110	185	..	3500	3210	20.5	4.4	7.3	24	4.6	5.9	160	86 $\frac{3}{4}$
1/29	0	135	90	155	..	3500	3210	19.2	4.1	7.3	26	4.2	4.8	163	85 $\frac{3}{4}$
1/30	25	135	70	185	..	3500	3190	16.3	3.5	8.7	33	4.1	1.6	146	85
1/31	25	120	60	95	23	5370	4600	19.1	4.3	12.6	51	5.1	2.3	146	83 $\frac{1}{4}$
2/1	37	130	109	130	45	5250	4050	18.7	3.3	10.7	39	4.3	2.0	137	82 $\frac{1}{4}$
2/2	52	70	60	95	45	5370	3510	16.0	3.5	10.2	37	3.9	2.1	121	81 $\frac{3}{4}$
2/3	..	15	15	30	45	800	360	15.0	...	....	..	...	...	86	....

A further opportunity was afforded of determining the influence of sodium bicarbonate in the production of edema by a study of the following case:

CASE 135.—The patient was a male, 34 years of age, who entered the hospital in January, 1908, in a most pitiable and cachectic condition, his weight having fallen from 138 to 88 pounds. He had been under our observation for nearly a year and a half, having developed diabetes three and one-half years before we first saw him. For a short time previous to admission he had given up on his own account the use of sodium bicarbonate, because he believed it was the cause of his edema. The diet on entrance consisted of milk, 1 pint, cream,  $\frac{1}{2}$  pint, fresh butter, 2 ounces, oatmeal (cooked), 1 gill, 4 eggs, meat, 10 ounces, potatoes, 8 ounces, 6 ounces of (cabbage, spinach, lettuce, tomatoes), apple, 4 ounces, orange, 4 ounces, olive oil, 1 ounce—without the addition of salt. It contained approximately 135 gm. carbohydrate, 110 gm. protein and 185 gm. fat. For the first four days no alkali was given. Twenty-five grams of sodium bicarbonate were then added to the diet. This was a little more than the quantity which the patient had taken intermittently for the two years up to the time he had omitted it before coming into the hospital. Two days after he began to take the alkali symptoms of coma became marked, and, despite the fact that the sodium bicarbonate was increased in quantity, death occurred two days later.

Not only was no edema to be noticed during the period of the administration of the alkali, but the weight, which had fallen 2 $\frac{1}{2}$  pounds during the first four days after entrance, continued to fall, but at a

but it is worthy of note that the increase did not take place at first, although there was undoubtedly a restriction of 100 to 200 gm. of carbohydrates as compared with the diet before entrance. The analyses of the  $\beta$ -oxybutyric acid were made by the modification of Magnus-Levy's method recently suggested by Mr. Black. Duplicate analyses presented most satisfactory results, and we can not too highly recommend Mr. Black's procedure, which shortens the time required for the analysis of  $\beta$ -oxybutyric acid to a few hours.

The observations on the two cases above reported are distinctly against the view that sodium bicarbonate had anything to do with the production of edema in our cases.

The study of the action of sodium bicarbonate in a diabetic individual is difficult because the results of its administration may be so diverse. For example, we know that the administration of sodium bicarbonate to a severe diabetic leads to an increased excretion of  $\beta$ -oxybutyric acid in the form of its salt. This may not be an indifferent matter. Desgrez and Saggio have shown that diacetic acid and more especially  $\beta$ -oxybutyric acid are distinctly harmful to the kidneys. It is therefore readily conceivable that the extra amount of these acids excreted following the use of sodium bicarbonate in severe cases of diabetes may so injure the kidney as

S. Sur la novicité des composés acétoniques. Compt. rend. Soc. de biol., 1907, lxiii, 288. Reviewed in Centrbl. f. Stoffwechsel- u. Verdauungskr., 1908.



to prevent its performing its ordinary functions, such as, for example, the excretion of salt. A retention of salt would of course in turn lead to a retention of water with an increase in body weight. The administration of sodium bicarbonate may on the other hand have a totally different effect, since it is one of the best methods for removing chlorin and with it water from the body. In this event sodium bicarbonate would lower rather than increase body weight. Both of these actions might go on simultaneously. In that event it would depend on the quantity of salt in the body and the degree of injury to the kidneys whether the gain or loss of weight takes place. Still another variable enters into the problem, for both Magnus-Levy and we have observed in the study of patients with fatal diabetic coma that considerable quantities of chlorin may be excreted by the intestines.

In order further to simplify the question of the etiology of edema in diabetes we determined to note the effect of the withdrawal and addition of salt to the diet of a diabetic patient. A favorable opportunity was afforded by observation of Case 135, above mentioned. The diet, which was constant, contained a comparatively small quantity of chlorin, though an amount amply sufficient for the usual needs of the body. During the first four days of the experiment the chlorin in the

of diabetic patients in coma is more concentrated than normal. A diabetic patient on the verge of coma is well known to be in unstable equilibrium. At such a time the removal of nearly all the accessory water from the body must be of serious import.

Suggestive evidence that salt plays an important rôle in the production of edema in severe diabetes was given by Case 147 already reported. An examination of the data displayed in the table of that case will show that when this patient was on the verge of coma, the weight was at the lowest point. On this day in addition to the administration of considerable doses of sodium bicarbonate, as much as this particular patient's stomach would bear, we gave salt solution enemata, and he subsequently took a little more salt in the diet than is the rule. Coincident with his improvement, as was to be expected, there was a gain in weight, but this was so rapid that it is impossible to explain it otherwise than by the retention of water, which was later found by the appearance of edema. The gain in weight ceased when salt in his diet was restricted, although this was not done until he had replaced most of the floating water of the body. The improvement of the patient with comparatively small doses of sodium bicarbonate was unexpected and it suggested that the salt simultaneously administered might have had some contribu-

TABLE 3.—ADMINISTRATION OF SALT TO PATIENTS WITH DIABETES.

	Case 11.	Case 112.	Case 155.	Case 8.	Case 105.	Case 186.	Case 194.	Case 163.
Age .....	49	50	46	69	18	60	13	43
Carb. bal.....	—	—60	+40	+35	—	St.+	+20	+87
NaH <sub>2</sub> PO <sub>4</sub> .....	3.3 gm.	3.7 gm.	.....	.....	.....	.....	1.5 gm.	.....
Diacetic acid.....	++	++	0	0	++++	+	0	0
Weight (lbs.) during Control Period:								
Day 1.....	147	193	173 1/2	153	111 1/2	176 3/4	110 1/4	170 1/8
2.....	147	193	173 1/2	152 9/16	112 3/8	176 3/4	111	168 1/2
3.....	145	192 1/2	173 1/2	152 5/8	111 3/8	176 3/4	111	168 1/2
4.....	145	193	173 1/2	153	111 1/4	176 1/4	110	168 3/4
Weight (lbs.) during Salt Period:								
Day 5.....	147 1/2	196 1/4	173 1/2	153	110	176 1/2	111 1/4	169
6.....	149	194	173 3/4	153	110 3/4	178 1/4	112 3/8	169 3/8
7.....	148	196 1/4	173 3/4	152 1/2	111	177 1/4	112 1/4	169 7/8
8.....	148	197	174 1/2	.....	111 3/8	177 1/4	112 1/4	170
Weight (lbs.) during Second Control Period:								
Day 9.....	.....	195 1/2	175	152 1/16	112 1/4	181	111 1/4	169 5/8
10.....	148	194	173 1/2	151 3/8	112 3/8	180	111 1/8	169
11.....	149	193 1/2	173	151 1/2	112 1/2	179	111	169 7/8
12.....	149	.....	173	152 1/8	112 1/2	179 1/2	110 1/2	169 1/4

urine gradually decreased. This was presumably due to the small amount of chlorin in the diet as compared with that before entrance. The fall in chlorin excretion became much more rapid as soon as alkali was begun. The weights were parallel to the chlorin, falling slowly at first and then rapidly. Edema did not occur in the presence of a restriction of salt although the condition previously found favorable to its appearance—a marked diminution in the carbohydrate intake—was present. The explanation would thus apparently lie in the restriction of the salt in the diet. But the case suggests many interesting questions.

The patient remained in nearly as good condition during the first four days in the hospital as at entrance, but coincident with the administration of sodium bicarbonate, coincident with the fall of chlorin to a daily average of 2 gm., and coincident with the increasing loss of body weight, coma appeared. Might not these four factors be brought into connection? The sodium bicarbonate accelerated the removal of the accessory chlorin and water from the body, and it set free for elimination increased quantities of  $\beta$ -oxybutyric acid. Was not the percentage of this acid thereby increased in the remaining body fluids? In support of this view there are data available which show that the blood

tory effect. It will be remembered in Magnus-Levy's remarkable case (Case 6) recovery from actual coma took place with the administration of large doses of sodium bicarbonate, some of which we infer was dissolved in normal salt solution. It is of interest too that in his case general dropsy, including ascites, developed. There was, however, albumin in the urine of his patient.

If the withdrawal of some of the salt from the diet of a severe case of diabetes prevents the occurrence of edema when the carbohydrates are being restricted, the administration of salt should lead to salt retention and gain in weight. We, therefore, gave salt in doses of 4 gm. twice daily to eight patients with diabetes. The weights of the patients were taken in the same clothes at the same hour (as a rule shortly before a meal) and after urination. For the sake of control the patients were weighed for several days preceding and following the salt period. The data are presented in the form of a table (Table 3). Two of the patients (11 and 112) presented marked acidosis, and it is at once evident that these were the only cases showing a material gain in weight in the salt period. They are patients who clinically correspond exactly with those in whom we previously had noted edema. Patient 105 was a boy



with advanced diabetes of the severest type. He had not, however, lived on a very restricted diet for some time, and frequently took more than the moderate amount of carbohydrates allowed. Despite the severity of the disease acidosis was not marked, presumably because of his liberal diet. Patient 194 was a young girl with diabetes of only a few months' duration and of a mild form. The youngest patient with diabetes who in our experience has shown edema was 30 years of age. Patients 155, 8, 186 and 163 presented all the requirements for the production of edema, save that their diabetes was of a mild type without acidosis. These patients failed to gain weight in the salt period. These experiments require confirmation, but so far as they go they suggest that salt is an important factor in the edema of diabetic patients.

If one studies the quantity of chlorin eliminated by patients in diabetic coma it will be found as a rule to be slight. This may be due partly to starvation during the last few days of life, partly to the excretion of chlorin by the intestines, and also partly to the use of sodium bicarbonate in considerable amount during the period previous to the onset of coma, as well as to its employment in excessive amount in coma itself. The low chlorin excretion in coma is shown in Table 4.

A study of this table will show that the chlorin was low almost without exception when alkalies were admin-

TABLE 4.—CHLORIN EXCRETION IN COMA.

Author.	Case.	Duration of coma, days.	Total Cl. in coma, c.c.	Total vol. urine in coma, gm.	Remarks.
Magnus-Levy..	1	3	18.7	14.050	No alk. Died next day.
Magnus-Levy..	2	1 1/2	1.30	6.590	Alk. R. Died.
Magnus-Levy..	3	3	18.49	10.060	No alk. Died.
Magnus-Levy..	5	12	5.24	5.400	Alk. R. Died next day.
Magnus-Levy..	6	5	13.22	36.825	500 gm. NaHCO <sub>3</sub> . Recovered.
.....	6		14.40	9.475	Out of coma. Ascites.
.....	4		15.38	17.350	420 gm. NaHCO <sub>3</sub> . Coma. Recovered.
Joslin.....	4	3	3.9	23.350	Alk. R. Died next day.
Joslin.....	135	3	6.4	15.990	Alk. R. Died next day.

istered, and high in those instances in which no alkalies were given. The only instance (Magnus-Levy, Case 6) in which the chlorin approached normal limits when alkalies were given recovered from the coma. In that case dropsy, including ascites, was present. One explanation of the appearance of coma in a severe case of diabetes mellitus would be as follows: The restriction of the carbohydrates in the diet leads to the non-oxidation of very considerable quantities of  $\beta$ -oxybutyric and diacetic acid, quantities much above those already being formed in the body. The elimination of these acids causes an irritation of the kidneys. This leads to the retention of salt and the production of edema in those individuals whose bodies contain considerable quantities of sodium chlorid. When the chlorin is low in the body, as is frequently the case, due in part to the long-continuous use of sodium bicarbonate, or to the lack of ingestion of food and even partial starvation in the last few days preceding coma, there is no extra salt to be retained, and consequently no edema appears. These latter patients therefore are especially prone to coma because the acids remaining in the body are in a more concentrated solution. Nature on the one hand is making every effort to remove the acids from the body by the kidneys by means of the excretion of large quantities of urine, because only in this way can much  $\beta$ -oxybutyric acid be excreted, while on the

other hand she is attempting to retain chlorin and water in the body to protect the normal concentration of body liquids.

The treatment of diabetic coma by the use of sodium bicarbonate has afforded unsatisfactory results, but prophylactically the use of alkalies appears to be of undoubted value. From the observations and experiments above recounted it would seem advisable to note the chlorin excretion in severe cases of diabetes, and when it is found low or when weight is falling yet the actual net caloric value of the food is sufficient, to add salt to the diet. In actual coma it would appear advantageous not only to administer large doses of alkalies, but also to give with them moderate quantities of salt. It is perfectly obvious that too much salt might do quite as much harm as too little, because by its administration too much liquid might be retained in the body, and the  $\beta$ -oxybutyric acid fail in excretion. Moderate quantities, however, would appear theoretically to be indicated. Only last year Folin suggested that the exclusive administration of one form of alkali was irrational and recommended a combination of salts.

## CONCLUSIONS.

1. The withdrawal of salt from the body does not lead to the production of acid intoxication of the diabetic type nor does it increase an acidosis already existing.

2. Edema in cases of diabetes mellitus presenting marked acidosis frequently occurs coincident with restriction of the carbohydrates in the diet.

3. This edema is not due to the simultaneous administration of sodium bicarbonate.

4. The edema is probably caused by the increased production of acids causing injury to the kidneys during excretion, thereby leading to retention of salt.

5. Patients in diabetic coma almost without exception present no signs of edema, and show diminished chlorin in the urine if alkalies are given.

6. The careful administration of salt along with sodium bicarbonate is recommended in the prophylactic and actual treatment of diabetic coma.

81 Bay State Road. 71 Marlboro Street.

## DISCUSSION.

DR. ALEXANDER LAMBERT, New York: The cases that cause us the greatest worry and require the closest attention are those of diabetes mellitus in most unstable equilibrium. It would be interesting to know whether Dr. Joslin noticed at some time a diminution of the excretion and whether, in the slow drying-out process which the system must necessarily undergo, the amount of thirst diminished as the edema came on and the diminution in the water became apparent. In a discussion the previous evening the question came up in regard to sudden changes in diet in diabetes. I have never hesitated in making these sudden changes in diet, because I have not, as a rule, given alkali; whereas those who give alkalies in a patient with a severe acidosis find it unwise to make these sudden changes. Changing the salt content of the diet, the sodium chlorid and the sodium bicarbonate must be of great moment to these people. I have never seen anything but benefit result from these sudden changes in diet when I did not give alkalies, when the indications were evident, of course. In cases of long standing one can not hold the diabetic to too severe a diet. When too low a diet is given acidosis in many cases may come on, or be most prone to come on. It is hard to keep a diabetic contented with a restricted diet. If by the use of salt, as Dr. Joslin has suggested, we can relieve patients of some of their symptoms, keep them in better equilibrium, and keep the equilibrium in a more stable condition, I think that the observations made by Dr. Joslin are most valuable.



DR. J. M. ALLEN, Liberty, Mo.: Over thirty years ago I found chronic inflammation and ulceration of the duodenum on postmortem examination in two patients that died from diabetes mellitus. Since then I have made postmortems in five additional cases, and in each found chronic inflammation and ulceration of the duodenum and no other pathologic condition, except the ordinary changes to be found in the kidney. In all I have treated twenty-seven cases: the clinical symptoms of each were the same as those of which I made postmortem examinations. Hence I conclude that diabetes mellitus is the result of faulty metabolism in the duodenum, caused by the pathologic condition mentioned. The practical abilities of the old masters in our profession are nowhere indicated with more force than in the diet list given to diabetics by Watson, Wood, Flint and others, which mainly consisted in albuminoids, thereby requiring but little function of the duodenum, and lessening the possibility of physiologic hyperemia. I read a paper on this subject and along these lines before the American Medical Association at its semi-centennial meeting at Philadelphia.

DR. G. W. McCASKEY, Fort Wayne, Ind.: The clinical importance of metabolism has increased greatly during the past few years, and the entire question of metabolism has assumed a very important place. One must look to the test-tube for a solution of many problems in connection with clinical medicine. I was particularly impressed by what Dr. Joslin stated about the four cases of severe diabetes in which there was a chlorid retention with a serous effusion; whereas in the mild cases there was none. This seems to me to point to the existence of an impaired renal permeability, at least for salines. It has been shown by von Noorden that as diabetes continues on for a period of time the sugar in the blood must be increased considerably over 0.1 per cent. before glycosuria takes place. Normally when there is over 0.1 per cent. glycosuria ensues. Whether this is conservative on the part of Nature, or whether it is the result of the chronic irritation, there is diminished permeability of the renal epithelium and the sugars and chlorids gradually increase in the blood.

DR. ELLIOT P. JOSLIN, Boston: With the diminution in the excretion of urine there is a corresponding diminution in thirst. Recently Dr. Goodall and I published in the *Boston Medical and Surgical Journal* personal observations on the manner in which acidosis affects young and old diabetic patients. We found that the latter succumbed to a degree of acidosis which young individuals could stand well. When an acidosis developed in a person of advanced years, or one past middle life, the prospect for life was less than when a corresponding degree of acidosis occurred in a young individual. Presumably it depended on the condition of the kidneys and their vulnerability. It is also interesting to know that it was only in the young persons that recovery from diabetic coma often occurred. The young person was capable of voiding large quantities of urine and so was able to wash the acids from the body. In one case nine quarts of urine were voided during recovery.

### ABDOMINAL CERVICAL CESAREAN SECTION.\*

J. PFANNENSTIEL, M.D.

Professor of Obstetrics and Gynecology at the University of Kiel,  
KIEL, GERMANY.

Obstetric therapy during the last twenty years has entered a new phase by the substitution of obstetric pubiotomy in the place of symphyseotomy. In the same way those methods of delivery which aim to extract the child by means of incision of the uterus have been markedly improved and enlarged.

The so-called vaginal Cesarean section of Dührssen, better termed hysterotomy, has opened a large field in

obstetric methods. This operation has shown good results in cases in which the indication for rapid delivery, especially in eclampsia and in prolapse of the cord, necessitates such measures. Likewise the true Cesarean section, that is, delivery through incision of the uterus by the abdominal route, necessitated by narrowing of the bony pelvis, or because of stenosis of the vagina and cervix, has undergone changes in the last decade that are by no means inconsiderable.

Among these new methods Cesarean section, performed according to Fritsch, is of advantage because it consists of transverse incision through the fundus. By this means the placental site is most surely avoided, and the method also admits of a more rapid hemostasis, because the suture of the uterine wall is performed by ligatures inserted vertical to the course of the blood vessels.

Lately an attempt has been made to enlarge the scope of the Cesarean section with the view of further safety to the child's life by the introduction of cervical Cesarean section through the abdomen. This new method is to be credited to Frank of Cologne. The fundamental idea was not the same as that involved in the practice of making an incision into the lower uterine segment in order to avoid the placental site, but is based on the effort to extend the indication for Cesarean section to infected cases. The results of Cesarean section in the last few years have only become so excellent after we had learned to avoid unclean cases and to confine our operations to such cases as presented a more or less complete guaranty of good asepsis; therefore, those clinics especially whose material consisted exclusively of waiting women show brilliant results, with a maternal mortality of only zero to 1 per cent.

On the other hand, those operators who have dealt with women previously subjected to the more or less frequent examination of midwives, or to attempts at delivery at the hands of the general practitioner, in spite of good asepsis, still report a mortality of 10 per cent.

Frank's idea was to operate extraperitoneally. He was followed by Veit and Sellheim, who attempt to modify his method in another direction. While Frank incised both the abdominal parietes and uterus transversely immediately above the symphysis, Veit planned his incision through the median line, and Sellheim adopted my transverse fascial incision through the abdomen. All three operators direct their efforts to protecting the peritoneal cavity from infectious material—especially from the amniotic fluid—by operating either entirely extraperitoneally or subperitoneally. They do this by reflecting the peritoneum from the bladder and cervix, entering the uterus below the plica vesico-uterina (Frank, Sellheim).

The same result is reached by transperitoneal operation, the parietal peritoneum being incised above the bladder. The peritoneum covering the cervix is then severed, and before the uterus is opened the visceral and the parietal peritoneal surfaces are united either by suture or forceps (Veit, also Frank and Sellheim).

A number of patients have recovered after this method of operation. Of course it is questionable whether these patients would not have recovered just as well if the classic Cesarean section had been employed; the results, however, have not appealed to me in favor of this idea. Baunni and Sellheim have already reported deaths due to sepsis.

I do not doubt that other, as yet unpublished, cases had a fatal outcome. We are all well aware how difficult

\* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



it is to distinguish between true infection and sapremic intoxication, or let us say for the sake of brevity, to distinguish dangerous from harmless microbial invasion *sub partu*, and, therefore, be in a position to form a correct prognosis. For a true infection may remain localized and consequently lead to a favorable outcome, while a sapremic intoxication may end fatally by producing general poisoning. The sharp distinction between infection and intoxication is theoretic and requires revision.

It is impossible in cases of fever *sub partu* to announce with certainty that this case is one of septic infection and, therefore, extremely serious, or that case is sapremic and, therefore, harmless. It is true that the experienced diagnostician will be guided in some cases by the general impression obtained from seeing the febrile patient, but such impressions can be deceptive. The simplest case would be one in which we know how the pregnant woman has been treated in the last few days preceding labor. For instance, when one is dealing with waiting women, who for many days before labor have been kept scrupulously clean, and during labor have either not been examined at all or only under conditions of strictest asepsis. If in such cases a rise of temperature *sub partu* occurs one can assume that this in general is of harmless nature; but even then it is possible to be deceived, as I have seen from personal experience.

It is known that pregnant women examine themselves, or allow themselves to be examined by other women, and thus infection can occur. The course of the infection is then puzzling to us, because the fact of its examination by unskilled hands has been concealed.

It is always well when dealing with febrile patients, or even with those in whom no fever is present, to consider them as infected, or at least as suspicious, providing we elicit the fact that the woman has been in labor for a long time or has been subjected to repeated examinations on the part of physicians or midwives whose asepsis is not reliable. If with these precautions we undertake Cesarean section, no matter by what method, there is no reason why a considerable percentage should not have a happy outcome, simply because no infection was present. On the other hand, it is equally true that in the fatal cases death might have occurred even if the delivery had been obtained through perforation instead of by Cesarean section, because we are dealing with a true, septic, progressive infection. But my standpoint is that it is not a matter of indifference whether the uterus of a febrile patient is left untouched or whether a complicated wound is made. The gravity of the prognosis is doubtless increased by the operation.

In this connection it is not alone the direct infection of the peritoneum with bacteria that must be taken into consideration, but also the fact that stagnating blood in both the uterine wound and in the uterine cavity furnishes a nutritive medium for the growth of the bacteria.

As important as it is to protect the peritoneal cavity from infected amniotic fluid, which is quite feasible by means of the above mentioned methods of Cesarean section, I am unwilling to acknowledge that this suffices to prevent fatal peritonitis. The same applies to the wound of the abdominal wall, which is the more imperiled the more complicated this wound is. To these objections others must be added. The fundamental thought of Frank is to protect the peritoneal cavity against the infectious wound area. The question then arises, "Is this technically possible?"

Complete subperitoneal operation, such as is recommended by Frank and Sellheim, is at times not feasible, as I have found by experience, and as is acknowledged by both these authors. They, therefore, advise in such cases—and Veit has adopted this in his longitudinal incision—cutting through the parietal peritoneum and the cervix, to undermine them, and to unite them by means of forceps. This produces a closed subperitoneal space, to which access to the cervix is obtained. Thus somewhat greater safety against infection of the peritoneal cavity is secured. But this is not an absolute guaranty, as infectious bacteria are known to break through such artificial barriers. It is, therefore, logical and right that Frank, who produces a broad skin and muscle wound, and, in addition, opens a large, subperitoneal, cellular area, should advocate open wound treatment and drainage. The abdominal wound is equally endangered if infection arises after my transverse fascial incision.

Sellheim has frankly acknowledged that he made a mistake in one fatal case by omitting drainage, but experience has shown that in most cases such drainage is entirely unnecessary. The same difficulty which confronts us in deciding the question whether in a given febrile case infection is present or not confronts us in deciding whether the wound is to be left open or the peritoneal cavity completely closed. The drainage entails a further risk, as it favors the likelihood of abdominal hernia as well as the consequence of abnormal adhesions in the cervical region with the abdominal wall, by no means inconsequential to the future well-being of the patient.

It is questionable whether we are justified in exposing the mother to all the above dangers in order merely to save the life of the child, which, as we know, is extremely jeopardized in the presence of infected amniotic fluid. I would like to answer this question in the negative and to advise that in all cases in which infection may surely be assumed, or in which a distinct suspicion of it is justified, to sacrifice the child by perforation, or where the pelvis is too narrow, to resort to Cesarean section, after the method of Porro.

I believe that our modern attempts to save the child's life shoot beyond the mark, and, therefore, at least for the present, I must refrain from endorsing the extra-peritoneal Cesarean section. But I am not prepared to discard Frank's idea completely in those cases in which the fever in a pregnant woman gives the general impression that the rise of temperature is harmless. I would advise, however, not to operate subperitoneally, but transperitoneally.

My experience in the realm of abdominal surgery has given me great confidence in the capacity of the undamaged peritoneum to destroy bacteria. It is well known that the peritoneum possesses these faculties to a much higher degree than the widely opened connective tissue surfaces.

Attempts to protect the body against invasion of bacteria within the abdominal cavity can be made by the injection of oil into the peritoneal cavity during the Cesarean section, as I have proposed, based on the experimental work of Glimm. That this measure is capable of preventing fatal infection has been shown experimentally by Glimm as well as the fact that the injection of oil, at least into guinea-pigs, is harmless.<sup>1</sup> My own clinical experience has as yet been too scanty to

1. Reported from my clinic by Hoehne.



permit of any final judgment, especially as I have been unable to apply the method in Cesarean section. So far as I am concerned, I would not hesitate to perform transperitoneal Cesarean section, combined with the injection of oil, in cases of apparently harmless fever and a living child. The proper dose consists of 200 c.c. of olive oil, which has been sterilized for half an hour on a water bath at a temperature of 100 C. (212 F.). This fluid is simply poured into the abdomen by means of an irrigator during the course of the operation.

Concerning the technic of the Cesarean section, I have rejected the extraperitoneal method of Frank, Veit and Sellheim; but the work of these operators has taught me that the classic Cesarean section, as well as the modification of Fritsch, can be improved by employing the cervical incision. My technic which I have reported<sup>2</sup> resembles that of Sellheim, but differs from it basically in that I operate transperitoneally.

To recapitulate, my technic is as follows: A typical transverse incision, about 15 cm. long, is made at the level of the anterior superior iliac spines; the aponeurosis of the rectus muscle is reflected up to the symphysis and down to the umbilicus. The peritoneum is then incised longitudinally for a distance of about 10 cm. Then a careful incision of the cervix is made between the bladder reflection and the contraction ring. The peritoneum is carefully guarded against contamination of amniotic fluid by means of pads, etc.

If one does not operate too early, that is, if one waits until the cervix has dilated and been partly absorbed, then the bladder rests merely against the vagina and no longer against the cervix. It is then unnecessary to separate the bladder from its underlying parts, as one has sufficient room to deliver the child by the direct cervical incision.

Should the plica vesico-uterina still be high in situation, this fold is incised, separated from the bladder and the bladder pushed down, exactly as in the abdominal operation for fibroid uterus. The child is now delivered by means of lateral pressure or extracted by the feet. After a short pause, which is occupied with cleansing, changing pads, etc., the placenta is delivered either spontaneously or by means of pressure exerted on the fundus (through the abdominal wall) similar to its ordinary delivery. The cervical wound is sutured in two layers and a typical closure of the abdominal wall is made. I have employed this method so far in one case with recovery. Rubeska reports a similar case. The method has numerous advantages over the classical operation of Saenger and that of Fritsch.

1. All the advantages inherent in my transverse fascial incision, that is, (a) the morbidity, and with it the mortality, has diminished, because the uterus remains *in situ*, and the rest of the peritoneal cavity is guarded from contamination from without; (b) the danger of a ventral hernia is eliminated; (c) the patient is able to leave her bed early (in normal cases from the third day on), which shortens the convalescence considerably.

2. Further advantages are due to the situation of the uterine wound. In most cases the hemorrhage is minimal—with the exception of placenta previa. (a) No large vessels are situated within reach of the incision; (b) detachment of the placenta is entirely left to Nature.

The course of labor resembles, as Sellheim has justly

said, more closely a physiologic process. My operation excels that of Sellheim because of greater simplicity and the avoidance of all those objections previously discussed in criticising the extraperitoneal method of Frank and Veit. My operation also can be applied in cases in which the mother has an apparently harmless fever, and in which the life of the child must consequently receive due consideration. In these cases the oil injections are to be employed immediately after the extraction of the child.

The application of the cervical Cesarean section is extensive. First, in contracted pelvis, the indication for pubiotomy must, however, not be narrowed, as the excellent results recently obtained should be taken into consideration. Only in cases in which pubiotomy no longer promises a sure chance for the child is Cesarean section to be undertaken. Cases of stenosis due to scars or neoplasms of the internal genitals stand on a similar plane as contracted pelvis, unless some radical tumor operation (myoma) indicates a different technic. Further, cervical Cesarean section is applicable in cases of threatened rupture of the uterus with living child, unless an already existing infection is present as contraindication. This is exclusive of the previously mentioned cases of contracted pelvis. Unlike Sellheim, I would like to emphasize the indications for vaginal Cesarean section, which are distinctly special. In fact, the results of this method have been good.

In conclusion I would say that the extraperitoneal method of Cesarean section should be discarded, because it is harmful to the mother and of uncertain value, at least in febrile cases, to the child. In contrast to this, transperitoneal cervical Cesarean section marks a distinct progress. In some cases in which there is fever in the mother it is indicated, but must then be combined with a prophylactic injection of oil into the peritoneal cavity.

## ABDOMINAL CESAREAN SECTION,

AS PERFORMED AT THE SOCIETY OF THE LYING-IN HOSPITAL OF THE CITY OF NEW YORK, WITH  
AN ANALYSIS OF 186 CASES.\*

ROSS MCPHERSON, M.D.

Attending Surgeon, Lying-in Hospital.  
NEW YORK.

In presenting this paper for consideration, it is my intention to take up, so far as the time allowed me will permit, the question of abdominal Cesarean section, with regard to the indications for its employment, the choice of time for its use, the technic of the operation, and the results obtained. In a general paper of this description, it would be trying to the patience, as well as unsuitable, to give more than a passing consideration to the details of the subject, the main object being to show the results obtained from a large number of sections, together with certain especial points in the technic of the operation.

The series of cases reported comprise the total number done in the Lying-in Hospital during the eighteen years of its existence, and are, therefore, in no sense of the word, selected cases. It will be my endeavor to show some of the dangers, as well as the advantages of this method of delivery.

\* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



## INDICATIONS FOR OPERATION.

Broadly speaking, Cesarean section by the abdominal route is indicated in all cases where there is a degree of obstruction to delivery, either on the part of the mother or the child, sufficient to render such delivery impossible with best results to both, it being understood that the child is viable and that the condition of the mother is such that she will survive the operation. Such indications may be classified as follows:

1. Deformed pelvis.
2. Placenta prævia.
3. Eclampsia with a firm, undilated cervix, and complicated or not with the two previous causes mentioned.
4. Neoplasms of the uterus, such as fibroids, carcinoma, etc.
5. Vaginal deformities, such as marked contraction from scars, tumors, etc.
6. An excessively large child.

Taking these up in order, by the term "deformed pelvis" I mean any pelvis which is so contracted as to render impossible the passage of a normal living child. This may express itself in the form of a flat, justo-minor, rachitic, Naegele, Roberts or osteomalacic pelvis, the important feature for the obstetrician to realize being that in the individual pelvis the particular fetus will not come through alive, or without extreme damage to the mother or child or both. The day is past when we do Cesarean section simply because the true conjugate is shorter than normal, for we have learned that in some cases, notably in the type known as the Roberts pelvis, the true conjugate is not only not diminished, but may be even longer than normal, and yet delivery by the natural route be impossible on account of the amount of the contraction at the sides. In short, then, the surgeon must train his hand by frequent examinations to judge, first, the size of the pelvis and, second, the size of the fetus, and, lastly, he must be able to form an opinion as to the relations which the two bear to each other, if he expects to have a favorable outcome to his cases. These considerations, taken in conjunction with the apparent physical force of the mother and such supplementary information as the history of previous difficult labors will form the means for his decision for or against Cesarean section in an individual case.

Regarding the utility of this operation in placenta prævia, it is my belief, as expressed in print<sup>1</sup> some months ago, that in certain cases of placenta prævia, with a central implantation, in the presence of a firm, undilated os, where the soft parts are firm and unyielding, less damage will be done to the mother, and we shall be more certain of securing a living child by a timely Cesarean than by resorting to the other usual methods of delivery. The mortality in this condition, as shown in the article just mentioned, is, under the best circumstances in hospital practice, almost 18 per cent. for the mother and over 40 per cent. for the child, while the morbidity (maternal) on account of hemorrhage, laceration and possible subsequent infection is very great. It would seem as if any methods of delivery which offered as a result 40 per cent. of deaths were open to a good deal of criticism.

With regard to eclampsia, under similar circumstances, a better result may be expected than in many cases of forced delivery.

Concerning the other causes mentioned, time will not permit of more than a passing mention, but it certainly must be obvious that when neoplasms fill the lower seg-

ment of the uterus or vagina, when scars have contracted the vagina to a point where the passage of a child can not but cause grave destruction to the soft parts, or where the size of the child is out of all proportion to the size of the pelvis, especially if the head be one of the type not infrequently encountered, in which the ossification seems to be premature, and the head is firm and unlikely to mold, in these cases, too, it would surely seem as if an elective Cesarean section, done by a competent operator, was the operation of choice.

## TIME OF OPERATION.

It has been our custom at the Lying-in Hospital to allow the patient to go into labor sufficiently to secure some dilation of the os, thereby facilitating drainage, and to determine whether or not the head will make an attempt to engage. This also has the advantage of allowing us to be certain that the woman is at or about term, which in occasional cases, notwithstanding opinions to the contrary, is not an easy matter to determine. Recent articles have condemned the operation after the onset of labor, but, as I shall hope to show later, this form of procedure is not unsatisfactory in its results. It is freely admitted that where we can have our choice the time of election is just before or at the beginning of labor. In a service such as we have at the New York Lying-in Hospital, however, this choice is not always possible, as the patient is often not seen until she is well advanced in labor. Then, with a viable fetus, we have only the operations of hebotomy, symphyseotomy, craniotomy on the living child, or Cesarean section from which to choose. Symphyseotomy has been universally given up, and the published results of hebotomy are not, to our minds, very encouraging, containing, as they do, reports of tardy and severe convalescences often with protracted recoveries and considerable damage to the mother. While at our institution we have as yet done no hebotomies, we do not yet feel that we are justified in performing the operation. This leaves us with nothing then but a craniotomy on the living child, or a Cesarean section, and up to the present we prefer in most cases to take the chance of the section. It is true that we may possibly have a fatal result, but that is not a reason for relegating the operation to the background, for we shall always have to take a certain number of chances in surgery. No well-grounded surgeon would think of refusing to operate on a severe case of appendicitis simply because statistics showed that he got better results in the interval cases. Why, then, should we refuse to do an operation to save the life of the child when we do not know that the mother will not recover and are practically certain that the child will be born alive? Here, as in other cases, the discriminating judgment of the operator, based on knowledge obtainable only by experience, must determine which cases are and which are not suitable for operation.

## OPERATIVE TECHNIC.

With regard to the operative technic, I can do no better than to quote from an article<sup>2</sup> by Dr. Asa Barnes Davis of our attending staff. He says, after describing the usual preparation for a laparotomy:

The abdominal cavity is opened by a median incision 12 cm. in length, extending from above downward to the umbilicus. The fundus of the uterus is found directly under this wound. If dextro torsion, which is frequently present, occurs, the

1. Bulletin of Lying-In Hospital, December, 1907.

2. Lying-In Hospital Bulletin, December, 1905.



uterus is manually adjusted so that the anterior uterine wall faces forward. The abdominal cavity is then walled off by means of three or four moist gauze pads, wet in salt solution. This leaves only a small area of the uterus exposed to view. [It is understood that the uterus is not delivered from the abdominal cavity.—R. M.] An assistant now places a hand at either side of the abdominal wall, near the wound and well backward, so regulating his pressure that the uterus remains in place during the process of being emptied, and afterward until the deep sutures are tied. A median incision, which begins well up at the fundus and extends downward so that it is a little longer than the abdominal incision, is made. This incision should be made carefully so that the amniotic cavity is not opened. Should the placenta be found situated directly under the wound, it is better to cut or tear directly through it. If, however, the membranes present, it has been found advisable to sweep the hand quickly between them and the inner surface of the uterus, in order to prevent adhering of the membranes. The lower extremity of the child, which is most readily found, is grasped and practically a breech extraction is done, the after-coming head being delivered by the Smellie-Veit maneuver. The cord is clamped and cut by an assistant, and the child is carried from the room, in order to avoid confusion while establishing respiration. A double tenaculum is now placed on either edge of the uterine wound at its upper angle to prevent the uterus from slipping down into the wound, the uterus is emptied of any clots which may have formed, also of the placenta, and with as little delay as possible the deep interrupted sutures of heavy chromic catgut are placed; each suture is inserted about one centimeter distant from the edge of the uterine wound, carried down to the endometrium, and passed through the opposite side in reverse order. After these sutures are placed, being tied as they are put in, a continuous suture of fine catgut is used to bury the first row of sutures, and brings the peritoneum into apposition. The sponges are now removed, and the abdomen closed in layers in the usual manner.

A dry dressing is applied which is not disturbed until the eighth day when the sutures are removed. The patients are allowed to sit up at any time after the tenth day and always before the fourteenth day, depending on the involution of the uterus and the condition of the wound.

#### RESULTS.

With the foregoing observations on indications, and description of the technic, the results obtained in this series of 186 cases may be reviewed.

Out of the total number, thirty mothers died, showing an apparent mortality of 16.15 per cent. When, however, we come to analyze the actual cause of death we shall see that the percentage which can actually be attributed to the Cesarean section is in reality very much lower. Of these women, three died of postpartum eclampsia, six of pneumonia, one each of suppression of urine, shock following a low rupture of the uterus before admission, nephritis, pulmonary embolism, carcinoma, intestinal obstruction, acute dilatation of the stomach, asphyxia from the anesthetic and paraplegia. One was unaccounted for, two died of shock following the operation. The remaining nine died of septic peritonitis. These had all been subjected to more or less manipulation before entering the hospital, and in all cases cultures taken from the vagina and cervix showed streptococci.

These patients were operated on with the hope of saving the life of the child, with the result that out of the whole series of thirty deaths of mothers there were but four still-births.

It seems fair to exclude from the mortality statistics cases in which death was not directly due to Cesarean

section, and while the argument may be used that if the patient had not undergone the operation she might not have died, still it hardly seems fair to include deaths from anesthesia, nephritis, Pott's disease with paraplegia, postpartum eclampsia and the other causes already mentioned, since these might have caused the death under any circumstances. Indeed, some of the patients cited would surely have died in a short time, and the operation was done only in the hope of saving the child. Accordingly, then, on account of the operation of Cesarean section *per se*, the real mortality figures would seem to be those of the patients that died of sepsis. Of these we have nine, which gives us a mortality for the operation of only 4.08 per cent., not an unsatisfactory showing.

The total number of still-births in the whole series was thirteen, or 6.9 per cent. It is interesting to note that eleven of these still-births occurred in the first seventy-eight cases, and that in the last 108 operations we have had only two still-births.

The indication for operation in 162 cases was a deformed pelvis, and the remaining twenty-four operations were for malignant growth, atresia of the vagina, impacted face presentations, eclampsia, central placenta prævia, of which latter there were two cases, with a living mother and child resulting in each instance, disproportionately large head and impacted shoulder. The membranes were ruptured before operation, and the os uteri was more than two fingers dilated in 124 cases.

In all the instances but one of death from sepsis the membranes were ruptured, the patient had had outside manipulation, and had been a long time in labor.

#### SUMMARY.

With these necessarily brief observations I will conclude with what seem to be the main points brought out by a study of this series of cases:

1. Cesarean section is the operation of choice when the obstruction to delivery is such that a viable fetus can not be delivered by the normal passages and the mother offers a fair chance of recovery.
2. This obstruction need not of necessity be a deformity of the bony pelvis, but may be caused in several other ways, as indicated above.
3. While elective Cesarean section just before labor or at the very beginning is desirable, the fact that the patient has been for some time in labor, does not in itself preclude the possibility of doing the operation.
4. The operation requires a particular technic, with skilled assistants, to get the best results, which makes it undesirable to undertake it unless the conditions are satisfactory.
5. These special points in technic are:
  - a. The high incision.
  - b. The non-delivery of the uterus from the abdominal cavity.
  - c. The absence of any method of constriction to prevent bleeding, this not being necessary.
  - d. The method of suture described.
6. Where the conditions here described exist, and excluding patients who would die whether they had a Cesarean section or not, the results should show a maternal mortality of not much more than 4 per cent. of the cases and a still-birth percentage of almost nothing.



## DISCUSSION.

ON PAPERS OF DRS. PFANNENSTIEL AND M'PHERSON.

DR. W. H. WATHEN, Louisville: Twenty-five years ago, before the Section on Obstetrics of this Association, I read a paper, stating that the time would come when no man would be justified by the medical profession, either from a scientific or from a moral aspect, in performing craniotomy on a living child. I am glad to see that that principle has now been recognized. There is no excuse whatever for performing craniotomy on a living child. It is a more difficult, more dangerous operation than even the old classical Cesarean section. It destroys the lives of all the children and of many of the mothers, whereas Cesarean section, if the woman is brought in a reasonably good condition nearly to term, saves the lives of nearly every woman and child. We sometimes lose children because we are compelled to operate before the child is entirely viable, but with the modern methods of incubation many of the children are saved. Recently I operated in two cases in which I lost the children because the operation was a necessity when viability was doubtful. One was the case of a woman on whom I operated because of total obstruction of gas and feces. She had been in premature labor twenty-four hours. A large myoma filled the entire pelvis so that the cervix could not be felt. The child was removed barely alive, but did not survive more than four or five hours. The uterus and the fibroid tumor were removed. The second case was one of placenta prævia of about the same term of pregnancy. The child was removed and lived for about the same length of time. In both cases, I believe, with the modern methods of caring for the child, it would have been saved, but in the hurry to operate to save the life of the mothers the best incubators could not possibly be had. Both mothers made a prompt recovery. I am in favor of Cesarean section in nearly every case of well-marked placenta prævia, as an operation of election in the interest of both the mother and the child. These operations are more easily performed than of most any other major abdominal operation. The simple Cesarean operation without removal of the uterus is a very slight affair with an experienced abdominal surgeon. If there is a contraction of the pelvis, preventing the delivery of a healthy child, the uterus should be removed, and it can be removed in about half the time that a uterus can with a myoma because of the relaxed condition of the structures. If there be a fibroid tumor it ought to be removed, and it can be removed much more easily than an ordinary fibroma. I am glad to have heard of the 180 cases with the beautiful results reported by the speaker from New York. The time will come when, if we can make a timely diagnosis and carry these patients up to labor, with operation under favorable conditions in a hospital, the mortality will be practically nil.

PROF. AUGUST MARTIN: A new operation must be recommended to general practice with some reserve, but hardly any new operation has been based on better anatomic conditions than this one; not only is it true that in the median line of the uterus in front and behind we do not meet large vessels, but also that the whole situation of these parts in this stage of parturition in which the operation is usually indicated is in a better condition for operation than any other. If the anterior lip is split, in most instances one does not meet the bladder nor the peritoneum. That is the point to be avoided. There are some peculiar conditions, but in most cases these dangers are avoided.

The vaginal Cesarean section is not an operation that can be made or indicated when there is pelvic contraction. There are different indications for vaginal section, but there is no contention that this is an operation of emergency. If there is time, it is far better to reduce uterine contractions and dilate the uterus by natural procedure and deliver the child. But there are, indeed, sufficient cases of emergency, and in these vaginal section is better than any other way. I am particularly disinclined to the Bossi instrument. Dr. McPherson believes this operation to be rather dangerous for its morbidity and mortality. As far as I know, experience indicates that not only in the hands of the specialist, but also in

the hands of many obstetricians this operation is a very good one. New operations must be introduced into practice by teaching, and in many clinical wards, as far as universities are concerned, our students have ample opportunity to see these operations. In every instance in which I have operated before my students they are astonished to see the simplicity of the operation. It is striking to see that the vaginal wall separates very easily. It is possible to separate as far as that part where one can take hold of the head by forceps or perform turning and the deliverance of the child. In my early experience I carefully watched the bladder and did not have any difficulty, but the most interesting part to me was the peritoneum. In most of these instances we do not meet the peritoneum, even if we have to go on incising the uterine wall. It is astonishing to see that we can go very high into the uterine wall without injuring the peritoneum. The opening of the uterus is, in fact, very easy and the delivery is in the same way very easy.

Concerning the repair it is equally astonishing to see how we can bring down all these parts and secure this wound by a running suture in the mucous lining and by another pelvic suture which closes the outer surface of the colum uteri and catches the base of the bladder, leaving at the very end in the vaginal wall a small wound which is shut at once with a lower suture. So the technic is, indeed, a simple one. As far as I have seen, an obstetrician who is accustomed to do any obstetrical operation is competent also to do a vaginal operation. Asepsis in the beginning seemed to be a difficult task, but it needed only a few years to become universal. Another difficulty in the way of the vaginal operation is the narrowness of the outlet. The reason for this narrowness is the more obvious since the cervix uteri is not dilated. The life of the mother or the child forces us to deliver at once. It has been said that the narrowness of the parts is a great impediment. This can be avoided by cutting up the left or the right side of the vaginal wall, not in the median line, which gives bad cicatrization, but cutting from the end of the nymphae up to the vault so that the full hand can be inserted. The uterus is opened and delivery and closure of this wound are made, and these patients, so far as I have seen, made an excellent recovery if not infected before. I ask permission to give these remarks because of my conviction that the vaginal operation in this way is one of the best we do in obstetrics, and that in doing this we save more lives of mothers and children than in any other way.

DR. J. B. DE LEE, Chicago: The indications for Cesarean section should be enlarged. There is no doubt that the danger of opening the abdomen in obstetric cases is greater than it is in other cases, but why this is so we can not understand. That peritonitis follows abdominal operations more often when a woman has been in labor than it follows in cases of similar gravity and other surgical complications is a certainty in my experience.

The attempt to increase the chances for the child is a most commendable one. Every obstetrician abhors the operation of craniotomy and seeks by other means to increase the number of living children in his obstetric cases. In order to improve the mortality of Cesarean section, we should seek to improve the conditions under which the operation is done. One of the means of improving the conditions is by making the incision in the uterus in the lower part of the organ, and therefore in the lower part of the abdomen, because the lower part is less liable to infection, the intestines come less into play, and there is less interference with the bowel when the lower part of the pelvis is invaded. To my mind, this is the only advantage of the operation as Professor Pfannenstiel has described it. The danger of infection in Cesarean section must always be reckoned with, because we do not know when it is present. No clinical, no bacteriologic test, will give any information in such cases. Craniotomy, however, on the dying child, still has a place in obstetric practice. Let us save the child's life by doing better obstetrics under the following conditions, and the number of children saved will be ten times greater than the number of children saved by Cesarean section and other operations of this class. The indications for Cesa-



rean section in a general practitioner's work are so rare that the number of children saved in this way is very small. If the general practitioner will try to preserve the child's life in the following every-day complications, he will save a large number of them: 1. A perfectly healthy woman with a large pelvis and a normal child with a somewhat more resistant perineum than usual. The practitioner should give the perineum time to dilate, restrict the use of forceps, watch carefully the child's heart, and at the first indication of danger interfere. A large number of children will thus be saved who otherwise would be killed by forceps. 2. Occipito-posterior positions in perfectly healthy women, with normal babies and everything normal, except the occipito-posterior position. Let the physician here, instead of using the obstetric forceps, high or low, with the exhibition of brute force, carefully watch the progress of Nature, study the mechanism, and by some manipulations with his hand restore the normal position or aid the normal rotation. He will in this way save a large number of children. 3. Let him observe a watchful course of treatment in face presentation and only interfere in the presence of disproportion and in the indication of danger to the child. 4. In prolapse of the cord let him adopt some of the operations suggested, particularly the vaginal Cesarean section, or let him try the colpeurynter by the method of Dr. Stowe. 5. Let him learn how to care for breech cases.

DR. HENRY D. FRY, Washington: I am glad that Dr. Pfannenstiel does not recommend a subperitoneal or extraperitoneal operation for Cesarean section and that he prefers the transperitoneal. The operation he suggests, however, does not appeal to me because in the cases that are not infected there is no objection to going right through the peritoneum and operating in the usual way. In these cases I have always noticed that the incision ought to be as high in the uterus as possible. One begins the incision in the upper part, and as one goes to the lower part of the corpus one gets into larger vessels and has more hemorrhages. This is a distinct objection to his operation. I want to get as far from the cervical tissue as possible and open the uterus high up. He asserts that there is less danger of hernia. I think that there is scarcely any danger of hernia if the wound is sewed properly.

I do not think that abdominal Cesarean section in cases of eclampsia is justifiable. In a paper which I shall read on prompt delivery in eclampsia I shall report twelve cases of vaginal section for eclampsia with eleven recoveries and one death. In the one death the patient was almost moribund when the operation was done. I think it is an ideal operation and does away entirely with abdominal Cesarean section for eclampsia.

I do not believe that abdominal Cesarean section is indicated in placenta prævia, and I think that the field for its employment is very small. In a primipara with a small vagina, small cervix not effaced and a central implantation, an abdominal Cesarean section can be done. I have reported thirty-two cases of placenta prævia in which I delivered the child by the natural passages without maternal death. If we can deliver a woman with this condition so successfully by the natural passages, I do not think that we ought to subject her to Cesarean section, and I believe that we should do it only in a few cases, the indications in a case being that the patient is a primipara with a central implantation and a cervix not effaced.

I do not agree with Dr. McPherson that symphysiotomy is universally discarded, and believe that if, in certain cases, he had used it he would not have had such a high mortality from Cesarean section. We ought to select the cases and eliminate such bad ones as he had. Evidently good judgment was not employed and patients operated on that should not have been subjected to operation. If my results were not better than his, I might change my technic and adopt his. He says that one must not take the uterus out of the abdominal cavity on account of the danger of shock. That is all theoretical. The uterus can be taken out of the abdominal cavity without danger of shock. I have had nineteen Cesarean sections in which the uterus was taken out of the abdominal cavity, and not picked cases, but cases that were brought into the hos-

pital, some in labor for thirty-six hours, and in those nineteen cases there were eighteen recoveries and one death. The patient that died died because of acute dilatation of the stomach.

DR. J. H. CARSTENS, Detroit: It seems to me that this operation described by Professor Pfannenstiel is not for the general practitioner. It is more difficult than Cesarean section. I think it an ideal operation in selected cases in hospitals where there are the facilities, but to perform this operation somewhere in a cottage, down here on the Illinois prairies, opening up all the loose cellular tissue and all those little channels where there is a chance for septic absorption, I think is a pretty serious thing. We are not so afraid of the peritoneum as we used to be. The operation of vaginal Cesarean section is the one operation for eclampsia. In eclampsia it is necessary to operate quickly. The child in from three to five minutes can be delivered. Any general practitioner ought to be able to do that operation and he should familiarize himself with the methods of operating, because he is the one who has the cases of eclampsia. He can split the anterior lip and deliver the woman in a few minutes and save many women's lives.

So far as Cesarean section itself is concerned, I think that the lines ought to be drawn more broadly. Patients can not always be saved. In order to save the patient it is necessary to make a diagnosis of the condition beforehand, to get the measurement of the pelvis and to be prepared to do Cesarean section in time, and not try all modes of delivery and then when the poor woman is septic and used up finally decide to do a Cesarean section. That is not fair to the man who does the Cesarean section. If one man can not do it, he can get help. The hospital facilities are so great in this country and in Europe that any man can get assistance in a very short time. But the important point is to be prepared to do Cesarean section in time.

DR. WILLIAM B. REID, Rome, N. Y.: It is possible for a country doctor and general practitioner to do a Cesarean section, either abdominal or vaginal, and to do it successfully, not only for the mother, but for the child. During the past twenty months I have had opportunity of doing eight Cesarean sections, and I report these cases without mortality. I differ from the previous speakers regarding the technic. I do not believe that these little points make so much difference. I believe that the vital point is to be sure of the diagnosis. I do not know of any one having spoken of or written on the use of the x-ray previous to confinement for the purpose of measuring the pelvic outlet. The most important point of all, having decided the necessity of doing the operation, is to do it expeditiously; do not kill the patient from shock. It is not whether the uterus is raised or left in. It is how much time is spent and how much shock is given the patient. The average time consumed in these operations that I referred to was twenty-six and a half minutes. I am ashamed to say that in the last one I took thirty-six minutes.

DR. LESTER E. FRANKENTHAL, Chicago: After a careful perusal of the literature that comes to us from abroad and in our own country, I came to the conclusion that I would never subject a patient of mine to the extraperitoneal cervical Cesarean section. Shortly after coming to this conclusion I was asked to see, in consultation, a case of eclampsia. The patient was brought to the hospital and died about thirty minutes after I first saw her. I was at that time preparing for another operation in the operating room, and being notified of her death, I hastened to her room in order to do, if possible, a Cesarean section on the dead in order to save the child. Some time elapsed before I could get the necessary instruments—a knife or a scalpel was all I asked for. While waiting for the instruments I auscultated but could not hear the fetal heart sounds. I then decided to do the Sellheim operation in order to get personal experience in this operation on a pregnant though dead woman. I found the difficulties that have been described in the literature of separating the bladder from the peritoneum and found that it was impossible in this instance to avoid tearing the peritoneum at the inser-



tion of the median vesical ligament, so that had this been a septic case the peritoneal cavity would have been opened and sepsis could probably not have been avoided. The position I take is that pubiotomy and Cesarean section are positively contraindicated in all septic cases; and, notwithstanding the remarks that have been made here this afternoon, I should not hesitate, if delivery were impossible by the natural passages, to do a craniotomy on the living child, because I reason that the life of the mother is of greater value than the life of the unborn or born child, especially since in the event of the death of the mother the chances are greatly in favor of the child's not growing to maturity. Besides, if a craniotomy is performed on the child and the mother recovers without any untoward results, as she ought to in the vast majority of instances, another opportunity is given her for a subsequent pregnancy, and a premature delivery, a Cesarean section or a pubiotomy can be done in a subsequent pregnancy at the proper time, before the woman has become infected, and she can then personally rear her child, since recovery is practically assured. I believe that having had this experience on the dead—it was a rare opportunity—I shall never subject an infected patient to the extraperitoneal Cesarean section, and in other cases (non-infected cases) when Cesarean section is indicated I should prefer to do either the required Cesarean section or the intraperitoneal Cesarean section as most of us have done many times.

DR. I. S. STONE, Washington: I oppose Dr. Pfannenstiel's suggestion for this reason: If Cesarean section is wrong in an infected woman because she is infected, the danger is not necessarily because the peritoneum itself will be involved or infected. We all know that the peritoneum is about the best friend that the abdominal surgeon has. I was much surprised to hear a man say that a majority of his fatal cases were a result of peritonitis. Such is not my experience. A majority of deaths in my cases are from sepsis, and I would rather trust the peritoneum to care for an infection transmitted by operation than by the method suggested by Professor Pfannenstiel, or any of those operations, which expose the connective tissue around the bladder. The possibility of a patient dying from sepsis with lack of drainage has been mentioned. If infectious matter can be forced from the uterus into the peritoneum, it certainly can be forced into the connective tissue, and that ought forever to contraindicate that operation.

Twice since the paper of Dr. McPherson has been read I have heard suggestions in favor of a return to mutilating operations on the child. I must have been living in a land of dreams. I have been living in Washington, where we do Cesarean section without mortality, and when I hear the New York statistics which announce a mortality of 16 per cent., I do not wonder that these speakers mention the mutilating operation of embryotomy.

DR. ROSS MCPHERSON, New York: I regret that I did not make myself clear on the question of mortality. I made a statement of a total mortality of 16 per cent., but I said in addition that the mortality in cases in which sepsis occurred was only 4 per cent. If I had wished to select the cases I could have shown over a hundred with no deaths at all, but it was my desire to be perfectly honest, and to give the statistics exactly as they occurred, even at the risk of having them misunderstood. I do not consider that a death from general carcinoma, or from paralysis following Pott's disease, should be laid at the door of a Cesarean section, done for the sole purpose of saving the life of the child. Dr. Fry spoke as if he thought that I had done all of these cases myself. Such is not the fact. My own record is eleven cases, with eleven living mothers, eleven living children, and eleven primary unions resulting.

I did not state that Cesarean section by the abdominal route was indicated in every case of eclampsia, but in certain cases in which the pelvis is even a trifle contracted, Cesarean section by the vaginal route does not offer any more ease of extraction than without it, as by the vaginal route, the bony pelvic obstruction is not in any way relieved. I do not see any reason to change my views in regard to placenta prævia, and con-

cerning symphysiotomy, I stated that I knew of no place where that operation was being done at the present time. Our experience at the Lying-in Hospital proves that patients are liable to have more shock, and to bleed more, when the uterus is removed from the abdominal cavity. In the first fifty or sixty cases reported, the uterus was so removed, since which time we have not done so, and believe that we have had better results. Concerning the use of the x-ray, a number of German observers report the death of the fetus after the prolonged exposure necessary to obtain a good negative of the pelvis. This is worthy of consideration.

## THE PREPARATORY AND AFTER-TREATMENT OF ABDOMINAL SECTION.\*

HENRY T. BYFORD, M.D.  
CHICAGO.

Recent discussions on the preparatory and after-treatment of abdominal section have shown great disparity of opinion. Some advise a thorough and extended course of preparatory treatment, including medication, dieting, free purgation, etc., while others condemn everything in the nature of a delay or of a change from the patient's ordinary mode of living. After operation some advise the withholding of even water for 24 hours and solid foods for a week, and the maintenance of a recumbent position for two or three weeks, while others give solid food as soon as the effect of the anesthetic has passed off, and get the patient out of bed on the second day. Some give opiates in the majority of cases, others give none; some allow the bowels to become constipated, others begin with laxatives as soon as the patient can take them. When doctors disagree so radically, who shall decide? In order to get a perspective view of the subject, let us briefly review its history.

When we began to perform abdominal sections, anti-sepsis and asepsis were not understood, and our results were so unsatisfactory that such operations were seldom undertaken until a fatal termination without interference was not only assured but imminent. Hence the mortality was excessive, and those who survived often required careful and prolonged after-treatment to keep them alive and cure them of the effects of the operation. Peritonitis, ileus, abscess formation, secondary hemorrhage, imperfect suturing, suppuration about ligatures, infection and separation of sutured surfaces, etc., were so common that the patients were kept in bed for four weeks or longer and were not allowed to be turned on the side for one or two weeks. A routine practice of allowing them to get up during the first week would certainly have been unwise under such conditions.

In order to enable them to survive, the surgeons began to develop a complicated system of preparatory treatment, which became still more complicated when the principles of antisepsis began to be applied systematically. Thus an abdominal section with its preparations, its complications and medications, to say nothing of the operation itself, was usually a terrible ordeal, of two or three months duration, to the patient and sometimes to the surgeon. But as the operative and antiseptic details developed, the operations were simplified and the postoperative complications began to diminish and now have almost disappeared. The long courses of preparatory treatment are now unnecessary, and much

\* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



of the old detail is recognized to be not only burdensome, but detrimental. For want of complications there is not much to be done in the way of after-treatment, although some persist in doing things. Thus the tendency all around has been toward simplicity.

There is one thing, however, which does not seem to have been sufficiently considered in our discussions, viz., the individual case, or, to put it more concretely, the patient. All cases and all patients are not alike. Every surgeon gives his method but not his case nor his kind of cases. One surgeon has a preponderance of appendix and gall bladder operations, another of intestinal cases, and another of operations on the pelvic organs.

In the case of an exploratory incision through a small incision in the posterior vaginal fornix or over the pubes on a healthy person and without doing more than introduce one or two fingers, it would sound sententious to use the words preparatory and after-treatment. The patient would only require an antiseptic toilet, i. e., to be made clean beforehand, and to have the dressings and sutures removed afterward. But if an emaciated, sallow-faced woman comes to us from a distant town with a large uterine tumor from which she has been bleeding profusely twelve or fifteen days every month for five or ten years, we are not justified in putting her into the hospital and operating on her the same afternoon or the next morning, either with or without the administration of a mild laxative or enema. We would probably take time to make a diagnosis or an attempt at one. We might not consider the time lost in making a urinalysis. If she were bleeding at the time, we might consider it advisable to put her to bed for a day or two and try and check it; or if she were at the end of a profuse menstrual period we might consider a few days of judicious feeding and tonic treatment desirable. We might consider it advisable to make a blood count, and if we found only 40 per cent. of hemoglobin and 2,000,000 red cells, we might deem a few weeks of forced feeding in a rest cure or sanitarium a justifiable preparatory treatment.

After an operation which had necessitated an incision from the pubes to an inch or two above the umbilicus, the separation of adherent adnexa and intestines, and the removal of a vermiform appendix, we might decide to allow her to stay in bed more than one day after the operation. Or if we operate on a case of late postpuerperal pyosalpinx, in which the temperature has remained high, and find the mesosalpinx and broad ligaments infiltrated with pus foci, a case in which we can only save the patient's life by removing the pus tube and draining the pelvis, we may find it necessary to keep the patient in bed for a week or two or three afterward. If there is much postoperative meteorism or gastric regurgitation we may even have to make an early attempt to move the bowels; we may have to give strychnia, liquid diet and other things for several days.

I need not tell you that the first class of cases and the last two should not be treated alike. Yet nearly every one who writes or talks on the subject gives his method as if applicable to all or to a vast majority of cases, instead of saying that his method is adapted to certain cases, and should be modified in the vast majority of cases, and reversed in some. The fact is that time should be taken to inform oneself of the condition of the patient and to correct such pathologic deviations as need correcting, whether it takes a day or a month. Except in emergency cases, a stranger should not be

operated on within twelve or eighteen hours after first seen, although that much time might be sufficient for one who had been under observation or treatment for a considerable time.

I will illustrate the application of different methods employed in the after-treatment by comparing three of them, viz., (1) the use of saline cathartics and laxative enemas; (2) the use of opiates, and (3) the avoidance of all medical interference. In the first case cited of an exploratory incision, the non-medical treatment would be ideal; in the second case, that of a uterine fibroid in an anemic patient, an opiate might be desirable; in the third case of pyosalpinx one might find opiates harmful and laxatives desirable or necessary. However, in the first case one might give an opiate and make the patient feel better, or, on the other hand, one might give a laxative enema or a saline cathartic and relieve the discomfort. In the second case, there might be intestinal fulness and distress that would promptly be relieved by the laxative treatment. In the third case, opiates might be used to relieve the distress if there were no signs of over-distention or paralysis of the intestines. Thus we see that different kinds of cases are adapted to different kinds of treatment, and also that the same result may even be obtained in the same case by opposite methods of treatment. With regard to food, one patient recovers rapidly from the anesthetic and has an appetite and normal digestion almost as soon, while another recovers slowly from the anesthetic and has a coated tongue, perhaps a dilated stomach or distended intestines and should be kept on a liquid diet for a few days.

Hence I would say that to recommend a certain kind of treatment either before or after abdominal section is misleading. Each case should be treated differently from the others, for definite deviations from the normal or for the purpose of producing some slight deviation from the normal that will facilitate the surgical work, such, for instance, as reducing the normal intestinal fulness before operations for intestinal resection or anastomosis. On the one hand, we simplify our technique as much as possible, on the other, we individualize the case and do whatever the peculiar condition may indicate. We should stop talking about doing much or doing little, and talk about doing the right thing, the whole right thing, and nothing but the right thing.

In conclusion, I wish to say that the object of these remarks is not to open up a discussion about what is the best treatment, but to depreciate the prevalent tendency to recommend or to condemn methods of treatment indiscriminately.

#### DISCUSSION.

DR. DANIEL H. CRAIG, Boston: I think that there should be no routine treatment, and in regard to nourishment following the operation the patient's own condition and own desires in the vast majority of cases are to be taken as a guide. As long as you keep up the maximum of nourishment necessary to the patient's strength, you are doing all that is necessary. On the other hand, if another patient recovers from her anesthetic and the immediate effects of the operation and desires nourishment I think you are doing equal harm if you withhold nourishment, other things being equal. I have followed exactly the same rule with regard to the recumbent position. If one patient feels a disinclination to get up within the first few days after operation, I practically never urge on her the necessity of hastening this in the least. On the other hand, if the patient desires to sit up in bed, feels that the recumbent position is irksome—I am speaking of cases in which the results fulfil expectations—it doesn't make a bit



of difference to me whether the patient feels so on the second day or the tenth. I think that one should be guided by the feeling of the patient and one's own knowledge of the patient's physical condition.

DR. RUFUS B. HALL, Cincinnati: The paper is so conservative in its statements that one feels reluctant to discuss it, but I am going to take up one or two points; for instance, the patient who came in from the country with a large tumor in the abdomen bleeding ten to fifteen days in each month. Before he would operate, Dr. Byford said, he might keep the patient in the hospital a day or two until he improved her general condition. My feeling would be that he ought to keep her under observation for a little while, give her preparatory treatment and build up her general health. He should let her have ten or twelve days following her menstrual period to recuperate and then select the best time just before she would bleed the next time to do this operation. He owes that to his patient, the profession and to himself—to put her in the best possible condition to bear the operation she is to have.

In the other case he said he might keep the patient in bed a day or two after the operation. He should do it. He should keep her in bed longer than a day or two. The patient ought not to be permitted to get up in a day or two, in my judgment, even if she wants to.

## OBSTETRIC, SEPTIC AND ANESTHETIC TOXEMIAS.\*

H. G. WETHERILL, M.D.  
DENVER.

Postoperative vomiting of a regurgitant type, first mucous, then bilious, finally brown, grumous and bloody, has been for many years a well known and much dreaded sequel of surgery, and has struck terror to the hearts of many surgeons after the performance of apparently simple and successful operations. The significance was so evident and a fatal result was so often inevitable as to dishearten the most buoyant optimist. Accompanied by slight icterus, relative or absolute suppression of urine, intestinal and gastric distention, tympanites and aperistalsis, it constitutes a pathologic picture long known and dreaded, yet little understood.

### ETIOLOGY.

It is only within the last year or two that the true causes which have produced this symptom complex have been generally suspected and a solution of the problem seriously suggested. Even now when we seem to have struck the right lead, little has been done other than to suggest in an indefinite sort of a way that the conditions are due to a toxemia or toxemias to which certain things are contributory as etiologic factors.

This syndrome has been recognized for a number of years in connection with pregnancy as acute yellow atrophy of the liver, and, furthermore, its toxic character has been appreciated; but curiously enough the occurrence of most of the same symptoms, more or less constantly grouped, after surgical operations has failed to suggest to our minds a like toxemia or failure of elimination due to surgical sepsis, chloroform poisoning, or a sapremia resulting from decomposing placental tissue or retained blood clot after abortion or ruptured ectopic pregnancy. I have had the misfortune to see several of these toxemias in cases of ectopic pregnancy and incomplete abortions, and have learned to regard sapremia as a common antecedent of the serious symptoms noted.

Overlooking the significance of the slight icterus, when it has occurred, and disregarding the urinary suppression, we long labored under the delusion that most of the surgical patients presenting this group of symptoms were primarily victims of what we have been pleased to term intestinal paresis, and we have treated them as such, basing the diagnosis, in the main, on the obstinate and persistent vomiting and aperistalsis or reversed peristalsis; ignoring the underlying causes of the toxemia, such as sepsis, late chloroform poisoning, sapremia, etc.—failing utterly to appreciate the significance of acetone, diacetic acid and even albumin and casts in the urine, and knowing little or nothing of the bearing of the ammonia coefficient.

Certain well-known toxemias of pregnancy present a pathologic picture which resembles very closely these postoperative toxemias. The clinical history and symptoms resemble them closely in most of the important details, particularly in the character of the pernicious vomiting of pregnancy of toxemic origin, as pointed out by Whitridge Williams.

### CLINICAL COURSE.

The course of the disease is ordinarily somewhat less acute and virulent as an accompaniment of pregnancy, and its symptoms are, perhaps, more varied. However, the vomiting presents the same general characteristics, and the appearance of the liver at autopsy is much the same as in the toxemias of sepsis, sapremia and late chloroform poisoning.

The characteristic eye symptoms of these toxemias (neuroretinitis and retinal hemorrhages) are more often observed in the toxemias of pregnancy because of the slower and more insidious course of the disease. Yet it can scarcely be doubted that they exist many times without being recognized in the more rapidly fatal postoperative toxemias caused by sepsis or chloroform, and one can scarcely doubt that they would be found much oftener in such cases if they were more often sought.

Grouped and classified simply from the standpoints of symptomatology, urinalysis and autopsy findings, liver diseases of pregnancy, sepsis, sapremia and late chloroform poisoning have many points in common which serve to place them in close relation with each other. Only detailed study of their different phases can determine a further classification and differentiation between them.

In the earlier stages of the disease, these cases are apt to present in common an acidosis of the urine, without albuminuria. It is also probable that the "high ammonia coefficient, indicating that a much greater proportion of the total nitrogen is excreted in the form of ammonia than usual" (Whitridge Williams), will be found to be common to all of these toxic states, as has been demonstrated by Williams in the toxic vomiting of pregnancy. Whether the overloading and overwhelming of the liver, or its inadequacy as a toxin filter is responsible for the toxemia, or the toxemia causes the liver and kidney lesions and produces the inadequacy and consequent failure of function, is as yet unsettled; but medical science is making progress in the solution of the problem, and the indications point to a revision of our former views and teaching in regard to this moot point.

While some of the patients who present this symptom complex of toxemia as a postoperative or obstetric complication may be shown to have had an impaired liver

\* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



and kidneys which have acted imperfectly as toxin filters and eliminators, many others are apparently healthy and sound until overwhelmed by the profound intoxication, the liver and kidneys giving way and breaking down under the toxic load carried to them by the blood stream. Woods Hutchinson<sup>1</sup> says: "In short, in the pregnant woman, an excess of excretory materials is poured into the blood, and it apparently takes, as it were, but a straw to throw the already overloaded liver off its balance, and set up degenerative changes in it, which result in the rapid accumulation of poisonous products in the blood. It would appear that, here again, as under other conditions, the liver is the principal protector of the body tissues against toxins from whatever source; and that the question of the degree of systemic invasion is largely a question of the degree to which it can rise to the emergency."

I think most of us have been struck with the curious similarity of the final syndrome in a large percentage of our fatal cases. No matter from what source the poison comes, whether through a pure infection, or an acute poisoning, or a chronic antotoxemia, a very large percentage of our patients die after the same fashion. There is the familiar group of headache, drowsiness, loss of vision, Cheyne-Stokes respiration, increase of expiration over inspiration, coma, convulsions; and death closes the scene. Whether the cause of death is pneumonia, yellow fever, phosphorus poisoning, surgical sepsis, puerperal eclampsia, diabetes, or nephritis, the dying picture is so similar that one can not help being strongly inclined to the belief that death, in all these cases is due, not so much to the original toxin, which destroyed or damaged the particular organ involved, as to the general accumulation in the tissues of the poisonous products of their own metabolism. In fact, to coin an expression, this symptom group stands for "liver failure."

The exact *modus operandi* of the intoxication is as yet undetermined in both the postoperative and the obstetric varieties of the disease. Little that is logical or scientific is known about its treatment except to get rid of the causative factor (pregnancy) in the obstetric variety, to promote the elimination of the poisons through the skin and other channels in all phases of the process, and to add as little as possible to the burden of the overwhelmed organs through the administration of improper food and drugs which are poisonous in this condition.

The one practical point which seems to present itself clearly, and the one to which I desire to call especial attention is the apparent necessity for avoiding the administration of chloroform in any of these cases, whether they be obstetric or surgical; for so much we do know, that chloroform may produce the very condition we are fighting and can only add to the burden of the already impaired organs of elimination.

#### CHOICE OF ANESTHETIC.

As to a choice between chloroform and ether where some anesthetic must be given, I say without hesitation that I should give the preference to ether in spite of what is said by Hare and others about its being contraindicated and chloroform preferable in such conditions of toxemia with liver and kidney complications. Wherever possible local anesthesia, spinal anesthesia,

somnoform or nitrous oxid gas should be substituted for both ether and chloroform. Morphin and codein should also be avoided whenever possible.

#### OPHTHALMOSCOPIC EXAMINATION.

The diagnostic importance of an ophthalmoscopic examination can not be too strongly emphasized, for in many of the cases it is possible for an expert to make an absolute diagnosis from the appearance of the eye grounds alone, as was done independently and without help from me by Dr. E. W. Stevens in the case of one of my patients who suffered from such a toxemia of pregnancy and who had no albumin in her urine. Likewise, the chemist who made the urinalysis, Dr. E. C. Hill, reported independently the same diagnostic opinion—all of which goes to show the enormous importance of skilled and intelligent collaboration in such cases.

#### THE URINE.

The urine is primarily and before all else the index to the serious pathologic process and must be regarded as the key to an early differential diagnosis. While its quantity and specific gravity, the presence of albumin, casts, blood or pus are significant, these do not point to the true state of the case as does the existence of a high degree of urinary acidosis with acetone, diacetic and oxybutyric acid, etc., and particularly a high ammonia coefficient, as is insisted on by Whitridge Williams and others.

#### REPORTS OF CASES.

Of the patients I have seen who have developed these profound symptoms of toxemia, five are of exceptional interest, as they are examples of different pathologic states in which the toxic syndrome was a sequel.

CASE 1.—A married woman, 28 years old, known to be pregnant, had been bleeding from the vagina for a number of days and was thought to be aborting. She was very nervous and had vomited freely when I first saw her. She was sent to the hospital, chloroform was administered, and on examination the uterus was found empty and a mass was felt in the left pelvis. Vaginal incision through Douglas' pouch demonstrated blood and clots in the peritoneal cavity. A rapidly executed abdominal section made it possible to empty the abdomen of the blood clots and tie off and remove the left tube, in which a six weeks' ectopic gestation was found. She was put to bed in good surgical condition, but soon developed restlessness, headache and a shrieking delirium, so that it was necessary to use mechanical restraint. She vomited mucus, bile and grumous blood; was jaundiced and secreted little or no urine, and died in coma on the third day.

The important paper of Bevan and Favill,<sup>2</sup> on the effects of late chloroform poisoning, appeared soon after her death. On reading this paper it became apparent to me that my case was one of those toxemias in which we now know that chloroform is a contributory agent to a fatal termination, for this is the view I prefer to take of these cases rather than to attribute the symptoms solely and entirely to the poisonous effects of the chloroform. I am convinced that the free blood and clots in the abdominal cavity and the antecedent pregnancy were factors in producing the toxemia.

Soon after this I saw in consultation a woman with symptoms of precisely the same kind. She had been delivered at term by an exceptionally capable practitioner, a small amount of chloroform having been given. After eleven days she died with the symptoms of acute yellow atrophy of the liver. The delirium, jaundice, vomiting,

1. The Liver as a Toxin Filter, Practitioner, Lond., November, 1906, p. 583.

2. THE JOURNAL A. M. A., 1905, xlv, 691.



urinary suppression, blindness and coma were unmistakable, and at the autopsy the appearance of the liver and kidneys was characteristic.

CASE 2.—This patient, aged about 25 years, was sapremic from self-induced abortion, the uterus not having been emptied. She was distended and the tubes and pelvic peritoneum were infected. Operation for emptying the uterus and dealing with the pelvic infection by laparotomy was begun under ether; but as this was not well taken, chloroform was substituted by the anesthetist. The operation was completed quickly and satisfactorily, but the patient soon developed restlessness, vomiting, urinary suppression and jaundice. She became wildly delirious, screaming, fighting and biting, so that she had to be tied down in bed. Coma and death followed two days later. At autopsy the liver was found shrunken, yellow and softened in spots.

CASE 3.—A married woman living apart from her husband was seen in consultation. She was past 40 years of age and had several children, though no pregnancies had occurred for more than ten years. She was bleeding from the vagina and having intermittent abdominal and pelvic pains like uterine contractions. She admitted missing three menstrual periods, but strenuously denied the possibility of pregnancy. She confessed to having had great pain during the preceding night and having expelled a "fleshy tumor," which she had failed to save for the inspection of the doctor. At the time of my visit she was icteric and vomiting bile. She had severe headache and was anxious and restless.

On vaginal examination, the uterus was found enlarged and softened, and the os dilated so that a finger could easily be introduced into the uterine cavity. She had the nipple signs of pregnancy.

My diagnosis was incomplete abortion, complicated with toxemia and liver and kidney involvement.

She was sent to the hospital, and so far as possible without an anesthetic the uterus was explored and emptied with the finger and placenta forceps. My irrigation and drainage tubes were introduced, and dilute alcohol irrigations of the uterine cavity were made through the tubes every two hours. She did not become delirious or unconscious, but her face became puffy and her legs edematous, and for eleven days she secreted only a dram or less of urine each 24 hours. This urine was high colored, boiled solid, and was loaded with blood, casts and renal epithelium. It also gave a pronounced reaction for acetone and diacetic acid. The patient died twelve days after I first saw her in coma.

At autopsy, the uterus was found enlarged, softened and partly filled with broken-down and decomposing placental debris. The liver was small, markedly yellow and fatty, with many small, softened and necrotic areas. The kidneys presented the characteristic appearance of an acute parenchymatous nephritis.

In this instance the toxic character of the disease was recognized early. Notwithstanding the indications for emptying the uterus it was deemed wiser to accomplish this end only so far as might be possible without the administration of an anesthetic, relying on the intrauterine irrigations of alcohol to arrest the residual placental decomposition and uterine infection. This brings up the perennial question of the use of the uterine ennette in such a case; but that is a vexed problem we have no time to consider in this connection, though most of us have very definite views on the subject.

In this case, at least, the toxemia was not complicated and intensified by the administration of chloroform or the elimination interfered with by morphin, nor was the existing overload in the blood stream increased through the administration of nitrogenous or other improper food.

CASE 4.—A young woman who came to Colorado for pulmonary tuberculosis was found to have a tuberculous right kidney. The left kidney was sound and doing the physiologic

work of both. The right kidney was removed under surgical anesthesia, ether being selected as the anesthetic of choice; but the anesthetist, who makes a specialty of this branch, changed to chloroform during the operation without my knowledge or consent.

The patient vomited inordinately from the time of her recovery from the anesthetic, the vomitus becoming green, then brown, and was regurgitant in type. Slight icterus soon developed. The left kidney secreted amply for the first forty-eight hours, but the quantity gradually diminished until suppression was complete after five days. From the second day acetone and diacetic acid were found in it, and later albumin and casts in abundance. She died six days after the operation. The autopsy revealed the characteristic small yellow liver and an acute parenchymatous nephritis of the left kidney; but no tuberculous disease, though the right kidney was found completely disorganized and riddled with tuberculous abscesses when removed at the operation. The wound of operation was dry and apparently uninfected.

CASE 5.—Woman, aged 38 years, pregnant five months. She had lived well for some years and taken her share of a bottle of wine for lunch and dinner. Her life was sedentary. She had vomited almost daily for three months; but the vomiting could not be said to be pernicious or inordinate. When I saw her she was dull and complaining of an intense and unbearable headache with some dimness of vision. The urine was scanty and high colored, *but contained no albumin*. The other constituents of the urine were most significant, however, and clearly pointed to toxemia with hepatic involvement.

Report of Dr. E. C. Hill on first specimen of urine:

Quantity (24 hours), 31 ounces; color, yellow; reaction, slightly acid; sp. gr., 1015; urea, 1.7 per cent.; uric acid, 92 mgm. per 100 c.c.; phosphates,  $7\frac{3}{4}$  per cent. by volume; chlorids, 3 per cent.; inorganic sulphates, 0.7 per cent.; indican, slight excess; bile salts, doubled; ammonia, 2.52 gm. treble normal maximum; albumin, absent; albumose, absent; dextrose, absent; acetone, very marked reaction; diacetic acid, marked reaction; hemoglobin, absent; bile pigment, absent; centrifugal sediment, slight, consisting of mucus, vesical and vaginal epithelium and vibriones.

Rigid diet, cathartics, diuretics and diaphoretics brought about great improvement in her condition, and she was soon well enough to take a carriage and visit the office of Dr. E. W. Stevens for an examination of her eyes. I had told him nothing about her illness, but he wrote me as follows in regard to her: "I have just finished the examination of the eyes of Mrs. X. She gave a history of pain in the eyes and head of five weeks duration. The pain in the head located near the right occipital parieto-temporal region had been made worse by a blow in this region. The pain was constant.

"My examination showed a left hyperphoria of  $1\frac{1}{2}$  degrees. The refraction under homatropin was R. E. + S.  $\subset$  + 0.75 cyl.; axis 120°. L.E. + 1.50 S. With this correction the vision was normal.

"The ophthalmoscopic examination showed well-marked neuroretinitis in each eye, one small hemorrhage was observed in the right eye, near the nasal margin of the optic nerve. This patient, then, presents three ocular conditions for consideration, viz.: (1) A left hyperphoria of  $1\frac{1}{2}$  degrees. (2) A high refraction error. (3) Neuroretinitis. I have ordered glasses correcting the hyperphoria and the error of refraction. The neuroretinitis is without doubt due to toxemia of pregnancy."

Great improvement followed the persistent maintenance of the treatment and diet, and she went along to the twenty-eighth week of pregnancy with comfort. Then, after some dietary indiscretions and relaxation of the eliminators, she again developed intense headache and scanty urine, with much puffiness of the face and ankles, the pulse dropping to 38. The urine was found loaded with epithelium, casts, and blood, and contained 50 per cent. of albumin by volume. Later it boiled solid. A rigid diet amounting almost to a prolonged fast, and forced elimination brought about some improvement in the conditions and she was carried to the thirtieth week of gestation, when a large catheter was put into the uterus, and the vagina was packed with gauze to induce labor. The



fetal heart and fetal movement could still be found: After three days, labor having begun, the catheter and gauze were removed, and the cervix was found partially dilated and quite dilatable. The cord became prolapsed. As it was still pulsating and could not be replaced the forceps were applied and a small, under-developed, still-born child was extracted, and the placenta was expressed. No anesthetic was given.

She made a slow but steady and satisfactory recovery. One week after delivery the urine had cleared up to a remarkable degree, the albumin being reduced to a trace and the renal debris markedly diminished.

She had severe headaches for some time and her skin was sallow; but her progress toward restored health was uninterrupted. Her vision is improving and it is hoped that little permanent impairment of her sight will result.

William Hunter<sup>3</sup> says of chloroform poisoning: "According to Guthrie the unknown cause of this idiosyncrasy is a pre-existent and morbidly fatty condition of the liver which reduces the liver to the verge of inadequacy prior to the administration of the anesthetic."

We can scarcely escape the conviction that this is true in many of the surgical and obstetric patients we see with such toxemias as are here considered.

Knowing the late poisonous effects of chloroform as we now do, it is certainly incumbent on us as surgeons and obstetricians to do all in our power to make an early diagnosis of these states through the symptoms, the urine and the eyes; to treat them as intelligently and vigorously as our present knowledge of the subject warrants, and above all else to withhold drugs which may accentuate the toxemia or retard the elimination of the toxins.

The high ammonia coefficient insisted on by Whitridge Williams as a diagnostic feature in the toxemias of pregnancy must be conceded to be important. He has done much to establish this point in its bearing on the pernicious vomiting of pregnancy. His conclusions are in accord with what we have long known to be true in other toxemias which present the symptom complex of the inadequacy of the liver as a toxin filter.

Another highly important point is made by William Hunter.<sup>3</sup> He concludes: "The vomiting which occurs after administration of anesthetics is not of nervous origin; but it is, I consider, essentially toxic, due to the profound depression of liver function with consequent diminution in its antitoxic function during the period of the administration. This depression will be the greater if a liver already weakened by disease or poor nutrition be further unduly weakened by food having been withheld for many hours before the administration of an anesthetic, may thus in individual cases be carried too far, and it is, in my opinion, largely responsible for the effects of delayed chloroform poisoning in exceptional cases. Such effects could in all probability be completely prevented if, instead of withholding food, particular care was taken that the patient had always a very nutritious and easily digestible meal, well sweetened, two or three hours before operation."

Surgeons, gynecologists and obstetricians can not hope to solve the intricate questions involved in pathologic problems such as are presented by cases like these. The internist, the physiologist, the biological chemist and laboratory worker must tell us how and why these things occur. We can, however, give the results of our clinical experience to aid them and we can aid each

other by relating our experiences, suggesting expedients and making known our practical conclusions.

#### CONCLUSIONS.

So far as one may reach conclusions regarding an unsolved problem, my reading, observation and clinical experience lead me to believe:

1. That toxemias of pregnancy, sepsis, sapremia, late chloroform poisoning, etc., have many common characteristics and from the standpoint of the clinician they may be grouped for study, prevention and treatment.

2. Chloroform may cause such toxemias and liver lesion *de novo*.

3. Chloroform aggravates existing toxemias of the hepatic type.

4. Pregnancy, retained blood and clots of concealed hemorrhage, the sapremia from decomposing placental and fetal debris, sepsis, and the autointoxication of over-feeding and drinking and of coprostasis predispose patients to such liver lesions.

5. Urinary insufficiency with acidosis and a high ammonia coefficient, retinal hemorrhages and neuroretinitis, regurgitant vomiting of the mucous, bilious, grumous type, with or without slight jaundice, and with or without albuminuria, constitute the syndrome characteristic of such toxemias.

6. Albuminuria, when it occurs, may be, indeed often is, late in developing (as in Case 5) and should be regarded as secondary rather than primary, and as a result rather than a cause of the condition.

7. In such toxemias of pregnancy with or without pernicious vomiting the uterus should be emptied at once, but without chloroform, and, if possible, without other anesthesia.

8. Fasting and forced elimination by the skin, kidneys and bowels offer the best prospects for cure after, as well as before, the removal of the cause.

#### DISCUSSION.

DR. BERNARD COHEN, Buffalo: How would Dr. Wetherill find the high ammonia coefficient in the case of a woman with eclampsia and how would he examine an eclamptic woman's eyes to determine whether she has choked disc? Of course the intestinal contents form the leading cause of all forms of toxemia. The chloroform produces it in a way; but how would the condition be accounted for in a woman who has not had chloroform? The effects of the eclamptic poison on the liver have been beautifully demonstrated by Dr. Ewing of New York. He has a number of specimens showing how the liver is broken down in patients dying from eclampsia. The foci can be seen only with the microscope, but the whole liver is studded with the necrotic spots.

DR. HENRY D. FRY, Washington: Tarnier points out that in all cases of pregnancy there is hepatic insufficiency and that insufficiency is increased by any toxic condition. We often see the function of the liver still more interfered with. The kidney affection, as Dr. Wetherill has said, is secondary. The first indication of toxemia is sometimes renal insufficiency. Dr. Williams four years ago stated that we should accept the percentage of ammonia coefficient as an indication of when to empty the uterus in hyperemesis gravidarum. The quantity of the ammonia coefficient is not so important in eclampsia. Dr. Williams stated that with the ammonia coefficient increased to 10 per cent, dangerous ground had been reached and that the uterus should be emptied. I thought that a very interesting statement and I tried to follow it. In a case of hyperemesis gravidarum very soon afterward, however, I had to empty the uterus before the ammonia coefficient reached 6 per cent. If I had waited for 10 per cent, the woman would have died. On the other hand, the ammonia coefficient may go to 35 per cent, or 40 per cent, and the woman get well without

<sup>3</sup> Delayed Chloroform Poisoning: Its Nature and Prevention, *Lancet*, Lond., April 4, 1908, p. 993.



evacuation of the uterus. It was a great disappointment to me to find that this sign, which I hoped would be a good indication, had failed. The only point on which I disagreed with Dr. Wetherill is that I do not attach to the percentage of the ammonia coefficient the same degree of significance that he has attached to it in his paper.

DR. H. G. WETHERILL, Denver: I have no final solution of the problem to offer. It is in a process of evolution and its solution must depend on the members of the profession and their laboratory co-workers. I did not intend to convey the impression that I regarded the percentage of the ammonia coefficient as a sole and final factor which should decide whether or not the uterus should be emptied. Like Dr. Fry, I do not accept the statement of Dr. Williams as the last word in this matter. Probably Dr. Williams himself may be inclined to modify his views later. Taken with other things, however, it has a great deal of significance. I think that the character of the toxemia is indicated much more by the state of the blood and the blood tension as shown in the eyegrounds and otherwise, and I regard the condition of the eyes and the cooperation of an expert ophthalmologist as most important in making the diagnosis and in deciding on the course of treatment to be adopted.

## A SUMMER CAMP FOR THE TREATMENT OF SICK BABIES.\*

WALTER GRAHAM MURPHY, M.D.  
HARTFORD, CONN.

In the treatment of summer diarrhea in children, artificially fed, it is generally agreed that there are three important requisites, namely, clean milk, fresh air, and intelligent care. It is also agreed that in the prevention of diarrhea the utmost vigilance must be observed during the hot months, particularly in cities. How to provide all these conditions is one of the problems in medicine, the solution of which is imperative.

This paper has to do with the efforts of the Hartford (Conn.) Medical Society to solve this problem in its locality. During the summer of 1907 a camp was maintained in one of the city parks by a committee of the society. This camp was suggested at a meeting of the milk commission of the Hartford County Medical Association. It is easily seen that the production of certified milk is not sufficient alone to materially reduce the high mortality of diarrhea among the children of the poor. The price is prohibitive. Those who can afford to pay fifteen cents a quart for milk can conveniently remove their children to the country or seashore during the hot months. Those who, from necessity, must remain in the city, and can not procure certified or other high-grade milk, are the very poor. Some, it is true, realizing the importance of clean milk, obtain it at the sacrifice of other things, but many can not. It is to reach the latter class of people that the hospital was established. Milk stations and laboratories for distributing certified milk were carefully considered, but it was the opinion of all that the best results were to be obtained by a hospital assuming entire control of a patient, night and day, during his illness.

As a result of this opinion at a meeting of the Hartford Medical Society a committee of ten was appointed with authority to construct and maintain a summer hospital for the care and treatment of sick babies. The committee was given authority to collect money in the name of the society for the support of the hospital.

Permission was obtained from the city park board to locate a tent hospital on Riverside Park, and an appeal for money was made through the daily papers.

Riverside Park, as its name implies, is a park on the bank of the Connecticut River. It is not an ideal location for a camp. The park is very largely made ground, somewhat low, and twice a year at least is under water from river freshets. On the east side it borders the river, and on its west is a railroad freight-yard. It was certainly a severe test for the efficiency of an outdoor hospital. This park was selected because of its nearness to the tenement district whose babies it was designed to treat and to whose mothers it was desired to demonstrate that cleanliness for babies, pure milk, and fresh air would accomplish results.

In the construction of the hospital four tents were used. One was a ward-tent thirty feet long and fifteen feet wide, with six-foot side walls and thirteen-foot ridge. This tent held, with some crowding, twenty-four babies. Behind the ward-tent and connected with it by a covered passage, was the diet-tent, twelve by fourteen feet. There the babies' milk was prepared and instruction given to the mothers of the sick children in the methods of handling clean milk and of making simple modifications. Each mother had these instructions before taking her baby home. Behind the diet-tent stood a tent nine by nine feet, containing the boiler which furnished the hot water, and at one side was a tent twelve by fourteen feet used as a nurses' dormitory. All the tents, except the boiler-tent, were floored. The furnishings of the ward-tent were two long tables two feet in width, which held baskets for the babies. Each basket was covered by a hood of mosquito-bar. All woodwork was painted white. In the diet-tent were a sink with hot and cold water, a refrigerator and a table for preparing food for the patients. All the tents were lighted by electricity.

The hospital was opened July 15 with accommodations for twelve patients, and two nurses in attendance. Later twelve more baskets were added and three nurses. Our nurses worked under decided disadvantages. The dormitory as arranged was not practical for sleeping-quarters during the day. A room was provided and meals furnished up-town.

The attending staff consisted of members of the society. There were six attending physicians, a bacteriologist, who kept a careful oversight of the milk supply, and a pathologist. The members of the general committee having the work in charge acted as consultants.

According to Dr. Williams' report as secretary there were treated, up to the closing of the hospital on September 15, sixty babies. The average number per day was twelve; the average length of stay ten days. During the hot periods all twenty-four beds were filled; and on one day in August there were twenty-five patients, and eight were turned away from lack of room. Most of the patients (60 per cent.) came in for summer diarrhea; 30 per cent. were suffering from marasmus or severe malnutrition; 7 per cent. had gastrointestinal indigestion without diarrhea; 10 per cent. had marked rickets; 5 per cent. had pneumonia; while meningitis, malaria, pericarditis and cretinism claimed one case each. The death rate was comparatively low, considering the severity of the cases treated, most of the deaths occurring in cases in which diarrhea was grafted on a previous malnutrition or rickets. There were twenty deaths, or 33 per cent. mortality,

\* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



including all cases. Deducting from this the patients that entered the hospital moribund and died within the first twenty-four hours, the death rate was 18 per cent.

The expense of the hospital was met by public subscription. According to the report of the treasurer, Dr. Abrams, the total expense was \$1,619.01. Of this amount \$483.96 was for equipment, tents, plumbing and carpenter work; \$274.42 for furnishings, bed-sheeting, household utensils, etc.; \$208.42 for maintenance, laundry, telephone and help; \$200 for food, including groceries, ice, coal and medicine; \$416.20 for nurses' salaries, meals and room, and \$35 sundry expenses not classified. Including total cost the average expense per day for each patient was \$2.23. Deducting the cost of equipment and furnishings and not allowing for depreciation, which is an unknown quantity, the average cost per day for each patient was \$1.15.

The committee feels that the society may congratulate itself on the success of the hospital, and on the interest which it aroused in the community. The well-to-do rallied most cordially to its support and gave help and money freely, and the east side showed its interest by coming to the hospital in such crowds that the tents had to be roped around to protect them.

Such, in brief outline, is the result of our first year's undertaking.

During the present summer the same general plan of work is to be continued as that of last year. There will be added another ward, thus allowing a total accommodation of forty patients. The nursing staff will consist of five trained nurses and five nursery maids. The nursery maids will be trained in the care of babies under ordinary conditions. They will be taught the rules of infant hygiene and the care and preparation of food. The committee also hopes to be able to give to the mothers more adequate demonstrations of the care of milk and bottles.

On account of the increased force of nurses and the difficulties experienced last year in finding suitable accommodations for board and rooms near the hospital, and also the expense and inconvenience of sending out the laundry, the committee has purchased a portable house, to be used as a dormitory, dining-room and kitchen for the nurses, and in which the laundry work can be done.

Our expenses must, of course, be greater than last year.

The committee does not put forward the idea of a summer camp with any claim of originality. In the important work of education and in the alleviation of the sick, this camp simply demonstrates a method which may be employed. It is modest in its construction and inexpensive to maintain. It offers the advantage over regularly established hospitals that it can be erected on any plot of ground where there is a water supply and drainage, and further, it fulfills its function as an object-lesson and means of education better than any isolated hospital can possibly do. It is in the open where those who pass must see its work and its aim.

75 Pratt Street.

#### DISCUSSION.

Dr. J. H. MASON KNOX, Baltimore: I have been interested in work of this character for several years and am glad to see that it is becoming more general. In Baltimore we found that the terrific thunder storms which we sometimes have there made tents impracticable for sick babies. Considering the short duration of time these babies stay in the hospital, there

should be trained nurses and physicians to care for the babies when they are returned to their homes. We found at Mount Wilson that unless, after the babies were returned to their homes, we could give them pure milk of exactly the quality we had at the hospital and supply the proper nursing much of our summer work at Mount Wilson was thrown away. If these children can be returned to their homes with a mother who understands better how to care for them and a trained nurse to visit them in their homes and give necessary instructions, the results from the summer camp treatment will be very much better.

Dr. JOHN M. BEFFEL, Milwaukee: I want to give a little review of the work that is being planned in Milwaukee. A year ago one of the women's clubs became interested in the death rate among children under 5 years of age. The death rate was shown to be 40 per cent. of the total death rate in children under 5 years of age. We had the highest death rate among children under 5 years of any city in the United States outside of Pittsburg. The matter was laid before the city council, which appropriated \$3,000 for the erection of a sanitarium or pavilion to be located on the lake shore. It is about 40 feet wide and 80 feet long. It faces Lake Michigan on the east. The main entrance is in the middle, and at the rear of the main floor is the administration room, then a room for nurses, a diet kitchen, an ice-box, a bathroom with a set of six infants' tubs and the lavatory. Then there is a space entirely open and surrounded by a railing. Curtains can be raised in time of wind to protect this space. Hammocks are hung here and ten little cribs placed in the rear. We have already raised by a little work about \$1,000 for the maintenance of this work for this summer, the idea being to call the attention of the public to the fact that there is here a vital problem. Let us become awake on this subject and realize that the babies under 5 years of age should be better cared for.

Dr. T. W. KILMER, New York: The statistics seem to show a strikingly high mortality—33.5 per cent. In New York in our out-patient department our statistics are so much lower than that, that I would like to know if these babies were practically moribund when brought in.

Dr. W. G. MURPHY, Hartford, Conn.: I won't guarantee the statistics. We had a very busy summer. Whether they are strictly accurate or not I do not know. But taking them as they are and deducting the cases of patients who came in moribund, we have a mortality of about 18 per cent. It is unfortunate that physicians will unload on us cases in which there is absolutely no hope. If I am not mistaken, the mortality of the floating hospitals is about the same as ours. Only desperate cases are sent to these hospitals; the mortality must be higher than other institutions. Our experience was that we got more money than we needed.

### A NEW SIGN FOR THE DETECTION OF MALINGERING AND FUNCTIONAL PARESIS OF THE LOWER EXTREMITIES.

C. F. HOOVER, M.D.

CLEVELAND.

The sign I wish to describe is one which I have employed for the past two years. Although the cases observed number only four, I feel justified in attaching great importance to the sign because it is dependent on a normal function, which I find always exhibited in healthy persons and invariably present in the sound leg of patients suffering from hemiplegia or paresis of one leg due to some pathologic lesion.

If a normal person, lying on a couch in the dorsal position, be asked to lift the right foot off the couch with the leg extended, the left heel will be observed to dig into the couch as the right leg and thigh are elevated. If you place your hand under the tendo Achillis



of the left side and sense the muscular resistance offered by the left leg you will observe that the left heel is pressed on to the couch with the same force which is exhibited in lifting the right leg off the couch. In other words, the left heel is employed to fix a point of opposition against the couch during the effort at lifting the right leg. This will always occur if the healthy person makes a free and uninhibited effort to lift the right leg. Of course the opposition offered by the other leg is not essential to a successful elevation of one leg, but if a free effort of the will is made (no matter how slight the effort) the point of opposition made with the leg of the other side is invariably present unless some inhibitory impulse be sent to the opposing leg.

If the movements are carried out in the reverse order the same principle holds true: i. e., if a normal person be requested to press the right leg against the surface of the couch there will be a counter-lifting force exhibited in the left leg.

If a patient suffering from hemiplegia or monoplegia of a leg be requested to lift the extended and paretic leg off the couch it will be observed that the other leg offers the opposition above described whether there is any voluntary muscular strength exhibited or not on the affected side. I have had opportunity to observe this in a large number of hemiplegic patients and the opposition from the normal leg never failed.

If the hemiparetic patient is asked to lift the normal leg off the couch against resistance he will exhibit an opposition with the paretic leg which is directly proportional to the voluntary muscular strength he is able to employ when a display of voluntary muscular power in the paretic leg is exacted.

When the upper extremity is involved this sign is sometimes demonstrable on the normal arm, but at other times it is wanting.

In two cases in which paresis of one leg was claimed by the plaintiffs in suits for personal injuries, there were wanting the characteristic physical signs to sustain the claim of paresis of the lower extremity as the result of injuries. Furthermore, in both of these cases, when the patient was asked to lift the normal leg off the couch, the leg which was alleged to be very paretic was opposed strongly against the surface when resistance was offered to lifting the normal leg. When the patient was requested to lift the paretic leg, there was an apparent attempt to respond to my demand, but the normal leg did not offer the least opposition. The normal leg lay perfectly limp on the couch. Had the paresis been genuine, the sound leg would have been firmly opposed against the surface of the couch when an uninhibited attempt was made to lift the paretic leg.

The absolute lack of complementary opposition from the normal leg was also observed in a case of hysterical hemiplegia, when the patient was requested to lift the paralyzed leg.

In another case of hysterical para-paresis inferior, which was accompanied by abasia, the patient could bow himself into the pose of opisthotonos, but if he was requested to lift one leg off the couch there was no complementary opposition offered by the other leg and the leg which he seemingly attempted to lift would not be raised off the couch.

This sign appeals to me as being particularly valuable for the reason that it depends on the exhibition of a function from the normal leg which must always be

present if the patient does not inhibit the normal impulses to the lower extremities.

In the four cases I have briefly described the complementary opposition was entirely wanting. Whether this lack of complementary opposition will always be found or not in malingerers and hysterical subjects remains for further observation to determine. But in view of the fact that complementary opposition is always present in a normal patient and in all patients with genuine paresis and genuine paralysis, we are justified in assuming the existence of cerebral inhibition to an apparent voluntary exhibition of strength when complementary opposition is absent.

If a malingerer were familiar with the object of the examination he could, of course, satisfy the demands of the examiner. In testing for this sign the examiner should seem to fix his attention on the leg which is alleged to be paretic.

In this manner I believe that one will always be able to trick a malingerer or hysterical subject into betraying the falsity of his claim.

I demonstrated the character and significance of this sign to one of the patients described. He promptly abandoned a crutch and cane, an orthopedic corset and blue spectacles and returned to work for the company against whom he had brought suit. The same course was adopted with the hysterical abasic patient. His gait became quite normal after a half hour's persuasion. Whether he later relapsed or not I do not know.

The sign in genuine hemiplegia which Babinski describes<sup>1</sup> for differentiating between genuine and functional hemiplegias depends on the affected side for its exhibition. I have found Babinski's sign unsatisfactory. The fact that this sign of complementary opposition is always present in normal subjects and in genuine paresis of the lower extremity, and the fact that it depends on an invariable function of the normal side gives it a very broad application.

702 Rose Building.

## VENESECTION AND CARDIOVASCULAR AFFECTIONS\*

JUDSON DALAND, M.D.

Professor of Clinical Medicine in the Medicochirurgical College and  
Physician to the Medicochirurgical Hospital.

PHILADELPHIA.

Venesection in cardiovascular affections is referred to by many authors, but it receives scant attention in actual practice. Recently, two physicians in active practice for several years reluctantly admitted at the bedside of a patient that they had never performed a phlebotomy.

That venesection has become neglected is due, first, to inherited prejudice because of its indiscriminate and unjustifiable use years ago, at which time it was the fashion to bleed healthy individuals each spring; second, to the fear that the abstraction of blood would weaken one already diseased; third, to the objection to its use by the laity, who are prone to believe that if death subsequently occurs, it is due to blood-letting; fourth, to a failure on the part of many physicians to recognize clearly the indications and limitations

1. Brissaud and Souquis: Article in Bouchard and Brissaud's "Traité de médecine," ix, 55.

\* Read before the American Therapeutic Society, Philadelphia, May 7, 1908.



of this procedure: and fifth, to the erroneous belief that a small, weak, rapid pulse is an absolute contraindication to blood-letting.

Usually, venesection in cardiovascular affections is employed as a palliative or as a life-saving measure. As a rule, venesection becomes necessary in conditions in which the patient's life is in jeopardy, so that when performed, even though marked amelioration of symptoms is secured, many deaths eventually occur. Occasionally, however, certain death is averted.

Venesection is especially indicated in certain cases of valvular diseases of the heart with well-marked failure of compensation, in which the patient presents extreme dyspnea or orthopnea, cyanosis, tumultuous cardiac action, a rapid, small, feeble pulse, distention of the veins of the head and neck, a feeble apex-beat displaced to the left and seen and felt over a larger area than normal; increase in the area of cardiac dullness to the left and right, and not infrequently accentuation of the pulmonic second sound. Blood-letting is especially indicated if these symptoms and signs are progressive, despite the administration of the ordinary cardiovascular remedies. Under such conditions twenty ounces of blood should be slowly abstracted from the median cephalic vein. If degeneration of the myocardium is not extreme, the relief secured is immediate and satisfactory. Cyanosis disappears, dyspnea diminishes, the overdistended veins become less prominent, the heart becomes stronger and less tumultuous, and the radial pulse increases in strength and volume and decreases in rate.

In these cases a small, weak radial pulse is due to the emptying of the blood from the arterial system into the veins, which produces extreme overdistention of the right auricle and ventricle, preventing their emptying. The right ventricle is often so extremely dilated that its contractions are exceedingly feeble, and the pulmonic circulation is so greatly interfered with that but a small quantity of blood is delivered to the left heart. The extraordinary relief of symptoms, however, is often but temporary, although occasionally, in the interval, cardiac remedies are able to produce a favorable effect, which, before venesection, was impossible, so that gradually circulatory equilibrium is re-established and the patient recovers. Exudates in any of the serous cavities should be removed before resorting to venesection.

The cardiac signs and symptoms described may occur late in the disease affecting the mitral or aortic valves.

In mitral stenosis, accompanied by extreme right ventricular dilatation, with failure of compensation, venesection is of great value and often prolongs life.

In acute pulmonary edema, symptomatic of right heart dilatation, even when the patient is almost moribund, venesection often induces marked palliation and sometimes recovery follows.

In well-marked degeneration of the myocardium, venesection is valueless.

In failure of compensation, occurring in the course of arteriosclerosis, blood-letting is frequently of great value.

In aneurism of the arch of the aorta, dyspnea or pain may be temporarily relieved by the abstraction of eight or ten ounces of blood.

A not uncommon cause of death in acute croupous pneumonia is extreme dilatation of the right heart due to the obstruction in the pulmonary circulation caused by a consolidated lung. When, therefore, the symptoms and signs of right heart dilatation show themselves, venesection to the extent of twenty or

twenty-four ounces becomes not only a palliative measure of great value, but occasionally saves life. It is important to accentuate that a weak radial pulse in croupous pneumonia, under these circumstances, is not a contraindication of venesection, but on the contrary a strong indication for its performance. In a certain number of these cases, it is most gratifying to observe a gradual progressive increase in the strength of the pulse while blood is escaping from the incised vein, illustrating strikingly the existence of an overfull venous system and a partially emptied arterial system.

Recently several physicians decided that venesection would in all probability hasten death in a case of pneumonia because the pulse was extremely weak. Reluctantly they consented to the abstraction of twenty-four ounces of blood and witnessed an increase in the force of the pulse during the operation, and later restoration of the circulatory equilibrium and recovery.

Certain of the deaths in pneumonia following venesection are due to a cardiac thrombus which had formed in the right heart, while dilatation was at its maximum, and prior to blood-letting. In other cases the myocardium was previously diseased, or the toxemia had already produced myocardial degeneration.

The danger of cardiac thrombosis is due not only to the overfilling of the venous system with blood and the slowing of the circulation, but also to the extraordinary increase in the coagulability of the blood in this disease; and therefore venesection should be performed promptly. As soon as early symptoms and signs of right ventricular dilatation show themselves, venesection should be performed, not only to prevent cessation of the heart-beat, but also to prevent cardiac thrombosis.

Rather uniformly hypertension, even to 220 mm. or more, has been observed in uremia and the frequent occurrence of arteriocalillary spasm has been recorded.

It is easy, therefore, to understand why, under these circumstances, sudden and extensive cardiac dilatation may occur, and also why the venous system should contain a relatively greater quantity of blood than normal. These conditions would be favorably influenced by venesection.

It is not within the scope of this paper to consider the relationship of phlebotomy to any other disease, but mention should be made of the benefit observed in certain cases of apoplexy, after blood-letting, by lowering the blood pressure and diminishing the amount of blood escaping into the cerebrum or from the meninges.

317 South Eighteenth Street.

## INFECTION OF OPERATIVE WOUNDS BY MALIGNANT DISEASE.\*

I. S. STONE, M.D.

WASHINGTON.

The question of most importance in all operative surgery is how to save human life, not only for the time, but to prevent a return of the morbid process whenever this is possible. Certain problems regarding the extension of malignant disease have engaged the attention of physicians for many years, and we have been impressed with the importance of further study of the danger of implantation of cancer and tuberculosis during the time we have a broad exposure of raw sur-

\* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



faces, as during breast and pelvic dissections; as, indeed, any wound may be involved directly, or may be the port of entry of further extension of the disease in question.

I wish to call attention to certain cases in which carcinoma, sarcoma and tuberculosis have apparently made fresh and rapid extension after operations. This immediate invasion appears to indicate a close relation of cause and effect. My observations lead me to suspect strongly that cancer and possibly sarcoma may vary in the intensity with which they attack the tissues. This may be due either to cell activity or to diminished vitality or increased susceptibility on the part of the patient. To illustrate I will briefly report a case of rapid development of carcinoma in an abdominal incision after a Wertheim hysterectomy operation:

*History.*—Mrs. T., aged 38, had a vaginal hysterectomy in 1905. In two years there was a return of the symptoms, and she was found in what we unhesitatingly pronounced an inoperable condition. However, at her earnest request, nearly the whole vagina was removed along with pelvic glands which were undergoing softening and contained material resembling pus. The operation exposed ureters on both sides, and the vessels down to Poupart's ligament below, and some distance above the pelvic brim. In short, we continued the operation until further anesthesia was dangerous.

We felt absolutely sure that we had contaminated the raw surfaces within the pelvis as well as the abdominal incision, because the soft and necrotic glands could not be extirpated without rupture partly owing to their close attachment to the blood vessels. In a week we had wound infection with purulent discharge. In five weeks we had marked elevation of the upper margin of the right border of the incision. This soon developed a crater about half an inch from the skin margin. It is unnecessary to say that all attempts to treat this growth failed. In perhaps two weeks after the new growth above mentioned had begun, we noticed a much larger area of development on the left side of the incision. These two centers continued their development until nearly the whole wound presented every appearance of cancerous growth and this persisted and extended rapidly until the inguinal region was largely involved, and which later on caused the death of the patient, nearly one year after the second operation.

Two operations for tumors of the breast which were thought to have been carcinoma until microscopic examination proved them to have been sarcomata resulted in rapid universal or disseminated metastases. These were fatal in a few months, and were not, as was the carcinoma, retained as a local manifestation. Query: Was the rapid spread of the disease caused by exposing fresh-cut open lymph spaces and vessels?

We have found in one operation for tuberculous uterine adnexa which were suppurating, due probably to mixed infection, that the wound tract had evidence of acquired tuberculous disease. The very poor condition of the patient favored much suppuration, and drainage was continued for seven weeks. The wound tract remained unhealed for twelve or fourteen weeks, a sinus persisting all of this time, and this showed tubercle bacilli until healed. The patient was treated for tuberculosis by the open air and forced feeding method and is now (two years since operation) quite well, having gained twenty-five pounds in weight.

Finally, we suggest as a result of the findings in this case that many of our delayed recoveries are due to similar causes. Besides the very great danger of wound contamination during operations which should be avoided, there is, in certain instances, notably in old cancers, a very rapid systemic invasion which we usually attribute to "mixed infection." Just what this mixed

infection is, and what it portends, have not been studied, because such delayed cases are generally considered inoperable. Does the accidental infection of the wound in a breast operation increase the danger of malignant invasion, or the contrary? Finally, if carcinoma and sarcoma are best eradicated by wide dissection, made far beyond the area of suspected disease, would it be possible to prevent immediate infection (with malignancy) by some sterilizing solution or other agent with elective affinity for pathologic conditions, yet which would not destroy healthy tissues nor prevent normal wound healing?

#### DISCUSSION.

DR. H. J. BOLDT, New York: It has been my custom for years in all operations for cancer to have the pathologist make serial sections of the surface, from the edges of the specimens removed and to satisfy myself whether or not I had probably done my operation in perfectly normal structure. With very few exceptions the report was that the operation was done in normal structures, and yet it is remarkable that in not a small percentage of those cases we did, in less than from one to two years, have recurrence of the disease in the field of operation; that is, in the scar tissue. It has struck me that there must be a predisposition, of what nature I do not know, nor do I think any one else knows, on the part of the patient, for recurrence to take place. There is something about carcinomatous patients that makes them likely to have recurrence unless extirpation is made far away from the original site of the disease. I do not know of a single instance in which the surgeon in operating for cancer became infected with the disease. In the large series of investigations made by Winter, particular attention is called to the vaccination metastases of carcinoma. There is so much research work to be done that I hope our pathologic laboratories will be able to throw some light on the subject.

DR. H. G. WETHERILL, Denver: It is perhaps not as well understood as it should be by the profession at large and by many operators that benefit may accrue from the use of some of the electrothermic instruments devised for the prevention of implantation and recurrence. I have had a good deal of experience with what is known as the Downes clamp, by which it is possible to do a hysterectomy without ligatures, to grasp the base of the broad ligament, close the venous channels and leave few raw surfaces. It certainly has very definite advantages. Possibly the members of this Section will remember that the statistics of Byrne, of Brooklyn, were far better in the freedom from recurrence of cancer than others had attained. His results were obtained through the use of an instrument resembling the Downes clamp. If the original incision through the vaginal vault is made with the cautery knife and then the broad ligament is clamped on either side there is less risk of implantation and of recurrence.

In connection with the cases operated on by Dr. Stone for a tuberculous sinus I might allude to the advantages which accrue from using a vaccine and particularly from the use of tuberculin in these old tuberculous sinuses. Of course, the treatment does not apply to cancer, but to various tuberculous lesions in which sinuses occur, such as from the stump of a ureter which it may have been impossible to remove after nephrectomy.

DR. GEORGE GELLHORN, St. Louis: All statistics on vaginal hysterectomy for cancer tell us that out of 100 recurrences 77 take place in the vaginal wound. While the majority of these recurrences are due to non-radical operation, yet many are unquestionably caused by contamination of the freshly opened lymphatics with cancer particles. To avoid these implantations, Maekenrodt of Berlin devised his vaginal hysterectomy by means of the cautery, the so-called igniextirpation. As you know, he preceded Byrne of Brooklyn by a few months. In 1898 I reported the late results of this igniextirpation in Maekenrodt's clinic. There were 39 patients operated on, with 4 recurrences, none of which were found in the vaginal incision. This goes to prove that implantation during the



operation had been avoided successfully. The careful observation of Dr. Stone is, in my opinion, a very valuable additional argument in favor of the postulate to avoid contamination of the wound in all operations for malignant disease. Reports are becoming more frequent that after the usual operation for ovarian cystoma cancer occurred in the abdominal incision. The conclusion, therefore, offers itself that we should, in such cases, make a long incision so as to remove the cystoma completely without opening it, rather than perform a short incision and let out the contents, because in the latter mode of procedure contamination of the freshly opened lymphatics of the abdominal wall can not often be avoided.

DR. G. BETTON MASSEY, Philadelphia: Dr. Boldt made the statement, which is familiar to us all, that we know little about cancer. I submit that Dr. Stone's paper and some other remarks made here this afternoon prove that we know more about cancer than we are acting on. We know enough to believe that it is a microbic disease, not only capable of being sown into the wound by operation too close to the disease, but also capable of being "milked" into the wound. In the ordinary operation of removing a breast or any other large organ watch any operator, if you do not critically watch yourself. How many times is the mass handled and accidentally squeezed by the assistant during the hour to an hour and a half that the operation lasts, without regard to the possibility of the cells being dislodged and implanted in the wound?

Have any present seen that form of recurrence of cancer of the chest called cancer *en cuirasse* that did not follow a knife operation? It may have been by one of the modern operations, but in which the cells were brought into intimate contact with the cut veins and lymphatics, permitting aspiration into the subcutaneous tissues. Whether or not we have found the germ of cancer we must alter our surgical procedures under the assumption that it is a germ disease, and either cut wide of the diseased area and try to prevent implantation, use the electrothermic method, or, still better, the electrochemical method that I have advocated, or in some other way prevent reinfection of the wound. The very criticism I have made of curettement in tuberculosis applies with far greater force to this operation for cancer, yet I fear it is still frequently practiced.

DR. D. H. CRAIG, Boston: I rise primarily to suggest an expedient which I have used regularly since a rather unfortunate case, closely resembling that of Dr. Stone, of infection of the abdominal wound. I desire to say first, however, that as a surgeon I can not allow the criticism of surgery which has just been made to go unchallenged. I think that the modern surgeon is not open to the criticism of milking a cancer breast on which he is operating before he severs the lymphatic connection. The method now in vogue of operating on a carcinoma of the breast is to start at the axillary attachment and sever the lymphatic connections downward from that breast before handling it. The breast can then be handled with much greater impunity.

An experience with an infected abdominal wound led me to adopt this technic. The operation was done through an incision sufficiently large not to cause bruising of the wall, for I believe cellular irritation to be one of the most important factors in the development of carcinoma, whether it be by direct trauma as we so frequently see it or by trauma of laceration as seen in the cervix. If we transplant the infection in doing hysterectomy we implant it on an irritated cellular structure which is a favorable site for the growth. My expedient is, after I have completed the operation and am ready to close up the wound, to take an entirely new set of instruments, not hitherto employed in the operation, and cut out all tissue around the incision which may have become infected.

DR. J. S. STONE, Washington: It seems to me that somebody ought to occasionally point out to us the fact that our beautiful surgery as yet has some defects. Conditions are not quite so bad as Dr. Massey would have us believe, but I think he is interested in another direction. I think, however, that the greatest possible care should be taken in amputation of the cervix and vagina, to close up as far as possible all oppor-

tunities for fresh infection. The Downes clamp seals only a certain portion of exposed surface; not one-eighth in the Wertheim operation or even in the ordinary removal of the uterus. In all operations an absolutely aseptic technic should be observed, remembering that the strongest chain is no stronger than the weakest link.

## NASAL ANALGESIA AS A PROGNOSTIC SYMPTOM IN DRY CATARRHAL DEAFNESS.\*

DUNBAR ROY, A.B., M.D.

ATLANTA, GA.

The question of nasal analgesia in its relationship to so-called dry catarrhal deafness is one concerning which no references are to be found in aural literature, and one which has never been considered by the majority of aurists if we may judge from the replies which I received from twenty-five men in various parts of the country, to whom I addressed the following questions:

1. Have you ever noted marked nasal analgesia in persons suffering with so-called dry catarrhal deafness?

2. If so, have you ever noted this as a prognostic sign in the final results of the treatment?

3. Has this symptom been of any value to you in determining the prognosis in these cases?

I received seventeen replies and from no one did I receive an affirmative answer to the last question. Nearly all had noted the condition as existing, but had simply considered it as a natural condition in these cases.

About a year ago I was struck with the fact that many of the patients who consulted me for progressive deafness, presented at the same time a condition of manifest nasal analgesia. I mean by nasal analgesia, a condition of manifest insensitiveness of the nasal mucosa whereby one may accomplish all kinds of instrumental manipulations in these cavities without discomfort to the patient and without the use of any local anesthetic. Since that time I have made it a rule to examine closely for this symptom in every case of a patient applying for treatment suffering with what is usually designated as dry catarrhal deafness.

It is not my intention, even were I able, to consider in this short paper the pathology of deafness, for much is yet to be written and clinically studied before we can know anything definite about this subject. The work of Politzer, Moos, Siebemann, Gruber and others has done much to enlighten us on the micropathology of this condition; but even with this light we seem to be groping in the dark in our endeavors to find some treatment which will be curative in its results. There are a great many problems yet unsolved, whose solution will aid us much in the management of these cases, but until then clinical observation and correlation must make up the sum total, in a great measure, of our knowledge.

I speak of this condition as so-called dry catarrhal deafness, since this term conveys to most of us what is usually meant in these cases, though I am by no means free to admit that this is an appropriate term. One might be justified in using the word catarrhal in those forms of deafness in which there is a discharge from the ear, but in that form in which the pathologic condition is just the opposite, the term seems a misnomer.

\* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



I am fully convinced that the ideas promulgated in text-books and writings of the present day are in a great measure wrong as regards the cause of progressive deafness. By this expression, I do not mean the deafness occurring in children and young adults who suffer with adenoids, for here we recognize the causal relationship, but I mean those cases which creep on insidiously in young adults and in persons of advancing age who have previously shown no symptoms of nose or throat derangement.

Just as the treatment of atrophic rhinitis is the darkest page in rhinologic literature, just so the treatment of progressive deafness is the darkest in that of otology. Our programs are filled with papers on operative procedures in cases of sinus thrombosis and middle-ear suppuration, and yet where we see one case of this condition we see one hundred cases of patients seeking relief for no other condition than annoying tinnitus and increasing deafness. Text-books tell us that the most frequent cause of this form of deafness is a diseased condition of the nasopharynx or the nasal cavities, especially a stenosis of the latter. The patient seeks relief from the aurist and is treated to the same old dose of nitrate of silver to the nasopharynx, sprays to the nasal mucosa, followed by the use of the Politzer bag or the Eustachian catheter and bougie. This stereotyped form of treatment is soon recognized by all patients and they lapse back into the same old condition of pessimism.

Until we recognize the fact that the form of deafness usually attributed to a catarrhal condition of the nose and throat, is itself a distinct entity and its pathology still an unsolved problem, we can never advance to a point where the treatment must be adapted to each individual case. I am sorry that I have no new ideas to suggest as to the successful treatment of these cases, but the point I wish to mention in this paper is the symptom of nasal analgesia referred to and which perchance may prove a valuable point in developing the future management of this condition.

In a few words I will give my observations and deductions on the symptom of analgesia as it has been found in these cases of so-called catarrhal deafness.

What is meant by analgesia as it refers to the subject in question?

All rhinologists are familiar with the fact that the sensitiveness of the nasal mucosa varies with individuals under different conditions of the membrane itself. This may be accounted for on the basis of temperament; the phlegmatic individual being much less susceptible to this sensitiveness than those of nervous temperament. On the other hand, this lack of sensitiveness of the nasal mucosa will be found in varying degrees among patients who suffer from progressive deafness of the dry variety, in the study of which we will often find that it is not due to the temperament of the patient. The analgesia referred to in these individuals is not confined to the nasal cavities, for we also find it present in the ear itself. For instance, what patients with normal hearing apparatus could stand the use of the Lucae probe on the drum membrane or even other instrumental manipulations in this region? That the same pathologic causes which produce this condition in the nasal cavities also acts on the aural apparatus is evident. What these changes are must yet be determined. Branches from the same nerve trunk supply both organs with sensibility and whether or not the same degenerative and hypertrophic condition which exists in the cases of progressive deafness of the middle

ear, is also present in the sensitive nerve terminals themselves, must as yet be determined.

I am convinced that this form of progressive deafness is a condition *sui generis* and that the mucous membrane in the nose, nasopharynx, Eustachian tube and middle ear, undergoes the same pathologic changes that are found in the nerve terminals which supply these parts. The more advanced are these changes in the mucosa and nerve terminals, the less favorable is the prognosis for the improvement of hearing. These same degenerative changes also finally take place in the auditory nerve itself as is evidenced by the tuning fork test and the histopathologic investigations of Moos, Politzer, Gruber and others. If then such changes do take place, which fact of course has not yet been conclusively shown, it would certainly seem to follow that a lack of sensibility in the nasal cavities means also a lack of sensibility in the middle and internal ears, with some changes in the auditory nerve itself. Basing the argument on these premises, it would also indicate that the more insensible to irritation a part is the less likely is it to be restored to normal sensibility. This certainly seems to be a law of our physical constitution manifested in various pathologic conditions of the human frame. For instance it is noteworthy how insensible are the nasal cavities in atrophic rhinitis.

These observations of mine and the report which follows must certainly be understood as distinctly preliminary, for it is only to call attention to this symptom and to ask for clinical observations from others that this paper is even presented. It may be that there are some who do not consider this a symptom in the prognosis whatever, but only a natural occurrence. Some may consider it only as a symptom of the temperament of the individual without any reference to its relationship to a diseased condition of the ear. My own conclusions are based on observations noted in twenty-five cases which have been followed for a sufficient length of time to warrant me in placing some value on this prognostic symptom. It is true that this is indeed a small number of cases on which to base a report, but what I have said is in no wise conclusive but is intended to direct others into the consideration of this subject of which no mention has as yet been made and in which there may be possibilities of an important prognostic sign.

Of the twenty-five patients twenty showed the accuracy of this symptom in the final prognosis, while in five it was decidedly uncertain. This symptom may also aid us in directing the line of treatment to those measures which will give more vitality to the nasal and aural tissues and to the nerves which supply their sensibility. Hence the value of potassium iodid in these cases.

In conclusion I can only say that this symptom has proved of decided value to me, for the results of treatment have uniformly been better when there existed a normal or abnormal sensibility of the nasal mucous membrane than when there was a decided symptom of nasal insensibility.

#### DISCUSSION.

DR. E. E. HOLT, Portland, Me.: I think that the analgesia of the nose is accounted for by inflammatory changes and by age. In manipulations about the eye in the latter part of manhood the sensibility is a good deal less. I have communicated with some dentists who tell me that the mucous membrane of the mouth is very much less sensitive in the latter part of manhood. This subject was brought to my attention by Dr. Burr, whom I have associated with me in work



on the physical economic value of man. In establishing the standard man of the different ages, infancy, childhood, youth, manhood, change of life and old age, Dr. Burr notes that all the mucous membranes are less sensitive at the latter part of manhood. You will notice in Dr. Bryant's paper that most of his patients are above 35 or 40. The period of manhood begins at 21 and lasts to about 50. One will notice in manipulating the mucous membrane about the distribution of the fifth nerve in patients of mature years that this membrane is less sensitive than in youth life. I have never seen this hypoaesthesia in young persons; it is always in older people and it is caused by inflammatory conditions due to vasomotor disturbances and the changes due to age.

DR. J. HOLINGER, Chicago: In chronic suppuration of the middle ear there is a distinct loss of sensitiveness on the drumhead and in the middle ear, which is of prognostic value; but whether in spongification of the capsule of the labyrinth this holds good I am not prepared to say. In making the routine examinations of such an ear the catheterization of the Eustachian tubes often brings tears to the eyes of the patient. Furthermore, it is often necessary to rid the drumhead of scales or wax, and here also the patients give evidence of pain, showing rather the opposite of analgesia. Is there not a possibility that a great number of these patients, simply from sheer force of will power, try to overcome pain in order to give the doctor a chance to do everything in his power to help them? I think that it is more an evidence of will power than of lack of sensitiveness.

DR. C. F. WELTY, San Francisco: I have noted nasal analgesia always as associated with atrophy of the mucous membrane of the nose. I have further noted that ear lesions associated with this condition have been produced by nasal hypertrophy; that the atrophy is one of the later stages of hypertrophy, and that the ear lesions have been produced while in a state of hypertrophy. Furthermore, if otosclerosis happened to be associated with the analgesia it was simply a coincidence, and bore no relation whatsoever to the nasal analgesia.

DR. DUNBAR ROY, Atlanta: I had no reference to the earlier years of life, between the ages of 5 and 20, in which there are so many catarrhal conditions, as wrong tonsil and adenoid conditions, but to the advanced periods of life. It is true, as Dr. Holt has said, that there is this lack of sensibility in older persons, but in the cases I have reference to his theory does not apply. There is a marked difference between various old people of the same age in the amount of sensibility in the nasal mucous membrane. I had no reference to analgesia as a cause of deafness; I simply called attention to the association of this condition with the so-called progressive deafness and the possibility that it may throw some light on the subject of prognosis.

## EXPERIMENTS TOWARD A PHYSIOLOGICALLY ISOTONIC SOLUTION OF SALTS.\*

HERMAN M. ADLER, A.M., M.D.

Assistant in the Theory and Practice of Physic at the Harvard Medical School; Assistant in Clinical Pathology at the Boston City Hospital.  
BOSTON.

The solution that is almost always employed by surgeons and clinicians for irrigations and intravenous injections is the so-called normal saline solution. This is a solution of NaCl in water varying from 0.7-0.9 per cent. in strength and agreeing approximately with the tonicity of blood, that being the only property of blood which at the time that this solution was devised was sufficiently understood to be imitated. Since that time physiologists, for experimental purposes, have vastly improved this solution, taking into consideration

the action of other inorganic salts, besides sodium chlorid. Nevertheless, these advances have not been utilized to any considerable extent in practical medicine. Originally this research had for its object the investigation of the possible advantages of using clinically a solution which conformed more closely to blood than the ordinary normal saline solution. Saline solutions, such as those of Ringer, Locke and others, which have replaced almost entirely the ordinary sodium chlorid solutions in laboratories of physiology, conform more nearly to the inorganic constitution of blood. However, little attention has been paid to other important properties of the blood which until recently have hardly been understood. Among these are:

1. The correct H and OH ion concentration.
2. The capacity for maintaining the proper reaction in spite of increase in acid or alkali.
3. The capacity for the transport of carbonic acid.

In view of this, I turned aside for the present from my original problem in order to attempt such improvements as seemed possible in the light of these recent findings. The present communication is confined to a report of the results of this undertaking.

The practical problem then, in a case like this, is to choose those characteristics of blood which are essential, ensure their proper establishment and to include as many of the other characteristics as may readily be obtained without sacrifice of simplicity of technic and permanency of the solution. The solutions most frequently employed, where a physiologically normal saline solution is required, are solutions of NaCl of such a strength as to be isotonic with the blood. The tonicity has always been considered the essential point. The experiments of Ringer, Locke, J. Loeb and others, have shown the importance of the addition of K and Ca to the saline solution, especially when this was to be employed to maintain rhythmical contractions in the isolated heart. Hédon and Fleig,<sup>1</sup> starting from the assumption that a physiologic solution should correspond as nearly as possible to the blood, prepared a solution which in addition to Na, K and Ca, contained Mg, and phosphoric and sulphuric acid. All these solutions possess also a varying degree of alkalinity due to the addition of NaHCO<sub>3</sub>. The exact amount of each ingredient varies with the author and, in each case, has been determined empirically. With no other test than the physiologic it is apparent that considerable variations in constitution need not necessarily produce any marked effect experimentally. With the exception of the total concentration, the tonicity, which is more or less definitely fixed, the rules for making up a physiologic saline solution are therefore very indefinite.

However, facts in regard to the maintenance of the proper neutrality and the equilibrium between acids and bases in general, by means of which the CO<sub>2</sub> transport is effected in the animal organism, have recently appeared which, when applied to the preparation of a saline solution, not only give us more definite guides, but make possible the preparation of a solution more nearly like blood than any other so far devised.

The data at hand regarding the concentration of the inorganic constituents of human blood are necessarily very insufficient. The methods for obtaining reliable information require the use of large quantities of blood, and it is, therefore, not surprising that the

\* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

\* From the Laboratory of the Department of Theory and Practice of Physic, and the Laboratory of Comparative Physiology, Harvard Medical School.

1. Arch. Internat. de Physiol., 1905-1906, iii, 95.



majority of the determinations have been carried out on the blood of animals. Through the work of Bugarszky and Tangl,<sup>2</sup> Abderhalden<sup>3</sup> and others, we have a fairly complete knowledge of the inorganic constitution and concentration of the blood of a number of the domestic animals, including the horse, cow, sheep, goat, pig, dog, rabbit and cat. It has been found that, in its general characteristics, the blood of these animals shows a marked uniformity both as among the various species as well as between the animal blood and the human. Moreover, it is known that the constitution of the blood of the same species, and even of the same individual, is subject to variations at different times which approximate closely to the variations observed in the analyses of the serum of different species.

The constitution of the fluid portion of the blood has been obtained by calculation from quantitative determinations of the blood corpuscles and of the serum. As, however, the methods available at present are not of such accuracy as to allow absolute dependence on figures obtained, it was considered wiser to simplify the procedure and to base the calculations for an artificial solution to resemble the body fluids on the figures for the serum, with the full realization that the result would be only a close approximation of the actual conditions. The human serum consists chiefly of water in which are dissolved about 8.5 per cent. solids. These consist mainly of albuminous substances and small quantities of sugar, cholesterin, lecithin and fat, and inorganic bases and acids. These latter are mainly Na, K, Ca, Mg, in combination with HCl,  $H_3PO_4$ , and  $H_2CO_3$ . By calculation based on the quantitative estimations of Abderhalden<sup>4</sup> of the inorganic content of blood serum the values shown in Table 1 were obtained in grams per liter:

TABLE 1.

Na <sub>2</sub> O	4.45	Na	3.30
K <sub>2</sub> O	0.26	K	0.21
CaO	0.12	Ca	0.08
MgO	0.045	Mg	0.03
Cl	4.0	Cl	4.0
P <sub>2</sub> O <sub>5</sub>	0.07	H <sub>3</sub> PO <sub>4</sub>	0.09

If these amounts are expressed as chlorids, phosphates and carbonates we obtain the results shown in Table 2:

TABLE 2.

KCl	0.40	K	0.21	Cl	0.19
CaCl <sub>2</sub>	0.22	Ca	0.08	Cl	0.14
+6aq	0.4				
MgCl <sub>2</sub>	0.12	Mg	0.03	Cl	0.09
+6aq	0.25				
NaCl	5.90	Na	2.32	Cl	3.58
				Cl =	4.00
NaH <sub>2</sub> PO <sub>4</sub>	0.11				
+1aq	0.126	Na	0.02	H <sub>3</sub> PO <sub>4</sub>	0.09
NaHCO <sub>3</sub>	3.51	Na	0.96		
		Na =	3.30		

A solution containing per liter the amounts stated in Table 2 has precisely the same reaction as blood and possesses nearly the same power to neutralize both acids and alkalies, as shown by Henderson and Black.<sup>5</sup>

The correctness of the reaction was further clearly shown when tested with rosolic acid paper, and agreed fully with the observation made by me on blood and reported in a previous communication.<sup>6</sup>

The monophosphates now constitute about 10 per cent. of the total phosphates, and free carbonic acid about 6 per cent of the total carbonic acid. In other

respects the proper relationship between the several acids and bases is automatically adjusted by this method of preparation.

The inorganic constituents being thus properly adjusted, it remains to consider the organic. It is evident at once that the proteins of the blood can not very well be introduced into an artificial solution. However, one of the important effects of the presence of colloids in blood, the increase of the viscosity, can very well be brought about in an artificial medium by means of a colloid or colloids that do not coagulate with heat and that are more or less inert, or at least innocuous, in the animal organism. Two such substances are easily obtainable, viz: gelatin and gum arabic. Albaucse<sup>7</sup> has shown that a 2 per cent. solution of gum arabic in water has a viscosity closely resembling that of blood, and his perfusion experiments convinced him of the importance of this factor. A considerable advantage of gum arabic over gelatin solutions is the fact that the former remains liquid at the temperatures required in the preparation of the fluid. The sugar content of the blood likewise was approximated by the introduction of 0.15 per cent. dextrose.

The effect of the addition of the colloid was remarkable in that it increased the solubility of the calcium salts and apparently held them in solution at a temperature and a CO<sub>2</sub> tension that, without the presence of colloid, caused a precipitate. The solution thus prepared had a freezing point of -0.58 C, corresponding to that of human serum, and its osmotic pressure was further tested physiologically by using it to make a suspension of blood cells. The red cells retained their shape perfectly.

In Table 3 I have placed side by side the ordinarily used Locke's solution, the solution of Hédon and Fleig<sup>8</sup> and my own:

TABLE 3

	Locke	Hédon and Fleig	Author
NaCl	0.9	0.6	0.59
KCl	0.025	0.03	0.04
CaCl <sub>2</sub>	0.023	0.01	0.04
MgSO <sub>4</sub>	....	0.03	MgCl <sub>2</sub> 0.025
NaH <sub>2</sub> PO <sub>4</sub>	....	0.05	0.0126
NaHCO <sub>3</sub>	0.02	0.15	0.351
Glucose	0.10	0.10	0.15

It will be seen that in regard especially to NaCl, NaHCO<sub>3</sub> and NaH<sub>2</sub>PO<sub>4</sub> these solutions differ considerably from one another. Locke's solution contains sufficient NaCl to produce an isotonic solution without any further additions. In other words, this solution must in most cases be slightly hypertonic. The omission of Mg and P<sub>2</sub>O<sub>5</sub> from Locke's solution, while probably not important, certainly does to some extent affect the final equilibrium between acid and base. The NaHCO<sub>3</sub> is much too low to obtain the correct reaction. The same is true of the solution of Hédon and Fleig who on that account probably have kept the CaCl<sub>2</sub> so low. The solution suggested in this communication contains a comparatively large amount of NaHCO<sub>3</sub> and a small quantity of NaH<sub>2</sub>PO<sub>4</sub> which together produce an equilibrium able to maintain the necessary amount of calcium in solution. If the CaCl<sub>2</sub> and the NaH<sub>2</sub>PO<sub>4</sub> are separately dissolved and mixed with the other substances already in solution, no precipitate appears. If all the salts, however, are placed together in the necessary quantity of water a certain amount of calcium phosphate is formed. This precipitate will readily go into solution on passing CO<sub>2</sub> through the

2. Arch. f. d. ges. Physiol., 1898, lxxii, 531.

3. Ztschr. f. physiol. Chem., 1898, xxv, 67.

4. Abderhalden, E.: Ztschr. f. physiol. Chem., 1898, xxv, 67.

5. Am. Jour. Physiol., 1907, xviii, 250.

6. THE JOURNAL A. M. A., 1907, xlix, 461.

7. Arch. f. exper. Path. u. Pharmacol., 1893, xxxii, p. 297.

8. Arch. Internat. de Physiol., iii, 95, 1905-1906.



liquid. The reaction, however, will become more acid. After the salts are in solution, the excess of  $\text{CO}_2$  can be driven off without causing a reappearance of the precipitate.

Aside from theoretical and practical chemical considerations, it seemed desirable to test the correctness of the solution as a physiologic fluid by experiments with the living organism. The molecular concentration of the fluid, as above stated, was made to approximate that of cat's serum by the addition of 0.15 per cent.  $\text{NaCl}$ . A number of experiments were conducted to determine how long an isolated cat's heart would beat rhythmically when perfused with this solution. The apparatus used was the one described by Cleghorn.<sup>9</sup> The cat's heart was removed as quickly as possible from the animal, and after it had freed itself of blood in a saline bath, was tied to a canula passed into the aorta just above the coronary orifices. The solution was then forced through the coronary arteries under a constant pressure of 60 mm. of mercury. The whole apparatus was kept at about 35 C.

The results obtained proved that this solution was well adapted to the requirements of a circulating fluid. In one case, under unusually favorable conditions, rhythmic contractions were maintained for 21 hours after the heart had been removed from the cat. No difference could be observed between the solution made up as above and one from which  $\text{MgCl}_2$  had been omitted, and the  $\text{NaCl}$  content correspondingly increased. In regard to the viscosity, the solution containing 2 per cent. gum arabic gave rather less satisfactory results than the one without it. This could be explained possibly by the increase in  $\text{K}$  content of the solution, due to the gum arabic.<sup>10</sup>

It is worthy of note that the best results so far were obtained with those solutions which had no oxygen added. As the water was always freshly distilled, it is not likely that any large amount of oxygen was present, and it is conceivable that the  $\text{CO}_2$  content of the solution acted as a stimulus. Furthermore, the solution is capable of holding and removing considerable quantities of  $\text{CO}_2$ , which, possibly, is quite as important as the presence of oxygen. Several experiments were tried in which the solution was saturated with oxygen and then perfused under oxygen at pressures of from 50 to 80 mm. of mercury. It could not be observed that this caused any more favorable result.

#### CONCLUSIONS.

While the experiments are as yet incomplete it is, perhaps, not too early to say that the solution described above has certain qualities that recommend it for physiologic use. It approximates blood serum closely in its constitution, in the concentration of its various components and in reaction. It provides a mechanism, on the one hand, for maintaining the reaction, and, on the other hand, for neutralizing acids and alkalies. It provides for the transport of a sufficiently large amount of  $\text{CO}_2$ . The clinical application of this solution is still under investigation.

It is a pleasure to record my indebtedness to Dr. L. J. Henderson for help in the calculations, and to Dr. W. T. Porter for much valuable guidance as well as for generously placing their laboratory facilities at my disposal.

## Clinical Notes

### GANGRENOUS APPENDICITIS COMPLICATING HERNIA.

OCCURRING THREE WEEKS AFTER BIRTH IN  
A PREMATURE CHILD.

HOWARD LILIENTHAL, M.D.

Attending Surgeon to Mt. Sinai Hospital,  
NEW YORK.

*History.*—R. T. was born March 31, 1908, six weeks before the end of a carefully computed term of pregnancy. He was the third child of a physician. His mother and one of his brothers had been operated on for appendicitis. Two weeks after birth his weight was five pounds and four ounces. Considering the circumstances, the child seemed normal and gained satisfactorily in weight. Thus on April 7 his weight was five pounds and two ounces and on April 11 five pounds and eight ounces. Shortly after birth a small reducible tumor was noted in the right inguinal region, the enlargement gradually extending into the scrotum. When the child was three weeks and three days old the father called in a physician, who applied a truss with a small wooden pad, the hernia being apparently thoroughly reduced. The truss was put on about 5 o'clock in the afternoon, and from the first caused the child to become restless and to cry, so that at the end of four hours the appliance had to be removed. The baby, which was breast-fed, refused to nurse, even though it was thought that the source of irritation was no longer present. The mother made repeated efforts to cause the child to take the breast, but after a few minutes it would cease and cry out, and there was regurgitation of the ingested milk. By 7 o'clock in the morning the parents noted a great change in the baby's expression. The fontanelle was distinctly sunken, and the face began to have the hollow-eyed, bluish appearance so characteristic of impending collapse. The hernia could apparently still be reduced, but there remained a slightly indurated mass in the scrotum, and there was some edema of the prepuce.

*Examination.*—I saw the patient with Dr. Edward W. Perkins just twenty-four hours after the application of the truss. Locally the appearances were as described; the abdomen, however, was rigid and distended, and attempts at physical examination caused straining and crying. The bowels had moved twice and some flatus had been expelled. While I was present the baby had a sinking spell and had to be revived with a little diluted brandy. The temperature was taken and found to be below 96 F. The urine was high-colored, staining the linen.

*Operation.*—Recognizing that we had to deal with an extremely desperate condition, I advised an immediate operation, being under the impression that strangulation in some form existed. The baby was accordingly removed at once to Mount Sinai Hospital, where I operated an hour later under general anesthesia by chloroform and ether, administered by Dr. T. L. Bennett. By the time we were ready to operate, intra-abdominal tension had still further increased, and the hernia could be with difficulty reduced, so that efforts at taxis were abandoned and the usual incision for herniotomy was made. On opening the sac, a distended coil of large intestine lay before us, constricted at the neck to such a degree that I did not deem it safe to make efforts at replacement until the constriction had been relieved by incision. This was at once followed by a gush of serum amounting to at least three or four ounces, and I was able with ease to reduce the greater part of the hernia. With gentle traction I then withdrew from the scrotal sac the slightly adherent appendix, the distal half of which was black and obviously gangrenous. A single ligature caught the organ at its base as well as the meso-appendix; ablation was performed with the scissors. Gauze packing was held in place by a firm bandage of gauze and then starch, the patient's leg being included down to the foot in the extended position and the bandage still further reinforced by wooden splints. There was no attempt whatever to close any part of the wound. The time of the operation was twenty minutes, and the baby was taken home as soon as the work had been completed.

9. Am. Jour. Physiol., 1899, ii, 275.

10. Locke: Jour. Physiol., 1895, xviii, 332.



**Bacterial Examination.**—Culture from the interior of the appendix showed the presence, even at this early date, of the colon bacillus, in spite of the fact that the child had been breast-fed throughout, and had only on one or two occasions tasted unboiled water. The examination was made at the pathologic laboratory of Mount Sinai Hospital, the culture being examined by Dr. Sophian and the result confirmed by others of the staff.

**Recovery.**—Six days after the operation the dressing was changed, most of the packing was removed, and the uneventful recovery was complete two weeks from the time of the operation. There was a steady gain of weight from the first until on May 7 the child weighed seven pounds and four ounces. The boy seems to have recovered perfectly, but I am told that there is some colic which comes on fifteen or twenty minutes after each nursing. The stools, however, are free from mucus and are of normal color, frequency and consistency. The mother thinks that the apparently irritant quality of the milk may be due to extraordinary worry in domestic affairs.

The technic followed in this case, namely, treating the wound without suture and by intraperitoneal packing alone was employed by me with equal success in a child operated on about seven years ago in the practice of Dr. Henry Heiman. This patient was only eight days old. There was strangulation of a right inguinal hernia. The operation for its relief was extremely difficult because we feared to give more than the smallest possible quantity of anesthetic, chloroform, and owing to the struggles of the child there was almost complete evisceration. In spite of this the patient recovered and the hernia has not recurred.

It is probable that in the present case when the truss was applied the cecum only was replaced, the pad resting directly on the base of the appendix, interfering with its circulation and giving rise to an amount of traumatism sufficient to cause permanent thrombosis and consequent gangrene which naturally could not be relieved by the removal of the pressure.

## TETANY IN AN INFANT FOUR DAYS OLD.

LEONARD K. HIRSHBERG, A.B., M.D.  
BALTIMORE.

Conditions associated with tetany have an added interest just now because of the studies of MacCallum, Pfeffer, Mayer, Escherich and others on the parathyroids. The following case is, therefore, instructive:

**History of Mother.**—A. M., aged 25, was seen June 8, 1908. She had been in the second stage of labor for twelve hours. Her physical condition was excellent except for the presence of a small thyroid enlargement. The goiter was about 12 cm. to the right of the midsternal line. Her pulse never rose above 84. The child's head was on the perineum. The fetal heart gave slight evidence of irregularity during pains, but was about 140 to the minute. About one and a half ounces of chloroform were administered and an unusually large boy delivered, uncorrected weight 14 pounds, corrected weight not less than 9¾ pounds. It was the largest baby I have ever delivered, the average weights of 47 babies in my records being 7¼ pounds, hospital and private practice.

**History of Child.**—The baby was finely formed, with a sound head and slight *caput succedaneum*. A second degree tear in the mother, required five silkworm sutures. The child was unusually clean when born, with a most curious and unusual bright red scarlatinaform blush over its entire body. Shortly after birth the nurse directed my attention to repeated vomiting of a frothy serum. There were no injuries anywhere; the body, scalp, head and extremities showed no marks of any kind. It slept well and took the breast well. The prepuce was completely closed. This was relieved by circumcision

eighteen hours after delivery. There were no nervous symptoms noted during the first, second or third day, although the curious frothy vomitus continued at intervals. He was put to the breast three times each day until the third, when the feedings were brought more closely together.

At birth, although the family history was clean, two drops of 2 per cent. solution of nitrate of silver were instilled as a prophylactic. The next day much pus was present in the left eye, which was also swollen. The pus was examined and contained no gonococci. Boracic acid washings were continued for three days. A red, papillary, exanthematous condition also existed in the mouth, on the tongue and buccal mucous membranes. This did not interfere with nursing, yet the boracic acid was always used before the infant was given the breast. From five to ten black, green and mucoid stools began to pass on the second day.

On the fourth day I called the nurse's attention to the tetany-like movements of the hands, arms and legs of the child. At this time they were scarcely noticeable. She attributed them to some warm sterile water which she had just given the baby. She had not observed them before.

At my second visit on this day the contractures, athetoid tremors (for the amplitude was too small to call them movements) were paroxysmal, the skin alternately wrinkled and tense, some dyspnea and temporary cyanosis. There was no rise of temperature, but the pulse often became uncountable.

From the fourth to the ninth day the typical athetoid movements, extended joints, separated fingers, the thumb contracted on the palm, folded arms and moving elbows made the diagnosis certain.

The convulsions never lacked the movements so distinctive of tetany. The cyanosis grew steadily worse and the pulse often disappeared. Opisthotonos was never present.

Trousseau's and Chvostek's signs were present. From careful external percussion and auscultation the stomach was not dilated. There was no evidence of rickets or history of it in either parent's family.

Cold sponges, warm baths and sodium bromid were of no avail. Ice packs to the spine and head, chloroform and all of the tried remedies failed to keep the infant from passing out. No section was permitted. I arrived two hours after the termination. The body was a bluish black. The body was so perfectly formed, so well molded and well nourished that I could scarcely believe the child dead.

Osler says that tetany is an extremely rare disease. Two years ago he collected 163 cases, including those at Johns Hopkins. He says it bears a definite relation to infections, rickets and gastrointestinal disorders. My patient is perhaps the youngest in the literature.

1. Was the tetany due to an inherited defect of the parathyroid? Such a theory appeals to me because of the mother's goiter.

2. Was it due to boracic acid toxemia? The cord was dressed with boracic acid, the eye was being irrigated with boracic acid, and the mouth was being washed before each feeding with boracic acid.

3. Was there any relation between the nitrate of silver conjunctivitis and the nervous explosions shown as tetany?

4. Was there a hemolysis of the infant's blood from the rich serum of the mother obtained from too frequent intervals of breast feeding during the first days?

5. Was there an infection from the early circumcision which produced the tetany?

6. Was there some gastrointestinal factor due to an unusually rich mother's milk?

7. Did all or any of these causes produce the fatal tetany?

Evidently there was no infection present. The hemolytic theory may be dismissed because the sera are homologous. The absence of a dilated stomach and the precedents in the case of the mother's milk and fre-



quent early feedings, reduce the gastrointestinal factor to a minimum.

I hardly believe enough boracic acid or nitrate of silver could be absorbed to produce a fatal result. There is nothing then left to blame but the parathyroids. The goiter and scarlet rash point to them. Since a section was refused, it is mere speculation.

Next to the diseased parathyroids as a cause, the weight of facts is in favor of the stomach and intestines as a possible cause. The early and frequent vomiting, which increased, and superimposed a diarrhea when frequent feedings began, have led me to feel that I made a grave error in not adopting a starvation policy at the onset of the prodromal symptoms.

1937 Madison Avenue.

## PYONEPHROSIS AND CEREBRAL ABSCESS.

WILLIAM P. WILLARD, M.D.  
SAN FRANCISCO.

The following case is of interest on account of the supposedly metastatic cerebral abscess being caused by an entirely different organism from that which infected the kidney and also because of the duration and course of the two conditions.

*History.*—J. N., aged 30, single, bartender by occupation, was at the age of seven run over by a sleigh and the left side of his head was injured. At eighteen he contracted gonorrhea, the discharge of which ceased after about three weeks treatment. Had led an irregular life and had used alcohol freely. Two years ago he began to suffer with pain in the lumbar region and more or less irritation on urination. This had persisted for about a year when I first saw him. At this time I found a well-nourished man of extremely nervous disposition. Nothing abnormal found in heart or lungs, kidneys not palpable and no pain on pressure; prostate enlarged, soft and the secretion full of pus cells. Urine contained nothing abnormal excepting a few pus cells. Cystoscopic examination showed nothing abnormal in the bladder. I treated the prostate for several months, and as the character of the secretion improved he complained less of the pain in his back.

*Examination.*—On Dec. 1, 1907, he came complaining of severe pain in the left lumbar region. Pressure over the left kidney caused some pain. The urine contained a few pus cells (2 or 3 to the field), as it did on the first examination. I again cystoscoped him and catheterized the ureters. On the left side the catheter could be introduced only about two inches when it met some obstruction, and although the catheter was left *in situ* for some time no urine was obtained. On the right side the catheter was passed just far enough to collect urine for examination. This showed nothing abnormal. Two days later I again catheterized the left ureter, and although I was able to push the catheter to the pelvis, still I obtained no urine. Radiographs showed nothing. An indefinite mass could now be felt in the left kidney region, the palpation of which caused an increased pain. Blood examination showed: December 10, 9,300 white cells; December 14, 11,400; December 19, 11,000. The highest temperature was 100 F.

*Treatment.*—Dec. 19, through a left lumbar incision I opened a cavity containing about a quart of greenish yellow pus, smears from which showed many red-blood cells, few polymorphonuclear leucocytes, very many short encapsulated Gram-staining bacilli (pneumobacterial infection). Pus drained freely from the wound and also into the bladder. Ten days later the patient had a severe chill, a temperature of 105 F. and a white count of 23,400. On exploring the wound the finger pushed into another cavity containing about half a pint of pus. After this the temperature fell and remained normal until he left the hospital. A few days before the operation the patient complained of pain in the left ear, which disappeared for several days after the operation, when it again

recurred. The aurist, Dr. Rosenthal, reported at this time that there was a slight exudate in the middle ear, which disappeared after Politzerization, but nothing to account for the pain. The pain increased in severity, extending from the auricular region, including the left frontal region, and later to the left occipital region. On pressure the pain was not increased, but percussion over the left temporal region was very painful.

Blood examination Jan. 13 showed reds, 4,300,000; whites, 8,200; hemoglobin 90 per cent.; polymorphonuclear leucocytes, 72 per cent.; mononuclear leucocytes, 16 per cent.; eosinophiles 1 per cent. The pain continued with exacerbations, especially at night, until Jan. 25, when the patient against my advice left the hospital.

*Subsequent History.*—For three weeks I saw him every day and he seemed at first much improved. Not only was the pain in the head less, but also the lumbar wound began to close and he gained a few pounds in weight. Later I noticed he became dull and was slow in comprehending what was said to him. Feb. 15, on going to his lodging, I found him suffering from intense pain over the left side of the head, incontinence of urine and feces, projectile vomiting and inability to move his left arm and leg freely. Temperature, 97 F. The following day the slight paraplegia had disappeared and nothing definite in the localization of the trouble could be found. Rectal temperature for three days was from 97 to 98 F.; pulse, 68 to 80; average white blood count, 13,200. On Feb. 19 I trephined the skull two inches anterior and one inch superior to the left external auditory meatus and introduced a small needle one inch into the brain substance and withdrew pus. The opening was enlarged and a large amount of greenish-yellow pus exuded. Exploration showed a cavity about four inches long by two inches in diameter. Smears showed much granular detritus, few polymorphonuclear leucocytes, few encapsulated Gram-staining bacilli and diplococci; streptococci were present in pure culture. After the operation the patient felt much better and was free of pain for twenty-four hours. The pain recurred and examination of wound showed a great increase of intracranial pressure, so that the brain substance was forced into the drainage tubes, blocking them. They were removed and a small amount of pus exuded from the wound. On attempting to reintroduce the tubes the patient became suddenly unconscious and almost pulseless. By stimulation his condition improved, but a left hemiplegia ensued and twenty-four hours later he died.

*Autopsy.*—At autopsy the remains of the left hemisphere of the brain was very friable and the meninges over both sides were covered with purulent exudate. The heart, lungs and liver were normal, the spleen enlarged, a fibrous capsule was all that could be found of the left kidney, while the right was greatly hypertrophied.

2672 Pine Street.

## A SIMPLE AND EFFICIENT DEVICE FOR FILLING AND EMPTYING PIPETTES.

G. C. CRANDALL, B.S., M.D.

Professor of Internal Medicine, St. Louis University.  
ST. LOUIS.

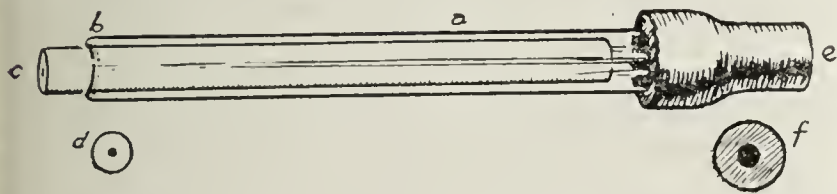
The device here illustrated I have found so easy to make and so efficient in application that I trust it may be of value to others. The parts consist of a glass tube (a), a medium hard, thick-walled rubber tube (c) with small lumen (d) for a piston, and a soft thick-walled rubber tube (e) with small lumen (f) for connecting the glass tube with the pipette. The piston tube (c) may be a solid medium hard rubber cord if obtainable, and the connecting tube (e) any soft rubber tube, but I have found the parts described very satisfactory. The piston tube here used is abdominal supporter tubing, and the connecting tube is the soft rubber tubing used for the flexible connection of antitoxin



syringes. The piston tube should fit the glass tube very loosely before the end of the latter is constricted (b).

To make, cut the parts the desired length, hold the end of the glass tube in the flame until the melting of the glass contracts the lumen at the end of the tube sufficiently to constrict slightly the rubber piston tube when it is introduced; draw a piece of glass in the flame, make two small plugs or beads with which stop the ends of the piston tube, insert the piston tube in the glass tube and connect to the pipette with the soft rubber tube.

To use it, turn and draw out gently the piston tube, which will fill the pipette as gradually as desired, the liquid remaining stationary in the pipette when letting go of the piston tube, making it easy to stop at any desired graduation mark, and the liquid may be forced out or taken in easily and accurately with perfect control of the column of fluid in the pipette when filling or emptying. It can be used with one or both hands. It is easily cleaned, if necessary, by pulling the piston entirely out. The one illustrated will fill a 1 c.c. pipette and it could be made with a greater or less capacity by



A device for filling or emptying pipettes or droppers; approximately actual size.—a, glass tube, 7 cm. long, 6 mm. diameter, 5 mm. lumen; b, end of glass tube slightly constricted; c, piston, 8 cm. long, 4 mm. diameter, 1 mm. lumen; d, cross-section piston; e, connecting tube, 2 cm. long, 7 mm. diameter, 2 mm. lumen; f, cross-section of connecting tube.

cutting the parts longer or shorter, or by using larger or smaller glass and rubber tubes. The soft rubber connecting tube is readily connected to pipettes with ends from two to six mm. in diameter. It may be adapted to any pipette in which perfect control of the liquid is desired or to any dropper when accuracy in dropping is wished. I have used it satisfactorily on blood pipettes, tuberculin pipettes and droppers for various purposes.

The special advantages which I have found in this device are its simplicity and cheapness of construction, its adaptability to various pipettes, the ease with which it can be cleaned and the perfect control of the column of liquid which it assures.

4283 Olive Street.

## ENDOTHELIOMA OF SCAPULA WITH REMOVAL OF ENTIRE BONE.

JOHN S. McEWAN, M.D.

Attending Surgeon to Church Home and Hospital,  
ORLANDO, FLA.

*Patient.*—X., aged 36, a carpenter, married, was first seen Jan. 18, 1908, when he complained of a painful growth on the shoulder.

*History.*—The family history was negative, there being no history of cancer in the family. He had had malaria and pneumonia, from both of which he recovered perfectly; he had had no other illness. He first noticed the growth about April 1, 1907, when it began as a small lump, "painful from the beginning." It continued to increase in size and the pain continued, and about Nov. 1, 1907, he began to lose weight. During the first part of January he began to have a little

fever, felt weak and could not work, so he came to the doctor.

*Examination.*—Man was of average height, well built and slightly cachectic. Examination of the heart and lungs was negative. Pulse, 100; temperature, 99 F.; respiration, 24. There was a tumor on the scapula, with the larger portion below the spine, but covering outer portion. It was round, hard and painful to pressure and measured 10 cm. (4 in.) in the widest diameter and 13 cm. (5 in.) in length. It was firmly attached to the underlying bone. Examination of the urine showed: Reaction, acid; sp. gr., 1020; albumin, slight trace; sugar, absent; a few hyaline and granular casts; granular urates and epithelial cells. Blood examination showed: Red cells, 3,500,000; leucocytes, 7,000, and hemoglobin, 60 per cent.

*Diagnosis.*—The clinical diagnosis was: Probably sarcoma. Microscopic examination by Dr. Martland of the Russell Sage Institute of Pathology, New York, showed an atypical endothelioma. "Many of the lymphatics are plugged with large endothelial cells. Some places tumor has apparent spindle-shaped cells simulating sarcoma."

*Operation.*—This was performed Jan. 25, 1908. An incision was made along the vertebral and spinal borders by the usual technic, tying the main arteries as they were reached. The wound closed by primary union, the patient leaving the hospital in three weeks.

*Examination of Tumor.*—The neoplasm was round, hard and of straw color; it possessed a thin capsule. A cut section showed jelly-like consistency, with but few blood vessels.

*Postoperative History.*—The patient has gained to date about 30 pounds. He can use his forearm perfectly and has complete control of the hand movements. His arm is improving all the time and he is holding the position of night watchman.

## Therapeutics

### CARBONIC ACID.

Dr. Thomas E. Satterthwaite, New York (post-graduate January, 1908) discusses the medical uses of carbonic acid gas. He reminds us that "carbonic acid is a normal constituent of the body, entering it as carbon, it is converted by an excess of oxygen into carbonic acid or urea, which in decomposing gives off carbonic acid." It is a normal constituent of the blood, and in arterial blood is about twice as abundant as oxygen, the latter being present in about 20 per cent. by volume. In venous blood there is a still larger amount of carbonic acid, viz., 48 per cent. by volume. He states that in arterial blood about all the oxygen present is found in the red corpuscles, while less than 1 per cent. is in the serum; in venous blood the serum contains the largest amount of carbonic acid, while perhaps about one-third is in the corpuscles. "One per cent. of carbonic acid gas in the atmosphere is recognized by its peculiar odor, and is intensely disagreeable to the one inhaling such air, but 3 per cent. produces no permanently deleterious effect, while 5 per cent. causes dyspnea and 10 per cent. narcotism. Water takes up hardly 3 per cent. of the gas."

Satterthwaite does not discuss the effervescing drinks or the value of effervescing waters from the carbonic acid standpoint, but he describes the advantages of the carbonic acid baths, especially as used for disturbed conditions of the circulation. These baths, the so-called Nauheim baths, contain carbonic acid, "which decreases the pulse rate and at the same time regulates the circulation in gout and rheumatism by dilating the capillaries and smaller vessels and by directly and indirectly stimulating the nervous centers, while the peripheral nerves are soothed." This brings more blood to the



surface, and, causing equalization of the circulation, tends to dissipate internal congestions and local congestions and would tend to improve general metabolism. The indication for such baths, then, would be in circulatory insufficiency as in chronic heart diseases, in neurroses, in neurasthenics, in gouty conditions and joint disturbances and in the disturbed metabolism of lithemia or so-called uric acid conditions.

Satterthwaite states that Franzensbad, in Bohemia, is visited by female patients who are sent there for the carbonated bath treatment of inflammations of the pelvic organs. It would seem that improvement of such conditions would be from the general improvement of the health and nutrition, such improvement tending, of course, to lessen a chronic inflammation or induration. "In neurotic patients who have been previously quieted only by drugs these carbonated baths, kept up for hours at a time under the care of a proper attendant, have given great relief without any other form of treatment." The advantages of such treatment of nervously excited patients, as in mania, have been demonstrated at the Manhattan State Hospital for the Insane on Ward's Island, New York.

One of the oldest methods of using carbonic acid gas is the dry plan, and this method has been used in Franzensbad, in Bohemia, where the gas is collected in rooms in which the patients sit in chairs and take the baths without removing their clothing. The gas is, of course, heavier than air, and hence in small amount rises but a few feet from the floor. Patients subjected to such a carbonic acid foot bath soon feel "a tingling in the feet and legs up to the level of the gas and subsequently an agreeable sensation of warmth, due to the dilatation of the capillaries." The water carbonic acid bath, however, adds to the advantage of the warm water, the action of sodium chlorid and calcium chlorid. The action of these slight local irritants intensifies the dilating action of the surface vessels, and there follows such baths a longer continued lowering of the general blood pressure and therefore a greater equalization of the circulation.

Carbonic acid baths may be made at home. The ingredients for such baths are prepared by pharmaceutical firms and may be obtained from most drug stores. The solutions, powders, or tablets, depending on the mixture used, should be placed on a rubber foot pad in the bottom of the bath. These ingredients generally consist of sodium bicarbonate, sodium chlorid and calcium chlorid. Sometimes acid sulphate of sodium tablets with sodium bicarbonate are used for the production of the effervescence. Full instructions come with each package, and generally enough material for twelve baths. A single such bath will cost about 75 cents.

#### ICHTHYOL.

This is a non-official but much used preparation. It is a chemical combination of ammonium with a sulphonic acid obtained by dry distillation from the bituminous shale found in the Tyrol. This shale contains the remains of fossil fishes. The chemical name is ammonium ichthyosulphonate or ammonium sulphoichthyolate. It contains a great deal of sulphur, and the preparation was brought to the notice of the profession by Unna, and was recommended for external use in skin diseases. It is a thick brown liquid which will mix with oils, fats, and with water.

It is a mild antiseptic and resorbant. When mixed with glycerin or olive oil in from 10 to 50 per cent. it has been applied to boils, indurations, inflamed joints, and to chemically inflamed parts. If frequently painted over a part it may cause blistering, but once or twice painting the skin will cause mild counterirritation. It has been recommended lately as a local application to stop pain in neuralgia. Combined with glycerin (10 per cent.) it makes a valuable vaginal tampon to reduce indurations and inflammations of the pelvis. It has been recommended for all kinds of skin diseases, both as an antiseptic and as a stimulant in chronic inflammations. In acute inflammatory conditions of the skin, as erysipelas and burns, weak solutions have been used with apparent advantage.

Ichthyol has had considerable use internally in pulmonary tuberculosis. Its principal value in these instances is, probably, as an intestinal antiseptic. The appetite often increases and there is less intestinal fermentation, it acting in this manner much like creasote. The best method of administering it for this purpose is with an equal part of water, and, beginning with one drop of this solution three times a day, gradually increase it to ten or more drops. Pills or tablets of ichthyol may also be obtained. The same precaution in using excessive doses should be taken as in using large doses of creasote, viz., that it soon may over-stimulate the gastrointestinal canal and a loss of appetite occur. It is also used internally for acne when this is due largely to intestinal fermentation. It may be ordered in pill form for this condition as follows:

R.		gm.	
Ammonii ichthyosulphonatis		3	or
Pulveris glycyrrhizæ	.....	3	āā, gr. xlv
M. et fac capsulas 20.			

Sig.: One capsule three times a day, after meals.

#### PERICARDITIS.

The pericardium, like any other serous membrane, may suffer from an acute, subacute or chronic inflammation. There may be only sufficient exudate to produce a dry pericarditis, or there may be an effusion in the pericardium more or less in amount, which is generally serous, though, in rare cases, it may become purulent. From dry pericarditis, or after the absorption, or after the evacuation of the serous or purulent exudate, or from an injury, adhesions may form and a condition of adherent pericardium results.

A primary pericarditis is rare. It is generally a secondary condition either to an acute infection, and most frequently inflammatory rheumatism, or to a chronic condition, most frequently chronic nephritis. The development is often insidious, at times even without pain, and in diseases such as follicular tonsillitis, which may be rheumatic, acute inflammatory rheumatism, chorea, and cerebrospinal meningitis, the heart should be daily examined so that beginning inflammation, either pericardial or endocardial, may be immediately discovered. The pericardial friction murmur is diagnostic, but this pericardial rubbing may not always be painful, and, in fact, may not be the source of pain. When effusion is present pain may be troublesome, showing that it is due to internal disturbance of the heart.

Pericarditis causes but little fever unless it is a complication of some feverish process. More or less dyspnea and cardiac anxiety occur and become marked if much effusion takes place. The heart sounds will become



muffled when there is much effusion, and the pulse becomes weak and rapid on the least exertion. If there is much pressure on the heart there is dyspnea and even cyanosis, and the condition is then serious. If the inflammation is prolonged, a myocarditis may develop and the heart may become dilated from the weakening of the muscles. When an enlarged cardiac dulness with cardiac dyspnea is first noted during the course of a chronic disease it is often difficult to diagnose possible fluid in the pericardial cavity from a simple enlarged dilated heart, hence great care should be taken before it is decided to aspirate supposed liquid from the pericardium.

The prognosis of pericarditis as a complication of acute diseases is generally pretty good unless other conditions render the prognosis serious. The pericarditis that sometimes occurs in the latter stages of chronic nephritis is serious and often causes a fatal termination. When there is considerable exudate around the heart there is danger from sudden syncope at any time.

The objects of treatment are: to remove the cause, if possible; to shorten the inflammation, and to prevent or get rid of the exudate. The indications to meet, then, are to treat the cause if we know it, to give as much rest to the heart as possible, to stop pain, to allow no reflex irritation to come from the gastrointestinal canal, and later to remove the effusion.

To meet the first indication we should treat the cause, whatever it may be, as we would if the pericarditis were not present. This is especially true of rheumatism with the precaution of not giving salicylic acid in too large doses or too long, when there is inflammation either of the endocardium or pericardium.

Absolute rest mentally and physically is an imperative necessity, as everything that increases the number of the heart beats increases the irritation of the pericardium. Enough morphin should be given hypodermatically to stop whatever pain is present, and pericardial pain generally requires but small doses. In the beginning of the inflammation an ice bag placed directly over the heart often seems to inhibit the inflammation and to prevent an effusion. As soon as an effusion has taken place the ice bag should be removed. If the heart is rapid, and it has not been injured by a long-continued feverish process which has caused a myocarditis, and if there is no renal or arteriosclerotic reason that digitalis should not be given, it certainly, in small doses, is advisable in pericarditis. If, for instance, a heart is pulsating 100 times a minute and small doses of digitalis reduce this to 80, this means 20 beats less per minute, or 1,200 less in an hour, and 28,800 less in twenty-four hours, which means that much less irritation to the inflamed pericardial membrane.

There is not very frequently sufficient effusion in the pericardial cavity to require paracentesis, but if there is much cardiac anxiety and dyspnea, or if the exudate is large in amount and is not quickly absorbed, aspiration should be done, of course with the greatest possible care. The best point for puncture has not been agreed on by all authorities, some advising that the needle be introduced between the third and fourth ribs at the left margin of the sternum, while Rotch prefers the right fifth interspace, and others advise doing paracentesis exactly in the region of the normal apex beat, the heart, of course, having been displaced by the fluid. Dr. Samuel West, in the *British Medical Journal*, Oct. 26, 1907, gives the safest advice, as far as the heart is concerned, for the withdrawal of pericardial fluid. He advises

that the needle be inserted "between the extreme limit of the cardiac dulness in the axilla and the place where the apex is determined to be." It is obvious that the heart itself could not be injured by following such advice. The objection to this position is that the pleural cavity may be punctured and fluid from the pericardium might then be allowed to enter this cavity. West says he has seen such accidents occur, but has never seen any serious results from it.

The patient should be in a recumbent or at least semi-recumbent position, this position favoring the sinking of the heavy heart away from the chest wall. The fluid should be drawn very slowly and the pulse carefully watched. A rapid evacuation of the fluid might cause collapse. If the fluid is found to be purulent it must at once be evacuated and a decision then made as to the best surgical methods to be employed.

If death seems imminent from the laboring heart during the course of pericarditis or any other acute cardiac condition, venesection may be not only justifiable but life-saving.

If the amount of pericardial fluid believed by clinical symptoms and signs not to be purulent does not diminish day by day, various methods are used to promote its absorption. Diuretics or diaphoretics are of but little use, and especially the latter are inadvisable on account of their prostrating effect on the patient. Daily saline purgatives, not too active, with a diminution of the amount of liquid allowed the patient will generally cause the fluid to be absorbed. At this stage blisters over the heart, small in size and perhaps several in number, seem also to promote absorption. If these methods do not promote absorption and the heart's action is good, either with or without digitalis, the fluid should be removed by aspiration. If an intermittent fever is present without assignable cause, the presence of pus in the pericardium must be suspected and the aspirating needle inserted for diagnostic purposes as well as for the removal of the fluid.

If after most of the fluid has been absorbed and the cardiac dulness has returned to nearly normal but still is larger than it should be, or if friction sounds are heard, or in conditions of dry pericarditis, it is advisable to give small doses of an iodid three times a day for a considerable period. The best preparation is the sodium iodid in a dose of 0.20 gram (3 grains) three times a day, after meals. It is also advisable to paint the precordium with the tincture of iodine once a day for several days, not allowing the skin to become hardened or blistered. Later, rubbing in a small amount of the ointment of potassium iodid is beneficial.

As soon as the acute inflammation is over general tonics and iron in some form, in small amounts, are needed, and as the condition improves the local resolution and absorption are completed. Of course during the acute stage of pericarditis, and for a considerable time after, the bulk of food or nutrition taken should be limited and gastrointestinal indigestion prevented. In other words, it may be found that milk, even during the acute stage, is not a good diet, if it causes gastric flatulence, a coated tongue, and constipation. The kind of diet the patient should receive depends on the amount of temperature.

After the patient is apparently well great care should be taken to prevent any exertion that could cause heart strain, since, as previously stated, the heart muscle is weakened by a pericarditis as well as perhaps by the cause of the pericarditis.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, AUGUST 29, 1908.

## THE PREVENTION OF COMPRESSED AIR ILLNESS.

Modern engineering activities have made extensive tunneling operations much more common than they formerly were, and submarine tasks by divers and caisson workers multiply in frequency, with the consequence that the serious effects that may follow exposure to high atmospheric pressure are being observed more and more commonly. The very practical question of the best means of avoiding these harmful results is one that interests both physicians and contractors, and the importance of this subject for naval work is such that the British Admiralty appointed a committee on deep diving to investigate the problems arising in this connection. Extensive experimental studies were made and correlated with practical experience, with interesting and important results.<sup>1</sup>

Since the experiments of Paul Bert in 1878 the principal fact concerning the genesis of compressed-air illness or caisson disease has been understood; namely, that it depends on the taking up by the blood and body fluids of large quantities of nitrogen under pressure, and the subsequent liberation of this gas when the abnormal pressure is removed, just as gas escapes from carbonated water when the bottle containing it is uncorked. The nitrogen is taken up not only by the blood, but also by every fluid and cell in the body, especially the fat tissue which Vernon found to absorb six times as much as the blood, a fact which becomes of considerable importance in calculating the time necessary to decompress with safety men who have been working in compressed air. As Paul Bert first pointed out, by very slow decompression all danger of caisson disease can be avoided, and later investigators established as a rule that in decompression a period of twenty minutes should be allowed for each atmosphere. The question of the amount of time required for safe decompression becomes a matter of much moment when men are working under the pressure of several atmospheres in short shifts, for it may require more time for this purpose than they can be engaged in active work, and in deep sea diving for a man to be obliged to spend two or more hours under water while returning from a pressure of six atmospheres or 165 feet, is certainly a severe hardship.

It was in connection with this latter question that the English committee made its extensive studies. It was found that the rate of saturation of the body with nitrogen, under pressure, is much more rapid at first, the amount taken up decreasing rapidly as saturation is approached more and more closely; conversely, desaturation proceeds much more rapidly at first than it does later. The element of time, therefore, enters greatly into the danger of exposure to high pressures, and there is little danger from rapid decompression after exposures lasting but an hour or so. Longer exposures require longer decompression time even when the pressure has been the same.

It is not desirable, however, that the decompression should occur at a uniform rate, as has been usually practiced and recommended. Much better results can be obtained by reducing the temperature rapidly at first to about half the pressure at which saturation took place, and then reducing the rate of decompression gradually toward the end. Uniform decompression has the serious disadvantage of keeping the subject exposed for an unnecessarily long time at a pressure near the maximum, thus increasing the amount of gas to be removed later, while toward the end the rate of decompression is dangerously fast, for the curve of removal of gas is not a straight line since the gas escapes much more rapidly at first than later. Tables have been carefully worked out showing the time necessary for each stage of decompression after various periods of exposure up to ninety pounds in excess of atmospheric pressure; and there is a decided gain in time as well as safety when the decompression is rapid at first and slow in the later stages.

In deep sea diving it is desirable that the time spent at high pressure should be as short as possible; consequently the descent to the maximum depth should be made as quickly as practicable, the time spent at this pressure should never be long, and the decompression should be accomplished by having the diver ascend rapidly to one-half the pressure, and more and more slowly after this point. If a diver were to stay at a depth of 213 feet, where the pressure is 7.5 atmospheres, until his tissues were saturated with nitrogen, the time required for safe decompression would be about five hours; hence it is evident that exposure to great depths can not be long maintained without great danger. Another danger of exposure to great pressures lies in the fact that the amount of oxygen taken up by the body may be so great as to cause oxygen poisoning. By taking these various facts into consideration, abolishing the usual slow descent, making the first part of the ascent rapid and the last part slow, it has been found possible to combine greater safety with a distinct saving of time under water for a given period of working time on the bottom.

Numerous experiments with goats compressed in a chamber devised for experimental purposes, gave oppor-

1. The Prevention of Compressed Air Illness, Boycott, Damant and Haldaue, Jour. of Hygiene, 1908, viii, 342.



tunity for observations on the pathologic anatomy of caisson disease. Bubbles were found most abundant in the blood, fat, and synovial fluid, and not uncommonly in the spinal cord, but they were rarely found in the other solid tissues. When death occurs the cause is nearly always pulmonary air embolism, while paralysis is the result of blockage of the vessels in the spinal cord by air. Only in the fat tissue and in the spinal cord were definite evidences of necrosis and tissue softening found, the reason for this localization presumably being the large amount of gas that is taken up by fatty substances. The characteristic symptom, the "bends," has been commonly ascribed to spinal cord lesions, but the investigators mentioned could not find evidence in support of this view; they believe that escape of bubbles into the synovial fluids may be the cause of the condition.

#### HOW SUPERSTITIONS ARE REINFORCED.

Every now and then a story appears in the newspapers that is apparently a striking confirmation of some one or other of the old superstitions that still cling to mankind. For the ordinary reader it is scarcely more than an out-of-the-way story. For those who have certain tendencies to believe superstitions and to be affected by them, such stories are often "confirmations strong as Holy Writ" of their peculiar notions. During the past few months a story regarding the number thirteen has been going the rounds with striking effect. It has been contradicted, categorically, but then contradictions never travel so fast or so far as the original story. The incident that forms the basis of the tale is taken from the biography of Sir John Millais, the English painter, and first appeared in the columns of *M. A. P.*, Mr. T. P. O'Connor's London weekly, whose enigmatic title is translated into words as "Mostly About People." According to the biographer, one day at dinner at Millais' house it was discovered that there were thirteen at table and one of the women diners was much disturbed. In order to reassure her, Mr. Matthew Arnold is said to have remarked: "Now the idea is that whoever leaves the table first will die within a year. With the permission of the ladies, then, we shall cheat fate for once. I and these fine strong lads," pointing to two husky young fellows, "will all rise together and I think that our united constitutions will be able to stand the assault of the reaper." According to the sequel of the story as told, Matthew Arnold died six months later, one of the young fellows committed suicide about the same time, and just within the year the third of the trio was drowned on the steamer *Quetta* off the coast of New Guinea.

Millais' biographer adds: "And now what shall be said of these things. The facts are exactly as I have stated them and are only too well-known to many now living." Of course, even if the facts were as stated it would be nothing but a coincidence: and we might expect that a serious writer of biography would be very

careful about his facts. According to a correspondent of the *London Spectator*,<sup>1</sup> however, the assertions are all wrong. He says: "The party is said to have taken place in August, 1885. Accordingly Arnold must have died in March, 1886, and the *Quetta* must have gone down about the same time. Everyone knows that Matthew Arnold died in April, 1888, and I have just come across a reference to the wreck of the *Quetta*, by one who lost several relatives in that ill-fated vessel, which gives the year of the wreck as 1890. What could a serious biographer have been about when he allowed his memory to trick him into penning such a piece of circumstantial nonsense? In view of these glaring discrepancies it is allowable to discredit the whole story, however it may have formed itself in the writer's imagination. Arnold knew from about 1868 that his life was precarious and that his end would probably be very sudden. Is it likely that even in jest he uttered such a speech as is here put into his mouth?"

It has seemed worth while to give some prominence to this contradiction because, while we are inclined to think that the influence of such ridiculous superstitions as the supposed malignity of the number thirteen wherever it occurs is dying out, there are many evidences of a gradual more or less unconscious yielding to the forebodings in this matter that would be amusing if they were not so amazing. How few people who are themselves free from the influence of the superstition are aware that many of the large passenger vessels built in recent years have no state room thirteen. Many modern hotels recently erected have no room number thirteen unless the proprietor was absolutely resolved to combat this foolish superstition. The fact is that some intelligent people feel uncomfortable if asked to take room thirteen. Some are so much disturbed that they would go to the trouble of moving to another hotel rather than to take it. Perhaps the climax of absurdity is that some office buildings of fifteen or more stories now being erected have no thirteenth floor. The reason given by tenants often is that some of their clients may have an objection to visiting the thirteenth floor, and so the manifestation of the superstition grows. At banquets in large hotels where the guests are seated at many tables, as a rule there is no table numbered thirteen. This is true even at medical banquets, and at the dinner to Professor Koch given by the German Medical Society at the Waldorf Astoria in New York not long ago: though there were seventy tables none bore the number thirteen. This was not, of course, because of any objection on the part of the physicians or of the committee. The fact seems to be that the hotel has no placard bearing the number thirteen to put on a table, lest it should scare some diners who might be sensitive in this matter.

It is difficult to understand the reasons for the per-

<sup>1</sup> March 7, 1908.



sistence and even the spread of the influence of a superstitious dread of this kind, but it is for physicians to recognize its presence and appreciate how much light it throws on the unreasoning dreads that so often preoccupy patients' minds and make them miserable in spite of reason.

#### ALCOHOL IN ARMIES.

In closing his paper on "The Feeding of the Soldier," read before the section on navy, army and ambulance of the British Medical Association. Major Blackham said: "The whole question of food values is, so to speak, in the melting pot, and the nation as well as the army may well look to us for a solution of the problem which involves such enormous interests. This is no mere professional or class question, but a matter of supreme economic importance to every nation on the globe."

There can be no doubt that the facilities for doing sound scientific work on such problems as dietetics, the use of alcohol, etc., are much better in organized, disciplined bodies, like the army, than is usually the case for civilian observers, because the conditions are more under control and can be more completely adjusted to solve the particular problem. There is some sort of approach, in fact, to laboratory conditions. For this reason Lt.-Colonel Davies' observations on the influence of alcohol in the service are especially valuable. While he holds it proved that alcohol is both a food and a poison (a food being defined as that which can be oxidized within the body into carbon dioxide and water, so producing heat and energy), he insists that as a food there are so many articles of equal or greater value and free from its objectionable characteristics, that it can be regarded as neither necessary nor advisable from a dietetic point of view. He discusses in this regard the findings of Liebig, Perrin, Anstie, Dupré, Parkes and Wollowicz, and the later pronouncements of Atwater and Benedict and Cushny. He then discusses certain special conditions in which the use of alcohol is held by many to be desirable, particularly from a service standpoint, viz., in extremes of heat and cold, under excessive labor, bodily or mental, and during the peculiar fatigues and exposures incident to war. He concludes that alcohol is unnecessary in any form or in any quantity, under any circumstances that may occur in military affairs. He specifically restricts these observations, however, to the ordinary healthy man, leaving the question of its employment in the treatment of the sick as a separate consideration.

Colonel Davies next inquires whether the use of alcoholic beverages by healthy men, which we have seen to be unnecessary, is, under ordinary circumstances, harmful or harmless, and especially as regards military conditions, whether it is to be encouraged, prohibited, let alone or regulated. In reply he adduces the figures

referring to the comparative healthiness of abstainers and non-abstainers, for the sixty years 1841 to 1901, obtained from the two classes of the membership of the United Kingdom Temperance and General Provident Institution. These go to show that the consumption of alcohol, even in moderate quantities (as would naturally be the case with the assurers in this society) tends to diminish the expectation of life. While the figures, he says, are hardly sufficient to be conclusive, their significance is so obvious that they demand attention.

When it comes, however, to a question of applying these considerations to service problems, Colonel Davies frankly admits that "as regards military life in ordinary times of peace, the absolute prohibition of alcoholic drinks altogether is not a practicable procedure. What is to be aimed at and what may be effected, is a regulation of their consumption, and an encouragement of those men who desire to do without them altogether, or who at any rate wish to partake of them in a very moderate amount." Colonel Davies then discusses the canteen question, and, comparing conditions as to alcoholism in the United States army under the present system with those of the armies of Europe, considers that as an economic and reform measure, a controlled canteen is more effective than an attempt at prohibition. He remarks on the continuous increase in the membership of the Royal Army Temperance Association, and cites statistics from 1901 to 1907, in proof of his conclusion that the consumption of alcohol in the British army is steadily diminishing.

#### THE TUBERCULOSIS CONGRESS.

The interest in the International Congress on Tuberculosis, to meet in Washington, September 21 to October 12, seems to be warranted by the programs of papers to be read before the sections. It is interesting to observe that the titles of the papers indicate that in addition to the valuable contributions of foreign delegates there will be a good representation of American experience and opinion. It should be noted that the section work of the congress is confined to the second week, September 28 to October 3. The first and third weeks will be occupied with the exhibition of objects of interest and educational value in respect to the tuberculosis problem, and with demonstrations and clinics and lectures by eminent foreigners. The possibilities of instruction and profit from these two weeks for the average visitor are not surpassed by the benefit to be derived from listening to the papers before the sections. There will be a tuberculosis exhibition, which is planned to surpass anything of the sort ever attempted. The methods of combating the disease employed in foreign countries and the devices for arousing interest and educating the public will be exhibited. A number of prizes have been offered, five being of \$1,000 each and



one of \$1,500, offered by the Smithsonian Institution. The latter prize is for the best treatise on "The Relation of Atmospheric Air to Tuberculosis."

During the first week of the congress the meeting of the International Conference on Tuberculosis occurs in Philadelphia, at which a number of valuable papers will be read. The program for this meeting was given in last week's issue, page 684. It is also intended to hold meetings in other cities. By these conferences the work of the congress will be considerably extended and its influence will be brought to bear on other communities besides the capital city.<sup>1</sup>

This congress should have a large attendance of persons representing the whole country. It is primarily a medical affair and the physician will be expected to lead here as he must lead in all efforts at the restriction of disease. In addition, however, the eradication of tuberculosis is pre-eminently a sociologic problem. The disease has its roots in the economic evils resulting from a civilization which has reached its high vantage ground too often at the cost of health. Its prevention is not merely medical; it must involve a wise philanthropy as well. Therefore, not only the physician, but the charity worker, the manufacturer, the labor leader and the statesman, may be expected at this congress. From the impressions received at the International Congress on Tuberculosis we may expect a new enthusiasm and a unity of effort that will greatly advance the anti-tuberculosis crusade not only in this, but in every country.

---

#### SOILED CURRENCY.

The subject of "tainted money" has already been noticed editorially in *THE JOURNAL*<sup>2</sup> and the possible dangers to health pointed out. That these dangers are obvious needs no saying. The very appearance of much of the currency in circulation suggests contamination and disease. The question of how far the danger is a real one, however, has not hitherto been studied to any great extent by accurate experimental methods, and possibly too much has been taken for granted from mere appearances alone. That this would seem to be the case is rendered probable by a recent investigation reported in the *Popular Science Monthly*<sup>3</sup> by Mr. Warren W. Hilditch of the Sheffield Laboratory of Bacteriology and Hygiene, Yale University. He made a careful study of twenty-four specimens of the dirtiest paper money he could procure from various sources—ticket offices, banks, drug stores and individuals—and examined them with special reference to the bacterial flora. Each bill was carefully washed with sterile salt solution

under conditions to avoid air contamination, and the final sediment, after centrifugation, etc., was examined microscopically, cultures made, and inoculation experiments performed. All inoculations gave negative results, and, excepting staphylococci, chiefly *S. albus*, few bacteria were found. The average number found for the twenty-four bills was 142,000, and there seemed to be no connection between the amount of dirt and the number of bacteria present—the cleanest looking bill having next to the highest count (405,000), while the bill that looked the dirtiest had but 38,000. When a bill has been in circulation for some time, he says, and its peculiar glaze has worn off, it collects bacteria readily, independently of the presence of dirt or grease. From his observations, it would seem that the bacteria of paper money are non-virulent and mostly of the air forms. He asks whether the lack of virulence may be due to drying, the bills having a peculiarly dry feeling, or to some antiseptic action of the ink used in the printing, but he did not attempt to investigate this question, confining his attention to the search for pathogenic forms. He quotes, also, Dr. Park of the research laboratory of the board of health of New York City and Dr. Doty, the health officer of the port, and the treasurer of the United States, all of whom give their opinion that the transmission of disease by currency must be rare, Dr. Park stating that he has never found any evidence of the actual transfer of disease through money, though he did find bills capable of carrying living tubercle and diphtheria bacteria for some days. Statements have been made in the secular press of the conveyance of serious disease by paper money, but they lack positive scientific verification. Naturally such proof is impossible in most cases, and this should be taken into consideration. We have even seen a statement that a bank teller who had contracted leprosy was still employed in his occupation, dealing out money. While this may be true, and it is a rather appalling fact, if so, the danger still may be less real than apparent, on account of the deficient viability of the special microbe outside of the animal body. That there is a real danger from soiled money Mr. Hilditch does not deny, but he thinks that the absence of virulent disease germs found by him indicates that it is at least not a common means of the transmission of disease. If it were, those most exposed in handling money, such as bank clerks, would bear evidence of it, at least more frequently than seems to be the case.

---

#### HUMAN LIFE A CHEAP COMMODITY.

The carelessness and indifference to human life shown in the repeated occurrence of railroad and car accidents, in reckless driving, particularly of automobiles, in the public distribution of samples of "headache powders" and other poisonous remedies, and in other ways, was signally displayed this week in Chicago. A live wire was left dangling in the street for more than two days after proper warning had been given. The natural result of this criminal negligence is one little girl killed, and her five-year-old brother dangerously burned. Had the ultimate purpose of a coroner's inquest been at

---

1. A large group of foreign delegates will go to Baltimore on October 5, when a public meeting will be held and an address will be given by Professor Landouzy of Paris. There will be similar meetings in Boston on October 6 and 7, when Dr. R. W. Philip, of Edinburgh, and Prof. Dr. C. H. H. Spronck, of Utrecht, will deliver public addresses. In New York, on October 8 and 9, Dr. N. P. Tendeloo, of Leyden, and Dr. Andres Martinez Vargas, of Barcelona, will give special lectures under the auspices of the Academy of Medicine.

2. April 18, 1908, p. 1269

3. July, 1908.



tained, instead of a verdict of accidental death, there would have been issued a verdict of culpable homicide against the person responsible for the continuance of this death trap from Friday until Monday.

#### THE TRIUMPH OF SANITATION AT PANAMA.

The redemption of the Panama Canal Zone from preventable diseases receives official confirmation in the report to President Roosevelt of the special commission appointed last April to investigate the work accomplished. The importance of the hygienic problem involved is emphasized by the commission in reviewing the difficulties under which the French labored in their efforts to construct the canal. The report says:

"The terrible scourge of yellow fever against which the French struggled in vain, the filthy and pest-breeding state of the principal Panama towns, the rough labor camps and other pioneer hardships of the first two eras have been eliminated through the brilliant and persistent activity of the department of sanitation, the department of municipal engineering and the building department. To-day we find yellow fever driven from the isthmus, malaria and pneumonia greatly reduced and a high average of health established. Although the government's immediate object on the isthmus is to dig the canal and to provide living quarters for a temporary enterprise, it has, in fact, created comfortable homes and well-organized social communities for its working force."

Modern civilization furnishes no better example than this of the possible victory over pestilence and disease, when the warfare is carried on in the light of modern scientific knowledge. The building of the Panama Canal and the sanitary record of the Japanese in their war with Russia are the two great object lessons of recent years, demonstrating that men can neither work nor fight to the best advantage unless protected from infectious and preventable diseases. The civilized nation which will hereafter put an army in the field or undertake a great engineering problem without first preparing the way by proper and adequate sanitary engineering and equipment will be regarded by the other nations as quite as foolish as a government which would build a vast fleet of modern warships and then arm them with the muzzle loading ordnance of one hundred years ago. An epidemic of typhoid fever in a military camp should be considered a greater disgrace to an army than a defeat in battle, since defeat may come in spite of the greatest exertions and the highest wisdom, while typhoid and yellow fever would be the result of ignorance or disregard of well known laws of prevention. All nations will profit by the sanitary lesson of the Panama Canal.

**Anesthesia in the Sixteenth Century.**—Stuart McGuire (*Virginia Medical Semi-Monthly*, July 24, 1908, p. 186) quotes the following from Dubartas (A. D. 1592):

Even as a surgeon minding oft to cut  
Some cureless limb, before in use he puts  
His violent engines in the vietim's member,  
Bringeth his patient in a senseless slumber;  
And griefless then, guided by use and art,  
To save the whole, saws off the infested part.

## Medical News

### DISTRICT OF COLUMBIA.

**Health Report.**—According to the health and mortality record for the week ended August 15 there were 94 deaths, of which 50 were white and 44 colored. Of the births 103 were white and 68 colored. During the week 33 cases of typhoid fever were reported, an increase of 8 over the previous week.

**Annex for Garfield Hospital.**—Plans have been prepared for the erection of a new addition to Garfield Hospital, the gift of Dr. Loren B. T. Johnson as a memorial to his wife. The building cost about \$35,000, will have a capacity of 60 beds and will be for the exclusive treatment of women and children.

**To Register Consumptives.**—The health officer is preparing to begin the enforcement of the new law providing for the registration of all cases of tuberculosis. Under the law physicians must report every case within one week after the disease is recognized. Provision is made for the free examination of sputum.

**Births Not Reported.**—An examination of the records of the health department by the census office shows that only 75 per cent. of the births in the District during 1907 were reported. The health office will endeavor to fix the responsibility for failure to record the remaining births, and it is probable that prosecutions will result.

**Personal.**—Dr. Joseph Taber Johnson has recovered from his recent serious illness.—Dr. M. G. Motter, chief sanitary inspector of the District, has resigned from the health department to join with the Public Health and Marine-Hospital Service.—Dr. Harvey W. Wiley, chief of the division of chemistry, Department of Agriculture, has been appointed an honorary president of the First International Congress for the Repression of Adulteration of Alimentary and Pharmaceutical Products.

### FLORIDA.

**Personal.**—Dr. Joseph L. Romero has been appointed health officer of Jacksonville.—Dr. Clarence Hutchinson, Pensacola, has received the degree of M.R.C.S. England.—Dr. Warren E. Anderson, Pensacola, agent of the State Board of Health, has gone to Atlanta to receive treatment at the Pasteur Institute.

**A Warning.**—Dr. Howard Steele Holloway, Jacksonville, writes warning against one H. F. Alphin, who purports to represent the L. D. Johns Company of New York, and who by specious promises and misrepresentation is succeeding in selling stock to doctors. The company he claims to represent says that it knows nothing of the man.

### ILLINOIS.

**Personal.**—Dr. George W. Mitchell, first assistant physician at the Illinois General Insane Hospital, South Bartonville, has started for a year of rest and study in Africa and Europe.—Dr. Charles E. Crawford, Rockford, has been re-elected grand medical adviser to the Sons of St. George.

**Hospital Contract Let.**—The contract for the building for the new hospital for tuberculosis on the grounds of the Cook County Hospital has been awarded for \$222,900 to the lowest bidder. The new building will be five stories in height, 162 feet long, with three wings, each 128 feet long and will accommodate 320 patients.

**Want Higher Standards.**—At the August meeting of the Galesburg Medical Society resolutions were adopted that the newspapers of the city be requested to refrain from mentioning names of physicians in connection with their professional work; and, furthermore, that a copy of the resolutions, together with a petition, to be signed by the physicians, be presented to the newspapers for publication.

### Chicago.

**Contagious Diseases.**—The cases of contagious diseases reported during the week ended August 21 numbered 187, of which 60 were diphtheria, 41 tuberculosis, 38 scarlet fever, 20 typhoid fever, 8 whooping-cough, 16 measles, 2 chickenpox, and 2 minor diseases.

**Personal.**—Dr. and Mrs. John B. Murphy will sail from Europe for home on September 12.—Dr. Antonio Lagorio is taking treatment at his own Pasteur Institute on account of infection from a wound from the bone of a rabbit which had been inoculated with rabies.

**Tuberculin Test.**—The department of health has sent out notices to physicians, worded as follows: "The department



of health suggests: Why not use tuberculin and diagnose your case of consumption *now*? Why wait until there is no hope? Which policy is best for your patient—for the community—for you? The department will give you the tuberculin."

**Deaths of the Week.**—During the week ended August 21, 575 deaths were reported to the bureau of vital statistics, 45 fewer than the preceding week and 109 fewer than the corresponding week in 1907. Chief among death causes were: Acute intestinal diseases, 196; consumption, 53; violence (including suicide), 35; nephritis and heart diseases, each 34; cancer, 32, and pneumonia, 27.

#### INDIANA.

**Health Circular.**—The Indiana State Board of Health has issued a letter to the people entitled "Why Not Protect the Health of School Children?" In this the importance of pure air and proper heating and ventilation is urged, the evils of air starvation detailed, and the lighting and air supply of schoolrooms considered—all these with the idea, first, of preserving the health of the school children, and, second, of saving the money of the state and increasing the general wellbeing and happiness.

**July Disease and Death.**—During the past month the order of disease prevalence was as follows: Diarrhea, cholera morbus, dysentery, cholera infantum, tonsillitis, rheumatism, typhoid fever, bronchitis, intermittent and remittent fever, inflammation of the bowels, whooping-cough, scarlet fever, diphtheria, measles, smallpox, typhomalarial fever, pleurisy, pneumonia, cerebrospinal meningitis, influenza, erysipelas, puerperal fever and chickenpox. There were reported 65 cases of smallpox in 13 counties, with no deaths. In the corresponding month last year there were 74 cases in 21 counties with no deaths. Tuberculosis caused 339 deaths and pneumonia 60 deaths. In the corresponding month of last year pneumonia caused 84 deaths. Typhoid fever caused 58 deaths. There were 207 cases reported in 58 counties. In the corresponding month last year there were 312 cases in 64 counties, with 53 deaths. Violence caused 207 deaths, of which 10 were murders, 26 suicides, and 171 accidents.

**Personal.**—Dr. Edward J. McOscar, Fort Wayne, has returned from Germany.—Dr. Benjamin H. Cook, Anderson, who sued the Indiana Union Traction Company for \$20,000 damages, has been awarded \$700 by the jury.—Dr. Floyd B. McBride, assistant surgeon at the Marion Soldiers' Home, has resigned, and will be succeeded by Dr. Lloyd B. Campbell.—Dr. Jay D. Nusbaum, Auburn, has been appointed surgeon to the Toledo & Chicago Interurban Railway.—Dr. Harry C. Sharp, surgeon at the Indiana Reformatory, Jeffersonville, has resigned, to take effect October 1.—Dr. Henry G. Linn, Rushville, has been taken to the East Haven Hospital, Richmond, for treatment for cholelithiasis.

#### IOWA.

**Bequest.**—By the will of the late Senator Allison \$1,000 is bequeathed to the Finley Hospital, Dubuque.

**Hospital Staff Elects Officers.**—The medical staff of Cottage Hospital, Creston, has elected the following officers: President, Dr. Frank E. Sampson; vice-president, Dr. J. W. Lauder; and secretary, Dr. Charles A. Beattie.

**Communicable Diseases.**—The epidemic of smallpox at Mason City is said to have been stamped out, the last patient having been discharged from the detention hospital.—Rockwell reports an epidemic of typhoid fever.

**Pollution of Waterways.**—At the annual meeting of the State Board of Health in July, resolutions were adopted that a committee of five be appointed to draft a statute to be presented to the next legislature, requiring that all cities, towns or communities purify their sewage so as to render the effluent harmless.

**Society Meeting.**—The Austin-Flint-Cedar Valley Medical Association, at its sixth annual meeting, held in Clear Lake, elected the following officers: President, Dr. Ernest J. Wadley, Waterloo; vice-president, Dr. Michael J. Kenefick, Algona; secretary and treasurer, Dr. Claude F. Osborn, Hampton; and censor, Dr. Henry H. Clark, McGregor. The association will meet in Hampton next year.

**Decision Against Physicians.**—In the damage suit of Mrs. Annie Arp for \$45,000 against Drs. Alphonse L. Hageboeck, Julius T. Haller and J. H. Meyhaus, Davenport, in which the allegation was made that the death of the plaintiff's husband was caused by leaving a sponge in his body after an operation for appendicitis, and in which the jury twice disagreed, a set-

tlement is said to have been arrived at by which Mrs. Arp receives \$4,500.

**Senior Students Get Diplomas.**—The three students of Drake University Medical Department who started mandamus proceedings to compel the authorities to grant them diplomas are to receive them. These students had taken a two years' course in an osteopathic college and two years in the medical college, and the president of the latter refused to give them certificates. The state board, however, is said to have made a special ruling in their favor.

**Personal.**—Dr. Alexander M. Linn, Des Moines, has been elected president of the State Board of Health, vice Dr. Joseph H. Sams, Clarion.—Dr. A. P. Blanchett, Council Bluffs, has been elected president of the State Board of Medical Examiners.—Dr. J. B. B. Hudson has been appointed first assistant state bacteriologist.—Dr. Robert Evans, Fort Dodge, returned from Europe August 18.—Dr. Lawrence W. Littig, Iowa City, who has been seriously ill with blood poisoning, is reported convalescent.—Dr. Matthew U. Cheshire, Marshalltown, has been appointed surgeon to the Marshalltown Light, Power and Railway Company.—Dr. Gabriel G. Bickley, Waterloo, is reported to be critically ill with pneumonia.—Dr. Andros Guede, Des Moines, has returned from Vienna.

#### KANSAS.

**Against Flies.**—The department of food and drugs of the Kansas State Board of Health has issued a leaflet entitled "Swat the Fly."

**Postgraduate Course.**—The faculty of the Kansas Medical College of Topeka has decided to open a postgraduate or clinical course during the week preceding the opening of the college term in September. This course is especially planned for the benefit of the alumni of the school.

**Personal.**—Dr. Henry M. Lankford, superintendent of Evergreen Place Hospital, Leavenworth, Kan., has been visiting his old home in Princess Anne, Md.—Dr. Edith S. Haigh has moved from Iola to Madison, Wis.—Dr. Samuel J. Crumline, Topeka, chief food inspector of the state, has been commissioned federal food inspector by the Secretary of Agriculture.

#### KENTUCKY.

**Verdict for Physician.**—In the damage suit of Mrs. Sarah Daugherty, Elizabethtown, against Dr. Argus D. Willmoth, Louisville, in which it was alleged that the defendant had left in the body of the plaintiff a sponge and other foreign matter, the jury brought in a verdict for the defendant.

**Sanitarium Incorporated.**—Dr. Milton Board, Hopkinsville, member of the State Board of Control, has filed articles of incorporation for a sanitarium with capital stock of \$10,000. The stockholders are Drs. Milton Board, Arthur T. McCormick, Bowling Green; James T. Windell, Louisville; Joseph McWilliams and Charles H. Moorman.

**New City Hospital Planned.**—The committee appointed to consider plans for the new City Hospital at Louisville has reported in favor of a sectional structure consisting of six pavilions, each containing two wards, with accommodations for 450 patients. Concrete is recommended as the material of construction, and the estimated cost of the structure is from \$600,000 to \$700,000.

**Graduation Exercises.**—At the commencement exercises of the Medical Department of the University of Louisville a class of 99 received diplomas. The salutatory was delivered by Dr. Thomas C. Maguire. Dr. Joseph M. Boyden presented the graduates to the chancellor of the university, Dr. J. C. Willis, who conferred the degrees.—At the fifty-eighth annual commencement exercises of the Kentucky School of Medicine a class of 47 was graduated.—At the annual commencement exercises of the Louisville and Hospital Medical College a class of 102 received diplomas. Rev. W. Francis Irwin delivered the doctorate address.

**Personal.**—Dr. J. M. Mathews has returned to the city after a six weeks' visit to Atlantic City, N. J., and White Sulphur Springs, W. Va.—Dr. W. L. Nuttall, Newcastle, has been appointed superintendent of the Feeble-Minded Institute, to succeed Dr. Alexander Bailey of Bailey's Mills.—Dr. Daniel J. Healey has been appointed pathologist to the Eastern Kentucky Asylum, and Dr. Louise Healey, his wife, has been appointed third assistant physician of the same institution.—Dr. Florence Meder has been transferred to the Central Kentucky Asylum at Lakeland, as third assistant physician.—In recognition of his fifty-two years of practice in Kentucky, Dr. Davis J. Foster, Paducah, has been presented



with a gold-headed umbrella by the physicians of the city.—Dr. Frank Boyd, Paducah, has been appointed surgeon general of the state guard.—Dr. William T. Merchant, Louisville, has been appointed city physician for the indigent colored population.—Dr. B. Frank Eckman, Covington, was painfully injured in a collision between his automobile and a railway train, July 29.—Dr. Stanislaus Brzozowski has been appointed superintendent of the Louisville Eruptive Hospital, vice Dr. J. L. Whittenberg.—Dr. Joseph M. Stuart has succeeded the late Dr. James P. Heavrin as president of the board of health of Owensboro.

#### MARYLAND.

**Homicides.**—Since 1885 there have been 441 homicides in Baltimore, an average of 18 per annum.

**Baltimore Personal.**—Dr. Robert Hoffmann has returned from Germany.—Dr. James E. Harris sailed for Germany August 19.

**Health Bulletins.**—The last of the weekly health bulletins of the Medical and Chirurgical Faculty of Maryland were on "Ptomain Poisoning" and "Baths."

**New Emergency Hospital.**—The Emergency Hospital building commission at Annapolis has asked for bids for the new hospital in that city, to cost about \$25,000, the amount appropriated by the state.

**Improvements at Quarantine.**—Extensive improvements are being made at the Baltimore quarantine by Dr. Thomas L. Richardson, assistant health commissioner. Among these are the installation of a new water system, a gas plant and baths.

**July Deaths in Baltimore.**—Dr. J. F. H. Gorsuch, health officer of Baltimore County, reports that during July there were 186 deaths, among which were 16 from tuberculosis, 15 from accident, 8 from cerebral meningitis, 7 from typhoid fever, and 3 from suicide.

**Protest Against Division of Authority.**—Dr. E. N. Brush of the Sheppard and Enoch Pratt Hospital, and Dr. Charles F. Bevan, dean of the College of Physicians and Surgeons, Baltimore, have entered a protest against the proposed division of authority at the Springfield Asylum for the Insane. Dr. Brush says: "The conduct of a hospital for the insane under dual management is universally condemned by those whose experience and knowledge entitle them to express an opinion. Such an arrangement is bound to result in friction and in disputes as to authority or responsibility, and this condition of affairs inevitably results in harm to the patients." The dual management of the asylum is believed to be advocated on the ground of economy.

#### MASSACHUSETTS.

**Contribution to Hospital Fund.**—The members of the Boston Curb Exchange have contributed \$1,000 to the fund of the Boston Floating Hospital.

**Typhoid at Newburyport.**—Dr. William H. Coon of the State Board of Health has been investigating the numerous cases of typhoid at Newburyport. The milk and water supplies are to be looked into.

**Personal.**—Dr. A. F. Story, Natick, who has been critically ill for the past six weeks, is reported to be improving.—Dr. Herman Cooper, Amesbury, who has been seriously ill with cardiac involvement, is improving.—Dr. Joseph H. Pratt, Boston, has returned home from Europe.

**Salem Health Crusade.**—The Salem board of health has inaugurated a health crusade and has issued a rule requiring all meats, poultry, fish, dates, figs, berries and shelled nuts, when exposed for sale in the open air, be covered so as to exclude flies and dust. It is understood that one of the main objects is to regulate the exposure of fish for sale.

#### MICHIGAN.

**Issue of Health Bulletin.**—The State Department of Health of Michigan has issued for its July and September bulletin a pamphlet on the summer diarrheas of infancy and their restriction, which deals with such topics as the care and dress of infants, fresh air, foods and drugs, and "patent medicines."

**July Vital Statistics.**—During July there were reported in the state 151 cases of measles, 110 of typhoid fever, 96 of scarlet fever, 78 of smallpox, 75 of whooping-cough, 69 of diphtheria, 52 of pneumonia, and 32 of meningitis. In all these cases of dangerous communicable diseases the number of cases reported was markedly lower than the average from 1904 to 1906.

**Tuberculosis Notes.**—The Grand Rapids Tuberculosis Sanatorium is now filled to its entire capacity of 25. The Anti-Tuberculosis Society of Grand Rapids is to furnish free clinics, which will be held from 12 to 1 o'clock either three or six times a week. Drs. Collins H. Johnson, Ralph H. Spencer, Alden H. Williams, Thomas M. Koon, J. D. Hastie, Abel J. Baker, and Henry J. Vandenberg make up the attending staff.—On July 21 the Houghton County Anti-Tuberculosis Society celebrated Blue Star Day, the wearing of the star meaning that the individual had helped in the fight against tuberculosis.—The board of health of Holland has passed an ordinance prohibiting expectoration on the sidewalk on penalty of a fine from \$5 to \$50.

#### MINNESOTA.

**Force Paroled.**—Dr. Jacob F. Force, Minneapolis, who was convicted of grand larceny and sentenced to serve three and a half years in the penitentiary, is said to have been paroled August 7 by the state pardon board.

**Society Meetings.**—At the annual meeting of the Wabasha County Medical Society, held in Lake City July 9, the following officers were elected: Dr. Lawrence C. Ingram, Zumbro Falls, president; Dr. Charles J. McGuire, Minneiska, vice-president; Dr. William F. Wilson, Lake City, secretary-treasurer; Drs. Emery H. Bayley, Lake City, J. Thomas Asbury, Wabasha, and Ernest A. French, Plainview, censors; Dr. William T. Adams, Elgin, delegate to the State Medical Society, and Dr. William J. Cochrane, Lake City, alternate.—At the annual meeting of Freeborn County Medical Society, held in Albert Lea, Dr. Gustav W. Barek, Albert Lea, was elected president; Dr. John P. Freeman, Glenville, vice-president; Dr. Olaf E. Rodli, Albert Lea, secretary, and Dr. John P. von Berg, Albert Lea, treasurer.—At the annual meeting of the Southern Minnesota Medical Association, held in Owatonna, August 6, the following officers were elected: President, Dr. Osmon F. Way, Claremont; first vice-president, Dr. William S. Wood, Blooming Prairie; second vice-president, Dr. Hugh F. McGaughey, Winona; secretary-treasurer, Dr. William T. Adams, Elgin. Winona was selected as meeting place for 1909.

#### MISSISSIPPI.

**Smallpox.**—Smallpox in virulent form is said to be epidemic in the Franklin neighborhood, Holmes County, where it has been necessary to close a negro school.—Three cases of smallpox were discovered in Meridian, July 27.

**Graduation Exercises.**—At the end of the second term of the Mississippi Medical College, Meridian, a class of 13 was graduated. Dr. William W. Hamilton, president of the college, told of the work the college had accomplished and hoped to accomplish. Dr. Nathan L. Clark, dean of the college, spoke of the history of the college and its outlook; Rev. William Mercer Green delivered the annual address, and Mr. Edwin McMorris awarded the diplomas.

**Personal.**—Dr. John R. Tackett, Meridian, has resigned as member of the State Board of Health, to take effect immediately.—The office of Dr. J. M. Clarke, Wingate, and contents, were destroyed by fire recently.—Dr. Julius Crisler, Jackson, has resigned his position on the staff of the Mississippi Insane Hospital.

#### MONTANA.

**Society Changes Name.**—The Silver Bow County Medical Association on July 24 filed notice of its change of name to Silver Bow County Medical Society.

**New Hospital.**—The Tong building, Big Hole Basin, has been remodeled by Dr. Sweet and opened as a private hospital, with accommodations for six patients.

**Compulsory Vaccination.**—The State Board of Health has issued an order providing that each pupil, teacher and janitor in every school in the state shall be vaccinated forthwith.

**Personal.**—Dr. Thomas J. Murray, Butte, was the guest of honor at a banquet given by the Silver Bow County Medical Association, June 20, in honor of his election as first vice-president of the American Medical Association.—Dr. E. M. Porter, Fort Benton, has been appointed county physician, vice Dr. J. Harris Russell.

**Vital Statistics.**—The July bulletin of the State Health Board states that during the month there were 473 births, 244 males and 229 females, and 330 deaths. The births were 143 in excess of deaths. The bulletin lays special stress on the mortality of young children and its avoidance, the increase in the number of cases and death from tuberculosis and the necessity of efficient meat and milk inspection.



## NEBRASKA.

**Licenses Revoked.**—The supreme court is said to have affirmed the decision of the district court of Lancaster County, whereby the licenses of Erick Munk and Daniel G. Walker, Lindsay, were revoked. The State Board of Health ordered the licenses revoked on the ground that these men had been guilty of performing criminal operations.

## NEW YORK.

**Still Wage War Against Noise.**—The citizens of Morris Heights have complained about the noise at Fort George, and the board of health has issued an order that all amusement devices be closed at 11 o'clock at night. Since the crusade has been on many more complaints have been received in regard to noises, and it is believed that permanent results will be obtained.

**Better Conditions Along the Croton Watershed.**—Dr. Thomas Darlington, after a tour of inspection, announces that the conditions along the Croton watershed are much better than they were last year. The work on the sewer system for Katonah which was authorized by the last legislature is progressing so that soon every possible danger to the water supply of New York City will be removed.

**Richmond Rid of Mosquitoes.**—After five years of experimental work with mosquito extermination, Staten Island is practically free of the pest, and Dr. Doty has to send to other places for insects for experimental work. The number of cases of malaria has decreased proportionately, only three being reported and two of these being off shore. Dr. Doty states that neglect will undo the work that he has accomplished. The filling in will be used with ponds and smaller pockets, and the ditches must be kept open.

**Northern New York Health Officials Organize.**—The Northern New York Health Officials' Association has been organized with the following officials: President, Dr. J. H. Durham, Cape Vincent; vice-presidents, Drs. Stephen A. Russell, Fulton; Howard A. Bassett, Lowville; and Benjamin W. Severance, Gouverneur; and secretary, Dr. Albert L. Morgan, Dexter. It is to hold quarterly meetings, and all members of boards of health and health officials in its territory are eligible to membership. The objects of the association are educational: That the members may be more thoroughly instructed in sanitary science; that they may acquire a more perfect understanding of the health laws of the state; and that they may gain a clear conception of the powers, duties and responsibilities of health officials, and also such officers as citizens.

## New York City.

**Personal.**—Drs. Darlington and Walter Bensel continue to receive letters threatening their lives if the slaughter of unmuzzled dogs is not stopped.—Dr. Mary Crawford, who is doing ambulance service in Brooklyn, was attacked by an insane man, who attempted to hurl her from the ambulance. Her face was badly lacerated by his finger nails.

**To Hold Meeting in New York.**—The Playground Association of America will hold its second annual congress in New York during the week of September 7. President Roosevelt is honorary president, and Dr. Luther H. Gulick, president. The meeting will be held in the American Museum of Natural History and the program will include addresses by Governor Hughes, Jacob Riis, Superintendent Maxwell and Dr. Woods Hutchinson.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ended August 15, 443 cases of tuberculosis, with 160 deaths; 134 cases of diphtheria, with 11 deaths; 106 cases of measles, with 5 deaths; 87 cases of scarlet fever, with 7 deaths; 124 cases of typhoid fever, with 17 deaths; 18 cases of whooping-cough, with 5 deaths; 5 cases of cerebrospinal meningitis, with 7 deaths; and 9 cases of varicella, a total of 926 cases and 212 deaths.

**Death Rate Lowered Again.**—The death rate for the week ended August 15 was at the annual rate of 15.74 per 1,000. For the corresponding week of last year it was 20.16 per 1,000. The number of children under 5 years of age who died was 559, against 824 last year. Deaths of children under one year of age were 331, as compared with 478 for the same week last year. This falling off in the death rate is attributed to education due to newspaper publicity, to better food supply, to more rigid inspection, and to the scarcity of money which forbids harmful luxuries in the way of food and overeating.

**Protest Against Slaughter of Dogs.**—The president and attorney of the Society for the Prevention of Cruelty to Ani-

mals registered an emphatic protest at the meeting of the health board against the wholesale slaughter of dogs. It was stated that during July more than 7,000 dogs had been taken up, and only about 2 per cent. had been reclaimed. This meant that about 6,000 dogs had been killed. It was admitted that the board of health had killed over 1,000. Dr. Walter Bensel presented a letter that he had received threatening him with death if the slaughter of unmuzzled and unleashed dogs was not immediately discontinued. It was stated that the policy of the board would not be changed until the Society for the Prevention of Cruelty to Animals could show itself capable of coping with the situation.

**Against Tuberculosis.**—Hundreds of thousands of transfers, bearing on their backs the following warning against tuberculosis, were distributed through the street-car lines August 23:

## CONSUMPTION IN EARLY STAGES CAN BE CURED.

Take your case in time to a good physician or to a dispensary and you may be cured—DO NOT WAIT.

Consumption is "caught" mainly through the spit of consumptives.

Friends of Consumption—Dampness, Dirt, Darkness, Drink.

Enemies of Consumption—Sun, Air, Good Food, Cleanliness.

If you have tuberculosis, do not give it to others by spitting; even if you have not, set a good example by refraining from a habit always dirty and often dangerous.

## THE COMMITTEE ON THE PREVENTION OF TUBERCULOSIS OF THE CHARITY ORGANIZATION SOCIETY.

SUNDAY, AUG. 23, 1908. (By Courtesy of Siegel Cooper Co.).

**A Plan for Hospital Reform.**—The commission appointed by the mayor in January, 1906, to plan for the reorganization, extension and administration of the hospital system in New York City, has just presented its report to the mayor, in which it is stated that the public hospital facilities are bad and that the ambulance service is in a chaotic condition, and the commission recommends that the charter be amended to provide for a department of public hospitals administered by a commission appointed by a board of trustees. This new department should also have charge of the public ambulance service. It is recommended that the commissioner of health should be a member of the proposed board of trustees. The report recommends the extension of the sanatorium at Otisville, new buildings at Blackwell's Island, early completion of the Sea View Hospital on Staten Island, the more rapid extension of the public hospital system of the city, the extension of the general facilities of the City Hospital, expediting work on the new Bellevue Hospital, and many other needed improvements.

## NEW JERSEY.

**Personal.**—Dr. James Curtis, Paterson, was seriously injured in an automobile accident at Hackensack, August 2.

**Scarlet Fever at Collingswood.**—Scarlet fever is epidemic at Collingswood and 14 new cases of this disease were reported during the week ended August 15. The contagion is thought to exist in milk bottles which are taken from house to house without being properly sterilized. The board of health is investigating this matter.

**Vital Statistics.**—During the month ended July 15, 2,589 deaths were reported to the bureau of vital statistics. The prolonged warm weather was no doubt responsible for the high death rate among infants, persons aged 60 years or over, and others whose vitality is low. The number of deaths of children under one year of age for the month is 607, and of persons 60 years and over, 668, a total of 1,375. During the month typhoid fever caused 20 deaths; measles, 21; scarlet fever, 36; whooping cough, 22; diphtheria, 36; malaria, 1; tuberculosis of lungs, 265; tuberculosis of other organs, 49; cancer, 130; cerebrospinal meningitis, 31; diseases of nervous system, 315; diseases of circulatory system, 265; diseases of respiratory system (pneumonia and tuberculosis excepted), 117; pneumonia, 123; infantile diarrhea, 202; diseases of digestive system (infantile diarrhea excepted), 187; nephritis, 156; suicide, 39; all other diseases or causes of death, 574.

## NORTH DAKOTA.

**Medical Society Meeting.**—At the annual meeting of the Grand Forks District Medical Society, held July 8, the following officers were elected: President, Dr. Henry O'Keefe, Grand Forks; vice-president, Dr. John E. Countryman, Grafton; secretary-treasurer, Dr. Archibald L. McDonald, Grand Forks; censors, Drs. H. G. Woutat, Grand Forks, and Gudmund J. Gislason, Grand Forks; delegates to the state medical association, Drs. Zella Stewart, Grand Forks, and William H. Witherstine, Grand Forks.



## OHIO.

**Medical Staff Resigns.**—On account of difficulties between members of the medical staff and the superintendent of the Charles S. Gray Deaconess Hospital, Ironton, seven of the eight members of the medical staff have resigned.

**Resolutions Regarding Dr. Eichberg.**—The executive committee of the Miami Medical Alumni Association adopted resolutions setting forth the loss sustained by the profession in the decease of Dr. Joseph Eichberg, and condoling with the family of the deceased.

**Judge Grants Immunity to Lawbreaker.**—Through a recent decision of Judge Reed of Sandusky, a new method of enforcing the state medical law has been discovered. The State Medical Board secured an injunction restraining a so-called "chiropractic" from practicing medicine. This individual protested that he was not practicing medicine. Judge Reed replied that an injunction restraining him from such practice would not interfere with his work at all, and that, consequently, he could have no ground for objection.

**Personal.**—Drs. John B. Ury and John D. Westrick, Defiance; Dr. William J. Walker, Farmer, and Drs. Noah H. Jackson, Henry W. Cook and Thomas N. Dean, Hicksville, have been appointed members of the Defiance County infirmary board. —Dr. Willard C. Kendig, Cincinnati, has been appointed examining physician for lunacy cases, and will leave shortly for Europe to take up postgraduate work. —Dr. Walter B. Laffer has succeeded the late Dr. Charles J. Aldrich as neurologist at the Cleveland City Hospital. —Dr. Don C. Hughes, Findlay, has been re-elected head physician for Ohio of the Modern Woodmen of America. —Dr. John H. Rodgers has resigned as a member of the Springfield board of health, and has been succeeded by Dr. Ira E. Seward. —Dr. Terrence J. Cunningham has been made a member of the faculty of the Toledo Medical College. —Dr. Edward M. Keefe, Cincinnati, has been appointed surgeon to St. Mary's Hospital, vice Dr. Herschell D. Hinekley, resigned. —Dr. William C. Schmitter, Cincinnati, has been appointed radiographer to St. Francis' Hospital. —Dr. William S. Keller, Cincinnati, has returned after a year in Europe.

## PENNSYLVANIA.

**Personal.**—Dr. J. J. Mallowney, Easton, left Easton August 21 for Seattle, whence he will sail for China as a missionary. —Drs. Jesse G. Hilleary and Samuel M. Davenport, Dubois, have returned from Europe. —Dr. Bruce P. Steele, MeVeytown, had his right arm fractured recently by the kick of a horse. —Dr. John Shaeffer, McCall's Ferry, was admitted to St. Joseph's Hospital, Lancaster, to be treated for a fracture of the clavicle.

**State Society Meeting.**—The fifty-eighth annual session of the Medical Society of the State of Pennsylvania is called to meet in Cambridge Springs, on September 14 to 17. Two special parlor cars for members will leave Philadelphia for Cambridge Springs, September 14, at 8:25 a. m. A third special car will be attached at Harrisburg for the convenience of members from Harrisburg, York, Chambersburg, Carlisle and other points. Applications for seats in these cars should be made to Dr. Albert M. Eaton, Philadelphia.

**New Tuberculosis Dispensary.**—The State Department of Health has secured a building on Bloom Street, Danville, where it will establish a new tuberculosis dispensary. This will be the headquarters of the state's fight against tuberculosis in Montour County. The work will be in charge of Dr. George A. Stock. The returns for the last year show that 13 per cent. of the deaths in Danville were caused by consumption. This is the highest death rate found in any city or town in the state with a population of 8,000 or over. The average rate throughout the state is 10 per cent.

**Society Meets.**—At the second annual meeting of the Williamsport Medical Association the following officers were elected: President, Dr. John Senn; first vice-president, Dr. Horace G. McCormick; second vice-president, Dr. George D. Nutt; treasurer, Dr. Albert F. Hardt. —At the July meeting of the Jefferson County Medical Society, the following officers were elected: President, Dr. Abraham Balmer, Brookville; vice-president, Dr. Addison H. Bowser, Reynoldsville; secretary and treasurer, Dr. Norman C. Mills, Big Run; reporter, Dr. Charles C. Hammond, Wishaw; and censors, Drs. John H. Murray, Reynoldsville, Sylvester S. Hamilton, Punxsutawney, and John C. Sayers, Reynoldsville.

**Typhoid Prevalent.**—At the Pennsylvania Reform School at Morganza 28 cases of typhoid fever have developed and one death has occurred. —On August 21, 7 cases of typhoid fever

were reported at Carbondale. This brings the total to 19 positive and 50 suspected cases. The source of contagion is said to be from the Bromwell dam, the town's water supply. —Typhoid fever is epidemic in Spring City and Royersford; 90 cases are present in the former place and 32 are reported from the latter. Dr. J. Scattergood of Chester County and Dr. H. W. Whitecomb of Montgomery County, state medical inspectors, have been detailed by Dr. Samuel G. Dixon, state health commissioner, to take charge of the epidemic. —Nine inmates of the Northampton County prison, at Easton, were reported to be suffering with typhoid fever, August 21.

**Pure Food Law Unconstitutional.**—In the case of the commonwealth of Pennsylvania against C. M. Keephart, which was tried before Judge Bell of Blair County, August 20, the pure food law of June 1, 1907, was declared unconstitutional. Under this act the retailer had the opportunity to place the responsibility for adulterated goods on the jobber or the manufacturer, a right that nearly all exercised. With this law removed the retailer will be again amenable for all impure foods he may sell, but it is expected that they will exercise their personal rights to demand pure goods and thus avoid prosecutions under the old act. It is the object of the pure food commission to place the case before the Superior Court in time to have the law corrected at the next session of the legislature, if found defective. Judge Bell cites article 3, section 4, of the state constitution, which provides that: "No law shall be revived, amended or the provisions thereof extended or conferred by reference to its title only, but so much thereof that is revived, amended, extended or conferred shall be re-enacted and published at length." In point of fact, the judge states that the act of June 1, 1907, was an amendment to prior acts on the same subjects, the prior act being picked up bodily and thrown into the act of June 1, 1907, by reference to its title only.

## Philadelphia.

**Bequests to Charity.**—The will of the late Levi Mayer bequeathes \$1,000 to the Jewish Hospital. —A bequest of \$5,000 to the Home for Consumptives at Chestnut Hill is contained in the will of the late James Sadleir, to be used to endow a room to be called the Maria Sadleir room.

**Personal.**—Dr. Theodore LeBontillier has been elected clinical professor of pediatrics in the Woman's Medical College of Pennsylvania. —Dr. Charles Lester Leonard has been a guest of the British Medical Association at its meeting in Sheffield and is a delegate of the American Medical Association to the Fourth International Congress on Electrology and Radiology, at Amsterdam, September 1 to 5. —Dr. A. Wexler, resident physician in the Mt. Sinai Hospital, was seriously injured by the explosion of a steam sterilizer, August 20. —Dr. A. E. Harris has gone to Tripoli, Syria.

**Health Report.**—The total number of deaths reported for the week ended August 22 aggregated 490, an increase of 41 over the number reported in the previous week and an increase of one over the number reported in the corresponding week of last year. This mortality represents a death rate of 16.2 per 1,000 of population. The principal causes of death were: Typhoid fever, 6; measles, 3; pertussis, 5; diphtheria, 2; consumption, 41; cancer, 29; diabetes, 4; apoplexy, 10; hepatic cirrhosis, 5; Bright's disease, 39; heart disease, 27; arterial sclerosis, 15; acute respiratory disease, 26; enteritis, 91; premature birth, 11; congenital debility, 9; senility, 6; suicide, 5; accidents, 15, and marasmus, 10. There were 120 cases of contagious diseases reported, with 8 deaths, as compared with 107 cases and 17 deaths, reported in the preceding week.

## VIRGINIA.

**Not Guilty.**—Dr. Arthur B. Cosby, charged with having performed an illegal operation, was exonerated from the charge at the trial, August 5, before Justice Crutchfield.

**Smallpox.**—Several cases of mild form have been reported in Alexandria. —A number of cases have developed at Musselman's, Spottsylvania County.

**Faculty Changes.**—The following changes are announced in the University College of Medicine, Richmond: Professor of theoretical pediatrics, Dr. McGuire Newton; clinical pediatrics, Dr. Paulus A. Irving; theory and practice of medicine, Dr. Alexander G. Brown, Jr.; and practice of medicine and physical diagnosis, Dr. J. Garnett Nelson.

**Personal.**—At the annual meeting of Fitzhugh Lee Camp, Spanish War Veterans, Richmond, Dr. Rollins Marshall was elected surgeon. —Drs. Harry D. Howe, Hampton, and Joseph T. Buxton, Newport News, returned from Europe July 31. —



Dr. Frank S. Hope, city health officer of Portsmouth, is seriously ill at St. Christopher's Hospital, Norfolk.

**Health Bulletins.**—Volume 1, Number 1, of the *Virginia Health Bulletin* appeared in July. It gives the details of the work of the state health department, and contains notices and articles relating to tuberculosis, typhoid fever, plague, flies and water animals. The second issue of the bulletin contains a compilation of the statute law of Virginia relating to the health of the people, and a list of the personnel of the county boards of health.

**Richmond Vital Statistics.**—During July there were 219 deaths in Richmond, 113 decedents being white and 106 colored. This gives an annual death rate of 22.6 per 1,000. The total deaths were 21 less than in June, and 37 less than in July, 1907. There were 33 deaths from diarrhea and enteritis, as compared with 44 last July. Typhoid fever was responsible for 6 deaths; tuberculosis and organic heart disease, for 15 each; nephritis, for 16. There were 101 cases of infectious diseases reported to the health department, 72 cases of typhoid fever, 11 of whooping cough, 9 of diphtheria, 3 each of measles and mumps, 2 of chickenpox and one case of scarlet fever.

**Election of Officers.**—At the annual meeting of the South Piedmont Medical Society, held in Lynchburg, the following officers were elected: President, Dr. Henry B. Melvin, Houston; vice-presidents, Drs. George W. Coker, Danville, Walter L. Williams, Brookneal, John A. Owen, South Boston, and Charles W. Tucker, Drakes Branch; secretary, Dr. George A. Stover, South Boston; and treasurer, Dr. James L. Kent, Lynchburg.—At the annual meeting of the Augusta County Medical Society, held in Staunton, the following officers were elected: President, Dr. R. Sumpter Griffith, Basic City; vice-presidents, Drs. Walter F. Hartman, Swoope, Wilbur B. Payne, Covington, and Henry H. Jones, Doehill; secretary, Dr. Achilles L. Tynes, Fishersville; treasurer, Dr. Thomas M. Parkins, Staunton; and censor, Dr. Henry C. Grant, Hermitage.

#### WASHINGTON.

**Fined for Failure to Make Report.**—Dr. A. L. McClanahan, Seattle, is said to have been arrested and fined \$20 for failure to report a case of diphtheria in his charge. He asserts that he sent in a culture to the health department, but was arrested before the report of the findings was received.

**Diphtheria Epidemic.**—An epidemic of diphtheria broke out among the government employes on Tatoosh Island during August. At one time all the employes except one were confined to their beds. Dr. John W. Edwards, with two nurses, was sent by the Marine-Hospital Service from Port Townsend.

**Personal.**—Dr. Albert McConaghy, Seattle, has been elected head of the department of physical development of the public schools of Seattle.—Dr. J. H. Boles, St. Louis, has been appointed physician at the Federal prison, McNeil's Island.—Dr. J. R. Booth, Seattle, has returned from London.—Dr. William R. M. Kellogg, Seattle, underwent an operation for abscess of the liver, August 15.—Dr. James A. La Gasa, resident physician of the Fannie C. Paddock Memorial Hospital, Tacoma, has been made acting superintendent to fill the vacancy caused by the death of Dr. Charles McCutcheon.

**Plague Prevention Work.**—During July, 25 ships were fumigated and 24 ships inspected by Passed Assistant Surgeon Glover, Public Health and Marine-Hospital Service, Seattle. Infection was found to exist among rats in a stable at Eighth Avenue and Madison Street, and precautions were immediately taken by the local health authorities to fumigate and clean out the locality. During July, 5,067 rats were inspected by the plague laboratory. On these 4,753 autopsies were made, and 9 were found to be infected with plague. These rats were all from the stable referred to above. Two postmortems on human subjects were made in cases considered suspicious, with negative results.

#### GENERAL.

#### INTERNATIONAL CONGRESS ON TUBERCULOSIS.

##### List of Special Lectures.

In connection with this Congress to be held next month, a series of special lectures will be delivered in Washington and elsewhere by eminent foreigners. The names of the speakers and the cities in which they will lecture follow:

**Studies in Tuberculosis in Domestic Animals and What We May Learn Regarding Human Tuberculosis.** Bernard Bang, Copenhagen, Denmark.—Washington, D. C., October 3.  
**New Methods for the Early Diagnosis of Tuberculosis.** A. Calmette, Lille, France.—Philadelphia, September 26.  
**The Campaign Against Tuberculosis in the Argentine Republic.** Emil Coni, Buenos Ayres.—Washington, D. C., October 2.

**Campaign Against Tuberculosis as Disease of the Masses in Germany.** Dr. B. Fränkel, Berlin.—New York, October 8.

**The Causes Which Have Led to the Past Decline in the Death Rate from Tuberculosis and the Light Thrown by This History on Preventive Action for the Future.** Arthur Newsholme, Brighton, England.—Washington, D. C., September 29.

**Social Life and Tuberculosis.** Gotthold Pannwitz, Berlin, Germany.—Philadelphia, September 24.

**The Antituberculosis Program—Coordination of Preventive Measures.** R. W. Philip, Edinburgh, Scotland.—Boston, October 6.

**Tuberculosis of the Heart, Blood and Lymph Vessels.** Andres Martinez Vargas, Barcelona, Spain.—New York, October 9.

**The Evolution of the Treatment of Pulmonary Tuberculosis.** Theodore Williams, London, England.—Philadelphia, September 25.

**The Campaign Against Tuberculosis in Large Cities by the Dwelling: Modern Scientific Methods for Its Construction.** Dr. Maurice Letulle and M. Augustin Rey.—(Joint lecture)—Washington, D. C., Sept. 30.

**Biology of the Bacillus.** Dr. A. A. Wladimiroff, St. Petersburg, Russia.—Washington, D. C., September 28.

**Collateral Tuberculosis Inflammation.** Prof. N. P. Tendeloo, Leyden, Holland.

Lectures, titles of which are not stated, will be given by C. H. Spronek, Utrecht, Holland, Boston, October 7, and Dr. L. Landouzy, Paris.—Washington, September 28.

#### Papers to be Read in Section I.

DR. WILLIAM H. WELCH, BALTIMORE, PRESIDENT.

This list includes all titles of papers received up to August 13:

**The Viability of the Tubercle Bacillus.** Milton J. Rosenau, Washington, D. C.

**A Study of the Proteids of the Tubercle Bacillus.** Victor C. Vaughan, Ann Arbor, Mich.

**The Action of Diffuse Light on Bacillus of Tuberculosis.** John Weinzerl, Seattle, Wash.

**The Morphology of the Tubercle Bacillus.** Dwight M. Lewis, New Haven, Conn.

**New Homogeneous Cultures of the Tubercle Bacillus.** S. Arloing and Paul Courmont, Lyons, France.

**Comparative Study of the Tubercle Bacillus of Human and of Bovine Origin.** J. N. Davalos and J. Cartaya, Havana, Cuba.

**The Virulence of the Bacillus in Connection with the Clinical Evolution of Pulmonary Tuberculosis.** A. Rodet, Montpellier, France.

**A Chamber in Which Dried Tubercle Bacilli May Be Handled Without Danger.** A. Parker Hitchens, Glen Olden, Pa.

**Channels of Infection.** N. P. Tendeloo, Leyden, Holland.

**The Portal of Entry of Tuberculosis.** Julius Bartel, Vienna, Austria.

**Sources and Channels of Infection of the Tuberculous Contagion.** G. Kuss, Angicourt, France.

**Portals of Entry of Tuberculosis.** S. Bernheim, Paris, France.

**Relation of the Air to Tuberculous Contagion. Sterilization of Air.** S. Bernheim, Paris, France.

**A Study of the Tuberculous Contamination of New York City Milk.** Alfred F. Hess, New York City.

**Percutaneous Inoculations of Tuberculosis.** Jules Courmont and A. Lesieur, Lyons, France.

**Immunization Experiments Against Tuberculosis.** Julius Bartel, Vienna, Austria.

**Contribution to the Immunity to Tuberculosis.** Jules Courmont and A. Lesieur, Lyons, France.

**Immunity of Men for Tuberculosis.** A. B. Marfan, Paris.

**Tuberculo-toxoidin and Immunization Serum.** Y. Ishigami, Japan.

**The Part of Enzymes in Tuberculous Lesions.** Eugene L. Ople, New York City.

**The Frequency of Healed Tuberculosis of the Mesenteric Glands, with Particular Reference to the Relationship Between Hyaline Deposits in These Glands and the Healing of Tuberculous Lesions.** Alfred S. Warthin, Ann Arbor, Mich.

**Tuberculous Infection According to the Test of Pathologic Anatomy.** S. Arloing, Lyons, France.

**Analysis of 1,000 Consecutive Autopsies in Montreal with Reference to the Incidence of Tuberculosis in the Various Organs.** John McCrae, Montreal, Canada.

**Incidence of Chronic Pleurisy in 1,400 Autopsies in Montreal, and Its Relationship to Tuberculosis.** A. R. Landry, Montreal.

**Anatomic and Pathologic Study of the Non-follicular Lesions of Tuberculosis.** Léon Bernard, Paris, France.

**Pneumonia in the Process of Pulmonary Tuberculosis.** R. Tripiet, Lyons, France.

**Anatomic Process of Hemorrhage in Incipient Tuberculosis.** J. Paviot, Lyons, France.

**The Kidneys in Tuberculosis of the Lungs.** Joseph Walsh and C. M. Montgomery, Philadelphia.

**Tuberculosis of the Spinal Meninges, with a Consideration of the Mode of Infection of These Structures.** D. J. McCarthy, Philadelphia.

**The Liver in Tuberculosis.** J. T. Ullom, Philadelphia.

**Pathology of Tuberculosis of the Peritoneum.** Walter Altschul, Prague, Austria.

**Experimental Tuberculosis of the Testicle.** Charles Esmonet, Puy de Dome, France.

**Multiple Toxic Tuberculous Periostitis and Adipositis.** O. Amrein, Arosa, Switzerland.

**Humoral Properties of Tuberculous Exudate: Prognostic and Therapeutic Value.** Paul Courmont, Lyons, France.

**Title not given.** Camillo Calleja, Valladolid, Spain.

**An Experimental and Clinical Study of the Calcium Metabolism in Tuberculosis.** Alfred C. Crofton, Chicago.

#### Distinguished Foreigners to Attend.

The following men are now known to be coming from abroad:

**Belgium:** J. F. Heymans, Ghent.  
**Denmark:** Holger Rordam and Johannes Fibiger, Copenhagen.



Germany: G. Hormann, Munich; Mme. Lydia Rabinowitsch-Kempner, F. Meyer, G. Kirchner, Robert Koch, Gotthold Pannwitz and F. Helm, Berlin; F. Köhler, Werden a. d. Ruhr; Rumpf, Ebersteinburg b. Baden-Baden; W. Schwabe and Uhlmann, Leipzig; W. von Leube, Würzburg.

Great Britain: W. R. Smith, G. A. Heron, C. Theodore Williams, H. Horton-Smith and A. Latham, London; Sheridan Delépine, Manchester; Sims Woodhead, Cambridge; Nathan Raw, Liverpool; N. D. Bardswell, King Edward Sanatorium, Midhurst; R. W. Philip, Edinburgh; William Osler, Oxford.

France: Charles Baradat, Cannes; F. Barbary, Nice; A. Calmette, Lille; Dupeux, Bordeaux; A. J. Magnin and L. Landouzy, Paris; R. Hervé, Lamotte-Beuvron; A. Leune, Versailles; Arloing, Lyons; P. Gallot, Mentone.

Italy: Umberto Gabbi, Messina; Massalongo, Verona; Eduardo Maragliano, Genoa.

Greece: Bastile Patrikios, Athens.

Holland: C. F. J. Blocker, Voorburg; R. de Josselin de Jong, Rotterdam.

Norway: F. Harbitz, Christiania; Herm. Gade, Hagekiken pr. Bergen.

Austria: Reisinger, Komitau i Böhmen; Lang, H. von Schroetter, Bartel, C. von Pirquet and H. Riedl, Vienna; A. Taussig, J. Dvorack and T. Altschul, Prague.

Roumania: J. Mitulescu, Bucharest.

Russia: S. von Unterberger, N. Th. von Tschigaieff and A. A. Wladimiroff, St. Petersburg.

Sweden: Karl Petren, Upsala; K. O. Medin, Stockholm.

Switzerland: Spengler, Davos-Platz; Th. Exchaquet, Leyser; Egger, Basle.

Spain: Jose Chabas, Valencia; A. Martinez-Vargas, Barcelona.

Hungary: H. Preisz, Budapest.

#### CANADA.

**Ontario Health Report.**—The returns to the Provincial Board of Health of Ontario for June give 843 cases of infectious disease, with 249 deaths, as compared with 1,023 cases and 240 deaths for June, 1907. The total deaths for June, 1908, were 2,117, and for the corresponding month of 1907, 2,078, the respective death rates being 12.2 and 12.1 per 1,000.

**Stricken from List.**—The names of 189 physicians have been stricken from the register of physicians by the Ontario Medical Council on account of non-payment of dues for three or more years. These men have declined, on principle, to pay the dues, holding that when they once become qualified physicians they should not be compelled to pay annual charges.

**Contract for Sanatorium Awarded.**—The contract for the erection of a sanatorium for consumptives at Tranquille, B. C., has been awarded by the executive committee of the British Columbia Antituberculosis Society to William O'Dell, Vancouver, for \$65,000. The provincial government has announced a further donation of \$20,000, making a total government appropriation of \$50,000. Of this new amount \$10,000 is conditional on the erection of a separate building for the treatment of advanced cases.

**Personal.**—Lieut.-Col. Cassius W. Belton, London, principal medical officer, militia district No. 1, has been detailed as administrative medical officer for the permanent force camp at Quebec in connection with the tercentenary.—Dr. Donald C. Malcolm, senior physician at the General Public Hospital, St. John, N. B., has resigned.—Dr. James R. Bird, Whitewood, Sask., who has been critically ill for the past two or three months, is now reported convalescent.—Dr. Algernon Woolverton, Hamilton, was stricken with cerebral hemorrhage while a passenger on the steamship *Victorian*, and is now in a hospital in Montreal.—Drs. Robert Ferguson, London, and Frederick Guest, St. Thomas, have been appointed local surgeons for the Southwestern Traction Company.—The following Toronto physicians are in England: Drs. Irving H. Cameron, Clarence L. Starr, John N. E. Brown, Robert A. Pyne, R. W. Bruce Smith, Charles O'Reilly, Andrew R. Gordon and John T. Fotheringham.—Dr. Robert J. Blanchard, Winnipeg, president of the Canadian Medical Association, is in England.—Dr. Robert D. Rudolf, Toronto, has been appointed professor of therapeutics in the University of Toronto.—Dr. George A. Bingham, Toronto, associate professor of surgery in the University of Toronto, has returned from England.—Dr. Thomas G. Roddick, Montreal, has resigned as dean of the medical faculty of McGill University and has been succeeded by Dr. Francis J. Shepard. Dr. Roddick is at present in England.—Dr. Ingersoll Olmsted, Hamilton, is spending a few months in Germany.

**Society Meetings.**—At the twenty-eighth annual meeting of the New Brunswick Medical Society, held at St. Stephen, the following officers were elected: President, Dr. John R. McIntosh, St. John; vice-presidents, Drs. Clinton T. Purdy, Moncton, and Angus J. Murray, Fredericton Junction; corresponding secretary, Dr. J. V. Anglin, St. John; recording secretary, Dr. George G. Corbett, St. John; treasurer, Dr. George G. Melvin, St. John; and members of the medical council, Drs. James P. McInerney, St. John; Edward T. Gandet, St. Joseph; P. Robertson Inches, St. John; Murray McLaren, St. John, and Joseph M. Deacon, Willtown. The next meeting of the association will be held in St. John.—The Welland County (Ont.) Medical Association held its annual meeting in Welland, July 5, and elected the following officers: President, Dr. Jacob H. Howell, Welland; vice-presidents, Drs. Fred J. T. Old, Port Colborne, George B. Snyder, Ridgeway, and J. M. Dalrymple, Fenwick; and secretary-treasurer, Dr. Ernest L. Garner, Welland.—The seventh annual meeting of the Maritime Medical Association was held in Halifax, N. S., July 1, and the following officers were elected: President, Dr. Patrick C. Murphy, Tignish, P. E. I.; vice-president, Dr. Willis B. Moore, Kentville, N. S.; vice-president for New Brunswick, Dr. S. C. Murray, Albert; and secretary, Dr. George G. Melvin, St. John. The association will meet in Charlottetown, P. E. I., next year.

#### FOREIGN.

**An Antiquackery Exposition.**—A traveling exposition of quack advertisements and methods is being organized at Upsala, Sweden, to send throughout the country.

**Measures Taken to Prevent Introduction of Malta or Mediterranean Fever into Turkey.**—Consul-General Ozmun, Constantinople, reports that it has been decided by the Ottoman government as a measure of public health to prohibit the importation into the empire of sheep, goats or other animals from Malta; also their products such as milk, cheese and meat which contain the germs of the fever known as Malta or Mediterranean fever.

**Danish Surgical Association.**—T. Rovsing and E. A. Tscherning of Copenhagen have issued an appeal to surgeons to combine in a national society to hold six meetings between October and May. The medical directors of large hospitals containing a surgical service are also eligible for membership. The organization of a surgical association has been planned for some time, as it has been realized that addresses on strictly surgical themes are out of place in general medical meetings.

**Dollinger Souvenir Volume.**—The professional silver jubilee of Prof. Julius Dollinger of Budapest was celebrated recently by his friends, and the last issue of the *Orvosi Hetilap* was expanded into a *Festschrift* in his honor. His present and former pupils contributed a number of interesting articles on various phases of surgery and orthopedies, Dollinger having been privat docent of the latter specialty before he was appointed to the chair of general surgery. The recent systematic organization of cancer research in Hungary is also his work.

**Institute for Radium Research at Vienna.**—As already mentioned in these columns, the Academy of Sciences at Vienna has now in its possession a few grams of radium salts obtained from about 25,000 pounds of the ore from the Joachimsthal uranium mines. An anonymous benefactor has now given about \$100,000 to erect and equip an institute for physical research with this radium. A Physical Institute has long been planned at Vienna and the Radium Institute is to adjoin it. It is hoped that Vienna will become a center for research on the properties of radium, as it has the monopoly at present of its production.

#### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Aug. 15, 1908.

#### The Care of the Feeble-Minded.

The royal commission on the care of the feeble-minded, which was appointed in 1904, has issued an elaborate report, which will be followed by six volumes of evidence and appendices, giving in detail the grounds on which the commissioners have arrived at their conclusions. They estimate that there are no fewer than 149,268 feeble-minded persons in England and Wales, in addition to the 121,979 who are certified to be insane, making a total of 271,607, or 0.83 per cent. of the population who are unfitted to be entrusted with the direction of their lives or the care of their property. The



commissioners recommend an extension of the existing protection of property under the Lunacy Act of 1890 to all classes of the mentally defective.

### The Royal Institute of Public Health.

The annual congress of the Royal Institute of Public Health has been held at Buxton. The president, Sir James Crichton Browne, delivered an important address on "Parasimony in Nutrition." He observed that of all methods of living the most important are those which relate to the upkeep of the body by food. The recognition of its importance had of late years led to constant repetition of the inquiry: "What must I eat to be saved?" and replies had been furnished by a shouting multitude of enthusiasts, cranks and empirics, each with an infallible system of his own. The reaction against overfeeding was in danger of being carried to excess. The standards of Professors Voit and Atwater had until lately been generally accepted by physiologists and the first indication of their being excessive proceeded from an American, Mr. Horace Fletcher, who believed he had discovered the enormous importance of prolonged mastication and the maintenance of health and strength by means of it on much less food than had been regarded as necessary. The late Sir Michael Foster invited Mr. Fletcher to Cambridge, where some observations were made to some extent confirmatory of his claims. In two individuals it was found that complete bodily efficiency was maintained on a well-chewed dietary of less than one-half of that usually taken. But Sir Michael declared it to be doubtful whether continued efficiency could be maintained on this low diet. Further investigations were made by Professor Chittenden at Yale, with results that had attracted widespread attention. But as the investigation proceeded the chewing became unimportant, except in so far as it diminished the craving for food. The real question was found to be the quantity of proteid required by the body. The conclusion was reached that the quantity of proteid required was not more than one-half of that previously considered necessary. Sir James submitted some considerations which should induce his audience to pause before accepting Professor Chittenden's views. If the latter were right, then all the world up to this time, except a few supposed faddists, was wrong. All the successful races of the world had habitually consumed proteid far in excess of Chittenden's standard and what is required for the repair of tissue. It was inconceivable that they should all under the most diverse conditions have made the same mistake. Sir James concluded that it is not so much economy as poverty in nutrition that is the question of the hour.

### Sick Workhouse Children to Go to the Country.

The great empty hospital at Carshalton, built for infectious diseases and containing 800 beds will be used for the sick children of the various London infirmaries. These children number over 2,000, and at present are in the crowded wards of the London infirmaries mixed with adult patients.

### The Hospitals and Medical Education.

The changes which modern progress has produced in the methods of teaching medical students have resulted in something approaching a crisis in the London medical schools. The development of laboratory methods of instruction has enormously increased the cost of teaching. The schools, especially the unendowed ones, can cover this only by increasing the fees of students to a prohibitive figure or by obtaining contributions from the benevolent rich. But the latter prefer to contribute to the hospitals, and, largely in consequence of the outcry raised by the antivivisectionists, the King's and the Hospital Sunday funds are forbidden to contribute anything to the medical schools, though attached to the hospitals. A proposal was made to reduce the expenses of maintaining the staffs and laboratories of the various medical schools of the metropolis by substituting for them a single institute of medical sciences at which all the preliminary subjects, such as chemistry, physiology, pathology, etc., would be taught. The enormous saving and the increased efficiency of such a scheme are evident. Subscriptions amounting to \$500,000 were subscribed for the purpose, but the scheme has fallen through. It only remains for the schools which are in difficulties to endeavor to obtain endowments. But an attempt in this direction by St. George's Hospital School has proved disappointing. In Great Britain the wealthy largely, and even munificently, contribute to the numerous charities, but will seldom give anything for scientific objects. The teaching of medical students is regarded as a process which should be paid for by the students.

### Accident or Disease?

A knotty point connected with accident insurance has been raised in the courts. A man was hunting when his horse, caught on a strand of barbed wire concealed in a fence, threw him on wet ground. Thoroughly soaked, he rode home, which took him an hour and a half. Pneumonia supervened the next day and proved fatal. He was insured against accident, and it was contended that the fall, wetting and exposure in combination were the cause of the pneumonia, by diminishing the general vitality of the system and the local resistance of the lung, so that the pneumococci were enabled to multiply. The insurance company relied on a clause in the policy excluding "disease or other intervening cause" as "the direct or proximate cause of death." The case turned on the exact meaning of "direct or proximate." With some doubt the judge decided in favor of the claimant.

### Researches Subsidized by the Government.

The president of the local government board has authorized the following researches in connection with the annual grant voted in parliament in aid of scientific investigations, concerning the causes and processes of disease: 1. A further inquiry by Dr. H. M. Gordon into the character and differential tints for the microbes in the throats of patients suffering from scarlet fever. 2. An investigation of protracted and recurrent infection in diphtheria by Dr. Theodore Thomson and Dr. C. J. Thomas. 3. An investigation of protracted and recurrent infection in typhoid fever by Dr. Theodore Thomson, in conjunction with Dr. Hedingham. 4. Investigations by Dr. V. G. Savage into the presence of paratyphoid bacilli in men, the differentiation of streptococci in goats and the bacteriologic measurement of pollutions of milk. 5. A statement of the results of bacteriologic examination of over 7,000 samples of milk from different parts of the country by Professor Delépine. 6. An investigation of the rôle played by flies as carriers of disease, by Dr. Copeman and Professor Nuttall. 7. An inquiry into the condition of flock bedding by Dr. Farrar. The bacteriology and biology of bedding will be undertaken by Professor Nuttall. 8. A statistical inquiry into the social incidence of disease will also be begun. The prevalence of varicose veins and hernia under different social conditions is the first of a number of subjects under this head.

### PARIS LETTER.

(From Our Regular Correspondent.)

PARIS, FRANCE, Aug. 11, 1908.

### INTRODUCTORY.

In these letters, of which this one inaugurates the series, I propose to keep the readers of THE JOURNAL informed in regard to the scientific and professional movement of medicine in France. The professional and social aspects of medicine will often have the first place. In fact, in regard to scientific questions, the care with which THE JOURNAL notes the original works as they appear in the best French periodicals and summarizes the most interesting, relieves the correspondent of the task of dwelling on things that can be learned fully as well from this extremely valuable section, the "Current Medical Literature." However, as the works analyzed in this department of THE JOURNAL represent only one of the many manifestations of scientific activity, I shall occasionally seek to inform the readers of the progress realized in the medical sciences in France in congresses or in reports before scientific societies or in the event of the publication of some book of general interest. But especially I hope to present professional questions—medical economics—for in France, as elsewhere, under the influence of the ever-increasing complexity of social conditions, these questions are becoming more and more important for the physician, while at the same time this aspect of medical life in France is that of which physicians of other countries generally know least, and in regard to which they have only vague ideas.

### A SIGN OF THE TIMES: THE PRACTITIONERS' CONGRESS.

From the professional point of view, the present epoch is of unusual interest, as for some time there has been considerable agitation in the profession in France. In April, 1907, for the first time the general practitioners of the country assembled in a congress to discuss professional interests exclusively; and a few weeks ago a second congress was held at Lille, as has already been mentioned in THE JOURNAL. Reform in medical education and the free choice of the physician by the injured in industrial accidents were the main subjects discussed. Without wishing to attribute too much importance to the



results of these two congresses, it must be recognized that the mere fact of such assemblies devoted exclusively to discussion of questions affecting the profession as a whole, is certainly a significant sign of the times.

#### THE MEDICAL CRISIS.

What are the causes of this agitation? The principal cause lies in the hard times which the medical profession in France is now experiencing. Twenty years ago Professor Bouchard was able to say in inaugurating his course of general pathology: "We are living in a time in which it is good to live, when one is interested in medicine." This is equally true today, but unfortunately many of our confrères might be tempted to modify this aphorism a little by adding: "We are living in a time when it is hard for a physician to live." The practice of medicine has in fact become very unsatisfactory. Of course, there are no exact statistics on the subject. But Dr. A. Clere has been conducting an inquiry which allows a certain insight into the gravity of the situation. Dr. Clere sent out a question blank asking information in regard to: 1, Years of practice; 2, fees received last year; 3, professional expenses. The answers received allowed the following conclusions, based on the total average practice: In the large cities after the second year of practice the income is 3,000 francs (\$600), which increases by \$200 each year up to the twelfth year, when it ranges from 12,000 to 14,000 francs (\$2,400 to \$2,800). After the twenty-fifth year it declines, and by the thirty-fifth reaches \$600 or less. In the small towns and in the country, the débutant rapidly reaches 4,000 francs (\$800), 6,000 (\$1,200) by the third year and 8,000 (\$1,600) after seven years, without ever getting much higher, and falling by the twenty-fifth year below \$1,200, with insignificant results after the thirtieth year.

But to appreciate the actual meaning of these figures the professional expenses must be borne in mind. These expenses are high when one's practice is over \$1,000 or \$1,200. These expenses are particularly high for specialists, for physicians at health resorts, etc. For example: X., general medicine, income 27,225 francs, professional expenses, 7,000 francs. Y., specialist, income 30,000 francs, professional expenses 14,000, household expenses 15,800 francs. Z., winter resort, fees 6,200 francs, professional expenses 4,000 francs. XX., mineral springs resort, fees 6,000 francs, and professional expenses 3,000 francs. (A franc, it will be remembered, is one-fifth of a dollar, or 20 cents.)

Thus the practice of medicine is far from assuring a livelihood for the physician and his family, and a large number of practitioners find themselves obliged to make up the deficit by extramedical means.

#### CAUSES OF THE CRISIS.

At first it was believed that one of the principal causes of this crisis was the afflux of foreign students, who after graduation settled down in France to practice medicine. In order to remedy this competition, in 1898 a university diploma was inaugurated for foreign medical students which did not confer the right to practice, like the state diploma. But the importance of this competition had been singularly exaggerated, as is shown by the fact that the number of foreign students has remained about the same since as it was before, very few of them wishing to settle down in France. Foreigners wishing the state diploma are now obliged to produce the same credentials as French students (the baccalaureate degree and certificate of studies in physics, chemistry and natural history), but the number of medical students in the seven medical schools of the country is 819, in 1908 (of whom 635 are inscribed for the university diploma), while the number in 1898 was 908. The restrictive measures adopted in regard to foreign students had no effect in preventing the onward march of the medical crisis, which shows that its cause must be sought elsewhere. This cause it was supposed had been found when the term "*pléthore médicale*," had been pronounced. In France, where picturesque expressions are so popular, this term of "medical plethora" has had a great vogue. And yet I venture to affirm that it is with this term as with so many other formulas which everyone repeats and accepts with confidence, without ever taking the trouble to verify whether and in what measure they represent the truth.

In the first place, it is not true to say that the number of physicians is constantly increasing. Since 1900 the total number of students matriculated at the medical school in Paris has been constantly declining. From 3,328 in 1900 it dropped to 2,754 in 1907, and only during the current year has it gone up a little (3,024). As to the number of physi-

cians graduated by the various faculties, this has also regularly declined. From 1,150 in 1901 it dropped to 914 in 1907. The Paris school, which in 1901 graduated 679 doctors, in 1907 graduated only 434.

There are at present in France (exclusive of the colonies), 19,089 physicians; even adding the health officers (the law of 1892 suppressed the *officiat de santé*, but the health officers appointed before this date have the right to practice), the total number of physicians is 20,020. According to the last census (March, 1906), the total population of France is 39,252,267 inhabitants. There is thus one physician to 1,966 inhabitants, or omitting the health officers, one to 2,056 inhabitants. In other words, for each 10,000 inhabitants there are 4.86 physicians, which is a proportion much lower than that in other countries, especially in the United States.

What proves still better that the total number of physicians is not excessive, is that about 30,000 of the 36,000 communes into which France is divided have no medical man, although 17,000 communes have less than 500 inhabitants each.

#### AN OVERCROWDED PROFESSION.

Thus we see that France is not overcrowded with physicians. But the medical men are too irregularly distributed. Beside the departments which, like those of the Alpes-Maritimes (Nice), have 12.2 physicians to the 10,000 inhabitants; there are others, like Finistère, where the proportion drops to 1.96 per 10,000. The large cities, of course, have the greatest attraction for medical men. Paris, for example, has 3,901 physicians for a population of 2,763,393, which gives one physician to 708 inhabitants. The proportion is still higher at Nice, where there is one doctor to each 536 inhabitants. This is the real source of the trouble. The young physicians who, in the cities where the profession is so overcrowded, have such a hard time and often succumb in the struggle, could easily gain a livelihood in the small towns and rural districts, where competition and the struggle for existence are much less severe, and where, besides, the professional expenses are infinitely less onerous. This is a most important point. In the large cities a considerable proportion of one's income is absorbed by keeping up an establishment which has to be more or less luxurious. Thus numbers of young physicians who imprudently settle down at Paris find themselves compelled to leave the capital after a certain time. It may not be without interest to remark that of late physicians change their addresses very frequently. Of course, a change of residence may be made for various reasons, but these frequent changes offer an indirect proof of the difficulties experienced by many physicians in establishing a practice at the point first chosen.

On the other hand, the abuse of free medical care aggravates very much the material situation of physicians. On all sides the free clinics are multiplying, and numbers of well-to-do persons, even the wealthy, frequent these clinics without scruples, as well as the free consultations in the hospitals. This has reached such a point that some ironically ask whether we may not soon have to pay the sick to allow us to treat them. The former dean of the Paris medical faculty, Professor Debove, tells the story of a patient in his service whom he wished to demonstrate at a clinical lecture, but the patient demanded pay by the day, saying that he knew his case was very interesting, and that he would enjoy being in a clinic with which he was familiar.

Besides all this, physicians are peculiarly exploited by certain lodges, mutual aid societies and the like. The number of these organizations is constantly increasing, and as they charge their members only very low rates, scarcely sufficient to insure their beneficiaries a suitable daily indemnity in case of illness, they skimp on medical attendance. These societies also present another inconvenience, which is that their members are not allowed their free choice of a physician, but must take the physician hired for the purpose by the society.

#### THE NEW FRENCH PHARMACOPEIA.

The new Codex will soon be ready for distribution. The last edition of the "*Codex medicamentarius*" (the French pharmacopeia) was issued Feb. 13, 1884. As this edition had ceased to conform with the present status of therapeutics and with the progress realized in this field of science, a special commission was appointed by the minister of public instruction for revision of the Codex. This commission has been at work for several years and concluded its labors some time ago, so that an official decree of last July stated that the use of the new Codex (edition of 1908) is and remains obligatory on and after September 15. As yet, however, the new edition has failed to make its appearance.



Pharmacology

[CONTRIBUTIONS FROM THE CHEMICAL LABORATORY OF THE  
AMERICAN MEDICAL ASSOCIATION.]

URISEPTIN.

Another Proprietary of the "Hidden Drug" Type.

W. A. PUCKNER AND W. S. HILPERT.

"Uriseptin," manufactured by the Gardner-Barada Chemical Co. of Chicago and claimed to be a "urinary antiseptic, uric acid solvent and diuretic," was examined in the laboratory of the American Medical Association to determine to what extent the claims made for it are justified.

The preparation as purchased in the open market bears a label which presents the claims of the manufacturers, emphasized by the chemical analysis duly signed by an analyst and attested by a notary. Accompanying is a reproduction of part of the label.

Before the examination had extended very far it was found that discrepancies existed between facts and claims, and by the time the analysis was complete Uriseptin was found to be in the same class as many other proprietary remedies that have been discussed in these columns.

Our examination shows that the most misleading statement is that concerning the "lithium-formaldehyd" compound the

compound would be most improbable, yet considerable time was spent in searching the chemical literature for such a compound. Thorough search, however, demonstrated that no such compound, nor any that even approximated it, has been described.

The question then arose as to the form in which the lithium and the formaldehyd are present. The statements regarding its properties as a urinary antiseptic and the fact that the preparation is said to slowly liberate formaldehyd in the bladder point strongly to the presence of hexamethylenamin.

Tests<sup>1</sup> were applied to demonstrate whether the formaldehyd was present as a lithium compound, and if not, whether it existed in the form of hexamethylenamin. By these the presence of hexamethylenamin was proved and the absence of formaldehyd in other combinations demonstrated. This fact alone shows that the preparation is deliberately marketed under a false claim, and it shows further that the analysis on the label is worthless. The quantitative method of analysis—which will be published in the *Journal of the American Chemical Society*, September, 1908, and of which an outline appears below<sup>2</sup>—demonstrated the presence of 5.51 gm. hexamethylenamin per 100 c.c. (25.15 gr. per fluidounce).

Besides the hexamethylenamin, Uriseptin contains lithium<sup>3</sup> and a benzoate.<sup>4</sup> Concerning the latter nothing is said in the analysis, whose worthlessness is again demonstrated. By quantitative methods<sup>5</sup> Uriseptin was found to contain lithium and a benzoate in such proportions as would indicate that the lithium and the benzoate radicle exist as lithium benzoate. This fact is further indicated by the claims made for the preparation regarding its properties as a uric acid solvent, for which purpose lithium benzoate is often used. Again, the demonstration that the formaldehyd present is in combination as hexamethylenamin precluded any possible chemical combination between lithium and formaldehyd and adds another strong point in support of the conclusion that the lithium and benzoic acid are in combination as lithium benzoate.

CONCLUSION.

By chemical analysis the active ingredients of Uriseptin are shown to be hexamethylenamin, approximately 5.5 gm. per 100 c.c. (about 25 gr. to each fluid ounce), and lithium benzoate, approximately 0.70 gm. per 100 c.c. (about 11 gr. to each fluid

white body which later turned to a mass of crystals. This crystalline body when washed and dried and boiled with dilute acid liberated formaldehyd. The resulting solution responded to tests for ammonia, hexamethylenamin and mercury. The same test applied to pure hexamethylenamin solution gave exactly the same results. A still further confirmation that hexamethylenamin was present as such and not in some combination which bromin water or mercuric chlorid might decompose, was the fact that chloroform extracted from Uriseptin a substance that had the same crystalline form as pure hexamethylenamin crystallized from chloroform, and which responded to all the above reactions for hexamethylenamin.

2. QUANTITATIVE TEST FOR HEXAMETHYLENAMIN.—Uriseptin was boiled with alkali to liberate and drive off all ammonia present as ammonium compounds, and then boiled with acid to decompose the hexamethylenamin. Finally the mixture was made alkaline again to liberate the ammonia resulting from the decomposition of the hexamethylenamin and distilled into normal acid; the actual quantities taken and the results obtained are given here: It was found that 5.0346 gm. of Uriseptin yielded an equivalent of 74.43 c.c. tenth-normal ammonia and 5.0197 gm. Uriseptin yielded an equivalent of 74.33 c.c. tenth-normal ammonia. The average of the two calculated to hexamethylenamin gives the result given above, 5.51 gm. per 100 c.c. or 25.15 grains hexamethylenamin per fluidounce.

3. LITHIUM.—This element was identified in the ash resulting from the incineration of Uriseptin by the ordinary tests.

4. BENZOIC ACID.—This was found by making a chloroform extraction of an acid solution of Uriseptin and applying tests for benzoic acid to the residue left after the evaporation of the chloroform.

5. QUANTITATIVE TESTS FOR LITHIUM AND BENZOIC ACID.—Lithium was estimated by the method of Gooch (*Am. Chem. Jour.*, ix, p. 33). Uriseptin, 2.8696 gm., yielded 0.0246 gm. lithium sulphate ( $\text{Li}_2\text{SO}_4$ ) and 2.1330 gm. Uriseptin yielded 0.0228 gm. lithium sulphate ( $\text{Li}_2\text{SO}_4$ ), giving an average of 0.95 per cent.  $\text{Li}_2\text{SO}_4$  which is equivalent to 2.35 gm. lithium benzoate in 100 c.c. The benzoic acid was determined by extraction of an acid solution of Uriseptin, evaporating and titrating the residue. Estimations made in this way indicated the presence of 2.00 per cent. of benzoic acid, or 2.10 gm. per 100 c.c. To show that the benzoic acid and lithium are present in the proper proportions to form lithium benzoate, the following is given: Calculating the proportional quantity of benzoic acid required for the quantity of lithium found, the figure, 2.24 gm. per 100 c.c., was obtained, agreeing very closely with the percentage of benzoic acid actually found, that is, 2.00 per cent., or 2.10 gm. per 100 c.c.

**ANALYSIS**

Sample of "Uriseptin" manufactured by the Gardner-Barada Chemical Co., Chicago, Ill., was found to contain:

Specific Gravity at 15.5 C.....	1.0716
Total Solids .....	20.42 p.c.
Alcohol (Ethyl).....	7.56 p.c.
Water (by Difference).....	71.92 p.c.
Total Ash .....	1.46 p.c.
Lithium Oxide .....	0.50 p.c.
Formaldehyde .....	5.62 p.c.
Acidity 100 cc equals 6.4 cc Normal Alkal.	
Sugars.....	Present
Couch Grass Extract.....	Present
Corn Silk Extract.....	Present

The Total Solids consist mainly of the sugars and extract of corn silk and couch grass. The couch grass and corn silk extracts were determined by taste and smell in comparison with authentic samples of same products. The Lithium Oxide and the Formaldehyde are in combination in the Uriseptin and together represent 20.77 grains per liquid oz. 1 remain.

Yours very truly,

(Signed) DR. EDWD. GUDEMAN.

STATE OF ILLINOIS } ss.  
COUNTY OF COOK }

Subscribed and sworn to before me this 13th day of May, 1908.

(Signed) PAUL E. BUENEFELDT,  
Notary Public.

**URISEPTIN**

**FORMULA**  
(See analysis).

Each fluid ounce of Uriseptin contains Formaldehyde combined with Lithium dissolved in concentrated liquid extract of Corn Silk and Couch Grass, and will liberate a sufficient quantity of Formaldehyde (24 grains) to impregnate the daily secretion of urine (45-50 fluid ounces) to a 1-1000 solution.

**PROPERTIES**  
Urinary Antiseptic, Uric Acid Solvent, Diuretic.

**INDICATIONS**  
Diseases of the urinary tract and their complications—Nephritis, Pyelitis, Urethritis, Gonorrhea, Gleet, Cystitis, Bacteriuria, Uremia, Phosphaturia, Prostatitis. Diseases dependent on uric acid diathesis—Gout, Rheumatism, Calculus, Asthma and generally as an antiseptic and uric acid solvent.

**DOSE**  
Tablespoonful night and morning, or one to two teaspoonfuls four times a day, preferably in hot water.

Reduced reproduction of part of the label from a package of Uriseptin.

presence of which is claimed, more or less directly, by both the manufacturers and the analyst employed by the manufacturers. Although the chemical properties of lithium and formaldehyd indicate in themselves that the existence of such a

1. QUALITATIVE TESTS FOR HEXAMETHYLENAMIN.—The identification tests used to demonstrate the presence of hexamethylenamin in Uriseptin were those proposed by Horton (*Ber. d. deut. Chem. Ges.*, xxi, p. 2000) and by P. Dobriner (*Zeit. f. anal. Chem.*, xxxvi, p. 44) in which hexamethylenamin dibromid ( $\text{C}_6\text{H}_{12}\text{N}_4\text{Br}_2$ ) and the mercuric chlorid compound ( $\text{C}_6\text{H}_{12}\text{N}_4\text{Cl}_2\text{Hg}$ ) are made use of. The addition of bromin water to Uriseptin gave an orange-colored precipitate which when washed and dried had the appearance of the precipitate obtained when solutions of pure hexamethylenamin are treated with the same reagent. This precipitate on drying over potassium hydroxid became a light yellow identical with the corresponding body obtained from pure hexamethylenamin. When boiled with water it gave off the odor of formaldehyd and by ordinary tests ammonia, bromin and hexamethylenamin were found in the resulting solution exactly as is the case when pure hexamethylenamin dibromid is subjected to the same conditions. The melting point of the yellow body obtained was found to be 196-200 C., which is practically the melting point of hexamethylenamin dibromid. As a final and rigorous proof of identity pure hexamethylenamin dibromid was mixed with some of the supposed dibromid and the melting point taken. The melting point of the mixture was found to be 194-200 degrees demonstrating beyond question the identity of the compound. As a confirmative test the mercuric chlorid test was applied. Mercuric chlorid precipitated from Uriseptin an amorphous



ounce), neither of which compounds is mentioned in the advertising matter on the label or in the so-called "analysis" on the label. The statements concerning the composition of Urisepitin are false and appear to be a deliberate attempt to mislead physicians.

COMMENT.—Investigation of the various "patent" and so-called "ethical proprietaries" advertised to the public and to the medical profession shows that those that have any value as therapeutic agents depend for that value on some well-known drug or drugs. Hence, while many proprietaries have some virtue, the ingredients which are of any value are so concealed by the coined and "near-scientific" names applied to them that these drugs are usually unrecognizable. The many and various acetanilid mixtures furnish examples of this class of proprietaries. And now we find another example in that much advertised nostrum, Urisepitin.

According to our chemists, the chief ingredients of Urisepitin are hexamethylenamin and lithium benzoate. Hexamethylenamin is a valuable so-called urinary antiseptic—probably one of the best we have. It is a pity that more physicians do not know the value of this drug in and of itself; it is a common ingredient of many proprietaries, and yet too seldom prescribed under its true name. There is no reason for its being given in the form of a nostrum; it requires no skill in compounding, for it is best given in its powdered form, either in capsules or otherwise. So that, like acetanilid, the old argument of the nostrum men that the preparation needs skill in compounding will not hold. If a physician wants to prescribe hexamethylenamin let him prescribe it in its simplest and best form, and thus know exactly what he is giving.

Lithium benzoate also has its rightful place in the materia medica, but not hidden in a proprietary mixture to be prescribed unknowingly. It is hard to conceive of any one thing that operates more disastrously against scientific therapeutics than the vicious practice of marketing under proprietary names standard and valuable drugs, with their identity purposely concealed. Yet how frequently it is done. Well-known drugs of unquestioned worth are combined with those that are little known and of doubtful value, or more likely absolutely worthless, the mixture is put on the market under a high-sounding name and it is exploited through physicians as a panacea for all kinds of diseases.

In this, as in so many other instances, an "analysis," made to order is given to lend an air of apparent respectability and scientific standing to the preparation or to its exploiters, with the object, of course, of misleading physicians into thinking they are reading unbiased testimony. In addition, the "literature" accompanying the preparation is usually a jargon of pseudo-scientific verbiage put in to serve the same purpose as the analysis—that of catching the careless physician.

This state of affairs will continue just so long as the medical profession will tolerate it—and no longer. So long as members of our profession will prescribe proprietaries on the statements of their owners—both as to their composition and therapeutic value—just so long will pseudochemical and pseudopharmaceutical companies fatten at the expense of the medical profession and to the detriment of the public health.

#### PYRENOL TABLETS AND EGLATOL CAPSULES.

##### More Unreliable Horowitz Products.

We have had occasion in commenting on the unreliability of certain manufacturers regarding their so-called synthetic products to refer to the preparations of the *Chemisches Institut* of Dr. A. Horowitz of Berlin. It has been shown<sup>1</sup> that several of the products of this concern do not possess the composition claimed for them. It is not always possible to produce a synthetic compound by putting the necessary materials together, and the failure of such a combination to possess uniform properties does not always justify an accusation of dishonesty or incompetency. When a pharmaceutical manufacturer, however, puts out tablets that vary widely in their content of the active ingredient, either gross carelessness or in-

tentional fraud must be assumed. G. Frerichs of Bonn has recently investigated the tablets of Pyrenol put out by Horowitz to determine the amount of extraneous material found in them.<sup>2</sup>

The tablets are advertised to contain 0.5 gm. (7.5 grains) of Pyrenol. While the tablets contained much matter which was insoluble and therefore not Pyrenol, yet the total weight of the tablets proved to be on the average but little more than 0.5 gm. (7.5 grains), in some cases even less. The percentage of Pyrenol in these tablets varied from 45 to 90 per cent., and on the average it would appear that in giving the Pyrenol tablets the physician would administer only about two-thirds of the amount of Pyrenol which he would naturally believe that he was giving.

Frerichs has since investigated capsules of Eglatol,<sup>3</sup> a mixture of chloral hydrate, antipyrin, caffeine, urethane and menthol, put up by Horowitz and found similar irregularities in weight, the empty capsule sometimes weighing more than the contents. Frerichs sarcastically remarks that the physician may content himself with the feeling that his patient is getting in each capsule about the same amount of gelatin and may rest assured that he will not get too large a dose of the medicine. Frerichs has also examined Arhovin capsules,<sup>4</sup> put up by Horowitz, and found that the amount of Arhovin which they contained varied widely and usually was much less than the amount which they were claimed to contain.

These products, except Eglatol, are on the American market, so that these investigations are of practical importance to the physicians of the United States. Such investigations as these of Frerichs serve to emphasize again the need of constant supervision of manufactured pharmaceutical products.

## Correspondence

### Determination of Sugar in Urine.

BATTLE CREEK, MICH., Aug. 14, 1908.

To the Editor:—In THE JOURNAL, Aug. 8, 1908, page 496, is an excellent method for the rapid determination of the percentage of sugar in urine. I wish to congratulate Dr. Moffitt on his success in simplifying this determination of the percentage of sugar so that anyone can do it in a few minutes. I believe, however, that I can suggest a slight change in the method that will make it even more simple. If 1 c.c. of Fehling's solution be added to 4 c.c. of aqua ammonia instead of the distilled water the result will be, in effect, Pavy's solution, in which the reduced copper oxid is held in a colorless solution. The advantage of this method is that the end reaction, when the Fehling's solution is completely reduced, can be more accurately and easily determined. One does not have to wait for the copper oxid to settle, nor is it necessary to filter the solution to make sure that all the copper is reduced. I have tested this method, using the one described by Dr. Moffitt as a control, and find that it is accurate.

WILFRID HAUGHEY.

### Additional Members of the American Committee of the International Medical Congress.

NORTHEAST HARBOR, MAINE, Aug. 14, 1908.

To the Editor:—Please add the following names inadvertently omitted from the list previously sent you for membership of the American committee for the Sixteenth International Medical Congress, and published in THE JOURNAL, June 13, 1908, page 2008:

W. W. Keen, M.D., Philadelphia.	James Tyson, M.D., Philadelphia.
Joseph Leidy, M.D., Philadelphia.	E. L. Trudeau, M.D., Saranac,
Charles Kolloch, M.D., Charleston, S. C.	N. Y.
James Ewing, M.D., New York.	George E. de Schweinitz, M.D.,
Walter James, M.D., New York.	Philadelphia.
H. A. Hare, M.D., Philadelphia.	L. J. McMurtry, M.D., Louis-
George Brewer, M.D., New York.	ville, Ky.
John Munro, M.D., Boston.	A. A. Van der Veer, Albany,
	N. Y.

J. H. MUSSER.

1. Iodofan, THE JOURNAL A. M. A., March 7, 1908, 784; Arhovin, *ibid.*, May 9, 1908, 1541.

2. Apotheker Zeitung, July 18, 1908, p. 521.

3. Apotheker Zeitung, July 22, 1908, p. 529.

4. Apotheker Zeitung, July 25, 1908, p. 538.



## Book Notices

**OBSTETRICS.** A Text-book for the Use of Students and Practitioners. By J. Whitridge Williams, Professor of Obstetrics, Johns Hopkins University. Second Enlarged and Revised Edition. Illustrated. Cloth. Pp. 950. Price, \$6.00. New York: D. Appleton & Co., 1907.

This edition has been brought up to date in every respect, many chapters having been rewritten, and new sections added on the "Metabolism of Normal Pregnancy," "Vaginal Cesarean Section," and "Pubiotomy and Contractions of the Pelvic Outlet."

In regard to the etiology of the vomiting of pregnancy, the author refers to his monograph, published in 1906, in which he stated that the present knowledge of the subject justified the differentiation of three types of serious vomiting of pregnancy: reflex, neurotic and toxemic. The reflex variety, of course, is dependent on some abnormality elsewhere in the body. The neurotic type he considers allied to hysteria and readily amenable to suggestive treatment. The toxemic variety is associated with profound disturbance of metabolism manifested by characteristic changes in the urine and the presence of definite changes in the liver and kidneys. He refers to the fact that it was first shown in his clinic that the urine in these patients presents a high ammonia coefficient, indicating that a much greater proportion than usual of the total nitrogen is being excreted in the form of ammonia. He shows the difference in the urine in neurotic and in toxemic vomiting by means of charts showing the relative amounts of ammonia and nitrogen.

He discusses at length eclampsia and the theories of its causation and then quotes Zweifel's apt designation of it as "the disease of theories." As Williams says: "Unfortunately, exact knowledge is still lacking." He does not agree with Davis and Edgar that eclampsia is always a preventable condition, though he states that prophylactic treatment is productive of untold good in many instances. In treatment, if the patient is not markedly improved after delivery, he advises bleeding—from 500 to 800 c.c.—the amount of blood withdrawn to be replaced by physiologic salt solution. He has followed out this procedure with good results, even in patients in whom the pulse was thin and weak. He refers to Krönig's employment of lumbar puncture in these cases, but does not comment on it; he also mentions renal decapsulation as performed by Edebohls, but states that it has been done in too few cases to permit of a proper estimation of its value or indications. The value of *veratrum viride*, he thinks, is much over-rated.

Pubiotomy, Williams believes, will practically displace Cesarean section for borderland cases, though he states that it is not indicated in cases in which the conjugate vera measures less than 7 centimeters. He describes in detail the technique followed in his clinic and reports good results.

The book is profusely illustrated and a complete bibliography is appended to each chapter. It is commended as one of the most practical text-books on obstetrics.

**DIE PRÜFUNG NICHTOFFIZIELLEN PRÄPARATE.** Part I. Von Dr. Gustav Mossler. Cloth. Pp. 133. Vienna: Carl Fromme.

The need of an impartial and disinterested description of the synthetic proprietaries and those definite chemicals which are not proprietary, but have been too little used or too recently introduced to secure a place in the Pharmacopeia, is quite generally felt, since these remedies should be brought to some sort of official standard. What has been inaugurated by the medical profession in this country by the formation of the Council on Pharmacy and Chemistry has been carried out in other countries under the auspices of the pharmaceutical authorities. Thus we have the publication of the British Codex under authority of the Council of the Pharmaceutical Society of Great Britain and the work undertaken by the pharmaceutical institute of the University of Berlin. Professor Mossler's position gives a certain authoritative character to his work. The book is intended primarily for the pharmacist as a guide in the examination of synthetic and unofficial chemicals as to their identity and purity. Noth-

ing is said in the body of the work of pharmacologic actions or therapeutic uses. Some of the preparations are official in the U. S. Pharmacopeia. The preparations are listed alphabetically by their chemical names, the proprietary name being given a subordinate place. The information of the body of the work is supplemented by several important tables, one giving common names and, very briefly, therapeutic characters, a second being a list of the non-official reagents, the third, a bibliography, the fourth, a list of patents and trademarks. This volume constitutes the first part of the work and it is the intention of the author in the second part to introduce the remedies and preparations which have appeared since the publication of the first part and to omit those the use of which has been discontinued. The work appears to be well done and to merit the support and the approval of both the medical and pharmaceutical professions.

**ESSENTIALS OF DIETETICS.** By Amy Elizabeth Pope, Instructor in Dietetics in the Schools of Nursing of the New York Hospital, and Mary L. Carpenter, Director of Domestic Science of the Public Schools, Saratoga Springs, New York. Cloth. Pp. 249. New York: G. P. Putnam's Sons, 1908.

In the preface the authors state that they have kept in mind three guiding principles: 1, That the book should be adapted in plan and scope to the needs of nursing schools; 2, that it should make a useful dietary guide for the home; and 3, that it should be sufficiently comprehensive to include essential, without being so large as to bewilder by the inclusion of unessential information. After giving the necessary fundamental definitions regarding the classification of foods—nitrogenous, non-nitrogenous, carbohydrates, etc.—the authors discuss milk, eggs, fish, meat and plant foods, a chapter being devoted to each of these subjects. In the chapter on dietaries are considered methods of measuring heat, food values, calculating dietaries, etc., and it also includes several practical tables. "Feeding of Infants and Children," and "Diet in Disease" each occupies a chapter. The rest of the book is devoted to miscellaneous matter relating directly to the subject and includes a large variety of recipes, methods of cooking, etc. Keeping in mind the object of the book and those for whom it is intended, it is in every way satisfactory. While the book is not written for the medical profession, physicians will find in it many useful suggestions and much practical information.

**DISEASES OF THE NERVOUS SYSTEM.** By H. Campbell Thomson, M.D. (Lond.), F.R.C.P., Dean of and Medical Tutor in the Middlesex Hospital. Cloth. Pp. 480, with illustrations. Price, \$2.75. Chicago: W. T. Keener & Co., 1908.

This book is of convenient size and shape, although not large, covers an extensive subject very completely and is altogether abreast of the times. It is well written, the descriptions in it being clear and full, but without unnecessary verbiage.

The introductory section is devoted to the structure of the nervous system and to reflexes, rigidity, contractures, electrical reactions and lumbar puncture; the next, to diseases of peripheral nerves, while the following sections deal with the structural and functional diseases of the cord and brain.

The illustrations are numerous and well selected. Many are from the author's own collection, and others were supplied by Pierre Marie. Nervous diseases, better than many others, can be illustrated by well-selected photographs. The author has been fortunate in his selection; while a few are not so well produced and printed as could be desired, all are characteristic.

This is a good text-book for students and an excellent reference book for practitioners. It is, moreover, not so large but that a practitioner wishing to refresh his knowledge of nervous diseases can do so quickly.

**THE OPERATIONS OF SURGERY.** By Jacobson and Rowlands, Vol. I, Upper Extremity, Head, Neck and Thorax. Cloth. Pp. 926. Price, \$6.00. Vol. II, Abdomen, Lower Extremity and Spine. Cloth. Pp. 1139. Price, \$6.00. Philadelphia: P. Blakiston's Son & Co., 1908.

This work, now in its fifth edition, has undergone a steady enlargement and improvement from the first. The first edition appeared as a single modest volume; the second as a large volume; the third as two small volumes; the fourth



as one small and one large volume, and now the fifth edition, as two large volumes, of nearly 1,000 pages each. The special feature of this work which makes it so valuable, in addition to the operative technic, is the vast amount of instructive information concerning the indications for and the results of the various operative measures described. In this respect, the work has stood at the head of its class, and it is with profound regret that one reads in the preface that: "Hereafter, if further editions be called for the pen that is responsible will be in other hands." As we have reviewed the work in detail previously, further comment is unnecessary.

**TEXT-BOOK OF OPHTHALMOLOGY.** By Dr. Ernest Fuchs, Professor of Ophthalmology in the University of Vienna. Authorized translation from the eleventh revised and greatly enlarged German edition with numerous additions, by Alexander Duane, M.D., Surgeon, Ophthalmic and Aural Institute, New York, with 441 illustrations. Philadelphia and London: J. B. Lippincott Company.

This text-book has been referred to by reviewers as the "Bible of Ophthalmology." This new edition is the same complete work that former editions have been. One notices some changes due to recent advances in general medicine and in the specialty of ophthalmology. The editor of the American edition has made additions to the chapters on external eye muscles and refraction which are important, giving as they do the views of a competent and conservative American ophthalmologist. These additions can be recommended particularly to the younger American students of ophthalmology, and to foreigners, many of whom have obtained a wrong idea of our views on these subjects.

**INSOMNIA AND NERVE STRAIN.** By H. S. Upson, M.D., Attending Neurologist to the Lakeside Hospital, Cleveland, Ohio. Cloth. Pp. 142, with Skiagraphic Illustrations. Price, \$1.50. New York: G. P. Putnam's Sons, 1908.

The following list of topics discussed in these pages will give some idea of the contents of the volume: Illustrative Cases; Sleep and Fatigue; Emotions; Subconscious Sensory Reflexes; Atavistic Symptoms; Derangements of Formal Thought; Inductive Inhibition; Convulsive Seizure and Chronic Spasms; Vascular Potential; Mechanism of the Vasomotor Circuit; Nutrition and Vitality; Cell Potential in Evolution; Epieritic Neuropsychoses; Prognosis; Therapy; Predisposition and Heredity.

Something more than one-fifth of the volume is devoted to "illustrative cases" of insomnia, melancholia, hysteria, mania, neurasthenia, dementia præcox, etc., in which the patients were cured by removal of impacted teeth. Unfortunately, the condition of patients long after this treatment is rarely detailed by the author, but the cases are dismissed with the statement that they remained well. Many of these cases are illustrated by skiagraphs of the jaws and teeth. The treatment is novel and awakens doubt in the minds of most readers. However, there is no doubt of its efficacy in the author's mind. This portion of the book is the most noteworthy.

The author does not substantiate the claim that he has effected cures in the many cases described of the diseases enumerated above by removing the cause of the troubles by pulling teeth. That relief has sometimes been effected is doubtless true, for many such cases are relivable and often curable by suggestion and by nervous and mental shocks of various kinds. But that impacted teeth were really causative of the disorders named is very doubtful.

**WHY WORRY?** By George Lincoln Walton, M.D., Consulting Neurologist to the Massachusetts General Hospital. Pp. 275. Cloth. Price, \$1.00. Philadelphia: J. B. Lippincott Co., 1908.

Why worry? That's the question! And sometimes it is a most difficult one to answer. While this is the title of the book before us, it would have been more appropriate to have used the imperative "don't worry," which exhortation, however, would be as difficult to obey as the question is hard to answer. But this book tells us not only why we should not worry, but how to avoid worrying. It is an axiom that most of our troubles, mental as well as physical, are imaginary, and consequently can be avoided if we only will it so. This is the keynote of the book; it is applied to every-day affairs, to social and business worries, as well as to physical. A chapter is devoted to hypochondria, another to neurasthenia and another to sleeplessness and to other purely medical topics. The chapter on sleep is a most sensible one, and could

be read even by physicians with decided profit. We are told that, as a rule, the loss of sleep is not harmful, in and of itself, but that worrying about it is what plays the mischief. Worrying because one can not sleep exaggerates not only the cause but the effect. The book is full of sound philosophy and common sense. While it is written for the layman, the physician may read it with profit to himself, and will find in it many hints that will be helpful in his practice.

**PHYSICAL SIGNS OF DISEASES OF THE THORAX AND ABDOMEN.** By James E. H. Sawyer, M.A., M.D., Oxon., M.R.C.P., Lond. Pp. 188. Cloth. Price, \$2.00. New York: William Wood & Co.

There is nothing novel in the subject-matter of this book or in the method of treating it. Inspection, palpation, mensuration, succussion, percussio and auscultation of the thorax and abdomen are described accurately, and what can be learned from these methods of examination is fully stated. The causes of the phenomena demonstrated by physical examination in health and disease are given with theoretical explanations. The illustrations which are mostly diagnostic are useful, and many are in part or wholly original.

## Miscellany

**Typhoid in Ireland.**—According to the consular reports, that for a number of years there has been an unexplained prevalence of typhoid fever in Belfast, attended by serious mortality, notwithstanding the excellent water supply and the enforcement of many sanitary precautions. So persistent was the succession of cases that the disease might be said to be endemic rather than epidemic in form. The local government board for Ireland determined to make special inquiry as to its cause, and in February, 1907, appointed a commission for that purpose. This commission was directed to investigate thoroughly not only the unexplained prevalence of enteric fever, but also every matter bearing on the public health of Belfast. This work engaged the members until recently, and the report of the commission has now been made public. The commission found that the mortality from this cause during the past 25 years in Belfast has been so great that no other city or town of the United Kingdom has ever approached it. During the years 1900, 1901 and 1902 the annual death rate from this disease was 0.72 per 1,000 of population in Belfast as compared with 0.34 in Dublin, 0.13 in Manchester, and 0.15 in England and Wales. The continuous prevalence of this disease has been contemporaneous with improvements in the water supply and in the general sanitary condition of the city. The most manifest facts regarding it ascertained by the commission were that it affected the working classes rather than the wealthier population, and that the Jewish residents of the city were practically exempt. Dr. L. W. Darra Mair, medical inspector of the local government board for England, was asked by his fellow-members to devote himself to investigating the causes of the disease prevailing under these conditions. His conclusions were adopted by the commission as part of its report. The commission completely absolved the local water supply. One limited outbreak was traced to infected milk; but the endemic prevalence of the disease was shown to be due to the unrestricted gathering of cockles, mussels and other shellfish from the "slob-lands" of Belfast Lough, which are laden with the city's sewage. Hundreds of acres are exposed at low tide, and the shellfish are gathered by the poorer classes, being eaten chiefly raw. The exemption of the Jews was due to their refusal to eat these molluscs. The evidence on which these conclusions are based is fully set forth, with the urgent recommendation that: "as no system of sewage treatment within practicable limits of cost will fully safeguard the lough shellfish, powers should be obtained to prohibit the gathering of the same for human consumption."

**Pasteurized Milk an Economic Factor.**—In his recent address to the students at Heidelberg, Nathan Strass pointed to the fact that the old theorizing, indifferent arm chair phase of political economy has passed, and its students find that it is concerned with all sorts of positive facts, which must be learned by patient investigation. It is not strange, then, to find students of political economy listening to a lec-



ture in an experimental milk laboratory. Straus discusses the economic importance of infant mortality and its relation to the milk supply. He also adopts v. Behring's view that tuberculosis is chiefly acquired by alimentary infection in infancy and hence the milk supply becomes doubly important. The ideal remedy—breast feeding—is unattainable at present. In a town like Berlin more than two-thirds of the babies have to be bottle-fed. The production of pure milk from a bacteriologic standpoint involves an expense that necessitates a prohibitive price (15 cents a quart). The only practicable remedy is pasteurization, and this has been shown not only to be feasible on a large scale, but very effective in the reduction of infant mortality. Straus reviews the objections to pasteurization and shows that they are either unfounded or of little moment. He reviews his own efforts in popularizing the use of pasteurized milk for infant feeding, and gives an account of his recent experiment in the village of Sandhausen, near Heidelberg, where the mortality of children under 1 year was 46 per cent. previous to his establishment of a laboratory to furnish pasteurized milk. He says: "We have now the record for June—the first month of the harvesters of infant lives—and so far my prophecy has come true. In the five months ending June 30, only 7 children under 2 years have died, as against 24, the average for the same five months of the last five years." According to Straus' observation, the handling of market milk in Germany is not ideal: "Even big dealers are singularly lax, from an American point of view, in this matter. I see even superior bottled milk being hauled through the streets with nothing better than a thin cloth to protect it from the glaring sun. I greatly fear that in this country less attention is bestowed on the milk than on the beer. You keep that cool while it is traveling and after reaching the place of consumption, and leave the milk too often to take care of itself. Truly, there is something to be learned from brewers and landlords."

**The Economic Cost of Disease.**—The department of medical economics of the *Ohio State Medical Journal* for July contains the following interesting item: "The Bense bill enacted last winter gives authority to the State Board of Health to require of cities the purification of sewage and the public water supply. This law has much power for good. Physicians in every state should urge its enforcement if necessary to secure pure water. . . . Seven hundred and forty-eight cases of typhoid fever were reported to the Columbus board of health for April, 1908. Allowing 10 per cent. of deaths and \$10,000 for the economic value of a human life; \$2 a day as the earning capacity for only half the afflicted; \$10 a week for nursing; \$125 for average funeral expenses and \$50 for medical services, all very low estimates, the cost would be as follows:

"Seventy-five deaths . . . . .	\$ 75,000.00
"Loss in earnings . . . . .	26,928.00
"Funeral expenses . . . . .	9,375.00
"Medical services . . . . .	37,400.00
"Nursing . . . . .	41,800.00

"Total . . . . . \$193,503.00"

In a word, the bill for typhoid fever for the city of Columbus for one month is nearly \$200,000. This is really a minimum estimate and the real figures are probably considerably higher. Drinking water contaminated with sewage is not only a dirty habit, but an expensive one.

**Pathogenesis of Eclampsia.**—U. Fernandez has been publishing in the *Semana Medica* his experimental research on the internal secretion of the decidua serotina. The conclusion, in the issue, May 21, gives 52 microphotographs of the findings. Subcutaneous injection of placental elements from an animal of the same species induced in gravid guinea-pigs a pathologic condition closely resembling puerperal eclampsia, in both clinical and anatomic manifestations. When the injections induced such a reaction that the animal cast her young, there was no tendency to convulsions. Simultaneous injection of liver tissue or of thyroid gland seemed to have a retarding, a neutralizing action on the placental poison injected. The experiments seem to establish beyond question the existence of an internal secretion in the decidua serotina. Also that placental elements are deported from the placenta into the maternal circulation. Further, that these elements induce defensive processes in the blood, revealed by phenomena of hemolysis and

syncytiolysis. Also that these phenomena of syncytiolysis liberate the eclamptic poison which then displays its dreaded action on the maternal organs, inducing the clinical picture of eclampsia.

**Prophylaxis of Hydatid Cysts.** Two years ago a committee was appointed by the minister of agriculture in Argentina to devise means to reduce the prevalence of echinococcus disease. Among the measures proposed by the committee are placarding the walls with posters showing the various phases of evolution of the scolex and of hydatid cysts in man and its mode of propagation, with warnings against drinking unboiled water or uncooked vegetables from sources liable to be polluted, against allowing sources to become polluted, and, above all, warning against dogs, urging restriction of their number, and that they should not be allowed access to uncooked meat. The *Tania echinococcus* seems to be unable to complete its life cycle outside the body of the dog. The committee also advises that a pamphlet portraying the dangers of echinococcus affections and measures for prophylaxis should be distributed with each dog license, and that no dogs should be allowed in slaughter houses, and that all vagrant dogs should be killed. The chairman of the committee is Dr. D. J. Crankwell, director of the *Revista de la Sociedad Medica de Argentina*, which reproduces in its last issue the educational posters designed for prophylaxis.

**Lumbar Puncture in Epilepsy.**—F. Tissot, in *Progrès Méd.*, May 9, 1908, reports the results of a series of experiments to estimate the therapeutic value of lumbar puncture in epilepsy. Six patients were under observation for periods varying from 34 to 55 days, during which time they received from 8 to 15 punctures, in which an average quantity of 36 c.c. was abstracted from the cerebrospinal fluid. The pressure was generally high. The results are not favorable to the utility of puncture in this disorder; the attacks were not modified; very often they occurred a few hours after the puncture, showing that the withdrawal of even large amounts of fluid (sometimes as much as 60 or 70 c.c.) had no special effect in preventing the convulsion. No bad symptoms followed the operations except slight headache, quickly relieved by lying down. Tissot has never observed any troublesome results from this measure, wherever employed, for diagnostic or therapeutic purposes.

**Diagnosis of Tabes.**—R. Burnand, in the *Revue Médicale de la Suisse Romande*, xxviii, April 20, 1908, discusses the differential importance of the unilateral absence of the knee-jerk, relating a case in which this was observed. The patient had suffered from attacks of dyspepsia every month or two, with repeated vomiting, and he applied to the physician merely for relief from these dyspeptic disturbances. A day or so before these attacks he always had transient pain in the back, which he had learned to recognize as a premonitory symptom of the "dyspepsia." Lymphocytosis was found on lumbar puncture, confirming the assumption of tabes. The patient's constant and violent use of the right knee in his trade as a rope maker had evidently localized the trouble in the corresponding portion of the spinal cord. The lumbar puncture seemed to have a favorable effect on the gastric crises, as they did not return afterward while the patient was under observation.

**Ammonia Coefficient in Urine.**—Hopkins, in the *Bulletin of the University College of Medicine*, Richmond, Va., July, describes a method of determining the ammonia coefficient by direct nesslerization. The ammonia is determined by diluting the urine volumetrically until the ammonia nitrogen in the dilution is between 0.001 and 0.02 µg. per c.c. A definite portion of the dilution is nesslerized, and the ammonia nitrogen in 1 c.c. of urine computed. The total nitrogen is estimated in the same manner, first reducing the organic nitrogen to ammonium sulphate by the Kjeldahl process. The ratio between the amount of ammonia nitrogen and total nitrogen thus determined is taken as the ammonia coefficient; as there is a possible error of 10 per cent. in the method, Hopkins concludes that it is applicable to the determination of pathologic variations only. For this purpose it answers the requirements. It



is sufficiently accurate to determine variations of clinical importance, and has great advantages in its rapidity and in the simplicity of technic and apparatus used.

**The Nostrum Campaign.**—The fight against the nostrums continues to gain recruits even among journals in no way connected with the Association. In its issue for March the *Journal of the Allied Societies*, a New York dental journal, thinks that "the time has come for the dental profession to take its stand for ethical medicine," and says that it "has decided to take its place with the American Medical Association's JOURNAL and others that are opposed to nostrums." To this end it announces its adoption of the two rules to apply to its advertising pages in respect of all remedial and prophylactic preparations, which are practically Rules 1 and 8 of the Council on Pharmacy and Chemistry. As basic principles these rules cover the essence of the struggle. The other rules are more in the nature of detailed applications to avoid the evasion of the former.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### BOOKS ON "CHRISTIAN SCIENCE."

PRINCETON, KY., Aug. 17, 1908.

*To the Editor.*—Will you please advise me as to the best work on the subject of Christian Science exposed from a medical point of view? If you can also furnish any other information I shall appreciate it. Quote prices on these books if convenient to do so.

CHARLES J. POLLARD.

ANSWER.—We do not know of any book that can be said to fulfill our correspondent's requirement, namely, an exposé of Christian Science from a medical point of view. There are four aspects from which the subject must be regarded by those who would study it critically: 1. as a system of philosophy; 2. as a religion; 3. as a mode of healing; and 4. as an organization having vast political, social and economic significance. The theoretic or didactic side of Christian Science as a mode of therapeutics has to be considered in reference to the first and second divisions above made, namely, philosophy and religion. The practical results in the application of its therapeutic claims constitute what we understand our correspondent to mean, when he asks for a medical exposé of the subject. The only systematic investigations of actual cases of which we are aware, are:

1. *The Medical News' Investigations into the Claims of Christian Science.* By J. B. Huber, M.D., *Medical News*, New York, Jan. 21, 28, Feb. 24 and 11, 1899. This is an investigation as to the correctness of the alleged facts in 20 patients who claimed to have been cured by Christian Science treatment. All cases offered were examined.

2. *One Hundred Christian Science Cures.* By Richard C. Cabot, M.D., *McClure's Magazine*, August, 1908.

With regard to the study of the subject in general, the following list, though not exhaustive, may be serviceable:

*Christian Science.* By Mark Twain. New York: Harper Bros., 1907. Cloth. Pages, 362. Price, \$1.75. With all its humorous word clothing this book is nevertheless a serious consideration of the subject under heads 1, 2 and 4 of the above classification. The socio-political-economic aspect is particularly strongly emphasized.

*Christian Science, the Faith and Its Founder.* By Lyman D. Powell. New York: G. P. Putnam's Sons, 1907. Cloth. Price, \$1.25 net.

*Christian Science.* By William A. Purrington. New York: E. B. Treat & Co., 1909. Cloth. Pages, 194. Price, \$1.00. This book deals largely with the medicolegal aspects.

Mary Baker G. Eddy. *The Story of Her Life.* By Georgine Milmine, a serial in *McClure's Magazine*, commencing January, 1907, ending October, 1907. This is really a biography of Mrs. Eddy and a history of the rise and development of Christian Science, drawn from facts of public record, documents, first hand testimony, etc. It is not argumentative, though the general tendency of the facts adduced is inevitably of the character of an impeachment.

*The Passing of Christian Science.* By C. G. Harger, Jr. Buffalo, N. Y.: D. J. Stoddard, 365 Washington street, 1899. Cloth. Pages, 91. This brochure consists of two parts: 1. Christian Science as a Religious Belief; 2. Christian Science as a Means of

Physical Healing. To this is added a useful dictionary of curious and eccentric beliefs.

*Crazes, Credulities and Christian Science.* By C. M. Oughton, M.D. Chicago: E. H. Colgrove, 1901. Cloth. Pages, 121. Price, \$1.00.

*Christian Science, Medicine and Occultism.* By Albert Moll, M.D. (Berlin.) Translated by F. J. Rebman. London: Rebman Limited, 1902. Paper. Pages, 47. Price, six-pence. (Twelve cents.) (Rebman Company, 1123 Broadway, N. Y.) This is an excellent statement from the neurologist's point of view.

*Valid Objections to So-called Christian Science.* By Rev. A. F. Underhill. New York: Edwin S. Gorham, Fourth avenue and 22nd street, 1902. Paper. Pages, 49. This pamphlet discusses the questions: Is Christian Science Christian? Is Christian Science Scientific? and deals with Systematic Knowledge *vs.* Speculation; Results Ethical and Moral; and Results Physical and Hygienic.

*The Christian Science Delusion.* By Rev. A. C. Dixon. Boston: W. H. Smith, 25 Stanhope street, 1903. Paper. Pages, 52. A critical examination of the theoretic basis of Christian Science.

*Christian Science Dissected.* By A. O. Sector. St. Louis: Christian Publishing Co., 1900. Paper, pages 61.

*Christian Science. A Sociologic Study.* By Charles A. L. Reed, M.D. Cincinnati: McClelland & Co., 1898.

In addition to the foregoing we must mention a book that will certainly throw great light on the subject for those not specially versed in psychology, and will elucidate the actual inwardness of whatever vitality Christian Science may possess, and show what it really consists in as distinguished from the claims made for it, and the explanations given of it.

*Religion and Medicine. The Moral Control of Nervous Disorders.* By Ellwood Worcester, D.D., Samuel McComb, D.D., and Isador H. Coriat, M.D. New York: Moffat, Yard & Co. Cloth, 1908. Pages, 416. Price, \$1.50. This book was written as an exposition of what is known as the Emanuel movement, and is not specifically directed against Christian Science. A perusal of it, however, will prove invaluable in studying the subject.

Another book of considerable utility as an explanatory sidelight is: *The Force of Mind, or the Mental Factor in Medicine.* By A. T. Schofield, M.D. Philadelphia: P. Blakiston's Sons, 1902. Cloth, pages 309. Price, \$2.

No man can effectively combat any position unless he first makes himself master of what that position really is. The best and most tangible—indeed the only—exposition that we have seen of the nature of Christian Science philosophy in terms that render it susceptible of critical and logical examination as a system of philosophy, is an article entitled *The Outer World and The Inner Man*, by Martha R. White, *Christian Science Journal*, March, 1908. Everyone who wishes really to gauge, as a wise soldier should do, the strength of the enemy, will find in this exposition what we conceive to be the best argument on behalf of a true philosophic basis for Christian Science that can be brought forward. But leaving this academic discussion to the philosophers, the utter immaterialness of the nature of ultimate realities to the facts of every-day life is tersely and forcibly expressed in an article on:

*The Philosophy of Christian Science.* By Borden P. Bowne, L.L.B., of Boston University. Originally published in the *Christian Advocate*.

### FORMALDEHYD IN MILK: ITS DETECTION AND ITS HARMFULNESS.

HAGERSTOWN, MD., Aug. 19, 1908.

*To the Editor.*—1. Will you give reliable tests for formaldehyd in milk and state the sources of possible error in making the tests? 2. Is the presence of formaldehyd in milk considered injurious to infants and children, and what symptoms does it produce?

A. C. MAISCH.

ANSWER.—1. The most reliable test for the detection of formaldehyd in milk is that based on the color which is formed when concentrated sulphuric acid (Hehner's test) or hydrochloric acid (Leach's test) containing a trace of iron is added to milk containing formaldehyd.

**Hehner's Test:** To a few cubic centimeters of concentrated sulphuric acid, to which a trace of some ferric salt has been added, add the milk to be tested so as to form a distinct layer on top of the acid and allow to stand. If formaldehyd be present, even one part to a million of milk, a violet coloration will take place at the junction of the two liquids.

**Leach's Method:** Dilute the milk with an equal volume of water and add for each cubic centimeter of the diluted milk 1 c.c. of concentrated hydrochloric acid containing 1 c.c. of 10 per cent. ferric chlorid solution, to each 500 c.c. of acid. The mixture is heated in a casserole over the bare flame to 80 or 90° C., rotating to break the curd which forms. If formaldehyd be present, a violet color will appear.



2. The presence of formaldehyd in milk is generally considered injurious to infants and children. On the other hand, some experimental observers have concluded that in the small quantities used in preserving milk (from 1 to 50,000 to 1 to 20,000) formaldehyd prevents the development of the more common bacteria without interfering with the digestibility of the milk. A full review of this subject may be found in Bulletin No. 41 of the Hygienic Laboratory, U. S. Public Health and Marine-Hospital Service, from which we quote: "It may be said, finally, however, that the medical and scientific opinion is decidedly against the use of preservatives in milk, not only on account of possible injuries, especially to young children, resulting from the continued use of such preservatives in small amounts, but also for the reason that the use of such substances, if permitted, would ultimately tend to carelessness and uncleanness in the handling of milk."

The principal objection made to the use of formaldehyd in milk is that it impairs the digestibility of the milk and tends to injure the digestive organs. It renders the milk less easily coagulable by rennin. Immediate symptoms which could be attributed with certainty to the presence of formaldehyd in the milk do not appear to have been observed.

#### RESUSCITATION AFTER DROWNING.

SUPERIOR, NEB., Aug. 6, 1908.

To the Editor:—I would like to see a discussion of the following points:

1. What is the longest authentic time that a body has lain under water and been resuscitated after removal?

2. If, on recovering a body from the water there is no heart beat perceptible to auscultation, will treatment avail anything, and if it should, is it not positive proof that the heart had not stopped?

3. How long should efforts at resuscitation be continued in hopeful cases?

J. G. WALKER.

ANSWER.—The effect of immersion in water depends on whether the person remains conscious and attempts to breathe or whether syncope occurs and breathing stops. In the first case death occurs in 1 to 5 minutes after water has entered the lungs. The power to remain under water without breathing varies considerably and is somewhat improved by practice. According to Draper ("Legal Medicine"), the longest time on record is that of Professor Enoch, namely, 4 minutes 46½ seconds. Draper also cites a report to the United States Life Saving Service of the resuscitation of Stanley S. Holmes, 5½ years old, after an immersion of 25 minutes. The resuscitation produced signs of life at the end of 45 minutes. Draper states that this is the longest time on record. In this case it is probable that syncope occurred and respiration ceased so that no water entered the lungs.

2. If in a case of drowning the heart has actually stopped beating, it is safe to say that the patient is dead and beyond resuscitation, but it must be remembered that the heart beat may be so feeble and indistinct as to be imperceptible even to the most expert auscultator. Hence, one is liable to think that the person is actually dead when such is not the case.

3. From the above it will be seen that apparently hopeless cases may be hopeful ones, therefore efforts of resuscitation after drowning should be persevered in for several hours unless signs of death are positive. Cases are on record in which persons have been restored only after efforts had been continued for over four hours.

#### PRECIPITIN TEST FOR HUMAN BLOOD.

AUG. 15, 1908.

To the Editor:—Please give the precipitin test for the identification of human blood.

B. J. A.

ANSWER.—A rabbit is injected intraperitoneally with 10 c.c. of human blood serum at intervals of a few days until from 6 to 8 injections have been given so that there is formed in the animal's blood a substance that will produce a precipitate in diluted human blood serum. The animal is now allowed to rest for a week, after which its blood is drawn and the serum obtained. The blood to be tested, if fresh, is diluted 100 times, but if dried, the material is soaked with distilled water and the filtered solution is mixed with an equal volume of double normal salt solution (1.2 to 1.8 parts of sodium chlorid to 100 parts of water). To the clear solution thus prepared a few drops of the serum of the immune animal are added and the mixture allowed to stand to see whether a precipitate will occur. If the material contains human blood, a precipitate will occur within half an hour. The precipitin is specific for human blood as distinguished from that of other animals except those of the ape family. Occasionally the blood of the domestic animals will give some haziness if not sufficiently diluted. The serum of the rabbit may be dried and retain its precipitating power for about six weeks. Such dried serum is dissolved from the filter paper, on which it has been dried, by means of a little normal salt solution, filtered if necessary, and used as described above.

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, United States Army, for the week ending Aug. 22, 1908:

Reasoner, M. A., first lieutenant, M. C., granted leave of absence for twenty-four days.

Tefft, William H., captain, M. C., having completed the duty for which he was ordered to Washington, D. C., will return to station in Cuba.

LeWald, Leon T., captain, M. C., granted twenty-five days leave of absence.

Woodruff, Charles E., major, M. C., granted three months leave of absence.

Bruns, Earl H., first lieutenant, M. C., will, upon the expiration of his present leave of absence, proceed to Fort Monroe, Va., for station and duty.

Culler, R. M., captain, M. C., relieved from duty at Fort Monroe, Va., and ordered to Fort Logan H. Roots, Ark., for station and duty.

Webb, W. D., captain, M. C., granted four months leave of absence, to take effect about Sept. 1, 1908.

Barney, Fred M., first lieutenant, M. R. C., granted thirty days' leave of absence.

Torney, George H., colonel, M. C., ordered to proceed at once from San Francisco to Alascadero Ranch, Cal., for duty in connection with laying out camp and sanitation of same.

Wilson, Elsworth, first lieutenant, M. R. C., relieved from duty Dept. Rifle Range, Cal., on completion of target practice and ordered to Fort Rosecrans, Cal., for temporary duty.

Snyder, H. McC., first lieutenant, M. R. C., relieved from temporary duty at Fort Rosecrans, Cal., and ordered to return to San Francisco, and resume duty at the Army General Hospital.

Shortlidge, E. D., captain, M. C., granted fifteen days' leave of absence.

Wells, Frank M., Card, Daniel P., Bowman, M. H., Chamberlain, G. E., first lieutenants, M. R. C., ordered to active duty in the service of the United States.

### Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Aug. 22, 1908:

Diehl, O., surgeon, detached from the Navy Yard, Philadelphia, and ordered to the *Charleston* and to additional duty as fleet surgeon of the third squadron, Pacific Fleet.

Gates, M. F., surgeon, detached from the *Charleston* and ordered to the Navy Yard, Philadelphia.

McDonnell, W. N., P. A. surgeon, detached from duty in connection with the Navy Rifle Team, Camp Perry, Ohio, and ordered to the Navy Recruiting Station, Minneapolis.

Lando, M. E., asst.-surgeon, detached from the Navy Recruiting Station, Minneapolis, and ordered to Washington, D. C., September 14, for examination for promotion, and then to wait orders.

Bishop, L. W., P. A. surgeon, ordered to temporary duty at the Navy Recruiting Station, New York.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Aug. 21, 1908:

#### SMALLPOX—UNITED STATES.

California: Oakland, July 1-31, 2 cases; San Francisco, Aug. 2-8, 5 cases; Stockton, July 1-31, 1 case.

Idaho: Carey, May 21-Aug. 4, 21 cases.

Indiana: Fort Wayne, Aug. 2-8, 1 case; Indianapolis, Aug. 3-9, 7 cases; Jeffersonville, July 1-31, 5 cases; Lafayette, Aug. 4-10, 2 cases.

Missouri: Kansas City, Aug. 2-8, 1 case; St. Joseph, 3 cases.

New York: Schenectady, June 1-30, 2 cases.

Ohio: Canton, June 6-13, 1 case; Dayton, Aug. 2-8, 2 cases; Toledo, 1 case.

Oregon: Portland, July 1-31, 47 cases.

Washington: Spokane, Aug. 2-8, 2 cases.

Wisconsin: LaCrosse, Aug. 2-8, 15 cases; Manitowoc, 1 case.

Utah: Salt Lake City, July 1-31, 10 cases.

#### SMALLPOX—FOREIGN.

Arabia: Aden, July 20, 3 deaths.

Argentina: Buenos Aires, May 1-31, 2 deaths.

Austria: Silesia, July 19-25, 4 cases.

Borneo: Sandakan, May 1-31, 37 cases, 13 deaths.

Brazil: Pernambuco, June 1-30, 55 deaths; Rio de Janeiro, July 8-16, 1 case, 1 death, on steamship *Peruviana*.

Ceylon: Colombo, June 28-July 4, 7 cases, 2 deaths.

China: Hongkong, June 28-July 4, 4 cases, 2 deaths.

Ecuador: Guayaquil, June 28-July 11, 6 deaths.

Egypt: General, June 26-July 8, 44 cases, 44 deaths; Cairo, July 16-22, 2 cases, 2 deaths.

India: Bombay, July 8-14, 11 deaths; Calcutta, June 28-July 4, 5 deaths.

Indo-China: Cholon, June 28-July 4, 2 cases, 2 deaths.

Java: Batavia, June 28-July 4, 5 cases.

Peru: Lima, July 13, 5 cases in the lazaretto.

Portugal: Lisbon, July 19-25, 2 cases.

Russia: St. Petersburg, July 12-18, 29 cases, 5 deaths.

Spain: Barcelona, July 21-31, 1 case; Valencia, July 19-Aug. 1, 6 cases, 1 death.

Turkey in Asia: Bagdad, June 22-July 4, 44 cases, 12 deaths.

Turkey in Europe: July 20-26, 9 deaths.

Zanzibar: June 7-14, 1 death.



## CHOLERA.

Ceylon: Colombo, June 25-July 4, 14 deaths.  
India: Bombay, July 1-14, 1 death; Calcutta, June 28-July 4, 29 deaths; Madras, June 5-10, 13 deaths.  
Indo-China: Cholon, June 28-July 4, 20 cases, 20 deaths.  
Russia: Astrachan, July 21-Aug. 6, 51 cases, 24 deaths.  
Saratov: Aug. 6, 14 cases, 2 deaths.  
Zarizyn: July 24-Aug. 6, 96 cases, 55 deaths.

## YELLOW FEVER.

Brazil: Pernambuco, June 15-30, 1 death.  
Cuba: Dauquiri, Aug. 1-8, 2 cases, 1 death.  
Ecuador: Guayaquil, June 28-July 11, 3 deaths.  
Martinique: Port de France, Aug. 17, present.  
Mexico: Veracruz, Aug. 14, 1 case.

## PLAGUE.

Brazil: Pernambuco, June 1-15, 1 death.  
British East Africa: Port Florence, June 11-26, 6 cases, 4 deaths.  
Chili: Antofagasta, July 12, 3 cases; Arica, July 15, 1 case; Iquique, July 14, 3 cases.  
China: Amoy, in native city and vicinity, July 14, present; Hongkong, June 28-July 4, 65 cases, 61 deaths.  
Ecuador: Guayaquil, June 28-July 11, 2 deaths.  
Egypt, general: July 24-30, 21 cases, 7 deaths; Alexandria, July 3-28, 10 cases, 3 deaths; Port Said, July 8, 1 from steamship *Orinoque*.  
India, general: June 28-July 4, 512 cases, 435 deaths.  
Japan: Kobe, July 12-18, 1 case; Osaka, July 4-11, 2 cases, 2 deaths.  
Peru, general: July 7-13, 32 cases, 13 deaths; Salaverry, July 19, 1 case.  
Turkey in Asia: Adalia, July 27, 2 cases.

## Public Health and Marine-Hospital Service.

List of changes of stations and duties of commissioned and other officers of the Public Health and Marine-Hospital Service for the seven days ended Aug. 19, 1908.

Kalloch, P. C., surgeon, directed to proceed to the marine-hospital, Portland, Me., for special temporary duty, on completion of which duty to rejoin his station at Portland (Me.) Quarantine station.

Magruder, G. M., surgeon, granted leave of absence for 7 days, from Aug. 2, 1908, under Paragraph 191, Service Regulations.

Wertebaker, C. P., surgeon, directed to proceed to New York, N. Y., for special temporary duty.

Wertebaker, C. P., surgeon, leave of absence granted for 1 month, from Aug. 9, 1908, amended so as to grant him 14 days from Aug. 9, 1908.

Stimpson, W. G., surgeon, directed to proceed to Tatoosh Island, Washington, for special temporary duty, on completion of which to rejoin his station at Port Townsend, Washington.

Oakley, J. H., P. A. surgeon, directed to assume temporary charge of the marine-hospital at Port Townsend, Washington, during the absence of Surgeon W. G. Stimpson.

Holt, J. M., P. A. surgeon, granted leave of absence for 16 days, from Aug. 15, 1908.

Vogel, C. W., P. A. surgeon, directed to report to the Director of the Hygienic Laboratory, Washington, D. C., for temporary duty.

Schereschewsky, J. W., P. A. surgeon, granted leave of absence for 1 month, from Aug. 17, 1908.

Fauntleroy, C. M., asst.-surgeon, directed to proceed to the marine-hospital at Mobile, Ala., for special temporary duty, on completion of which to rejoin his station at New Orleans, La.

Wilson, J. C., acting asst.-surgeon, granted leave of absence for 7 days, from Aug. 13, 1908.

Watson, Harvey J., acting asst.-surgeon, granted leave of absence for 30 days, from Sept. 1, 1908.

Sinclair, A. N., acting asst.-surgeon, granted leave of absence for 25 days, from Aug. 12, 1908.

Delgado, J. M., acting asst.-surgeon, granted leave of absence for 3 days, from Aug. 4, 1908, on account of sickness.

Keiller, W., acting asst.-surgeon, granted leave of absence for 7 days, from Aug. 7, 1908.

Keiller, W., acting asst.-surgeon, granted leave of absence for 23 days, from Aug. 13, 1908.

Mason, W. C., acting asst.-surgeon, granted leave of absence for 7 days, from Sept. 13, 1908.

Reimer, H. B. C., acting asst.-surgeon, granted leave of absence for 6 days from Aug. 10, 1908.

Richardson, S. W., pharmacist, detailed to represent the service at the meeting of the American Pharmaceutical Association to be held at Hot Springs, Ark., Sept. 7-12, 1908, on completion of which duty to rejoin his station at Buffalo, N. Y.

Roehrig, A. M., pharmacist, detailed to represent the service at the meeting of the American Pharmaceutical Association to be held at Hot Springs, Ark., Sept. 7-12, 1908, on completion of which duty to rejoin his station at Stapleton, N. Y.

## BOARDS CONVENED.

Boards of medical officers were convened to meet on Aug. 24, 1908, for the purpose of making physical examination of applicants for the position of cadet in the Revenue-Cutter Service as follows:

Washington, D. C.: Asst. Surgeon-General J. M. Eager, chairman; Asst. Surgeon-General J. W. Kerr, recorder.

New York, N. Y.: P. A. Surgeon J. A. Nydegger, chairman; P. A. Surgeon C. H. Lavinder, recorder.

Chicago, Ill.: Surgeon G. B. Young, chairman; Asst.-Surgeon C. E. Wood, recorder.

Boston, Mass.: Surgeon R. M. Woodward, chairman; Asst.-Surgeon T. W. Salmon, recorder.

Baltimore, Md.: P. A. Surgeon J. T. Burkhalter, chairman; Acting Asst.-Surgeon C. W. Hughes, recorder.

Philadelphia, Pa.: Surgeon J. M. Cassaway, chairman; Acting Asst.-Surgeon H. Horning, recorder.

San Francisco, Cal.: Surgeon H. W. Austin, chairman; P. A. Surgeon W. W. King, recorder.

Detroit, Mich.: Surgeon Fairfax Irwin, chairman; P. A. Surgeon M. J. White, recorder.

Portland, Me.: Surgeon P. C. Kalloch, chairman; acting Asst. Surgeon A. F. Stuart, recorder.

Mobile, Ala.: Acting Asst.-Surgeon J. O. Rush, chairman; acting Asst.-Surgeon C. S. Carter, recorder.

Galveston, Texas: P. A. Surgeon G. M. Corput, chairman; acting Asst. Surgeon W. H. Gammon, recorder.

Seattle, Wash.: P. A. Surgeon M. W. Glover, chairman; Asst.-Surgeon C. W. Chapin, recorder.

*Medical Economics*

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

## Organization in the Northwest.

The August number of *Northwest Medicine* contains the address of Dr. R. C. Coffey, president of the Oregon State Medical Association, as delivered before the annual meeting of that body on July 1. Dr. Coffey's subject was "Organization and Centralization of Medicine and Surgery of the Northwest." He first considered organization in general and the present-day movement toward medical organization, showing that better organization in every case secured better conditions and results, at an enormous saving of capital and energy. Applying this general question to the needs of the medical profession, he then asked: "Is organization possible for the betterment of the health and education of the community and for the establishment of a higher basis for the medical profession?" answering his question by showing that the present medical reorganization movement is a natural process of the times. In this connection, he said:

We have organized ourselves independently of the people and one of the first things we are to consider pertains to combining with our organization the strength of the public for whom we are laboring, if they only know what our aims are. . . . We go before a public gathering or a legislative body, present our claims and give our reasons why the public health of the community demands certain things; we are received with a pitying smile, not because the people are bad or ungrateful, but because they are ignorant of our work, and because we close ourselves up in a shell and refuse to discuss these matters with them, drawing closely about us our cloak of dignity, which is only a relic of heathenism.

The remedy for this condition, Dr. Coffey found in public education, in which connection he reviewed the addresses made at the Chicago session of the American Medical Association and emphasized the fact that the keynote of all of these papers was the education of the public. He then said:

In educating the public . . . we must not forget to organize our own affairs or educate our own profession. There are three agents in the education of our profession—our schools, our examining boards and our journals. We take the ground that these agents are public service organizations, and that as physicians we have a right to a voice in the management and direction of the policies of these organizations.

After reviewing the work of the Council on Medical Education, and the tendency toward the consolidation of medical schools, Dr. Coffey took up the situation as it exists in the Northwest, advising the fusion of the two schools in Oregon, in order that there may be a single, strong medical school in the Northwest. He then discussed reciprocity, particularly as it affects the states in question, and also advised the establishment of a journal by the Oregon, Washington and Idaho State Medical Associations, recommending the appointment of a journal committee by these three state associations for the purpose of considering this question.

Dr. Coffey's excellent and timely address, with its recommendations, was referred to a committee, which recommended the adoption of the recommendations and the appointment of committees on reciprocity, on the consolidation of medical schools, and on medical journals. The action of the Washington and Idaho State Associations and the results of this movement will be watched by all those inter-



ested in medical organization in the Northwest. Dr. Coffey's proposals are eminently practical and are in line with the best interests of the profession as a whole and especially of the profession in the three states involved. The active cooperation of these three state associations will go far toward improving conditions in the individual states and will do much to prepare them for the great career which lies before them.

#### Organization in Southeastern Pennsylvania.

Reports from southeastern Pennsylvania indicate a gratifying condition of energy and activity on the part of the county societies in that part of the state. The Bucks County Medical Society, which until this year met quarterly, now has monthly postgraduate meetings and quarterly general meetings, having divided the county into four sections, the members in each section carrying on the postgraduate work in harmony. A reading course for the coming year has been outlined. The Lehigh County Medical Society recently held an annual assembly, lasting all day. On Wednesday, July 22, a special medical day was held at Willow Grove Park, under the auspices of the county societies of Berks, Bucks, Chester, Delaware, Lehigh, Montgomery, Northampton and Philadelphia. Addresses were made by Dr. Albert M. Eaton, president of the Philadelphia County Medical Society, Dr. W. L. Estes, president of the Medical Society of the State of Pennsylvania, and Dr. Joseph D. Bryant, past president of the American Medical Association. Special attention has been given by these societies in the past few months to the importance and necessity of medical legislation, particularly to laws regulating the practice of medicine and the establishing of proper hospitals for the insane, inebriates, etc. The work being done is both valuable and gratifying, and will be productive of benefit to the people of the entire state.

#### POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.  
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

##### First Month.

##### SECOND WEEKLY MEETING.

#### DISEASES OF THE PERICARDIUM.

##### ETIOLOGY.

Age, sex, seasons. Primary rare. Secondary to rheumatism, septic processes, acute infections; tuberculosis; pneumonia, gout and chronic nephritis, traumatism. Pericarditis by extension: pleuro-pneumonia, pleurisy; endocarditis, myocarditis; disease of the thoracic wall and lymph glands.

##### VARIETIES, PATHOLOGY.

Acute Plastic. Fibrinous.—Pathology.—Extent of involvement, changes in endothelia, exudate, character and amount, terminations, change in heart muscle.

Pericarditis with Effusion.—Secondary to plastic. (a) Sero-fibrinous: Changes in visceral and parietal layers, character and quantity of exudate. (b) Purulent: Changes in pericardial layers, exudate, organisms usually present. Association with general or local disease. (c) Hemorrhagic: Associated with tuberculosis, malignancy, and in aged. Character and quantity of exudate, pericardial changes.

Adherent Pericardium.—Extent and structure of adhesions, appearance in recent and chronic cases.

#### DISEASES OF ENDOCARDIUM.

##### ACUTE SIMPLE ENDOCARDITIS.

Etiology.—Frequency in articular rheumatism. In tonsillitis, scarlet fever, pneumonia, chorea, phthisis. In cancer, gout and chronic nephritis. Rare in measles, diphtheria, chicken-pox.

Diagnosis.—Previous history, present illness, effect on pulse and temperature. Physical signs. Recurring endocarditis.

##### MALIGNANT, PERNICIOUS, ENDOCARDITIS.

Pathology.—Changes occurring in (a) vegetative, (b) ulcerative, (c) suppurative, lesions. Micro organisms usually found. Mural endocarditis. Associated pathology: primary septic processes; embolism, infarcts, number and location.

Symptoms.—Association with other diseases, temperature curve, pulse, infarctions, progressive anemia, sweats, rashes, physical signs. Diverse clinical pictures; septic type, typhoid type, cardiac group, cerebral group.

##### CHRONIC ENDOCARDITIS.

Etiology.—Age, constitutional diseases, acute infections, exertion. Influence in production of chronic valvular lesions.

## Medical Education and State Boards of Registration

### COMING EXAMINATIONS.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, Sept. 8-10. Secretary, Dr. Edwin B. Harvey, Boston.

IOWA State Board of Medical Examiners, Capitol Building, Des Moines, September 16-18. Secretary, Dr. Louis A. Thomas, Des Moines.

NEW YORK State Board of Medical Examiners, Albany, September 22-25. Chief of Examinations Division, Charles F. Wheelock, Albany.

### Oregon July Report.

Dr. Byron E. Miller, secretary of the Board of Medical Examiners of the State of Oregon, reports the written examinations held at Portland, July 7-9, 1908. The number of subjects examined in was 15; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 61, of whom 23 passed and 38 failed. The following colleges were represented:

College.	PASSED.	Year.	Per Cent.
Oakland Coll. of Med. and Surg.	(1908)	78.8	
College of P. and S., Chicago	(1900) 76.1; (1908)	75.4	
Chicago Coll. of Med. and Surg.	(1908)	75	
University of Louisville	(1895)	75.4	
College of P. and S., Baltimore	(1901)	80.9	
Johns Hopkins Med. School	(1908)	92	
Detroit Coll. of Med.	(1896)	78.8	
Hamline University	(1908)	81.6	
St. Louis University	(1907)	79.8	
University Med. Coll., Kansas City	(1908)	81.7	
Albany Med. Coll.	(1887)	78.7	
Omaha Med. Coll.	(1897)	79.2	
College of P. and S., New York	(1906)	84.4	
Willamette University	(1907)	78.8	
University of Oregon	(1907) 84.7; (1908)	77.3, 78.6	
Jefferson Med. Coll.	(1902)	79	
University of Pennsylvania	(1907) 82.2; (1908)	79.9	
Queen's University, Kingston, Ontario	(1897)	85	
University of Christiania, Norway	(1900)	77.2	
FAILED.			
George Washington Univ.	(1907) 57.1; (1908)	63.7	
Northwestern Univ. Med. School	(1907) 65.6; (1908)	71.2	
College of P. and S., Chicago	(1901) 63.7; (1903) 53.2; 1907		
69.4.			
Hahnemann Med. Coll., Chicago	(1906)	67.7	
American Med. Miss. Coll.	(1905)	73	
Physio-Med. Coll. of Indiana	(1906)	66.2	
Keokuk Med. Coll., Coll. of P. and S.	(1907)	*63	
University of Iowa	(1907)	69.9	
Kansas Med. Coll.	(1905)	71.6	
University of Louisville	(1907)	55.4	
University of Missouri	(1893)	*66.1	
Kansas City Med. Coll.	(1901)	58.6	
St. Louis Coll. of P. and S.	(1906) 68.8; (1908)	59	
Omaha Med. Coll.	(1896)	56.7	
Ohio Med. University	(1904)	72.8	
Starling Med. Coll.	(1908)	69	
University of Oregon	(1908) 62.3, 62.3, 65, 67.2, 68.9, 70.4, 71.		
74.5.			
Willamette University	(1907) 65.3, 65.7, 68.3		
Jefferson Med. Coll.	(1850) 0; (1886)	66.2	
University of Tennessee	(1895)	47.8	
University of Vermont	(1905)	69.6	
Western University, Ontario	(1894)	61.7	
University of Christiania, Norway	(1906)	71.9	
*Failed at January, 1908, examination.			

### Tennessee May Report.

Dr. T. J. Happel, secretary of the State Board of Medical Examiners of Tennessee, reports the written examinations held at Memphis, Nashville and Knoxville, May 5-6, 1908. The number of subjects examined in was 8; total number of



questions asked, 64; percentage required to pass, 75. The total number of candidates examined was 300, of whom 213 passed, including 55 non-graduates, and 87 failed, including 45 non-graduates. Ten reciprocal licenses were issued. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Birmingham Medical College.....	(1903)		88.5
Georgetown University.....	(1896)		79.2
Howard University, Washington.....	(1907)		84
Yale University.....	(1906)		92.7
Bennett Coll. of Ecl. Med. and Surg.....	(1907)		75
University of Iowa.....	(1881)		87.3
University of Louisville.....	(1908)		93
Louisville Med. Coll.....	(1904)		78
Louisville and Hosp. Med. Coll.....	(1908)		89
Flint Medical Coll.....	(1904)		75
Tulane University of Louisiana, (1890) 76; (1899) 90.6; (1905) 90; (1907) 93.1.			
College of P. and S., Baltimore.....	(1900) 88.3; (1907)		84.2
Harvard Medical School.....	(1908)		76
Tufts College Medical School.....	(1906) 78.2 90.7		
St. Louis Coll. of P. and S.....	(1908)		85
Barnes Med. Coll., (1908) 75.5, 78, 78, 80, 81, 84, 88, 91, 92, 93, 96			
Cleveland Coll. of P. and S.....	(1906)		90.7
Knoxville Med. Coll.....	(1906) 79; (1908)		77.5
University of Nashville (1899) 81; (1905) 79, 85; (1906) 94; (1907) 81.6, 93; (1908) 75, 76, 78, 80, 80, 81, 81, 82, 84, 84, 88, 89.3, 90, 94.			
University of Tennessee, (1905) 75, 80, 82.5; (1908) 75, 77, 78, 80, 81, 81, 81.6, 83, 83, 85, 98.			
College of P. and S., Memphis, (1907) 79; (1908) 79, 82, 88, 86, 93			
Meharry Med. Coll., (1899) 77; (1888) 75; (1904) 77; (1906) 75, 76, 85; (1907) 76, 76, 77, 87; (1908) 75, 75, 75, 76, 76, 77, 79, 80, 81, 82, 83, 84, 84, 84, 85, 85, 85, 88, 89, 89.6.			
Chattanooga Med. Coll., (1907) 75.3; (1908) 75.3, 77.2, 80, 82, 84, 87.7, 88, 88.1, 89.7.			
Memphis Hosp. Med. Coll., (1899) 76; (1900) 85; (1902) 78; (1904) 75; (1906) 90; (1908) 77, 79, 80, 82, 82, 83, 85, 85, 88, 90, 92.			
Tennessee Med. Coll., (1907) 85; (1908) 75, 77, 78.1, 81.5, 83.1, 83.5, 84, 85, 86, 92.			
Vanderbilt University, (1908) 78, 82, 82, 85, 86, 90, 90, 91, 92, 93			
University of West Tennessee... (1904) 85; (1907) 76; (1908) 86.6			
University of the South.....	(1906)		86
University of Virginia.....	(1907)		93
Heidelberg University, Germany.....	(1888)		91.5
FAILED.			
Atlanta School of Med.....	(1908)		66
National Med. University, Chicago.....	(1907)		72.5
Marion Med. Coll., Marion, Indiana.....	(1896)		63
St. Louis Coll. of P. and S.....	(1908)		69
Medical Coll. of Ohio.....	(1902)		48
Meharry Med. Coll., (1904) 57, 67; (1905) 61; (1906) 51; (1907) 65, 70; (1908) 67, 69, 71.			
University of Tennessee, (1900) 68; (1901) 48; (1906) 62, 68; (1908) 63.1, 72, 73.			
Chattanooga Med. Coll., (1894) 30.6; (1905) 39, 64; (1906) 62, 72.3; (1907) 42, 65; (1908) 65.2, 68, 68.5.			
Chattanooga National Med. Coll.....	(...*)		55.5
Knoxville Med. Coll.....	(1904) 69.5; (1905)		67
Memphis Hosp. Med. Coll.....	(1908)		69, 71
University of the South.....	(1905)		64.5
Tennessee Med. Coll.....	(1907) 67.5; (1908) 68.7, 71		
University of West Tennessee.....	(1905) 70; (1908)		68.6

#### LICENSED THROUGH RECIPROcity.

College.	Year Grad.	Reciprocity with.
Atlanta Med. Coll.....	(1898)	Georgia
Chicago Homeo. Med. Coll.....	(1899)	Georgia
Hospital Coll. of Med., Louisville.....	(1897) (1903)	Kentucky
College of P. and S., New York.....	(1900)	Georgia
University of Tennessee.....	(1903) (1904)	Kentucky
Vanderbilt University.....	(1904)	Kentucky
Chattanooga Med. Coll.....	(1900)	Georgia
Milwaukee Med. Coll.....	(1899)	Illinois

\*Year of graduation in doubt.

## Marriages

JOHN PURVES, M.D., to Miss Jane Porter, both of Oakland, Cal., August 10.

WALTER H. MAYHEW, M.D., to Miss Scipp, both of Baltimore, Md., August 5.

WALTER JAY FORD, M.D., to ROBERTA WIMER, M.D., both of Seattle, Wash., July 22.

I. DAVID LOEWY, M.D., to Miss Lilian Aarons, both of Philadelphia, Pa., August 15.

OTIS EISMAN, M.D., Pittsburg, Pa., to Miss Alice B. Percy, at Atlantic City, August 1.

THOMAS P. LLOYD, M.D., to Miss Elsie Jacobs, both of Shreveport, La., August 18.

SAMUEL H. DURGIN, M.D., to Mrs. Emma Elizabeth Adams, both of Boston, Mass., August 12.

ALFRED M. CALL, M.D., Rugby, N. D., to Miss Eva Camilla Egeland of Fisher, Minn., June 27.

SOLOMON C. KATZOFF, M.D., Baltimore, Md., to Miss Yetta Berman, at Lancaster, Pa., August 18.

WILLIAM C. F. WITTE, M.D., Milwaukee, Wis., to Miss Ethel Roslyn Bennett of Athelstone, Wis., at Milwaukee, August 5.

WILLIAM DOUGLAS MACON, M.D., Charlottesville, Va., to Mrs. Mercy Hunter Sherrerd, at Berkeley Springs, W. Va., August 11.

ARTHUR N. TASKER, M.D., first lieutenant, Medical Corps U. S. Army, to Miss Mary Elizabeth Berry of Washington D. C., August 8.

GARFIELD L. MCKINNEY, M.D., first lieutenant, Medical Corps, U. S. Army, to ELIZABETH SUTTON MOORE, M.D., of Pittsburg, Pa., August 8.

## Deaths

Samuel E. Gillam, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1869; Bellevue Hospital Medical College, New York City, 1878; of St. Johns, Mich.; a member of the Michigan State Medical Society; once president of the Clinton County Medical Society; for several years local surgeon of the Detroit, Grand Haven and Milwaukee Railway; and president of the local board of United States Pension Examiners; died suddenly, August 13, from heart disease, while fishing in a launch on White Lake, Mich., aged 63.

Charles Henry Burr, M.D. Medical School of Harvard University, Boston, 1882; University and Bellevue Hospital Medical College, New York City, 1901; a member of the Massachusetts Medical Society; assistant surgeon to the Manhattan Eye, Ear and Throat Hospital, in the eye department; surgeon to the eye and ear department of the Northern Dispensary, and clinical assistant to the nose and throat department of the New York Post-Graduate Hospital; died at the home of his wife's parents in South Framingham, Mass., August 13, from nephritis, after an illness of several months, aged 53.

William Buck, M.D. Medical School of Maine, Medical Department of Bowdoin College, Brunswick, 1859; a member of the Maine Medical Association; assistant surgeon and surgeon of the Sixth Maine Volunteer Infantry throughout the Civil War; for a number of terms a member of the board of selectmen and school board of Foxcroft, Maine; a member of the state legislature and treasurer of Piscataquis County; and for thirty-six years United States pension examining surgeon; died suddenly at his home, August 9, aged 74.

Joseph Eichberg, M.D. Miami Medical College, Cincinnati, 1879; a member of the American Medical Association; for sixteen years professor of theory and practice of medicine in Miami Medical College; and for twenty-five years visiting physician to the Cincinnati Hospital; a member of the Cincinnati Society for Medical Research and Cincinnati Academy of Medicine; and one of the most prominent practitioners of the city; was drowned August 18, while fishing in Big Tupper Lake, N. Y., aged 49.

Charles McCutcheon, M.D. Rush Medical College, Chicago, 1886; a member of the American Medical Association; for seventeen years resident physician and superintendent of the Fannie C. Paddock Memorial Hospital, Tacoma, Wash.; formerly president of the Washington State Medical Association; one of the best-known practitioners of the north Pacific Coast; died suddenly at Tacoma, August 10, from accidental poisoning by methyl salicylate, taken in mistake for sodium salicylate, aged 46.

Peter Evans Hines, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1852; a member of the Medical Society of the State of North Carolina; surgeon in the Confederate service during the Civil War; once president of the state medical society and surgeon general of the state; died at his home at Raleigh, N. C., August 14, aged 80.

John T. Irion, M.D. University of Nashville (Tenn.) Medical Department, 1872; a Confederate veteran; for fifteen years editor of the Paris (Tenn.) *Post Intelligencer*; postmaster of Paris for four years; died at his home in that city, August 9, from disease of the lungs, after an illness of several years, aged 71.

James P. H. Dunn, M.D. University of California, Medical Department, San Francisco, 1888; a member of the American Medical Association and Pacific Association of Railway Sur-



geons; head of the Oakland Central Hospital; and surgeon to the Southern Pacific Hospital Association at Oakland; died August 13, at the East Bay Sanitarium from skull fracture, two hours after being thrown from a horse, aged 48.

**Eli Conn, M.D.** University of Wooster. Medical Department, Cleveland. 1876; a veteran of the Civil War; probate judge of Butler County, Ohio, for four years; health officer of Akron; from 1882 to 1884 a member of the house of representatives; and in 1896 elected state senator; died at his home in South Akron, August 7, from cerebral hemorrhage, after an illness of five weeks, aged 70.

**John S. Apperson, M.D.** University of Virginia, Department of Medicine, Charlottesville. 1867; a member of the Medical Society of Virginia; surgeon in the Confederate service during the Civil War; from 1891 to 1893 assistant physician at the Southwestern State Hospital, Marion; one of the leading citizens of southwestern Virginia; died suddenly at his home in Marion, August 8, aged 64.

**Harmon M. Jeffords, M.D.** University of Georgia, Medical Department, Augusta. 1900; a member of the American Medical Association, and president of the Worth County Medical Society; local surgeon of the Atlantic Coast Line Railroad; died August 15, at his home in Sylvester, Ga., after a short illness, aged 30.

**John Albert Armstrong, M.D.** Vanderbilt University, Medical Department, Nashville. 1884; Medical Department University of Nashville, Tenn., 1885; a member of the city council of San Marcos, Texas, for three years; died at his home in that city, August 11, from heart disease, after an illness of two weeks, aged 47.

**Henry Arthur Duvall, M.D.** Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville. 1880; a member of the Kentucky State Medical Association; a specialist in diseases of the nose, throat and chest; died at his home in Louisville, August 12, after an illness of two weeks, aged 60.

**Gilbert E. Corbin, M.D.** University of Michigan, Department of Medicine and Surgery, Ann Arbor. 1855; a physician and dentist of St. Johns, Mich.; a member of the State Board of Examiners in Dentistry from 1888 to 1895; died at his home, August 6, from heart disease, after an illness of several years, aged 77.

**Alexander J. Lowber, M.D.** Jefferson Medical College, Philadelphia. 1882; a member of the American Medical Association; for several years secretary of the State Board of Health of Delaware; died at his home in Wilmington, August 12, from disease of the liver, after an illness of several weeks, aged 66.

**Ira Barrows Cushing, M.D.** New York Homeopathic Medical College and Hospital, New York City. 1872; a veteran of the Civil War; assistant surgeon Third Infantry, M. V. M., from 1873 to 1876; died at his home in Brookline, Mass., August 14, eleven days after an abdominal section, aged 61.

**Arthur C. Halbert, M.D.** Jefferson Medical College, Philadelphia. 1870; a member of the Mississippi State Medical Association; physician of Lowndes County, Miss.; was instantly killed in Columbus by the falling of the weights of the town clock in the court-house, August 15.

**Stephen A. Wood, M.D.** University of Vermont, College of Medicine, Burlington. 1884; a member of the Massachusetts Medical Society; for many years town physician and a member of the board of health of Bedford, Mass.; died at his home, August 13, aged 56.

**John G. Rishel, M.D.** Hahnemann Medical College and Hospital of Chicago. 1866; for many years a practitioner of Lewis, Iowa; fell from the roof of his house in Chickasha, Okla., August 11, and died five hours later from his injuries, aged 67.

**David Nelson Patterson, M.D.** Dartmouth Medical School, Hanover, N. H., 1877; a member of the Massachusetts Medical Society; died at his home in Lowell, Mass., April 23, from chronic nephritis, after an illness of two years, aged 53.

**William Alexander Lash, M.D.** New York University Medical College, New York City. 1868; a veteran of the Civil War; died at his home in Greensboro, N. C., August 2, from cerebral hemorrhage, after an illness of two years, aged 63.

**Thomas K. Smith, M.D.** University of Michigan, Department of Medicine and Surgery, Ann Arbor. 1867; for twenty years a practitioner of San Diego, Cal.; died suddenly at La Jolla, Cal., August 8, from cerebral hemorrhage, aged 66.

**Joel Simpson Blackburn, M.D.** Medical College of Evansville, Ind., 1877; Ohio Medical University, Columbus. 1889; died at his home in Fort Worth, Texas, July 28, from injuries received six days before in a fall from his buggy, aged 60.

**William Hambitzer, M.D.** University of Bonn, Germany. 1848; a member of the State Medical Society of Wisconsin and a pioneer settler of the Wisconsin lead district; died at his home in British Hollow, Wis., August 10, aged 84.

**Soltau Frederick Calhoun, M.D.** New York University Medical College, New York City. 1895; of Stockton, Cal.; died at the Alameda (Cal.) Sanitarium, where he had gone to undergo operation, August 12, after a short illness.

**Joseph Hibble, M.D.** Jefferson Medical College, Philadelphia. 1855; a practitioner of Enon, Ohio, for forty-two years; died at his home in that village, August 10, from rheumatism, after an illness of three months, aged 85.

**Charles E. Stipe, M.D.** Southern Medical College, Atlanta, Ga., 1898; a member of the Medical Association of Georgia; was struck by lightning and instantly killed near his home in Odessdale, Ga., August 8, aged 31.

**Samuel K. Snively, M.D.** Jefferson Medical College, Philadelphia. 1869; a veteran of the Civil War; died at his home in Williamsport, Pa., August 11, from heart disease, after an illness of two years, aged 67.

**William Kenyon Crelin, M.D.** Cleveland, about 1845; said to have been the oldest physician of Missouri; died at his home in Chillicothe, August 2, from mucous enteritis, after an illness of ten days, aged 92.

**William Woodruff, M.D.** Toronto (Ont.) School of Medicine. 1857; said to have been the oldest practitioner of London, Ont.; died suddenly at his home in that city, August 11, from heart disease, aged 78.

**Thomas Patrick McDonald, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia. 1891; a member of the Medical Society of the State of California; died recently in San Francisco.

**Havilah E. Hastings, M.D.** Missouri Medical College, St. Louis. 1880; a member of the Kansas Medical Society; and local surgeon of the Santa Fe System at Olathe, Kan.; died February 13, aged 60.

**James Easton, M.D.** College of Physicians and Surgeons, Keokuk, Iowa. 1873; for fifteen years a practitioner of Wichita, Kan.; died at his home, August 11, from kidney disease, aged 70.

**Wesley Peters, M.D.** Hahnemann Medical College and Hospital of Chicago. 1885; died at his home in Lancaster, Ohio, August 12, from intestinal disease, after an illness of one week, aged 51.

**William Wilson Hamilton, M.D.** Rush Medical College, Chicago. 1884; died at his home in East Liverpool, Ohio, August 5, from nephritis, after an illness of more than two years, aged 46.

**Schuyler Wade Mahan, a homeopathic practitioner of London, Ont.**; died at his home in that city, July 31, from paralysis, after an illness of one month, aged 71.

**Tempest J. Sullivan, M.D.** St. Louis College of Physicians and Surgeons. 1890; died at his home near New Frankfort, Mo., August 5, after a short illness, aged 40.

**Emory Walter Crowe, M.D.** University of Maryland School of Medicine, Baltimore. 1908; of Baltimore; was drowned at Ocean City, Md., August 2, aged 25.

**Alva B. Curtis, M.D.** Dallas (Texas) Medical College. 1904; died in Redlands, Cal., August 8, from tuberculosis, after an illness of nearly two years, aged 40.

**William Floyd, M.D.** College of Physicians and Surgeons, Keokuk, Iowa. 1881; for 45 years a practitioner; died at his home in Peru, Kan., July 25, aged 85.

**Henry F. Alpers (Examination, Ill.) of Aviston, Ill.**; died recently and was buried from the home of his son in Lincoln, Ill., August 7.

**William Higgs Cunningham, M.D.** Medico-Chirurgical College of Philadelphia. 1904; died recently at his home in Shiloh, N. J.

**Thomas A. Glasgo (License, Ind., 1897)**; an old practitioner of Brazil, Ind.; died at his home in that city, August 8, from paresis.

**Anthony White, M.D.** Rush Medical College, Chicago. 1890; of Excelsior Springs, Mo.; died April 20, aged 62.



## Society Proceedings

### COMING MEETINGS.

New Mexico Medical Society, Albuquerque, Sept. 2-3.  
Washington State Medical Association, Walla Walla, Sept. 2-4.  
South Dakota State Medical Assn., Yankton, Sept. 2-4.  
Medical Society of the Missouri Valley, Council Bluffs, Sept. 3-4.  
Colorado State Medical Society, Denver, Sept. 8-10.  
Med. Soc. of the State of Pennsylvania, Cambridge Spgs., Sept. 14-17.  
American Assn. of Obstet. and Gynecol., Baltimore, Sept. 22-24.  
American Dermatological Association, Annapolis, Sept. 24-26.  
Kentucky State Medical Association, Winchester, Sept. 23-25.  
Con. of State and Prov. Bds. of N. A., Washington, Sept. 25-26.  
Internat'l Congress on Tuberculosis, Washington, Sept. 21 to Oct. 12.  
Nevada State Medical Association, Goldfield, Oct. 6-7.  
Minnesota State Medical Association, St. Paul, Oct. 7-8.  
Idaho State Medical Association, Boise, Oct. 8-9.

### MICHIGAN STATE MEDICAL SOCIETY.

*Forty-third Annual Meeting, held in Manistee,  
June 24-25, 1908.*

*(Continued from page 699.)*

#### Treatment of Chronic Heart Diseases by Carbonated Mineral Baths and Exercises.

DR. W. L. WILSON, St. Joseph, described the five types of bath given at Bad Nauheim. He mentioned the methods ordinarily used in administering these baths artificially and objected to them on account of the gas being evolved too rapidly, subsiding too quickly, and not being thoroughly mixed with the water. His method was to dilute the St. Joseph mineral water with plain water and add carbonic acid gas from a carbonator. Nine parts of plain water must be used to approximate the *sool Bad* of Nauheim and corresponding amounts for the other varieties. The St. Joseph water contained sulphuretted hydrogen, which, in his opinion, enhanced the effect of the carbonic acid gas. In addition to the baths, graded exercises were given, the diet regulated and the amount of fluid ingested restricted to three pints in the 24 hours. This treatment was indicated in all functional cardiac troubles, myocarditis, fatty heart, angina pectoris, and in all forms of loss of compensation due to valvular disease or dependent on muscular changes.

#### Distinction Between Hysteria, Neurasthenia, Hypochondria and Simulation.

DR. CARL D. CAMP, Ann Arbor, called attention to the liability of confusing these conditions and to the means of differentiating them. In hysteria there were the so-called accidents, which were transient phenomena—e. g., paralysis, convulsions, emotional outbursts, etc.—and the stigmata, which were permanent manifestations—e. g., concentric contraction of the visual fields, reversal of the color fields, anesthesia of conjunctiva, pharynx or skin (not corresponding to nerve distribution), mental characteristics, etc. In neurasthenia there was always history of a mental or physical strain too great for its victim's organism to endure; the patient was fatigued in body and mind, had fatigue pains (as backache), lack of mental concentration, loss of memory, irritability and increased reflexes. There were no manifestations like the accidents or stigmata of hysteria. In hypochondria the patient believed he was ill when he was not; he attributed to himself symptoms that he had seen, heard or read about, but had no signs of hysteria or neurasthenia. In simulation, the patient had some ulterior purpose and was rarely able to carry out a well-feigned series of consistent manifestations.

#### Hypertrophic Stenosis of the Pylorus.

DR. W. M. DONALD, Detroit, recapitulated the symptoms of this comparatively new disease, or rather of the disease recently described by the caption of "Hypertrophic Stenosis of the Pylorus." He emphasized the fact of its occurrence largely in males (about 80 per cent.), referred to the valve-like arrangement of the pylorus, caused by the folds of the mucous membrane during spasm, and showed a specimen in which a

pencil could be readily introduced through the pylorus, but in which fluid could not be forced into the duodenum from the stomach, on account of the folds of the mucous membrane in the pylorus. He asserted the comparative rarity of the disease by the statement that in the Great Ormond Street Hospital for Sick Children, in London, only 39 cases were reported in ten years; but likewise asserted that many cases were overlooked in private practice through lack of familiarity of the ordinary practitioner with the symptoms of this disease. He reported four cases, occurring in one family during the past eleven years, two of them being demonstrated postmortem, and all of the patients except one dying within a week of birth; the third lived for five months and finally died of inanition. He believed the record of four cases in one family to be unique in the history of this disease. Of the four, two patients were males and two females.

#### Diet and Digestion.

DR. F. J. GROVER, Grand Rapids, emphasized the too prevalent neglect of dietetics by physicians in their employment of therapeutic agencies. The habits of eating among civilized beings were accountable for many acute and chronic disturbances, not only gastrointestinal, but constitutional, diathetic, circulatory, and visceral diseases. Insufficient mastication, over-feeding and under-feeding, irregular and too short meal-intervals, improper cooking, the choosing of vicious food articles, the disregard of nutritive values, unwise exertions as related to meals, vicious habits of fluid intake—all these were factors so widespread that they were seldom given any thought. It should be the physician's duty to inquire into habits of diet and try to know and advise correct methods.

#### The Country Surgeon.

DR. H. B. GARNER, Traverse City, in his chairman's address to the Surgical Section, emphasized the rôle which the country practitioner plays in surgical work. In America certain operations were first performed by country surgeons, as, for instance, Bradshear of Kentucky, who did the first hip-joint amputation; Levert of Louisiana, who first used the metallic ligature; Stephens of St. Croix, who first ligated the internal iliac; White of New York State, who first tied the common iliac; Deverie of Tennessee, the first to remove the lower jaw; Evans of Traverse City, who first successfully operated for spina bifida; MacDowell of Kentucky, whose ovariectomy was the first done in any country. The city specialist is apt to underestimate his rural brethren and to decry their attempts to do surgery, but many emergency operations must be done by the general practitioner, even including laparotomies, and occasionally a man of force and aptitude attained great surgical skill.

#### Drainage Following Cholecystotomy.

DR. J. J. REYCRAFT, Petoskey, asserted that drainage was too often unnecessarily used after cholecystotomy. Many operators invariably drained, and the majority drained in most instances; but there were many cases in which the mucous membrane of the gall bladder was healthy, as evidenced by its normal appearance, and in which the bile is non-infectious, even when many concretions were present. In such cases, if the common duct be patent, the author advised closing the gall bladder and the abdominal wound without drainage. Observance of this rule would result in the closure of two-thirds of cholecystotomy wounds, with an accelerated convalescence and a diminution of the postoperative hernias. If an occasional error were made in thus closing wounds, it would be easy to operate a second time and remedy the mistake. He suggested that when drainage is necessary a soft rubber tube is the only means advisable; cigarette drains and gauze are never to be used, according to his experience.

Discussion of this paper elicited a wide divergence of opinion.

#### Acute Peritonitis.

DR. W. F. METCALF, Detroit, elaborated the latest ideas on history, physiology and pathology of the peritoneum and its



inflammations, quoting especially from Dudgeon and Sargent's work on the bacteriology of peritoneal infections. These recent ideas had profoundly influenced methods of diagnosis, prognosis and treatment. One could not wait for classic signs, for treatment was then likely to be fruitless. Operation should be done as soon as diagnosis was established, and the diagnosis ought to be plain in twelve hours after the onset. It makes no difference whether the infection be local or general—an acute peritonitis should be operated on at once, unless the patient be moribund or undoubtedly improving. In the operative procedure he preferred the right rectus incision, when possible, closed any perforation that might exist, refrained from all irrigation or wiping (except removal of feces or food particles by moist gauze), used all possible expedition, and placed drainage in the dependent portions. If the process be localized, he laid a cofferdam of gauze around the focus, to be removed in from six to eight days; if this were not indicated, he drained through stab wounds by means of split rubber tubes containing gauze strips. The patient was placed in the Fowler position and normal saline solution given continuously by rectum. He has seen no benefit in these cases from opsonic therapy; he believed in the use of morphin in after-treatment, when there is restlessness and pain, especially in children; he seldom used a cathartic before the fifth day. If mechanical or paralytic obstruction developed, he performed a secondary laparotomy, releasing the bowel or doing enterostomy.

#### Appendicostomy.

DR. J. A. McMILLAN, Detroit, called attention to the value of appendicostomy in treating severe and obstinate cases of amebic dysentery, mucomembranous colitis, and syphilitic ulceration of the colon, all of which were resistant to ordinary methods of treatment. Other surgical procedures, such as extirpation of the colon, colostomy, and cecostomy, were beneficial, but difficult and dangerous, and accomplished no more than appendicostomy, which had the advantage of being simple, safe, efficient, clean, and could be easily closed when desirable. The method is especially indicated in colonic diseases, but its value decreased in proportion as the disease descended toward the rectum, so that sigmoid and rectal affections were better treated by rectal irrigations. After appendicostomy was performed, a rubber tube could easily be introduced into the cecum and fluids injected as indicated; usually irrigations once a day or once in two days would suffice. The technic of the operation and the methods of irrigation were fully described.

#### Chloroform Anesthesia.

DR. R. M. GUBBINS, Ceresco, claimed that the proper care in the administration of chloroform made it a safe, convenient and pleasant anesthetic. He dwelt on the need of giving minimum dosage, the use of strychnin for weak heart muscle, morphin and atropin when indicated, due regard for the patient's comfort, both mental and physical, an accurate knowledge of the condition of all important viscera, and the employment of suitable contrivances for administering the anesthetic. He criticized adversely the ordinary Esmarch inhaler and most of its modifications, also the complicated apparatus for combining chloroform, oxygen, etc., in definite percentages, and offered for consideration a mask of his own design, higher than the Esmarch, with perforations of the gauze covering. He mentioned the parenchymatous degenerations produced occasionally by chloroform and admitted that at present there was no way to obviate their occurrence.

#### Acute Toxemia After Chloroform Anesthesia.

DR. F. W. HEYSETT, Freesoil, said that many practitioners who use anesthetics were apt to think their patients out of all danger from the anesthetic as soon as its primary effect had worn off. But it must be realized that not only do pneumonias occur, but after chloroform especially there occurred a form of acute toxemia, due to parenchymatous degeneration of the liver, kidneys and other organs. The symptoms of this toxemia occurred from 10 to 150 hours after anesthesia and comprise feelings of distress and anxiety, restlessness, de-

lirium or stupor, nausea, vomiting, jaundice, convulsions, coma, scanty urine containing acetone, cyanosis, labored breathing, petechial hemorrhages, rise of temperature, rapid pulse. Mild cases were common, exhibiting only a few of these signs in a slight degree. The condition occurred oftener in females than in males, and the majority of deaths occurred in children under 10; a condition of exhaustion from any cause predisposed to the toxemia. A case was reported in detail.

#### Preliminary Report on the Use of Tubercle Residue in Surgical Tuberculosis.

DR. J. W. VAUGHAN, Detroit, reported 16 cases of surgical tuberculosis in which Vaughan's tubercle residue had been used, usually in conjunction with other methods of treatment. The residue was the product obtained by washing a large amount of dead germ substance with water, salt solution, alcohol and ether, then heated with sodium hydroxid and alcohol, which split the germ substance into a toxic portion, soluble in alcohol, and a non-toxic portion (the residue) insoluble in alcohol. The cases included tuberculous peritonitis, tuberculous kidney, psoas abscess, glands of neck, joint infections. He stated that his patients showed an undoubted beneficial effect from the bacterial therapy; that this was probably brought about by the formation of an enzyme in the blood, which reacted chemically with the tubercle bacillus so as to injure or destroy it. The total leucocyte count was not changed, but the differential count showed an increase of from 15 to 20 per cent. of polymuclear forms.

#### Diverticulum of the Esophagus.

DR. H. O. WALKER, Detroit, spoke of the two classes of esophageal diverticula: First, the "traction" variety, produced by a pull from without, usually by inflammation; these were usually small and gave very slight symptoms. Second, the pressure diverticula, produced by intraesophageal pressure, either congenitally or secondary to trauma or stricture. This variety gave serious symptoms, including choking, nausea, regurgitation, and inanition. Sometimes the diverticulum first filled with food and then food would pass by into the stomach, or food could be taken only in certain positions; occasionally the sac could be emptied voluntarily by vomiting, or it might require pressure; there might be pain after eating; in a few cases the decomposition of food in the sac gave rise to fetid breath. All these points, together with the bismuth-*x-ray* examination made the diagnosis definite. Prognosis was poor, death usually resulting from starvation, aspiration pneumonia, or phlegmon secondary to perforation. The treatment consisted in operative measures. He reported a case thus treated successfully. The mortality of the modern operation was very small.

#### Nerve Involvement in Fractures of the Extremities.

DR. CARL S. OAKMAN, Detroit, said that nerve injury at the time of fractures, or during reduction, retention or formation of callus, was an uncomfortable complication which could be effectively treated if recognized. Often, however, the circumstances of fracture accidents and their treatment led one to overlook nerve involvement and then the problem was increased in difficulty. Injuries to nerves of the upper extremity occurred far oftener than those of the lower, and the musculospiral was affected more often than any other nerve. The nerve was either contused, lacerated or entirely divided, most frequently the second. The symptoms of division of mixed nerves were anesthesia and motor paralysis, followed by atrophy, trophic and inflammatory skin changes, and occasional joint lesions; in laceration the symptoms partook of the above details in proportion to the extent of the injury. In contusion also the same symptoms existed, but usually milder and of limited duration, tending to spontaneous recovery. Pressure of a nerve by growing callus gave rise to paresthesia, hyperesthesia and muscular twitchings, followed by paralytic manifestations. In every case of fracture the physician should test the skin sensations before applying retentive dressings in order properly to treat nerve complications if they exist. Prompt recognition and intelligent measures might save months of inconvenience and possible lawsuits. Elec-



trical tests for degenerative muscle changes were helpful. Avoidance of violent manipulation in reducing fractures and dislocations would prevent a few nerve injuries, and careful watching of the position of fragments would sometimes forestall the pinching of nerve trunks.

#### Bloodless Operation for Internal Hemorrhoids.

DR. L. J. HIRSCHMANN, Detroit, described his technique as follows: A hypodermic dose of morphin is given twenty minutes before operation, the bowel is washed out with a suds enema and boric acid irrigation; the patient assumes the Sims lateral position, the parts are shaved and cleansed, and then anesthetized locally by hypodermic injection of from 20 to 60 minims of beta-eucain lactate solution, previously sterilized by boiling strength from 0.1 to 0.5 per cent. The sphincter is dilated to whatever extent is necessary (usually not much), the hemorrhoids exposed and individually anesthetized; a ligature carrier armed with No. 2 catgut is passed through the mucous membrane at the base of the pile and so directed as to half encircle the pedicle submucously and emerge at the opposite side; the ligature is tied snugly, thus effecting a ligation of the whole blood supply and only one-half of the mucous membrane. An analgesic suppository is given and the patient put to bed. Pain may persist for twenty-four hours, due to swelling. Inside of four weeks the piles thus ligated shrink and disappear, or the "nub" can be cut away. If there is no indication for haste, the pile can be removed at time of operation, leaving the wound to heal by granulation. He claimed that the procedure is recommended by its simplicity, brevity, safety and lack of hemorrhage.

#### Clinical Aspects of Prostatitis.

DR. F. W. ROBBINS, Detroit, made a report on the clinical aspects of prostatitis, based on his last 200 cases. Some of these patients were seen but a few times in consultation, so that complete statistics regarding duration, length of treatment, etc., were not attempted. About 5 per cent. had a negative venereal history. Masturbation was the probable cause in a few cases, while the influence of exposure to cold and dampness could be traced in others. A well-defined group was that traced to sedentary life, with overindulgence in eating and drinking. None of the patients was operated on, although the author was constantly on the lookout for cases suitable for prostatotomy. The symptoms of prostatitis were not always clean-cut. A patient with a history of gonorrhea or sexual excesses, complaining of precipitate ejaculations with less seminal fluid than formerly, and speaking of "loss of manhood" was apt to be suffering from prostatitis. Nervousness, dyspepsia and loss of weight were frequently present. The recurrences so often seen in gonorrhea were often due to prostatitis. Whenever the seminal vesicles were inflamed there was also inflammation of the prostate. Instrumentation was rather for the purpose of excluding diseases of the urethra and bladder than for any information it might give regarding the prostate itself. Digital examination by rectum and microscopic examination of the prostatic fluid were the only reliable means of diagnosis. The author believed that with proper treatment the prognosis was good. Most patients might safely marry. Heat and cold by rectum, laxatives, rest in bed and sedatives were indicated.

#### Conservatism in Surgery of the Uterine Adnexa.

DR. G. VAN A. BROWN, Detroit, reviewed the progress of gynecology toward conservation of the female reproductive organs, and emphasized the necessity of leaving in the pelvis as much functioning material as possible. In operations on the ovaries for Graafian follicle or corpus luteum cysts, for hematoma, fibroid tumor, dermoid, prolapse, healthy tissue could be left intact. In operations for tubal pregnancy, adhesions, sometimes in inflammatory lesions, normal ovarian tissue could also be left unmolested. The tube should not be excised unless its value was destroyed by certain myomata, tubal gestation, hydrops, inflammation. Acute salpingitis should not be operated on. The author suggested that women who have had conservative pelvic operations should favor impregnation by assuming the erect or the Fowler's position after

coitus, so as to make the ovum more likely to gravitate to the Fallopian current. He described cases and technique of operation.

#### Hydramnios: Its Etiology and Significance.

DR. J. E. DAVIS, Detroit, said that the origin of an excessive amount of amniotic fluid might be either fetal or maternal, or in rare instances from both sources. The cases of fetal origin were believed to be caused by circulatory disturbances, excessive urinary secretion, increased skin activity, serious inflammation of the amnion, deficient absorption, increased activity of the chorion and toxic substances in the fetal blood. The maternal causes were anemia, dropsy, leukemia and syphilis, all conditions leading to venous stagnation, and loss of tone of the uterus. He reported three cases illustrative of the etiology, variety and clinical significance. In his experience the condition was more frequent than one would gather from the literature. Case 1 was in a v-para. The fluid measured 12 liters and the cause was not determined. Case 2: The eleventh child was hydrocephalic and stillborn. Three weeks before delivery there was edema and marked increase in the size of the abdomen. Manual dilatation was performed with version. Two months afterward hysterectomy was done for pelvic inflammatory disease. Case 3: A primipara, at the eighth month of pregnancy, began to have edema of feet, legs and thighs. The urine was normal. The membranes were punctured and 10 liters of fluid allowed slowly to drain away. Labor set in and four hours later forceps were applied. The child died in thirty-six hours and at autopsy syphilitic lesions of the liver and lungs were found, which lesions suggested high blood pressure in the cord, the probable cause of the hydramnios.

Early examination of every pregnant woman should be made. Syphilis was a more frequent cause than was now recognized. Premature labor should be brought on as soon as the child's interests were safely conserved. Uterine hemorrhage and inflammation were thus limited.

#### Early Diagnosis of Carcinoma of the Uterus.

DR. J. H. CARSTENS, Detroit, said that it was well to have it well fixed in the mind that cancer, at its beginning, was a local disease, that at some time it was microscopic and that at some time in its course it was absolutely local and could be thoroughly removed. A crusade against cancer similar to that against tuberculosis should be begun. Physicians sometimes neglect cases of uterine bleeding; every woman in the cancerous period of life showing the slightest symptoms should be carefully examined. Excessive flow at the time of the menopause meant trouble and was not a normal manifestation of the climacteric. A discharge in a woman formerly free from it was an ill omen, and loss of weight and strength were important symptoms. The necessity of curettage and microscopic examination of the scrapings was dwelt on. Thoroughness of examination and early diagnosis were the necessities for a decrease in the frightful cancer mortality. The author proposed a cancer circular in which were given the signs by which a woman might know that she was in danger.

#### A Case of Obstetrics with Sequelæ.

DR. W. P. MANTON, Detroit, described the case of a primipara, aged 35, with previous history of pyelitis, who was taken with eclampsia in the eighth month of pregnancy; she had four convulsions and the urine was loaded with albumin. She was anesthetized, the cervix manually dilated, and the fetus extracted by forceps. The child lived only four hours. Both the cervix and perineum were torn, but only the latter was repaired at the time, on account of the patient's poor condition. On the third day after delivery a vesicocervical fistula developed, and within two months an attempt was made to repair it. After twelve days it reopened, but was much smaller. Six weeks later the woman experienced menstrual pain and again a month later. Shortly after this another operation was done. The uterus was found enlarged to the size of a three months' pregnancy, due to atresia of the cervical canal and retained menses. The uterus was evacuated, another plastic operation done to relieve the fistula and



prevent repetition of the atresia, and this was followed by complete recovery, and the restoration of normal menstruation.

#### Toxemias of Pregnancy: Etiology and Pathology.

DR. W. H. MORLEY, Detroit, said that the etiology of these toxemias was still unsettled, and that, therefore, many theories existed. The conditions might be due to hepatic insufficiency before or after conception, or to toxins circulating in the blood due to faulty elimination, or to aberrant chorionic and other fetal elements. The severe and mild hyperemesis, the other vague symptoms of toxic affections, and the various grades of renal trouble, including eclampsia, were all probably different manifestations of a common causation. The pathologic changes consisted in tissue destruction, mild or severe, according to the degree of toxemia. Liver, kidneys and spleen were the organs most often and markedly attacked; there might be simple degeneration, or atrophy, or necrosis and hyperplasia of connective tissue elements. The thyroid was often hyperplastic.

#### Toxemias of Pregnancy: Diagnosis and Treatment.

DR. H. E. RANDALL, Lapeer, stated that the diagnosis of the toxemias rested on recognition of certain symptoms, such as nausea, vomiting, epigastric pain, headache, edema, together with detection of diminished urea, albuminuria, casts and increased blood pressure. Convulsions might come on suddenly without premonitory symptoms. If the toxemia were accompanied by hepatitis there might be stupor, coma, black vomit, bilirubin, and rapid respiration. Acute yellow atrophy of the liver should be called either pernicious jaundice or icterus gravis; its most frequent occurrence was in pregnant women, as a severe phase of toxemia. In treatment of toxemias of gestation the first indications were elimination and lowering of blood pressure; for the former, use cathartics, diaphoretics and diuretics; avoid morphia. To lower blood pressure use nitroglycerin, the nitrites, veratrum, or venesection. Administer chloroform to control convulsions. If severe cases do not respond to these means, terminate labor at once.

## Medicolegal

#### Calling of Physician as Witness Waives Privilege as to Prior Examinations.

The Supreme Court of New York, Appellate Division, Second Department, says that the serious question in the personal injury case of Marquardt vs. Brooklyn Heights Railroad Company was the extent of the plaintiff's injuries. She called as a witness a physician who attended her after the accident and who testified that he treated her for a nervous condition. The defendant's counsel elicited from the witness on cross-examination the fact that he had treated the plaintiff for nervousness before the accident. The evidence was at first objected to as incompetent and inadmissible, and the trial court was about to sustain it on the ground that it was privileged, when the plaintiff's counsel stated that he was not claiming privilege, whereupon the defendant's counsel was allowed to proceed with the cross-examination until finally, after some dialogue between court and counsel, the court stopped the cross-examination in reference to the plaintiff's condition prior to the accident, and struck out all of the testimony of the witness on that subject, on the ground that the witness was precluded from testifying by Section 834 of the New York Code of Civil Procedure. The Appellate Division holds that this was error.

By calling the physician as a witness the court says that the plaintiff waived her privilege. Permitting a witness to be sworn and examined without objection is an express waiver, and a waiver once made can not be recalled.

In this case the plaintiff, the court says, had not only called the witness and examined him in reference to her condition after the accident, but counsel during the cross-examination had expressly stated that he did not claim the privilege as to examinations made by the witness prior to the accident. The court thinks that, by calling the physician and examining him

in reference to her condition after the accident, the plaintiff waived her privilege as to prior examinations, and it was permissible for the defendant to show by cross-examination that the condition testified to by the witness existed prior to the accident. If the plaintiff desired the shield of the statute, she should not have called the physician as a witness. When she did so, she opened the door to any inquiry relevant to the fact in issue concerning which the witness had testified.

#### Corporations Not Liable for Medical Services Rendered with Approval of President.

The Supreme Court of Indiana says that it was averred in the case of Cushman vs. Cloverland Coal and Mining Company that an employé of the defendant company, while at work for it, was personally injured, his wounds being of so serious a nature as to create an emergency for the immediate attention of a physician and surgeon in order to save his life, by reason whereof the plaintiff was called and employed to attend and treat him, by the defendant, by and through its mine superintendent, etc. But that was not all. The complaint showed further that, on the employment of the plaintiff by the mine superintendent, the latter immediately reported the fact to the defendant's president and general manager, who, as such officer, with full knowledge of the employment of the plaintiff, ratified and confirmed the same by expressing his approval, and by requesting the plaintiff to supply the injured employé with necessaries. So that the question of the sufficiency of the plaintiff's complaint, or right of recovery, really rested on the ratification by the defendant, acting through its president and general manager, rather than on the power of the mine superintendent to make the employment.

Ratification can only be made by one who has power to make the contract in the first instance. If the president and general manager had authority, either express or implied, from the defendant's board of directors to employ the plaintiff to render the services sued for on behalf of the corporation, then he could, no doubt, give validity by ratification to the superintendent's contract.

The naked act of investing the individual with the office of president gives him very little power to act for the corporation. He has no power to bind it in material matters, except as he may be authorized by law or by the board of directors.

Another general rule, apparently of universal acceptance, is that officers of corporations organized for and engaged in commercial pursuits, without special authority, can not, as a legal right, charge the corporation with the employment of physicians and surgeons to attend on sick or injured employées. The rule is even applicable to railroad companies.

No court, this court thinks, has gone so far as to hold that even the general manager of a railroad may, on behalf of the company, engage generally in providing medical aid to sick and injured employées and passengers, especially where it is not shown that the sickness or injury was the result of the company's negligence.

A modified exception to the rule applicable to railroad companies is generally recognized, founded on the exceptional characteristics and hazards of their operation. Employées of railroad companies, particularly trainmen, are called on to perform their duties along the line of the railroad, extending many miles. When on duty they are constantly away from home, often remote, among strangers, and beyond the quick reach of family and friends. In such cases, when the employé becomes seriously ill, or suffers a severe injury, and he has available neither family, friends nor credit, nor ability to provide for himself the care and medical assistance his condition imperatively demands, the dictates of humanity cast on the employer, as the one nearest in obligation, the duty to provide, during the continuance of the emergency, whatever is immediately and urgently required for the preservation of life and limb. It is only when there is no relative or friend present willing to help the sick or injured employé at a time of urgent necessity that the duty and authority rests on the employer, acting by its highest representative present to render assistance. Some one must serve the helpless man, and the law devolves the duty on the master rather than on a



stranger. The duty arises with the emergency and ends with it.

But this exception relating to railroads had no bearing on the question before the court. The defendant was a coal mining company, a strictly private corporation. Its business was stationary. Its employes performed their duties in one general working place, near their homes, family, friends and acquaintances, and had all the facilities for hastily summoning medical and other aid, in time of pressing emergency, as might be possessed by the corporation.

There is no greater or different reason for holding a private mining corporation responsible for supplying medical aid for its employes than appertains to all kinds of manufacturing bodies, and the court perceives no reason why either class of corporations, under ordinary circumstances, should be required to furnish their workmen with medical service any more than they should be required to furnish them with their dinner. The policy of the law is to protect the employe, equally with the employer, in the fullest freedom of choice in supplying his personal wants of every kind, whenever he is as capable and well prepared as his employer to act for himself.

The court does not, however, hold that a case can not arise with a mining or manufacturing company, or even with an individual, wherein the facts may be so unusual and extreme as to impose on the employer a duty analogous to that imposed on railroad companies. But no such case appeared under the facts alleged in the complaint. It was alleged in the complaint that the defendant was a corporation organized for and engaged in the business of mining coal; that the plaintiff was personally injured while at work for the defendant as one of its employes. There was no averment that either the mine superintendent, or the president and general manager, had received authority from the corporation to contract for, or to ratify the employment sued on, either expressly or by implication. The court was not informed even of the nature of the employment, whether as engineer, blacksmith, miner or other particular service. Neither was it informed of the nature or extent of his injury, nor the facts that created the emergency that imposed on the coal company the duty of employing the plaintiff. It was not averred that the injured employe was unable to help himself, or that he had no money, or credit, or family, or friends present to give him assistance, nor was it shown by the complaint that there existed any other reason why he was not as able and competent to speedily summon a physician as the company. The averment that the injured party's wounds were so severe as to create an emergency for the immediate attention of a physician and surgeon in order to save life was but pleading the baldest conclusion. Facts, and not conclusions, must be stated. The essential facts that should appear in support of a justifiable emergency were absent, and, as in all other cases, the court must, in testing the sufficiency of the pleading, assume such absent facts to be adverse to the pleader, under the general presumption that a party will set forth all the facts favorable to his case.

There was no error in sustaining a demurrer to the complaint in this case.

#### Procedure Before State Board of Health and Revocation of License for Criminal Abortion.

The Supreme Court of Nebraska holds, in *Munk vs. Frink*, that a complaint filed before the State Board of Health for the purpose of procuring an order revoking the license of a physician is sufficient if it informs the accused, not only of the nature of the wrong laid to his charge, but of the particular instance of its alleged perpetration. And in a trial under such a complaint it is not necessary that the proceeding should be conducted with that degree of exactness which is required on a trial for a criminal offense in an ordinary tribunal of justice.

Proceedings by the State Board of Health to revoke a physician's license for cause are summary in their nature and are triable before the board without the intervention of a jury. A trial and conviction in a court of competent jurisdiction is not a condition precedent to a proceeding by the State Board

of Health against a physician to revoke his license for any of the causes provided by statute.

The power conferred on the State Board of Health to revoke a physician's license for cause is an administrative and not a judicial function, and the limit of judicial interference in such cases is to protect the accused in his right to a hearing on specific charges after reasonable notice of the time and place of hearing has been given and a full opportunity afforded him to present his defense to such charges and against a conviction, unless on competent evidence. And in such a case, when the State Board of Health has so proceeded and taken testimony, and has given the respondent full opportunity to appear in person or by counsel to cross-examine the witnesses against him, and to introduce testimony in his own behalf, and has passed on the sufficiency of the evidence so taken, the findings of the board as to the sufficiency of the evidence to sustain the charges will be upheld, unless it appears that there is no evidence to sustain such findings.

In a hearing by the State Board of Health of charges against a physician for procuring or aiding or abetting in procuring a criminal abortion, it is not necessary to either allege or prove that the woman had become quick. It is not the murder of a living child which constitutes the offense, but the destruction of gestation, where such destruction is not necessary in order to preserve the life of the woman. The moment the womb is instinct with embryo life and gestation has begun the crime may be perpetrated.

The Supreme Court Commissioners say in this case that the section of the statute under which the proceedings in this case were had defines "unprofessional and dishonorable conduct," and includes "the procuring or aiding or abetting in procuring a criminal abortion" in that definition. This definition was assailed as "a profound legal bizarre," counsel saying that the author of that definition "should be immortalized as an apostle of the incongruous." But the Commissioners are unable to concur in this severe criticism of the author of the section of the statute under consideration or of the definition referred to. If "the procuring or aiding or abetting in procuring a criminal abortion" is not "unprofessional or dishonorable conduct" in one holding a certificate entitling him to practice medicine, then the Commissioners are unable to conceive of any conduct of which such person might be guilty which could be called unprofessional or dishonorable.

With regard to the contention that a sufficient complaint of unprofessional or dishonorable conduct within the meaning of the statute must, in apt terms, charge the criminal destruction by the accused, either as principal or accessory, of a vitalized human fetus, the Commissioners say that authorities are not wanting to sustain this contention, but the doctrine of the Supreme Court of Pennsylvania, in *Mills vs. Commonwealth*, 13 Pa., 632, is preferred. If the theory contended for should be sustained, it would be practically impossible to convict an abortionist for any abortion, or attempted abortion, during the first five months of pregnancy, for, if gestation had not proceeded to the period of quickening, there would be no way of disputing the testimony of the abortionist that what he removed from the woman was, in fact, a dead fetus. Even the woman herself could not dispute this testimony prior to pulsation following the quickening period. It would be giving unlimited license to the abortionist to ply his nefarious calling, provided he confined his criminal operations to the early months of gestation. The Commissioners prefer to be in line with the Supreme Court of Pennsylvania, and say, although it has been so held in Massachusetts and some other states, it is not the law "in Nebraska," and never ought to have been the law anywhere.

No error is found in this case in the revocation of the appellant Munk's license as a physician.

In the companion case of *Walker vs. McMahan*, the Commissioners say that it was true that the appellant Walker acted as assistant only to Dr. Munk in performing the operations complained of, but the evidence showed such a concert of action between these two doctors in these and other cases of a similar nature, and such a ready and unquestioning participation by the appellant Walker with Dr. Munk in the performance of the two operations involved that there was no escape from the conclusion that if one were guilty both were.



Current Medical Literature

AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

Boston Medical and Surgical Journal.

August 13.

- 1 \*Prophylaxis in Surgery. R. J. Pye-Smith, Sheffield.
- 2 \*Immediate Treatment of Serious Ocular Conditions Frequently First Seen by the General Practitioner. F. E. Cheney, Boston.
- 3 Excision of the Os Innominatum. Arthrodesis of the Sacro-Iliac Synchondrosis. C. F. Painter, Boston.
- 4 General Therapeutics of Gastric Affections. M. V. Tyrode, Boston.
- 5 \*Examination of One Hundred Eye Cases in the Dedham Public Schools. R. W. Place, Boston.

1. See Foreign Abstract No. 3, p. 794.

2. **Ocular Conditions and the General Practitioner.**—Cheney discusses certain grave diseases of the eye that are usually first seen by the family practitioner, and for which he must be prepared temporarily to assume the responsibility for treatment. In acute glaucoma the immediate treatment demanded is a miotic to contract the pupil and to relieve symptoms temporarily, pending an iridectomy. He recommends beginning with two or three drops of a 2 per cent. pilocarpin nitrate solution, instilled into the eye every half hour. If that fails, a 1 per cent. solution of eserine sulphate may be used with equal frequency. Morphine may be advisable for the pain and an early saline cathartic is beneficial. He next discusses iritis, and incidentally mentions, as a point hitherto unnoticed in the literature, that "supraorbital pain is not infrequently absent, or at least very moderate until atropine is used, when it may become severe, and so continue until the inflammation begins to subside." It is necessary to caution the patient of this, and not to discontinue the remedy on this account, because the one objective of treatment is as wide dilatation of the pupil as possible. Leeches to the temple are often of great use, especially when intense congestion rather than adhesions is the cause of the failure to dilate. Ophthalmia neonatorum is next discussed, and finally perforating wounds of the eyeball. As emergency suggestions in the last-named cases, Cheney orders thorough cleaning and irrigation of the conjunctival sac, with boric acid or other mild solution to lessen chances of infection; dilatation of the pupil with 1 per cent. atropine three or four times at four-minute intervals to prevent adhesions and check likelihood of iritis; some simple ointment applied to the eye. He recommends White's ointment:

R.	gm.	
Hydrargyri bichloridi .....	005	gr. 1/12
Sodii chloridi .....	03	or gr 1/2
Petrolati .....	16	3iv

Epsom salts or other active cathartic and a leech to the temple are also recommended.

3. **Eye Conditions in Public Schools.**—Place reports the results of an examination of the eyes of school children at Dedham, undertaken under the authority of the school committee because of the large number of cases of inability or indifference on the part of parents to attend to the matter. The figures are as follows: Number examined, 113; wearing properly fitted glasses, 21; wearing improper glasses, 16; recommended to wear glasses, 47; not needing glasses, 29. Three far-sighted children had been fitted with near-sighted glasses by opticians. Place particularly cautions that "young children with two, three and even four diopters of hypermetropia can sometimes read the usual amount at a distance, and these must be watched for inability to read their books for any length of time without having the vision blur or the eyes ache." These children are liable to nervous symptoms.

Medical Record, New York.

August 15.

- 6 \*Surgical Treatment of Empyema. P. T. O'Connor, Waterbury, Conn.
- 7 Treatment of Negligent Speech by the General Practitioner. E. W. Scripture, New York.
- 8 \*The Hospital and the Professional Anesthetist. A. T. Bristow, Brooklyn, N. Y.

- 9 \*Improvement of General Anesthesia on Basis of the Principle of Adapting the Boiling Point of the Anesthetic to the Temperature of the Body (Schleich)—Ten Years' Experience at the German Hospital. W. Meyer, New York.
- 10 Anesthesia at St. Luke's Hospital. R. Abbe, New York.
- 11 Administration of Anesthetics at Mt. Sinai Hospital. H. Lillenthal, New York.
- 12 Anesthetics at the Hospital for Ruptured and Crippled. V. P. Gibney, New York.
- 13 \*Amputation in Diabetic Gangrene. E. H. Eising, New York.
- 14 Anesthesia by Chloroform and Ether. E. Pendleton, Richmond, Va.

6. **Empyema.** O'Connor discusses the operative treatment of empyema and concludes that simple incision lacks the fundamental principles of surgery, and most advanced modern surgeons do not consider it a recognized method of procedure for the surgical treatment of empyema. The established plan of procedure, which has withstood the test of time, is that laid down by Hippocrates, with the exception that Hippocrates trephined the rib to avoid injury of the intercostal vessels and nerves, while we, with a more perfect knowledge of anatomy, prefer to resect a portion of one or more ribs, thus enabling the surgeon to introduce one or more fingers, or the whole hand, into the pleural cavity, and by intrapleural manipulation to break up all adhesions, remove the large masses of coagulated lymph, and thereby accomplish a more thorough surgical operation.

8. **The Professional Anesthetist.**—Bristow discusses the dangers of the modern method of anesthesia in hospitals, and submits a series of figures drawn from fifteen replies from members of the Brooklyn Society of Anesthetists to the following questions: 1. How long does it take you to induce an anesthesia? 2. How much of the anesthetic do you use in the induction? 3. How much of the anesthetic do you use in an hour? The figures include about 10,000 cases which Bristow contrasts with the figures from six hospitals covering about 900 cases. The comparison leads him to the conclusion that in hospitals ether is wasted, largely by the open method, or that the patient gets far more ether than is required, or both. He concludes that there is really just as much reason for appointing a visiting anesthetist to a hospital as for making any other professional appointment on the staff. Two things have to be provided for: the instruction of the internes and the payment of the anesthetist. The latter may be effected either by the hospital paying him a salary, which he may supplement by private work, the hospital recouping itself by a regular charge to private patients, or the anesthetist may receive his payment directly from all private patients operated on in the hospital.

9. **Anesthesia.**—Meyer discusses Schleich's method of improving general anesthesia on a physical basis by adapting the boiling point of the narcotic to the temperature of the body. He then considers the use of a combination of chloroform, ether, and ethyl chlorid, which he has used in hospital and private work for ten years and which has also been extensively used (preceded by a hypodermic of morphine) at the German Hospital. He considers that the improvement of general anesthesia, brought about on a principle of adapting the boiling point of the anesthetic to the temperature of the body, has been sufficiently demonstrated to merit the full and careful consideration of the profession.

13. **Diabetic Gangrene.**—Eising discusses the rôle of the following factors: 1, Glycosuria; 2, the acetone bodies; 3, ammonia excretion; 4, kidney complications; 5, arteriosclerosis; 6, blood pressure, and finally gives a summary of these factors in relation to gangrene. He concludes that armed with these facts determinable in any given case of diabetes we may apply them in the following manner: First, prognostically, before the occurrence of gangrene even in the presence of a high glycosuria, a marked acidosis (which means diacetic acid alone or diacetic acid and beta-oxybutyric acid), and advanced age, in the absence of arteriosclerosis and high blood pressure, we may look on the patient as being not of the type to develop gangrene. And again, from the prognostic standpoint, a patient not past forty years, with a low percentage of sugar, with no acidosis, but with an interstitial nephritis and a marked arteriosclerosis, we may look on as belonging to the type of those who may acquire gangrene.



## New York Medical Journal.

August 15.

- 15 \*Local and Surgical Treatment of Chronic Diarrhea. S. G. Gant, New York.
- 16 \*Use of the Bronchoscope, Esophagoscope and Gastroscope. T. H. Halsted, Syracuse, N. Y.
- 17 \*Extension, Without Use of Weights, for Fractures. C. M. Paul, Cincinnati.
- 18 Syphilis. G. Merzbach, Germany.
- 19 Preliminary Report on the Vaccine Treatment of Atrophic Rhinitis. R. H. Skillern and E. Burrill-Holmes, Philadelphia.
- 20 Headache and Its Cure. J. A. Donovan, Butte, Mont.
- 21 \*Pneumonia: One Method of Treatment. E. P. Tompkins, Roanoke, Va.

15. **Chronic Diarrhea.**—Gant believes that in a vast majority of cases chronic diarrhea is due to ulcerative lesions in the colon. Medicaments, though useful in acute diarrhea, are ineffective in the form under consideration. The local treatment of colitis may be non-operative or surgical; the former includes diet control, rest and colonic irrigation. Its success depends mainly on the thoroughness with which the bowel is cleansed. The irrigation treatment is usually effective in all varieties of colitis, but it naturally takes a longer time to overcome a tuberculous form than it does other types of ulcerated colitis. When non-operative measures fail after a few weeks' or month's trial, one of the following operations may be resorted to: Resection of the colon, colostomy, appendicostomy, cecostomy with irrigation of the small intestine (Gant's operation), and intestinal exclusion. He discusses each of these in detail and prefers cecostomy and appendicostomy as being effective, not dangerous, capable of easy performance, and as leaving few if any undesirable sequelae. Gant has no more hesitancy in advising these operations for the relief of chronic diarrhea than in recommending appendicectomy for appendicitis. Finally, he describes in detail a method of his own devising, not hitherto published, which he considers an effective way of irrigating both the small and larger intestine through the same opening in the cecum. This procedure is also useful in conditions other than diarrhea, namely, in the treatment of ordinary and pernicious anemia, autointoxication, ptomain poisoning, diarrhea of children, intestinal feeding following operations on the mouth, in stricture of the esophagus, gastric ulcer, cancer, etc.

16. **Bronchoscope, Esophagoscope, and Gastroscope.**—Halsted reports eighteen operations or examinations performed on fourteen patients; fourteen times under general anesthesia (ether in all but one), three under cocaine, one without any anesthetic. The patients varied in age from a new-borne babe of two hours to a woman of seventy. In four cases the operations were for the removal of foreign bodies. In the remaining cases the operations and examinations were for growths in the pharynx and larynx for strictures, etc. Halsted concludes that direct visual examination of the larynx, the trachea and the bronchus, down almost to the last subdivision of the bronchiole, is a practical thing and of inestimable value, not alone for the removal of foreign bodies in the lower air passages, but for the diagnosis and local treatment, both by topical applications and surgical interference, of various lesions that affect the larynx, trachea, bronchus and the lung, such as laryngeal tumors, tracheal and bronchial ulcers, tuberculous or other lesions, and lung abscesses, discovering the cause and location of pressure on the trachea and bronchus. By means of esophagoscopy the accurate diagnosis and treatment of many hitherto inaccessible diseases of the gullet becomes possible. The causes of painful and difficult deglutition, the etiology and diagnosis and localization of esophageal obstructions and stricture will depend not so much on the findings of the bougie as on the observations of the eye, aided by the probe. Through the gastroscope Chevalier Jackson has demonstrated the possibility of making a systematic and complete examination of from two-thirds to three-fourths of the stomach wall; that in many cases the pylorus can be seen and probed; that gastric ulcers can be treated locally; that early diagnosis of carcinoma can be made; that sections of tumors can be removed for microscopic examination—in a word, that the stomach, like the larynx, is subject to direct and local examination and treatment.

17. **Fracture Extension Without Weights.**—Paul describes a method of using an ordinary Bradford frame covered with a

bag of strong unbleached muslin, which is so cut as to form a series of hammocks. This enables the application of a plaster dressing to be made with circular turns without handling any part of the patient. The process of applying the plaster bandages is described. The article is illustrated.

21. **Pneumonia.**—Tompkins' method he asserts to be of value only in the stage of engorgement. He considers it the rational thing to do, to endeavor to decongest the capillary vessels of the alveoli. This was the object of the old-time bleeding, but the skin is capable of containing one-fourth the entire volume of blood. The patient, therefore, in this stage is surrounded by bricks made red hot in the fire and then put into boiling water and wrapped in a cloth. A flannel saturated in turpentine and covered by a newspaper is applied to the seat of pain. Half a grain of calomel and sodium hydroxid are given four times at two-hour intervals; and alternating with this, aconite, two minims, tartar emetic, one-fortieth grain, ipecac one-eighth grain, morphin sulphate, one-twentieth grain. He reports a case in which a rapid change took place within seventy-two hours of the time of the onset. He has no quarrel with the open-air treatment, not having had occasion to use it in pneumonia, owing to success with the treatment detailed above.

## The Lancet-Clinic, Cincinnati.

August 8.

- 22 \*Primary Melanotic Sarcoma of the Rectum and Anus. L. J. Krouse, Cincinnati.
- 23 Injuries at the Elbow. J. C. Larkin, Hillsboro, Ohio.
- 24 \*Obscure Fractures Discovered by Roentgen Examination. S. Lange, Cincinnati.
- 25 \*Cases of Reinfection with Syphilis. A. U. Williams, Hot Springs, Ark.

August 15.

- 26 The Doctor in Court. F. W. Langdon, Cincinnati.
- 27 Typhoid Fever. T. A. Dickey, Middletown, Ohio.
- 28 Myalgia Lumbalis. S. Lemp, Indianapolis.

22. **Primary Melanotic Sarcoma of Rectum.**—Krouse summarizes the literature of the subject and reports two cases of his own, adding a list of the cases that have been reported, with sex, age, location, duration, method of treatment, microscopic structure and results.

24. **Strain Fractures of Knee.**—Lange describes the anatomy of the knee joint, in detail as regards the ligaments, and then proceeds to consider the fracture effects of three classes of ligamentous strain, as follows: (a) Strain in the direction of hyperextension against the crucials, the posterior and the lateral ligaments; strain exerted laterally against the internal or external lateral ligaments, the knee being in extended position, which puts these ligaments in the stretch; (c) strain in a rotary direction, either in the direction of outward rotation, which is normally limited by the lateral ligaments, or in the direction of inward rotation, which is normally limited by the anterior crucial ligament. The transverse fracture of the patella is not included, as being too well known. He gives case reports with diagrams from skiagraphs of 1, Avulsion of external tuberosity of tibia; 2, avulsion of fragment from internal tuberosity of head of tibia with tearing off of small scale from internal tuberosity of femur; 3 and 4, crucial ligament fractures; and 5, a case of epiphyseal separation at lower end of femur.

25. Abstracted in THE JOURNAL, Nov. 16, 1907, p. 1707. The article was also published in the *Medical Fortnightly*, Oct. 10, 1907.

## Annals of Surgery, Philadelphia.

July.

- 29 \*Aneurismorrhaphy. Treatment of Popliteal Aneurism by the Reconstructive Method. J. F. Binnie, Kansas City, Mo.
- 30 \*Aneurismorrhaphy. Personal Experience with the Modern Method of Treating Aneurism. R. Abbe, New York.
- 31 \*Aneurismorrhaphy. Case of Popliteal Aneurism Presenting Unusual Difficulties in Application of the Matas Operation. J. A. Blake, New York.
- 32 \*Serous Coat of Blood Vessels Compared with the Peritoneum. R. T. Morris, New York.
- 33 Ligation of the Left Iliac Artery. W. J. Gillette, Toledo, Ohio.
- 34 \*Question of Operation for Non-penetrating Intracranial Trauma. J. A. Hartwell, New York.
- 35 \*Splenectomy. Report of Six Cases, with a Statistical Summary of All Reported Operations up to 1908. G. B. Johnston, Richmond, Va.
- 36 \*Subcutaneous Rupture of the Spleen. G. G. Ross, Philadelphia.
- 37 Gangrene of the Gall Bladder. A. S. Lobingier, Los Angeles, Cal.



- 38 Treatment of Appendix Stump After Appendectomy. M. Willis, Richmond, Va.  
39 \*Excision of Carcinoma of the Rectum by the Combined Method. J. A. Blake, New York.  
40 \*Diagnosis and Prognosis of Tuberculosis and Septic Conditions of the Kidney. G. E. Armstrong, Montreal, Can.  
41 \*Transperitoneal Removal of Tumors of the Bladder. C. H. Mayo.  
42 Antrum. E. A. Babler, St. Louis.  
43 Arrest of Growth at the Lower End of the Radius After Separation of Its Epiphysis. A. Waechter, New York.  
44 Strain-Fractures of the Knee. S. Lange, Cincinnati.

29 to 32. Abstracted in THE JOURNAL, March 28, 1908, p. 1067.

34. Operation for Non-penetrating Intracranial Trauma.—Hartwell considers this question from various viewpoints, therapeutic, diagnostic and prognostic, and reports illustrated cases, and formulates the following conclusions: First: Only in rare cases, namely, those of isolated injury affecting the sensorimotor area, can a positive focal diagnosis be made. Second: All grades of brain injury may be found in different parts of the same brain. Third: A general concussion may be followed by secondary changes in the circulation, which, if not relieved, produce pressure and death. Fourth: A pure decompressing operation is indicated in two conditions: (a) For the relief of pressure due to inaccessible hemorrhage, and (b) to relieve the pressure arising from traumatic edema of the brain. Fifth: Operation done without a very definite object in view, which object is based on careful diagnosis, is apt to be more harmful than hopeful. Sixth: The whole subject is fraught with manifold difficulties, and the brain surgeon should strive to become a practical neurologist in organic lesions.

35. Splenectomy.—Johnston reports six cases and summarizes all the reported operations up to 1908 as follows: Seven hundred and eight operations of splenectomy, with 514 recoveries and 194 deaths, a mortality of 27.4 per cent. In the period from 1900 to 1908 there are records of 355 splenectomies, with 289 recoveries and 66 deaths, a mortality of 18.5 per cent. If the instances of removal of the spleen for traumatic affections of that organ be excluded, there remain 242 splenectomies, with 210 recoveries and 32 deaths, a mortality of 13.2 per cent. The well-recognized contraindication to operation in leukemia may furthermore serve to exclude the seven cases in this series, which leaves a total of 235 splenectomies for diseases of the spleen with 208 recoveries and 27 deaths, a mortality of 11.5 per cent.

36. Rupture of Spleen.—Ross reports two cases and summarizes the reported literature as follows: Unoperated: Of 220 cases, 17 patients recovered—mortality, 92.3 per cent. Operative results: Splenectomy, 67 cases, 38 patients recovered, 29 died—mortality, 56.7 per cent.; splenorrhaphy, 2 cases, 1 patient recovered, 1 died—mortality, 50 per cent.; tamponade, 6 cases, 5 patients recovered, 1 died—mortality, 83.3 per cent. In the splenectomies 13 patients had complicating injuries, of which 9 died. In two who recovered, the complications were very slight.

39. Carcinoma of Rectum.—Blake summarizes his present opinions as follows: No single operative procedure for carcinoma of the rectum should be always carried out to the exclusion of others. The decision between the perineal and combined methods depends chiefly on the feasibility of preserving the efficiency of the sphincter and muscle, provided the growth is removable by the low route. When the combined method is used, an immediate abdominal anus should be formed unless the continuity of the natural passage can be restored with exceptional facility. Institution of a colostomy at a previous operation is an embarrassment rather than an aid.

40. Abstracted in THE JOURNAL, May 30, 1908, p. 1826.

41. Abstracted in THE JOURNAL, Jan. '11, 1908, p. 149.

Southern Medical Journal, Nashville, Tenn.

July.

- 45 Clinical Notes on Apoplexy. E. G. Wood, Nashville.  
46 \*Diagnosis of Painful Feet. E. L. Scott, Birmingham, Ala.  
47 Recent Work on Stomach Digestion. W. H. Witt, Nashville.  
48 Goiters of the Young. C. H. Mayo, Rochester, Minn.  
49 Remote Symptoms and Effects of Cholecystitis. A. M. Cartledge, Louisville, Ky.

- 50 What We Should Know About Malaria. W. Krauss, Memphis, Tenn.  
51 Use of Cocain in Surgery. J. S. Horsley, Richmond, Va.  
52 Indications for the Mastoid Operation. F. P. Calhoun, Atlanta, Ga.  
53 \*Treatment and Prevention of Tuberculosis by Tuberculin Immunization. W. Litterer, Nashville.

46. Painful Feet.—Scott discusses the various conditions to which persistently painful feet may be due, and summarizes his remarks as follows: First: Acute painful flatfoot is found in persons who subject their feet to abnormal strains. Weak feet, speaking generally, are found in persons who do not accommodate the foot usages and in those whose general bodily condition is below the normal. Weak feet, if untreated, may result in true flatfoot, or chronic strains and displacements in the structure of the feet. Diagnosis is usually not difficult, and is made by exclusion unless the evidence of perverted function be plain. Second: Morton's toe, or anterior metatarsalgia, is most frequently seen in women. The cramping pain in the region of the metatarsophalangeal joint of the third or fourth toe gives the diagnosis. The pain from the strain resultant of relaxations and that due to malpositions and exostoses, is not experienced except when the foot is in activity, while in the first-mentioned condition the pain may appear even during rest. Third: The diagnosis of gout must always be one more of suspicion than of proof; in the average case the condition must be distinguished from the other types of arthritis. The diet and habits of patients bring on attacks, and so this is the leading point in diagnosis. Fourth: Gonorrheal arthritis affecting the foot is in some cases difficult of diagnosis on account of denial of infection. The formation of the exostoses on the os calcis and the other tarsal bones makes it clear. As would be inferred, males are most frequently subject to this condition.

53. Treatment of Tuberculosis.—Litterer discusses tuberculin therapy, and concludes that experiments on animals demonstrate the possibility of creating immunity to tuberculosis by the use of tuberculins. He is of the opinion that the time is not far distant when individuals showing a tuberculous tendency will submit themselves to the repeated injections of some form of tuberculin as a means of prophylaxis against this disease. The clinical method in the administration of tuberculin is far preferable to the one advocated by Wright in which the estimation of the opsonic index is essential. Tuberculin therapy is proving an essential aid in the treatment of tuberculosis, especially as an adjuvant to the hygienic-dietetic open-air treatment.

Chicago Medical Recorder, Chicago.

July 15.

- 54 Treatment of Hyperesthetic Rhinitis (Hay Fever) by Injections of Alcohol. O. Stein, Chicago.  
55 A Few Operations in the Eye Department of St. Luke's Hospital and Northwestern Medical School. C. A. Wood, Chicago.  
56 \*Stab Wound of Fetus in Utero. D. A. K. Steele, Chicago.  
57 \*Action of Individual Drugs Obscured by Mixtures. H. B. Hemenway, Evanston, Ill.  
58 \*Diagnosis of Cutaneous Syphilis. F. E. Simpson, Chicago.  
59 Endometritis. C. J. Drueck, Chicago.  
60 Medical Texts for Midnight Sermons. Rev. E. Bell, Chicago.  
61 Treatment of the Puerperium. H. M. Stowe, Chicago.  
62 The von Pirquet Tuberculin Reaction in One Hundred and Fifty-four Children in an Orphanage. May Michael, Chicago.

56. Stab Wound of Fetus in Utero.—Steele reports a remarkable case, the extraordinary feature of which lies in the fact that a stab wound through the abdominal walls of the mother, penetrating the gravid uterus, entering the abdomen of the fetus *in utero*, completely severing the jejunum and permitting the escape of the large and small intestines through the wound of the abdominal wall of the fetus—should not in any way have interfered with the growth and development of the fetus *in utero*, or seriously affected the recovery of the mother. Another interesting fact is the complete occlusion of the two divided ends of the intestine of the fetus and the presence of nearly three ounces of glairy, sanguinoid fluid in the stomach of the fetus at the time of operation—ten hours after birth.

57. Mixtures and Drug Action.—Hemenway condemns the dispensary practice of ready-made mixtures, as causing the student to lose sight of the finer and more exact distinctions



in prescribing and leading him to a slipshod system of therapeutics, which he follows out in practice by using the ready-made mixtures of large manufacturing concerns. In using these mixtures physicians become accustomed only to the general results, and lose sight of the accurate indications for the individual drugs. These disadvantages are intensified in the case of proprietary mixtures, the formulæ of which are liable to change at the will of the proprietors, and in any event are rarely complete. He instances various kinds of dangers that may result from the use of unmodified ready-made formulæ.

**58. Cutaneous Syphilis.**—Simpson discusses the three points in regard to the diagnosis of late tertiary eruptions: 1. How are we helped by the personal history of patients? 2. How are we helped by corroborative signs of syphilis? 3. How do we tell a tertiary syphilid simply by inspection? As regards the history, there are three sources of error: 1. Early syphilis has been mild or benign, has caused few symptoms, and these have been unnoticed or forgotten. 2. Early syphilis has given symptoms that have been misinterpreted. 3. Symptoms are present in the history, that lead one to suppose wrongly that syphilis is present. Simpson discusses each of these heads, with instances, and adds the tendency of such patients to prevaricate. As to the second question, the usual associated symptoms that help us in secondary syphilis are absent in tertiary eruptions. One may, however, search for, first, gummata of other organs, especially of the bones or testes, which are easily examined; second, scars in the skin or mouth. The determination by inspection of a tertiary eruption is aided by 1, location, and usually asymmetry; 2, destruction of skin; 3, the nature of the individual lesion, usually gummatous; 4, the grouping of the lesions and the border of the patch, tendency to serpiginous arrangement; and 5, rate of progress. When other things fail, we can fall back on the therapeutic test, mercury and potassium iodid.

#### Journal of the Michigan State Medical Society, Detroit.

July.

- 63 Diagnosis of Extrauterine Pregnancy. C. N. Smith, Toledo, Ohio.
- 64 Theory of Therapeutic Injections of Fresh Normal Serum in Acute Infections. C. M. Stafford, Detroit.
- 65 \*New Apparatus for the Treatment of Fracture of the Patella. A. I. Lawbaugh, Calumet, Mich.
- 66 Sudden Death in an Infant Having an Enlarged Thymus Gland with Three Lobes. H. M. Rich, Detroit.
- 67 Cases of Otitis, Subperiosteal Abscess in Infants: Pseudocholesteatoma, Exostosis and Artificial Drum Membrane in Adults. E. Amberg, Detroit.
- 68 \*New Dietic and Injection Method of Treating Typhoid, with Report of Cases Successfully Treated in the Last Ten Years. F. J. W. Maguire, Detroit.
- 69 Biliary Surgery. H. C. Wyman, Detroit.

**65. Fracture of Patella.**—Lawbaugh describes a new method of treating fractured patella as follows: As the separation of the patellar fragments is chiefly due to the contraction of the quadriceps extensor muscle, it becomes necessary to have this relaxed so as to bring the fragments properly into apposition. To get a fixed point from which to make this traction, adhesive strips 1½ inches wide are used. The first strip passes from the inner and upper part of the thigh across the anterior surface to the outer side of knee joint, leaving an end for the application of a traction cord; the same is done on the outer side of thigh across to inner surface of knee joint. A sufficient number of these strips are used to cover the entire muscle. A traction cord is fastened to each aggregation of the ends of these strips on the inner and outer sides of the knee joint. These cords pass downward at an oblique angle and are fastened to the lower end of the splint. The whole is then swung by the suspension ropes and the amount of traction adjusted by the angle of suspension from the ceiling of the room. A firm pad just above the upper edge of the upper fragment will materially assist in keeping this fragment in position and give an additional point for the better traction. The lower fragment is held in position by means of adhesive strips pulling it upward and prevent the tilting which sometimes occurs. Passive motion can be instituted and kept up as much as may be deemed necessary without disturbance to the apparatus or fragments.

**69. Treatment of Typhoid.**—Maguire noted when treating children with summer diarrhea that shortly after giving

them nitrogenous food in the form of milk or beef tea, their temperature would always rise; whereas when giving them a carbohydrate diet, in the form of barley or rice water, this rarely happened. He was led to discard milk in typhoid from this and other considerations, and now never uses it. He compares the statistics of typhoid mortality in the American army during the Spanish-American war, where milk was largely used, with those of the Japanese army in the Russo-Japanese war, where rice water was used in typhoid and dysentery. He describes the steps of investigation by which he was led to his present injection treatment, in which he administers per rectum from 3 to 5 drops of phenol in a pint of sterile water, by means of a fountain syringe a foot above the patient. About an hour was allowed for the injection, using a gauge with a water-glass attachment. Maguire has used this treatment also in pneumonia and gastritis. He has treated 138 cases by this method, with success.

#### Journal of Nervous and Mental Disease, New York.

July.

- 71 Disease of the Primary Motor Neurons Causing the Clinical Picture of Acute Anterior Poliomyelitis: the Result of Poisoning by Cyanid of Potassium. J. Collins and H. S. Martland, New York.
- 72 \*Significance of Phrictopathic Sensation. E. Jones, London.
- 73 Tumor of the Frontal Lobes, with Symptoms Simulating Paresis. F. X. Dercum, Philadelphia.

**72. Phrictopathic Sensation.**—Jones says that during the process of recovery from a hysterical anesthesia, a great variety of abnormal sensations may be experienced by the patient when the part in question is stimulated. Certain features characteristic of these sensations occur in such constant association that he includes them in a single group, for which he proposes the term "phrictopathic." These are: 1, Abnormal persistence of the sensation of cutaneous stimulus; 2, delayed reaction time; 3, non-perception when a more normal sensation is present; 4, tendency to immediate motor response; 5, disagreeable quality of the sensation; 6, impairment of the sense of personal ownership. The author concludes that sensations showing the six features here grouped together under the designation "phrictopathic" are due to a cleavage between the esthetic sensibilities and the autosomato-gnostic memory feelings of a part of the body, which results from hysterical disaggregation implicating the latter group of mental processes; the degree to which the features are marked is a measure of the extent of this cleavage.

#### Journal Missouri State Medical Association, St. Louis.

July.

- 74 Relation Between Diseases of the Skin and Diseases of Other Organs of the Body. J. Duncan, St. Louis.
- 75 \*Sphere of Modern Surgery in the Relief of Stomach Disorders. H. E. Pearse, Kansas City.
- 76 Stricture of the Esophagus. C. E. Fulton, Springfield.
- 77 Unclassified Conclusions in Otolaryngology. F. C. Ewing, St. Louis.
- 78 History of Amputations I Have Done Above the Shoulder Joint. G. Halley, Kansas City.
- 79 General Anesthesia. J. J. Farrell, Hannibal.
- 80 Leukemia. P. Donohoo, Joplin.

**75. Surgery in Stomach Disorders.**—Pearse recognizes two great classes of disorders of the digestive function, both curable by surgical operation. The one an array of diseases of the gastric structure itself, the other reflected, so to speak, from other organs. Of the gastric neuroses, so called, he merely states that operation should cease when it finds a normal abdomen in so far as its visible anatomy is concerned. The ulcer cases should be attacked surgically, either by excision or by a gastroenterostomy, according to the case. The cicatricial contractions should be attacked and cured surgically by pyloroplasty or by a gastroenterostomy.

The duodenal ulcers should be attacked and cured surgically by gastroenterostomy or by excision, according to location. The cancer cases should be attacked surgically and the diseased area removed, if it is possible to hope for a cure; if this is impossible, from the great advance made by the disease, a gastroenterostomy relieves pain and prolongs life.

#### Buffalo Medical Journal.

July.

- 81 \*Acute Pancreatitis. Report of Four Additional Cases, with Autopsies. C. G. Stockton and H. U. Williams, Buffalo.
- 82 \*Bacterial Vaccines in Relation to Ordinary Pyogenic Processes. N. K. MacLeod, Buffalo.
- 83 Stanford Emerson Chaillé. L. S. McMurtry, Louisville, Ky.



81. **Acute Pancreatitis.**—Stockton and Williams add three new cases of this disease to the four already reported to them. They comment on them, and, as to etiology, consider the claims of traumatism, gallstones, infection, gastroduodenal catarrh, certain causes inherent in the pancreas itself, arteriosclerosis and embolism and thrombosis, to be classed as factors.

82. **Bacterial Vaccines.**—MacLeod says that in staphylococcal infections the efficacy of the vaccines is, in his opinion, beyond question. The results have been so uniformly satisfactory in boils, carbuncles, septic infections following wounds, syphilis, felons and similar lesions, that he feels that they are the most valuable assets at our disposal to-day. There can be no doubt that a stock vaccine is possible, but every staphylococcal vaccine is not suited to be used as a stock vaccine. It is rare to find one that gives uniform and satisfactory results in all cases; the dosage of almost every vaccine varies considerably; it is only after repeated trials that we either adopt a vaccine or settle on the appropriate dose. Again, every case has to be considered from other standpoints than that of vaccination. The isolation of the focus from the influence of the body fluids must be considered—it is manifestly impossible for the protective substances to have any influence on a focus walled in by a thick pyogenic membrane; again, any patient who is in a pronounced anemic condition can scarcely be expected to respond to inoculation, since those factors that have to do with the manufacture of the protective antibodies are evidently suffering with the general body depression. Finally, the question of the clotting power of the blood must be borne in mind; frequently patients with a high clotting power do not respond satisfactorily until this has been lowered by appropriate means. In regard to the streptococcal infections he asserts that, with the exception of the *Streptococcus erysipellatis*, a stock vaccine, in his opinion, is valueless. Polyvalent vaccines composed of strains of bacteria that have been of the greatest benefit in their specific cases, have proved of no avail whatever when used indiscriminately.

#### Louisville Monthly Journal.

July.

- 84 Acute Cholecystitis. H. H. Grant, Louisville.
- 85 Tuberculous Infection Through Milk. E. C. Schroeder, Bethesda, Md.
- 86 Extracts from the War Correspondence of the Late Dr. James M. Holloway. A. H. Rice, Leesburg, Ky.
- 87 Etiology of Syphilis. H. H. Koehler, Louisville.
- 88 Brain Abscess Following Middle-Ear Suppuration. A. O. Pfingst, Louisville.
- 89 Legal Relations of the Railroad Surgeon to Railroad Companies and the Duty of Injured Person to Make His Loss or Damage on Account of His Injury as Light as Possible. B. D. Warfield, Louisville.

#### Texas State Journal of Medicine, Fort Worth.

July.

- 90 \*Diverticulosis and Diverticulitis. J. J. Terrill, Galveston, Texas.
- 91 Imperfections of the Vital Statistics Laws of Texas and a Possible Remedy. L. B. Bibb, Pass Cavallo.
- 92 Work Done by the State Health Department. W. B. Brumby, Austin.
- 93 Appendicectomy. W. B. Russ, San Antonio.
- 94 Work Done by the State Board of Medical Examiners. G. B. Foscoe, Waco.

90. **Diverticulosis and Diverticulitis.**—Terrell urges that the terms diverticulosis and diverticulitis should have definite places in medical nomenclature, and should have definite meanings assigned to them. The possibility of the presence of these conditions should be borne in mind, especially in the aged. A more careful routine examination of the sigmoid and rectum in autopsies should be made to determine more nearly the relative frequency and the class of cases in which diverticula occur. It is to the surgeons that we must look for careful records of the clinical aspects of diverticulitis, and on them also must we depend for much of the pathologic detail.

#### New York State Journal of Medicine, New York.

July.

- 95 \*Chronic Middle-Ear Deafness. W. S. Bryant, New York.
- 96 Chronic Suppurative Cystitis: Treatment and Prognosis. V. C. Pedersen, New York.
- 97 Heredity in Disease. C. W. Southworth, Forestville.
- 98 Neuropathic Diathesis as Condition of Headache and Other Functional Diseases. G. M. Gould, Philadelphia.
- 99 When and How Shall We Use Cycloplegics in Refraction Work? A. Duane, New York City.

- 100 \*Medical Libraries for the Smaller Centers. S. Baker, Utica.
- 101 Effect of Alcohol on Secretion and Digestion. H. C. Jackson, Albany.
- 102 Esophagoscopy and Bronchoscopy, with Reports of Six Cases. T. H. Halsted, Syracuse.
- 103 The Purse-String Suture, Its Right and Wrong Application in Appendicectomy. J. F. Black, White Plains.
- 104 Lives of Officers of the Medical Society of the State of New York. J. J. Walsh, New York.

95 and 100. Abstracted in THE JOURNAL, Feb. 29, 1908, p. 722.

#### The Ohio State Medical Journal, Columbus, Ohio.

July 15.

- 105 \*Annual Address in Medicine. F. Forchheimer, Cincinnati.
- 106 Gonorrheal Arthritis. G. L. Bauman, Cleveland.
- 107 \*The Homeopathy of Hahnemann Compared with the Homeopathy of To-day. C. Higgins, Zanesville.
- 108 \*Medical Fee Bills. W. B. Patton, Springfield.
- 109 Pemphigus Foliaceus. E. D. Tucker, Toledo.
- 110 Treatment of Earache Without Operation. W. E. Murphy, Cincinnati.
- 111 Indication and Technic for Incising the Drumhead in Acute Otitis Media. O. B. Monosmith, Loraine.

105. Abstracted in THE JOURNAL, May 23, 1908, p. 1720.

107, 108. Abstracted in THE JOURNAL, Sept. 28, 1907, p. 1139.

#### Journal of the Kansas Medical Society, Kansas City.

July.

- 112 \*Prostatic Hypertrophy. L. H. Munn, Topeka.
- 113 Fanciful Tonsils, Their Anatomy, Physiology and Removal. J. Ogsell, Wichita, Kans.
- 114 Antitoxin in Diphtheria. F. Campbell, Kansas City, Kans.
- 115 Iritis. A. C. Graves, Pittsburg.
- 116 Treatment of Fractures. J. G. Sheldon, Rosedale.

112. Abstracted in THE JOURNAL, May 3, 1908, p. 1828.

#### Journal of the Tennessee State Medical Association, Nashville.

July.

- 117 \*Ophthalmia Neonatorum as a Sociologic Problem. H. Wood, Nashville.
- 118 \*Intramural Injections of Salicylate of Mercury in Treatment of Syphilis. J. W. Handy, Nashville.
- 119 \*Snoring, Mouth-Breathing, etc. G. E. Vaughan, Clarksville.
- 120 \*Case of Obstruction to the Ureter. M. C. McGannon, Nashville.

117 and 120. Abstracted in THE JOURNAL, April 25, 1908, p. 1372.

118, 119. Abstracted in THE JOURNAL, May 2, 1908, p. 1453.

#### Mississippi Medical Monthly, Vicksburg.\*

July.

- 121 The Race Problem. What Shall We Do With Our Negro Consumptives? H. L. Sutherland, Rosedale.
- 122 The Calomel and Podophyllin Habit. Rice and Klotz, Summit.
- 123 The Practitioner's Need of Bacteriology. J. B. Bullitt, University.

#### Journal of the South Carolina Medical Association, Greenville.

June.

- 124 Differential Diagnosis of Appendicitis. J. M. T. Finney, Baltimore.
- 125 So Called Continued Fevers. J. J. Watson, Columbia.
- 126 Tumor of the Carotid Gland. R. S. Cathcart, Charleston.

#### Journal of the Oklahoma State Medical Association, Guthrie.

June.

- 127 The Surgical Prostate. H. Reed, Oklahoma City.
- 128 Periodical Headaches. J. M. Postelle, Oklahoma City.

July.

- 129 Pilocarpin in Strychnin Poisoning. J. D. Batson, Marietta.
- 130 Cardiovascular Changes in Renal Diseases. A. W. White, Oklahoma City.

#### St. Paul Medical Journal.

July.

- 131 Chloroform Anesthesia. E. Boeckmann, St. Paul.
- 132 Ether Anesthesia. W. Davis, St. Paul.
- 133 Experience with Hyoscin-Morphin Anesthesia in Obstetrics. B. H. Ogden, St. Paul.
- 134 Apparatus for Rectal Anesthesia: Fergus Ether Inhaler. C. F. Denny, St. Paul.
- 135 Anesthesia. H. Sneve, St. Paul.
- 136 Statistical Aspects of Tuberculosis in Minnesota. C. Easton, St. Paul.

#### FOREIGN.

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

#### British Medical Journal, London.

August 1.

- 1 \*President's Address, British Medical Association. S. Snell.
- 2 \*Modern Medicine. J. K. Fowler.
- 3 \*Prophylaxis in Surgery. R. J. Pye-Smith.



**1. Miners' Nystagmus and Fire Damp.**—In his presidential address before the British Medical Association this year, Snell called attention to Sheffield as the "cradle of the study of industrial diseases." He instanced the work of Knight and Holland at the beginning of the 19th century on miners' and knife grinders' phthisis, that of Hall in 1865 on lead poisoning among file cutters, and fell back for an illustration of the profitability of a partnership between industrial pursuits and a life close to Nature, on Buchan's appreciation of the workingmen's gardens in Sheffield, in 1769. Snell cites four well-marked groups of affections of the eye of different causation representing many occupations. Of these he selects for special comment miners' nystagmus, concerning which many years ago he made the observation that has proved to be the essential part in the etiology of the affection, namely, that the cases that came under his notice were always in men who had to work in a constrained position that resulted in weariness of the elevator muscles. He explains the importance and the usual method of detecting fire damp in mines by the presence of a pale blue flame, or "gas cap" above the turned-down flame of the safety lamp. His investigations have demonstrated that the apparent "dancing" of the safety lamps, which is a prominent feature of miners' nystagmus, is, as he had suspected, a serious hindrance to the recognition of a gas cap. This was shown in the case of forty-eight miners from thirteen different collieries, all of whom were incapable of detecting a gas cap unless a dangerous amount of gas was present. This leads him to urge a periodical medical examination of officials, and in the case of a colliery explosion, an inquiry into the visual condition of those responsible for determining the presence of gas in dangerous proportion.

**2. Modern Medicine.**—Fowler, in the address in medicine, repeats the assertions made by him last year (*Lancet*, Nov. 9, 1907; abstracted in *THE JOURNAL*, Dec. 7, 1907, p. 1957), that "having regard to the wide field which it covers, the advance of medicine during the last thirty years has been infinitely greater in the mass than that of surgery, although, perhaps, not so readily appreciable by the public;" and he expresses a confident belief that we need have no fear for the future. He reviews the position in regard to a few of the more urgent problems confronting us as affecting the art and science of medicine, the student, practitioner, physician and profession. After touching on the place of Pasteur and Lister in medical science, Fowler discusses at considerable length vaccine therapy and the process of immunization, regarding which the evidence appears to him to be overwhelming that agents other than the leucocytes play the more important part in the process. He thinks it likely from present indications that we may ultimately possess an effective remedy for malignant endocarditis, and refers to the official endorsement by the British, German and Indian governments of Wright's antityphoid inoculation. He considers, however, that the greatest degree of interest attending the bacterial vaccine question centers around pulmonary tuberculosis. He contrasts the verdict of eight physicians at the Brompton Hospital, in 1890, after a careful trial of the old tuberculin—that they failed to observe any favorable influence, but found serious dangers accompanying its use—with the fact that the new tuberculin is now being used at Brompton Hospital and elsewhere without any of the disastrous results mentioned in the former report. This he attributes to the control of the opsonic index. He then discusses the theory of autoinoculation, and referring to the system of graduated labor introduced at the Frimley Sanatorium by Dr. M. S. Paterson, says that in afebrile cases when this treatment is supervised with exact knowledge of the individual it may render opsonic technique unnecessary. The sanatorium and vaccine therapy he considers so far from antagonistic that they will prove of mutual assistance.

It is to be hoped, he says, that there will never be a repetition of the lamentable lack of judgment, of self-control, and of those critical faculties which should characterize the members of a scientific profession which were displayed in 1890 and the following years. If to-morrow we were in possession of an absolutely certain remedy for pulmonary tuberculosis it is probable that nearly two-thirds of the existing cases would be beyond the hope of cure. There is no drug known

which is not limited in its effects by conditions of the body and the extent of the disease, which latter in cases of pulmonary tuberculosis is generally about three times greater than the physical signs indicate. Ought not these facts, he asks, to give pause to those irresponsible directors of the lay press who are careless of the hopes they excite or the grief which they cause, so long as they obtain sensational copy which will increase the sale of their papers?

Passing to the second division of his subject, Dr. Fowler expresses his confidence that more and more the preliminary and intermediate training of the student will take place in universities, leaving the purely clinical studies to the medical schools, thus necessarily associated with hospitals. He discusses the abuse of medical charities and lays his finger on the source of the evil when he says: "This abuse of the generosity of the profession will in my belief continue and increase, so long as it is to the interest of the managers of hospitals to show that they are doing what it is the fashion to call 'a great work.'" The moment that the relief of mere numbers ceases to be a merit and it becomes to their interest to show that they have done everything possible to insure that those who receive gratuitous medical treatment are really deserving of it, a great falling off in the attendance will immediately occur. As to the physician of the future, Fowler demurs to Wright's idea that he will be merely an immunizer, and submits that he must continue to be in the future as he has been in the past, above all things a man of wide clinical experience. The one thing that can not be read up is diagnosis. That must be learned at the bedside. He says:

"It must have occurred to every physician to be called to a case in which the condition of the blood and of every secretion that lends itself to examination had been carefully investigated, not once only, but several times, and yet the diagnosis was as far, if not farther, off than ever; whereas, an intelligent use of the old-fashioned methods of inspection, palpation, percussion and auscultation showed that it was literally staring one in the face."

He would not, however, be thought to undervalue the very great assistance given to diagnosis by the newer methods. He only urges that the older should not be allowed to fall into disuse.

**3. Prophylaxis in Surgery.**—Pye-Smith, in the Address in Surgery, holds prophylaxis as important in surgery as in medicine or obstetrics, or even in sanitary science. He discusses legislative prophylaxis, the prevention of accidents, reduction of risk in working with poisonous substances, etc. Then turning to prophylaxis in operative surgery, he says that we are especially concerned with the prophylaxis of pain, of hemorrhage, of shock, of sepsis, and of death. Various forms of anesthesia and pressure forceps have brought efficient prophylaxis of pain and hemorrhage within our reach. As to shock, not enough attention is paid to avoidance of the loss of warmth prior to and during operation. The preliminary starvation before anesthesia, if carried too far, may cause serious depression, and thus tend to shock. So also may the terrifying effect on a nervous person of being brought into the operating room before anesthesia. Sepsis, of course, may be prevented by careful attention to well-known measures, among which he insists on the use of gloves. He then discusses the surgical prophylaxis of disease and accidents in various parts of the body; and notably he insists that in appendicitis, while the interval operation is an excellent one when that stage is present, it is bad to allow a patient to die in the acute stage while waiting for the quiescent period in which to operate. He discusses the prophylactic surgery of the eye, nasopharynx, teeth, ear, chest, abdomen, pelvis and extremities, and of cancer, syphilis and suicide, and concludes by urging that we "think prophylactically."

*Lancet, London.*

*August 1.*

- 4 \*President's Address, British Medical Association. S. Snell.
- 5 \*Modern Medicine. J. K. Fowler.
- 6 \*Prophylaxis in Surgery. R. J. Pye-Smith.
- 7 Blood Changes in Ankylostomiasis. A. H. Brehaut.
- 8 Case of Carcinoma of the Jejunum, with Remarks on Malignant Disease of the Small Intestine. C. R. Keyser.
- 9 \*Treatment of Erysipelas. H. T. Gray.
- 10 Malarial Cirrhosis of the Liver. A. J. B. Duprey.
- 11 An Unusual Fracture of the Clavicle. J. W. Rob.



4, 5, 6. See abstracts 1, 2, 3.

9. **Erysipelas.**—Gray reports a series of six cases of erysipelas treated by Metchnikoff's serum, which, while too few to justify a definite conclusion, warrant, in his opinion, a further trial of that preparation, which he thinks more constant in its results than the antistreptococcal serum. The patients were all children between 1 year and 10 years of age.

#### Medical Press and Circular, London.

July 29.

- 12 \*Duodenal Ulcer. B. G. A. Moynihan.
- 13 Acquired Atresia of the Intestus and Vagina in the Adult. H. MacNaughton-Jones.
- 14 Construction and Management of Crematoria. C. K. Millard.
- 15 Bier's Method for Practitioners. M. Auffret.

12. **Duodenal Ulcer.**—Moynihan says that a knowledge of duodenal ulcer has grown out of operations for supposed gallstone disease, at which the gall bladder was found healthy, but ulceration commencing with stenosis was found in the duodenum. Gradually the symptomatology of duodenal ulcer became established, because after the surgeon had seen these cases he was able to learn from the patient the symptoms in greater detail; so the medical view, that duodenal ulcer was rare and difficult to recognize clinically, became altered altogether. It is now known to be very common and that it can be recognized with absolute certainty in nine cases out of ten. Duodenal ulcer, as it is seen, is almost invariably a small hard round ulcer, situated within half an inch of the pylorus and nearly always on the anterior surface of the duodenum, exactly where the first squirt through the pylorus would impinge on the duodenal mucosa, and this slight traumatism is no doubt a factor of some significance. Moynihan says: "If you are present at an operation for what are supposed to be symptoms of duodenal ulcer and you do not see the ulcer, do not believe it is there, . . . for it requires no imagination on the part of the surgeon or the audience to recognize it instantly." Duodenal ulcer exists more commonly in men than in women, viz., about two to one. Patients may suffer from it at both extremes of life. The symptoms in most cases are perfectly characteristic, but are described under a different name in the text-books. In the latter is described under duodenal ulcer, not duodenal ulcer as it should be recognized, but neglected duodenal ulcer. It is about as justifiable to include perforation and hemorrhage among the symptoms of duodenal ulcer, as it would be to include ruptured perineum among the symptoms of pregnancy. Moynihan describes the symptoms of duodenal ulcer as follows:

The patient tells you that he has certain definite attacks; and if you take the history given in detail, letting the man tell his own story, he will give you the impression of having read something which has been written about duodenal ulcer, which he is recounting to the best of his recollection to please you. He says that his trouble comes on in attacks, which are nearly always worse in winter than in summer, and are very apt to be precipitated by a chill. Let us follow the patient through the day. He makes a meal at eight in the morning, and from 2 to 2½ hours after it he is fairly comfortable; it is his best time. At the end of that time he has a feeling of discomfort in the epigastrium; he feels full and heavy, and may get some relief from the belching of gas. Some of these patients develop a habit of belching. They may bring up a very sour fluid, which tastes very bitter and acid, and makes the mouth dry and the teeth chalky. This pain gradually increases until the next meal time comes. To this I some years ago applied the name of "hungry pain." At the next meal the patient almost instantly gets relief, and that relief persists for two or three hours again. He probably eats a heavy dinner, and will nearly always tell you he has something before he gets into bed; a glass of milk or a cup of cocoa and a biscuit. He sleeps comfortably, until he wakes about 2 a. m. He gets relief from nibbling a biscuit, which he keeps at the bedside. The pain is found to be most relievable by something stodgy and indigestible. Taking an alkali relieves the pain; so will emptying the stomach by washing it out. If these symptoms which I have described are recurrent, you can diagnose duodenal ulcer.

Moynihan then discusses the differential diagnosis, and particularly notes that, after mistaking gallstone cases for duodenal ulcer, on talking it over with the patients he found that those with gallstones nearly always had a spasm of the diaphragm with a catch in the breath in an attack of pain, a symptom which he believes to be absolutely significant. Another indication of gallstones is a jaundice, too light to be evident to the naked eye or in the stools or urine, but perceptible in the blood as a deepening of the tinge of the serum after the corpuscles have settled in a capillary tube. As to treatment, perforation necessitates instant operation. Moynihan has made it a practice, in such cases, first to close the ulcer and secondly

to perform gastroenterostomy. The second indication for operation is the occurrence of hemorrhage, which is likely to be fatal in duodenal ulcer, differing in this respect from gastric ulcer, in which death from hemorrhage is rare. The ulcer should always be infolded. If he feels that he should not excise the ulcer he endeavors to secure by suture all the vessels running to it. Chronic duodenal ulcer causing the manifestations mentioned should be treated surgically, but gastric ulcers may often do well medically. He discusses the various operations.

#### Clinical Journal, London.

July 29.

- 16 Injuries to the Head. A. A. Bowlby.
- 17 Sprains. J. J. Clarke.

#### Quarterly Journal of Medicine, Oxford.

July.

- 18 \*Direct Inspection of the Gastric Mucous Membrane. H. S. Souttar and T. Thompson.
- 19 \*Clinical Bearing of Cutaneous Tenderness on Various Acute Abdominal Disorders, Especially Appendicitis. H. Robinson.
- 20 \*Origin of Endogenous Uric Acid. E. P. Cathcart, E. L. Kennaway and J. B. Leathes.
- 21 \*Respiratory Movements in Hemiplegia: Case with Tracings Showing the Movements of the Two Sides, and the Peculiar Effects of Coughing, and a Cyrtometer Tracing Showing Peculiar Changes in the Shape of the Paralyzed Thorax. S. West.
- 22 \*Primary Malignant Disease of the Appendix. R. G. Elwell.
- 23 Pads on the Finger Joints. W. H. White.
- 24 Extrasystole: Contribution to the Functional Pathology of the Primitive Cardiac Tissue. J. McKenzie.

18. **Inspection of Gastric Mucous Membrane.**—Souttar and Thompson describe their newly invented gastroscope, which consists essentially of a series of short tubes strung together on two narrow steel bands and encased in rubber. On pulling the steel bands, the instrument can be converted into a rigid tube. There is a small electric lamp. The entire stomach wall can be swept with the instrument, about six inches being visible at once. The article is illustrated.

19. **Cutaneous Tenderness.**—Robinson refers to the ten conclusions drawn by Sherren (*Lancet*, 1903, ii, 816) in a paper drawing attention to the frequency of cutaneous tenderness in appendicitis, its distribution, determination and clinical bearings. Sherren believed that information concerning the appendix could be obtained in this way. Robinson examines Sherren's conclusions in detail, and embodies his own deductions in a series of propositions of which some are a repetition of Sherren's conclusions, and others are not. Robinson's deductions are as follows:

1. In diseases of the appendix, or originating there, cutaneous tenderness is sometimes present: most commonly in the skin innervated from the eleventh dorsal segment of the spinal cord, but also sometimes in the territory of the ninth, tenth and twelfth, and possibly of the eighth dorsal and first lumbar segments.

2. The areas of such tenderness are most frequently of three main forms described by Mr. Sherren in the *Lancet* of Sept. 19, 1903. But cases are not rare in which the areas are irregular and atypical altogether.

3. A patient displaying an area of superficial tenderness of one of these three defined varieties is, in the great majority of cases, suffering from appendicitis.

4. Nevertheless, many other diseases may resemble appendicitis in this respect: for instance, renal colic, perforated duodenal ulcer, intestinal colic, perimetritis.

5. Inflammation of the nerve trunks is not the cause of this symptom, for the latter may occur in skin supplied by the posterior primary divisions of the spinal nerves.

6. There is little evidence as to the immediate cause of this reflex tenderness, but it is probably irritation of the afferent nerves from the appendix; the irritant is possibly in some cases tension, in others it is almost certainly something different.

7. The symptom is found in a minority only of the cases of appendicitis seen in hospital practice. It may vary in character, or disappear altogether, while a case is under observation; during the progress of an attack it may appear in a patient in whom it has not originally been present.

8. Cutaneous tenderness is found as frequently in subsequent as in first attacks of appendicitis. It may persist long after all other signs of the disease have disappeared.

9. The prognostic and therapeutic significance of cutaneous tenderness in cases of appendicitis is slight. It is somewhat less often found in cases of abscess than in other cases; when the symptom and an abscess coexist, it is usually in an early case.

10. Cases of widespread peritonitis set up by appendicitis may display large areas of cutaneous tenderness over the right side, or over the whole, of the abdomen.

20. **Endogenous Uric Acid.**—Cathcart, Kennaway and Leathes close an exhaustive paper with the following conclusions:

1. A marked increase in the output of endogenous uric acid has been found to occur in three conditions: (a) fever, (b) exposure to cold, (c) after severe exertions. The increased output coincides and terminates with the febrile rise of temperature, coincides with



and outlasts by many hours the exposure to cold, follows the exertions and lasts for many hours after them. It is suggested that in all these conditions the uric acid has its origin in metabolic processes occurring principally in the voluntary muscles, and not immediately related to voluntary contractions and work.

2. The daily tide in uric acid excretion, high output in the morning, low output at night, is not due to retention of uric acid formed during the night, nor is it due to the fact that the digestive organs are inactive during the night, if that is a fact, with the last meal taken at 9 or 10 p. m., as in most of the author's experiments. It is rather due to the quickened activity of all functions, especially those of the voluntary muscles, which results from the rest of sleep.

3. Generally speaking, the more lively the performance of the functions of the body as a whole, the greater the amount of uric acid produced will tend to be.

21. **Respiratory Movements in Hemiplegia.**—West recalls Hughlings Jackson's description of the peculiar changes of respiratory movements in hemiplegia and his explanation thereof. He then reports a case of right hemiplegia from a clot in the middle cerebral artery occluding the Sylvian artery and the lenticulo-striate artery, which showed a peculiar modification of respiration. As the patient lay in bed on the back, the right, i. e., the paralyzed, side was flatter all over the front than the other, and moved but little on respiration. The difference between the two sides was obvious to the eye and hand in ordinary breathing, and was greatly increased in voluntary breathing. Coughing produced the most extraordinary effect, for while the sound side contracted, the paralyzed side bulged or was blown out. This gave a most curious sensation to the hand laid on the side. The diaphragm moved apparently equally on the two sides, and an x-ray examination made the following day seemed to confirm this. By means of an apparatus, the respiratory movements of the sound and the paralyzed sides were recorded synchronously. In ordinary breathing the following peculiarities are observed on the paralyzed side: 1. The respiratory excursion, both inspiratory and expiratory, is much diminished, i. e., the height of the wave is reduced. 2. The character of the wave is altered. (a) It is much rounder; (b) it is delayed, for the rise may not begin till that on the sound side is three-fourths to five-sixths complete; (c) it is shorter, so that the postexpiratory pause, which hardly exists on the sound side, is very obvious. In voluntary breathing the differences are of the same kind, but exaggerated. (c) On coughing, the curves move in opposite directions, for while on the sound side after somewhat exaggerated inspiration the chest contracts, on the paralyzed side, instead of contracting it is distended by the cough, and the more powerful the cough the greater the distention or bulging. The effect of coughing was very remarkable, and it as well as the change of shape noted on the paralyzed side are suggested by West as new observations.

22. **Malignant Disease of Appendix.**—Elwell describes a case of primary malignant disease of the appendix, and comments on its rarity, its early age incidence, undoubted but undefined relationship with inflammatory conditions, complete dissociation from all gross manifestations of malignant disease, and its histology, which does not allow of its definite classification, but there are not yet sufficient grounds to justify the introduction of any other term than carcinoma.

#### Indian Medical Gazette, Calcutta.

July.

- 25 \*Incineration in Military Stations. H. Hamilton and H. Raitt.  
26 Experiments on Rat Exterminations. R. O. Saigol.

25. **Incineration.**—Hamilton and Raitt describe, with a photographic illustration, the latter's incinerator for burning up animal and human excrement, litter, sweepings, etc., in isolated places and small communities, where the disposal of such matters is a difficult problem. It is intended primarily for military cantonments, but could be cheaply and expeditiously constructed in any outlying district away from the resources of civilization.

#### Archives des Maladies du Cœur, Paris.

Vol. I, July, No. 7, pp. 401-456.

- 27 Histologic Modes of Destruction of Blood Corpuscles and Role of the Spleen in Production of Blood Pigment. (Modalités histologiques de l'hématolyse.) E. Gauckler.  
28 To-and-fro Rhythm of Anemic Souffle at the Base of the Heart. ("Rythme de va-et-vient" du souffle anémique de la base.) L. Gallavardin.  
29 \*Connection Between Arterial Hypertension, Hypertrophy of the Heart and Hyperplasia of Hypophysis and Suprarenals. J. Parisot.

29. **Hypertension, Hypertrophy of the Heart and Hyperplasia of Hypophysis and Suprarenals.**—Parisot reports a case in which a cardiovascular syndrome (arterial hypertension, hypertrophy of the heart and atheroma) was accompanied by hyperplasia of the suprarenals and hypophysis, while the kidneys were intact. There were also symptoms indicating extremely high tension in the cerebrospinal fluid. Autopsy showed cystic degeneration of the ovaries, thyroid, hypophysis and suprarenals. The patient was a girl of 22, and six months before the serious and fatal symptoms there was amenorrhea and other symptoms of ovarian insufficiency developed, soon followed by the vascular hypertension, cardiac palpitations and rebellious headache. The ovarian lesion was probably primary; the hyperplasia of the hypophysis and suprarenals was probably a secondary process, but the hyperfunctioning seems to have brought on the cardiovascular lesions and symptoms. His recent research has confirmed the blood-pressure-raising properties of extract of the hypophysis, the most powerful in this respect after suprarenal extract. The patient died suddenly, after several hours of coma. The urine was constantly normal. During the last few days the temperature rose to 38.5 C. (101 F.), the pulse at times to 160.

#### Presse Médicale, Paris.

July 18, XVI, No. 58, pp. 457-464.

- 30 The Lipoids. II. Iscoveseo.  
31 \*Temporary Localization of Injected Drugs. (Nouvelle méthode thérapeutique.) R. de Gaulejac.

July 22, No. 59, pp. 465-472.

- 32 \*Tubercles and Surgery. Debove.  
33 \*Hygiene in China. (L'hygiène urbaine en Chine.) J. J. Matignon.

July 25, No. 60, pp. 473-480.

- 34 Soluble Ferments II. Roger.  
35 Hysteria and Suggestion. (Revision de l'hystérie.) H. Meige.

31. **Temporary Localization of Injected Drugs.**—A girl of 15 was bitten by a viper in the tip of the middle finger; the finger swelled and became gangrenous below a ring she was wearing on that finger, but there was no general intoxication after the first acute but transient symptoms. De Gaulejac ascribes the favorable outcome of the case to the constriction from the ring, and confirmed this assumption by experiments on rabbits showing that a venom or toxic drug was comparatively harmless if temporarily localized in the part in which it was injected. Young rabbits injected with a dose of cocaine in one hind leg (which was rapidly fatal for the controls) tolerated it without injury if an elastic band was applied above to induce passive hyperemia for two or three hours. Constriction for one hour proved ineffectual. Older rabbits displayed less resistance. These facts not only throw light on Bier's method of therapeutic hyperemia, but they also suggest, he thinks, that a drug can be administered in this way in doses otherwise toxic for the organism. It may be possible by this means to increase the so-called maximal doses of certain drugs without harm, as the temporary localization of the drug may induce exceptional production of antitoxin, or the drug may be incorporated by the leucocytes, which will then yield it up, little by little, without causing intoxication. Temporary localization of the dose of a powerful drug may thus prove an important modification in therapeutics.

32. **Tubercles and Surgery.**—Debove asserts that in the presence of a joint, bone or visceral affection of obscure origin, the possibility of tubercles must be borne in mind. Tubercles once diagnosed, the surgeon should never attempt an operation unless under exceptional circumstances. An operation can only be palliative, for a peripheral operation is unable to cure an affection whose origin is central. Any traumatism, besides, is liable to have an injurious influence on the evolution of the tubercles, as he shows by a number of typical examples. In one case, a traumatic injury of the knee was treated by repeated resection and finally exarticulation of the hip. The patient was a man of 42, a druggist, and he now has lightning pains. In another knee affection, resection was followed by development of gastric and laryngeal crises and the patient died four weeks after the operation. The structure of the bones in tubercles is so profoundly altered that surgical intervention, he insists, is contraindicated. He also relates some instances of



stomach troubles which were treated by operation, on the assumption of organic stenosis, but nothing of the kind was found, and the symptoms persisted and increased, while other signs of tabes appeared as if aroused by the operation. In one case a surgeon was sued for damages for having aggravated the stomach disturbances by a gastroenterostomy for incessant vomiting which had been ascribed to stricture of the pylorus. Other signs of tabes developed afterward, and the gastric crises persisted and increased in intensity. Debove mentions some other cases which show that a gastroenterostomy rapidly unites when there is no obstruction at the pylorus. In another case the unrecognized tabetic gastric crises were ascribed to gallstones, and the gall bladder was resected; then a movable kidney was immobilized, but the gastric crises still persist, being even more intense. Other cases related refer to intensely painful intestinal and bladder disturbances in which operative treatment only whipped up the unsuspected causal tabes. Tabes should, therefore, be a *noli me tangere* for the surgeon, although Debove mentions that Dubar and Leroy reported last year two cases of gastric crises cured by gastroenterostomy.

33. **Hygiene in China.**—Matignon was attached to the French legation at Pekin for years, and he states that although there is absolutely no urban hygiene in China, yet the Chinese personally practice hygiene without knowing it. They are temperate, their food is hygienic, they always boil their drinking water, and the climate in northern China is dry and cold—not a drop of rain falls from September to May—while the sunshine is that of Africa. He noticed that during the winter and spring in the campaign in Manchuria, chestnut hair bleached to blonde and blonde hair became almost white. He adds that when the Chinese once wake to the necessity for urban hygiene they will obtain results more satisfactory than we can show now, and at less expense.

#### Revue de Médecine, Paris.

July, XXVIII, No. 7, pp. 587-664.

- 36 Old Doctrines, Useful Errors. (Vieilles doctrines, erreurs utiles.) F. J. Collet.
- 37 \*Radium Treatment of Angioma. L. Wickham and Degrais. Commenced in No. 6.
- 38 Use of Greek in Medical Language. (Construction des néologismes.) R. Pepin.
- 39 Experimental Reproduction of Landouzy's Typhobacillosis. II. Gougerot.

Cancer Research Supplement, pp. 1-58.

- 40 \*Etiologic Problem of Cancer. Borrel.
- 41 \*Precancerous Morbid States. (États morbides précancéreux.) P. Menetrier.

37. **Radium Treatment of Nevus and Angioma.**—Wickham and Degrais give some colored plates showing the complete retrogression of large port-wine vascular nevus on the face in three cases. One patient was a man; after five hours' exposure in the course of nineteen days a large uneven, tuberosus nevus on his cheek had vanished, and the skin was normally smooth with the exception of one minute nodule. There was no trace of cicatricial tissue left; the skin was only a little pinker than normal. Another patient was a child with a protruding, pulsating vascular nevus spreading over much of the cheek, ear and neck. Except for a slightly pinker tint, the region is now entirely normal. The radium seems to have an unmistakable action on angioma. The angiomatous tissue is not destroyed by the radium, but it speedily loses its color and retrogresses, seemingly melting away under the influence of the radium rays. The action is pronounced and gratifying on tuberosus, erectile, pulsating angioma. Flat or scarcely raised nevi give inconstant results. Sometimes they are all that could be wished, but in other cases unexpected resistance may be encountered and depression and pigmentation may follow the exposures. Nevi on the trunk and limbs have proved less amenable than those on the face. The application of the radium is painless, and no by-effects have been observed. The most convenient form of application is a disc of metal or cloth on which the radium is embedded in varnish. The applications can be made while the patient is sleeping. Six typical cases are related in detail. One week of daily half-hour applications of a 2 cm. disc representing 50,000 units cured a rapidly progressing port-wine pulsating nevus on a baby, with nothing to mark the spot except that the

skin is still a little pinker than the rest. Their previous communications on this subject were summarized in THE JOURNAL, March 7 and 28, 1908, pages 806 and 1084.

40. THE JOURNAL, Aug. 8, 1908, page 514.

41. THE JOURNAL, Aug. 8, 1908, page 514.

#### Semaine Médicale, Paris.

July 29, XXVIII, No. 31, pp. 361-372.

- 42 \*Suburethral Abscess in Women. (Abscess sous-urétraux chez la femme.) F. Lejars.

42. **Suburethral Abscess.**—Lejars reports a few cases and reviews the literature. He insists on the importance of excising the wall of the abscess; mere evacuation is not enough. He mentions several points that should be borne in mind when excising the wall to prevent injury of the urethra, etc.

#### Beiträge zur klinischen Chirurgie, Tübingen.

July, LVIII, No. 3, pp. 571-821.

- 43 Operative Treatment of Irreducible Forward Dislocation of Hip Joint. (Operative Behandlung irreponibler vorderer Hüftluxationen.) E. Streissler.
- 44 Suture of Arteries. (Arteriennaht.) F. Faykiss.
- 45 \*Spinal Anesthesia and Its By-Effects and After-Effects. (Lumbalanästhesie und ihre Neben- und Nachwirkungen.) K. Borszky.
- 46 Indications for and Results of Suture of the Bladder. (Blasennaht.) Renner.
- 47 Rare Dislocations of Shoulder, Pelvis and Hip. (Zur Kasuistik seltener Luxationen des Schultergelenks, etc.) Lindenstein.
- 48 Cholesteatoma of Umbilicus. (Cholesteatom des Nabels.) H. Coenen.
- 49 Primary Carcinoma of Jejunum and Ileum. W. Schlieps.
- 50 \*Frequency of Necrosis of the Limbs After Ligation of Large Trunk Vessels. (Häufigkeit der Extremitätennekrose nach Unterbindung grosser Gefässstämme.) E. Wolff.
- 51 Chondrectomy for Emphysema from Rigidity of the Thorax. (Chondrektomie bei Emphysem infolge starrer Thoraxdilatation.) H. Seidel.

45. **Spinal Anesthesia.**—Borszky reports success in 90 per cent. of 300 cases in which operations were done under spinal anesthesia. In 1.3 per cent. of the cases the analgesia was inadequate, and in 8.7 per cent. there was no analgesia. The by-effects and after-effects were at times so serious that he warns that the method should never be applied outside of a clinic or hospital. The main factors for success are the withdrawal of exactly the right amount of fluid, very slow injection of the undiluted solution, keeping the patient still sitting up for two or three minutes after the injection, and then keeping the head high as the patient reclines. Spinal anesthesia, he says, should be restricted exclusively to operations below the umbilicus for which local anesthesia is not adapted.

50. **Frequency of Gangrene After Ligation of Trunk Vessels.**—Wolff's extensive review of this field of surgical intervention tabulates 2,043 cases of ligation of a main artery or vein or both. Necrosis was observed in 233 cases, that is, in 11.4 per cent. The largest proportion of cases occurred in the legs.

#### Berliner klinische Wochenschrift.

July 27, XLV, No. 30, pp. 1389-1432.

- 52 \*Principles of Treatment of Carcinoma Based on Action of Antiferments. (Grundzüge einer Antifermentbehandlung des Carcinoms.) J. Hofbauer.
- 53 \*Influencing of Malignant Tumors by Atoxyl and Foreign Albumin. (Beeinflussung bösartiger Geschwülste durch Atoxyl und fremdartiges Eiweiss.) A. Sticker.
- 54 Negative Results of Injections of Placenta Blood in Carcinoma. (Injektionen von Placentarblut bei Carcinom.) E. Falk.
- 55 Importance of Antitrypsin in Blood. (Bedeutung des Antitrypsins im Blute.) v. Bergmann and Rauberg.
- 56 Treatment of Extreme Obesity. (Entfettung und Entwässerung bei hochgradiger Fettsucht.) L. Brieger.
- 57 Fat-Splitting Properties of Syphilitic Sera and Importance of Lipolysis for Serodiagnosis of Syphilis. (Fettspaltungsvermögen syphilitischer Sera.) J. Citron and K. Reicher.
- 58 Treatment of Enlargement of Prostate. (Therapie der Prostatahypertrophie.) Casper.
- 59 Importance of Urea-Carbonic Acid for Chemistry of Drugs. (Allophansäure und ihre Bedeutung für die Chemie der Heilmittel.) M. Overlach.
- 60 Dehiscence of Maxillary Sinus. (Dehiscenzen der Kieferhöhle.) H. E. Kanasugi.

52. **Principles of Antiferment Treatment of Cancer.**—Hofbauer comments on the constant presence of lecithin in malignant tumors, and reviews the literature on lecithin, showing its power to activate previously inert toxins and ferments. He compares this activating property to that of the spermatozoon on the ovum, and discusses the importance of counter-



acting this activating property displayed by lecithin or abnormal ferments in cancer. He has been experimenting with various ferment-inhibiting means, such as quinin, arsenic, cholesterin and foreign serum. In 20 cases of inoperable cancer the tumors decreased in size in every case under the influence of subcutaneous injection of the antiferment around the tumor or into its depths. In some cases the retrogression was so pronounced that only slight traces of the cancer still remain. The glands in the vicinity also retrogressed with the tumors. He injected twice a week about 25 c.c. of beef serum or about 0.4 c.c. cholesterin (dissolved in alcohol and precipitated with physiologic salt solution); or 0.5 or 0.1 gm. of quinin or 0.3 gm. atoxyl. The beef serum caused a little general reaction.

53. **Influencing of Cancer by Foreign Albumin.**—Sticker relates extensive research along the same lines as reported in the preceding article—both of which issue from Bier's clinic at Berlin. He found that excellent results were obtained in malignant tumors by injection into the periphery of 10 or 15 c.c. of sheep blood (the foreign albumin) followed the next day by an injection of not more than 0.01 gm. of atoxyl, repeated the fourth and sixth day, recommencing the series anew the eighth day with another 10 or 15 c.c. of sheep blood. This simple combination treatment had a favorable effect not only on malignant tumors, but also in cases of enlarged prostate. The beneficial influence was prompt and decided, but it did not prove permanent in any instance.

*Deutsche medizinische Wochenschrift, Berlin.*

*July 23, XXXIV, No. 30, pp. 1297-1336.*

- 61 \*Behavior of Cutaneous Tuberculin Reaction During Measles. (Verhalten der kutanen Tuberkulinreaktion während der Masern.) C. v. Pirquet.
- 62 Mitral Stenosis. P. Hampeln.
- 63 Severe Diabetes Due to Syphilitic Infection. R. Ehrmann.
- 64 \*Operative Treatment of Acute Pancreatitis. L. Bornhaupt.
- 65 \*Rachitis and Scoliosis. E. Kirsch.
- 66 Universal Favus. Talat.

61. **Suspension of Tuberculin Reaction During Measles.**—Pirquet has found that tuberculous children suffering from measles lose their capacity to react to the cutaneous tuberculin test. He tabulates the findings in 159 cases of measles, 24 in tuberculous children. The reaction became negative after the eruption appeared and then gave positive findings again, commencing the fifth day. He suggests that a positive cutaneous tuberculin reaction can be utilized as testimony against the measles.

64. **Operative Treatment of Acute Pancreatitis.**—Bornhaupt reports the third case of acute pancreatitis in which he operated. The patient was a woman of 42 who has been in the best of health since then. He shows that an early diagnosis of acute pancreatitis is possible by exclusion. In the early stages and in merely partial disease of the gland, the sugar in the urine is an important aid for the diagnosis. Intervention should be as prompt as possible, not only to divert the course of the pancreatic secretion out of the abdominal cavity, but to relieve the congested gland and infiltrated retroperitoneal tissue, and to restore conditions for normal circulation in the pancreas.

65. **School Scoliosis.**—Kirsch has been examining 1,015 school children with reference to scoliosis, distinguishing between the form that can be corrected and "fixed" curvature of the spine. The latter is either congenital or of rachitic origin in nearly every instance. Bachmann found scoliosis in less than 1 per cent. of 8,959 cadavers examined at Breslau, but the German school physicians have found that one in every three children has more or less scoliosis. Evidently the "non-fixed" curvature corrects itself later, while the "fixed" grows worse. Kirsch thinks that the best way to differentiate these forms is to have the child bend the trunk forward with the arms hanging. "Non-fixed" curvature corrects itself in this posture, while the "fixed" becomes more apparent, and torsion is plainly revealed. The important lesson taught by his research is the necessity for detection of rachitic scoliosis in its incipency, and its appropriate treatment before the child is old enough to enter school. Physicians are too much inclined to postpone proper treatment with the indispensable plaster bed until the child is older, believing that it will out-

grow the tendency to curvature. But this is extremely doubtful with rachitic curvature, while the finest results can be counted on if the tendency is corrected in time. The soft torsion-hump of young rachitic children yields readily to appropriate measures applied in time.

*Deutsche Zeitschrift für Chirurgie, Leipsic.*

*July, XCIII, No. 6, pp. 505-587.*

- 67 Pseudofractures of Sesamoid Bones of First Metatarsophalangeal Joint. L. Igelstein.
- 68 Mechanism of Bursting of Intestine from Abdominal Straining. (Mechanismus der Darmberstung unter der Wirkung der Bauchpresse.) F. Kempf.
- 69 \*Origin of Primary Carcinoma. (Entstehung primärer Carcinome.) O. Wyss.

69. **Origin of Cancer.**—Wyss accepts Ribbert's theory that carcinoma originates in epithelial cells over which the body has lost control and which then proliferate on their own hook at the expense of the body. In this long article he presents an array of evidence to sustain this assumption. In particular, he shows that changes in the subcutaneous tissue or vessels from local arteriosclerosis, interfering with the blood supply, finally shut off the epithelium above from the direct control of the rest of the body. This is shown instructively in Roentgen cancers, the infiltration of the subcutaneous tissue and papillary layer of the corium occluding the capillaries and gradually shutting off the epithelium from the blood supply. As long as the body is capable of responding with lively new formation of vessels, growth of capillaries, the epithelium does not suffer, but with advancing years this property is lost, and the epithelial cells gradually become excluded from the rest of the organism. The epithelial cells always display a peculiar faculty for independent existence, more than any other cells in the body, as in transplanted detached grafts. The details of 36 cancers are tabulated, all showing the infiltration below and the exclusion of the growth from the blood supply.

*Medizinische Klinik, Berlin.*

*July 26, IV, No. 30, pp. 1137-1178.*

- 70 \*Importance of Serum Diagnosis of Syphilis in Obstetrics. (Bedeutung der Wassermannschen Luesreaktion für die Geburtshilfe.) E. Opitz.
- 71 Nervous Disturbances in Heart Action. (Nervöse Störungen der Herztätigkeit.) Winckelmann.
- 72 \*Incandescent Light Baths in Chronic Bronchial Affections. (Anwendung von elektrischen Glühlichtbädern bei chronischen Bronchialerkrankungen.) A. v. Strümpell.
- 73 Perverted Sense of Smell. (Subjektive Kakosmie.) G. Lennhoff.
- 74 Treatment of Inoperable Tumors with Radium. (Behandlung inoperabler Geschwülste mit Radium.) A. Selig.
- 75 \*General Pathogeny and Symptomatology of Disturbances in Speech in Children. (Kindliche Sprachstörungen.) F. Kobrak.
- 76 Tests for Antimeningitis Serum. (Genickstarreserum.) F. Neufeld.

70. **Importance of Serum Diagnosis of Syphilis in Obstetrical Practice.**—Opitz hails the serum diagnosis of syphilis as of the greatest importance in maternities. A negative result proves nothing, but positive findings confirm the assumption of syphilitic infection with almost complete certainty. He has applied the test in 104 cases in the lying-in ward since last March, and obtained a positive response in 10 cases. The course of the cases later confirmed the findings in all but 2, but only 2 of the new-born children of the 10 mothers gave a positive response. The presence of the spirochetes alone is not enough to induce the reaction; other processes are evidently at work which occur less readily in the fetus than in the mother. The advantages of thus being able to differentiate the syphilitic patients and their offspring are obvious. He thinks that no woman should be recommended as a wet-nurse until the serum test has been applied. Negative findings are not absolutely decisive, but give comparative confidence. In the few cases in which the women gave a positive reaction, although apparently free from syphilis, it may be possible that the spirochetes in the fetus elaborated changes such as the spirochetes themselves would have induced. He advised such women of their condition and impressed on them the necessity for prompt treatment at the first indication of symptoms, but he did not institute treatment on the basis of the positive reaction to the serum test.



alone. He suggests, in conclusion, that possibly the mere fact of pregnancy may cause changes in the blood similar to those induced by the spirochetes and entail a positive reaction exceptionally in the non-syphilitic.

**72. Electric Light Baths in Chronic Bronchial Affections.**—Strümpell says that Kellogg's incandescent light baths have first made it possible to induce energetic diaphoresis without the slightest inconvenience or annoyance to the patient. He has found this technic of the greatest benefit in chronic bronchitis, especially the dry form, without secretion. He warns expressly that it is suited only for the primary cases, and that they must be carefully differentiated for the purpose. He knows of no other treatment for bronchial asthma which gives such good results as a few weeks of this technic, as his experience has demonstrated in fifteen cases with no recurrences to date. In two other cases only transient benefit was obtained. Any sweating procedures may prove beneficial, but the incandescent bath evidently acts not only on the sweat glands, but on others and on the epithelium of the bronchial mucosa. This action may be supplemented by the increased elimination in the sweat and secretions and by the hyperemia induced in the skin and by the influence on the general circulation—all of which help to explain the permanently favorable influence. In conclusion he warns against Roentgen treatment for the present, as it is not yet fully under control, and he advises institutional treatment for the incandescent course. Much the best results were obtained in his experience when the patients were under continuous medical oversight and influence.

**75. Defects in Speech.**—Kobrak distinguishes between the two factors in stuttering: the spastic paresis and the ataxia. The primary spastic paresis seems to be more the expression of certain organic focal defects, while the primary ataxia seems to develop more on a purely psychogenic basis. The latter is amenable to psychic and pedagogic measures. The defect in the speech center may be corrected by exercises. Much can be done in prophylaxis. This does not mean that every child with a tendency to stutter should be sent to a special sanatorium—although far the best results are obtained by institutional treatment. The stuturer should be patiently shown again and again how he can control his affection by physiologic exercises of the speech and avoidance of charlatans' methods.

#### Münchener medizinische Wochenschrift.

July 21, LV, No. 29, pp. 1521-1568.

- 77 Improved Polyvalent Antiserum. (Eine wesentliche Verbesserung meines Serums.) R. Dentschmann.
- 78 \*Detection of Scanty Typhoid Bacilli. (Verfahren zum Nachweis spärlicher Typhusbazillen.) H. Conrad.
- 79 Ultrafiltration of Chicken Cholera Virus. (Ultramikroskopische Infektionserreger.) G. Giemsa and S. Prowazek.
- 80 Hermaphroditism. A. Hegar.
- 81 Treatment of Acute Coryza. (Behandlung des akuten Schnupfens.) H. Löwy.
- 82 Suicide During Childbirth. (Zur Kasuistik des Selbstmordes während der Geburt.) K. v. Sury.
- 83 Measurement and Dosage of Roentgen Rays by Absolute Units. (Röntgenolyse.) F. Klingelfuss.
- 84 Acute Dilatation of Heart. (Zur Frage der akuten Herzüberanstrengung.) Schott.

**78. Technic for Cultivating Scanty Typhoid Bacilli.**—Conradi has studied 300 different dyes in the last three years, seeking to improve the technic for detection of typhoid bacilli. A combination of 1/15,000 picric acid and 1/150,000 brilliant green and peptonized agar with a little meat extract has proved the best technic for cultivating scanty typhoid bacilli, while inhibiting the growth of other germs, thus simplifying agglutination. He describes his experience with this "green plate" technic, which allows differentiation in twenty hours.

#### Wiener klinische Wochenschrift.

July 23, XXI, No. 30, pp. 1079-1108.

- 85 Relations Between Chemical Constitution, Physico-Chemical Properties and Pharmacodynamic Action. E. Pribram.
- 86 Anaphylaxis Produced by Organ Extracts. R. Kraus, R. Doerr and Sohna.
- 87 Laws of Peptic Digestion. (Gesetze der peptischen Verdauung.) H. Relchel.
- 88 \*Conservative Treatment of Chronic Suppuration Above the Tympanum. (Konservative Behandlung chronischer Eiterungen des Epitympanum.) L. Mekler.

- 89 Streptococcus Aggressus in Blood in Puerperal Sepsis. E. Hoke.
- 90 Adrenalin-Saline Injections as Adjuvant in Treatment of Exceptionally Severe Diphtheria. (Diphtherletherapie.) D. Pospischill. Commenced in No. 29.

**88. Conservative Treatment of Chronic Suppuration Above the Tympanum.**—Mekler reports two cases of obstinate suppuration in which he finally obtained a cure by blowing boric acid into the ear, the patient meanwhile reclining with his head hanging over the edge of a sofa, with the affected side down, the mastoid antrum therefore being at the lowest point. This brought the powder exactly where needed. The patient lay in this position for ten minutes, and the procedure was repeated every day, the result being that the suppuration gradually dried up.

#### Zentralblatt für Chirurgie, Leipsic.

July 25, XXXI, No. 30, pp. 905-936.

- 91 Antiferment Treatment of Suppurative Processes without Incision. (Antifermentbehandlung eitriger Prozesse.) H. Kolaczek.
  - 92 \*Treatment of Burns. (Behandlung von Verbrennungen.) L. Renner.
- August 1, No. 31, pp. 937-960.
- 93 Treatment of General Sepsis and Pyemia. (Behandlung septischer und pyämischer Allgemeininfektion.) P. Sick.
  - 94 Reversed Form of "Madelung's Deformity." De Wilt Stetten.

**92. Treatment of Burns.**—Renner reports excellent results in treatment of burns from application of a powder of one part bismuth to two parts kaolin. He has applied it in hundreds of cases during the last few years, and says that it effectually keeps the surface dry, while it prevents infection and allows the dressings to be easily renewed.

#### Zentralblatt für Gynäkologie, Leipsic.

July 25, No. 30, pp. 969-1000.

- 95 \*"Nerve Nucleus Icterus" of the Newly Born. (Kernikterus der Neugeborenen.) P. Esch.
- 96 \*The "Convolute" Uterus. (Der "schneckenförmige" Uterus.) E. M. Simons.

August 1, No. 31, pp. 1001-1032.

- 97 Case of Sclerema in New-born Infant. (Sklerema neonatorum.) P. Esch.
- 98 Antiprolapse Pessary. (Ein neues Pessar gegen Uterus- und Scheidenvorfall.) L. Friedmann.

**95. Nerve Jaundice of the Newly Born.**—The infant in the case reported by Esch presented general jaundice a few days after birth, early accompanied by tonic convulsions and bulbar symptoms. Several other members of the family had been affected with jaundice, as was noted also in Beneke's two cases. The nuclei of the nerves in certain regions showed intense yellow discoloration. The termination of this "nucleus icterus" has been invariably fatal in the few cases known to date.

**96. "Convolute" Uterus.**—Simons treats this defective development of the cervix by tents, with or without an incision. He has previously described it as "posthorn kinking" of the cervix, but thinks that Bossi's comparison of it to the convolutions of a seashell is more appropriate. An intrauterine tent usually proves effectual in restoring conditions to normal. Bossi's indications were summarized in these columns July 4, page 88.

#### Gazzetta degli Ospedali e delle Cliniche, Milan.

July 19, XXXIX, No. 86, pp. 905-920.

- 99 Two Cases of Rupture of Aorta. (Rottura dell'aorta.) V. Maragliano.
- 100 Influence of Morphin on Resistance of Red Corpuscles. (Influenza della morfina sulle resistenze dei globuli rossi.) G. Bonanno.
- 101 \*Experimental Ligation of Abdominal Aorta. (Legatura dell'aorta addominale.) U. Fiore.
- 102 Leucocyte Formula in Primary Anemia. (Valore semeiologico della formula leucocitaria nelle anemie primitive.) M. Giacomo.
- 103 Instrument for Intubation. (Nuovo intubatore del laringe.) G. Belloni.

**101. Ligation of Abdominal Aorta.**—Fiore concludes from his experimental research on dogs that ligation of the abdominal aorta is feasible. The animals all tolerated it without much disturbance when it was done about 4 cm. above the bifurcation. He found the transperitoneal route the most convenient. None of the patients recovered in the fourteen cases he reviews from the literature, but he does not think



that the ligation was responsible for the fatal outcome in any instance, and is confident that it has every prospect of success on a young and healthy patient.

#### Policlinico, Rome.

July, XV, *Medical Section*, No. 7, pp. 289-336.

- 104 Agglutination of Red Corpuscles by Various Bacteria. (Sulla emagglutinazione batterica.) G. Guyot.  
105 The Blood in Typhoid, with Special Regard to Behavior of Polymorphous Neutrophile Leucocytes. (Il sangue nell'infezione tifoidea.) A. Rucalossi. (Commenced in No. 6.

July, *Surgical Section*, No. 7, pp. 289-328.

- 106 Case of Muscular Angiomata. V. Porelle.  
107 \*Primary Sarcoma of Liver. (Sarcoma primitivi del fegato.) G. Bertelli. (Commenced in No. 6.  
108 Paragastric Appendicitis. (Contributo anatomopatologico, patogenetico e clinico alle dislocazioni appendicolari.) P. Frascella.

July 26, *Practical Section*, No. 30, pp. 933-964.

- 109 \*Löwy's Sign of Insufficiency of the Pancreas. (Nuovo segno dell'insufficienza pancreatica.) R. G. Quadrio.

107. **Primary Sarcoma of the Liver.**—Bertelli has been studying two cases of primary sarcoma of the liver, but was unable to discover any special syndrome for this affection. The liver soon attains a large size, while as a rule there is no ascites or jaundice.

109. **Löwy's Sign of Insufficiency of the Pancreas.**—Löwy found that adrenalin instilled into the conjunctival sac had no appreciable effect on normal animals, but induced pronounced dilatation of the pupil in animals whose pancreas had been removed. The same effect was obtained in diabetics, while other patients showed no response to the instillation. Quadrio reports similar findings in 25 patients; 20 free from any tendency to a pancreatic affection presented no reaction, but pronounced mydriasis was observed in the 5 others, and 4 of these had a tumor in the pancreas or were in advanced diabetes, while the fifth was an epileptic. The technic is simple—merely instillation of 3 or 4 drops of the suprarenal preparation in the conjunctival sac. When the reaction is positive, pronounced mydriasis occurs in a few minutes.

#### Hospitalstidende, Copenhagen.

June 3, LI, No. 23, pp. 641-688.

- 110 \*Operative Treatment of Sciatica. (Ischias.) A. Pers. Commenced in No. 22.

June 10, No. 24, pp. 689-712.

- 111 Copper-Hydroxylamin Test for Grape Sugar. (Bangs Metode til Bestemmelse af Druesukker.) H. Jessee-Hansen.  
112 \*Recurring Tuberculous Polyarthrititis. (Tuberkuløs Ledreumatisme.) K. Schäffer. (Commenced in No. 23.

June 17, No. 25, pp. 713-744.

- 113 Apparatus for Abdominal Massage. (Bugmassageapparat.) J. C. Johansen.

June 24, No. 26, pp. 745-784.

- 114 Sterilization of Metal Instruments. M. Claudius.  
115 Iodized and Chromicized Catgut. (Jodkromkatgut.) Id.  
116 Improved Technic for Microtomy. (Paraffinoid.) Id.

July 8, No. 28, pp. 817-848.

- 117 Operations on Kidneys when Catheterization of Ureters is Impossible. Six Cases. (Nyreoperationer efter svigtende Forsøg med Uretercystoskopet.) H. Kaarsberg. (Commenced in No. 27.

110. **Simple Operative Treatment of Sciatica.**—THE JOURNAL summarized, June 16, 1906, page 1894, Pers' earliest communication on the immediate and permanent cure of unusually severe and prolonged sciatica by exposing the nerve and releasing it from a network of adhesions which was binding it down. Since then he has applied this simple treatment in 47 cases with good results, as reported in THE JOURNAL, August 22, page 715. In his last 18 cases he has followed Baracz's technic for access to the nerve. In 6 cases there was a hip-joint affection besides, but the patients were relieved of their sciatica. He reviews the history of operative treatment of sciatica, adding that he intentionally refrains from stretching the nerve, as releasing it from adhesions has proved all that is necessary.

112. **Recurring Tuberculous Polyarthrititis.**—Schäffer reports the details of thirteen cases which confirm Poncet's assertions in regard to the existence of tuberculous rheumatism, the patients presenting arthralgia, acute and subacute arthritis simulating acute rheumatic fever, or a chronic arthritis similar to various forms of chronic articular rheumatism. These

affections are probably of toxic nature, but the importance of differentiating their tuberculous origin early is evident, so that no time need be wasted on the salicylates or mercury or anti-gonorrheal treatment. None of the thirteen patients has developed endocarditis since, and in none of the cases had there been a primary angina, so often noticed with true rheumatic fever, and there have been no evidences of gonorrhea or syphilis since in any case. One patient was a girl of thirteen, being treated for tuberculous glands in the neck. Pains developed in different joints with slight fever, but nothing pathologic could be discovered in the joints, although the pains persisted for a month with remissions at times. The child has been entirely free since from all tuberculous manifestations and is in good health to date thirteen years later. In another group of cases the clinical picture was that of acute rheumatic fever, except that the temperature was never very high and the joints not so sensitive, while the general health did not suffer as with rheumatic fever. In some other cases the tuberculous arthritis finally localized in one joint and persisted for a long time. In one case coxitis had long been preceded by pain in this and other joints. One patient had first the arthralgia, then serofulous conjunctivitis, and later tuberculous nephritis. This is a striking example of acute polyarthrititis as the first manifestation of tuberculosis. Schäffer reviews the entire literature on the subject, reiterating that an acute polyarthrititis which does not respond to the salicylates is strongly suspicious of tuberculosis. A total of 28 cases of joint affections are recorded among the 3,335 tuberculous children admitted during the last 32 years to the Refsnæs Hospital in his charge.

#### Upsala Läkareförenings Förhandlingar.

June 20, XIII, No. 5, pp. 307-393.

- 118 Infectiousness of Clothes Worn by Consumptives. (Infektiositeten hos lungsjuktigas kläder.) R. Friberger.  
119 Involution of the Thymus in Rabbits. (Thymuskörtelns åldersförändringar hos kaninen.) G. Söderlund and A. Backman.  
120 Enlarged Wandering Spleen with Torsion of the Pedicle. Splenectomy. (Hypertrofisk vandermjälte med stjälvkrinning.) A. Reuterskiöld and A. Vestberg.  
121 Cholesterol Crystals in Pleural Effusion. (Cholesterinkrystaller i pleuraexsudat.) V. Hedesström.

Supplement, pp. 1-504.

- 122 History of Operations for Hernia. Remote Results of 655 Herniotomies at Upsala. (Radikaloperationer för bräck.) S. Lindqvist.

### Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

SCIENTIFIC MEMOIRS. By Officers of the Medical and Sanitary Departments of the Government of India. No. 32. An Inquiry on Enteric Fever in India. Carried Out at the Central Research Institute, Kasauli. Under the Direction of Lieutenant-Colonel D. Semple, M.D., Director of the Institute, and Captain E. D. W. Greig, M.D. Cardboard. Pp. 108. Price, 30c. Calcutta: Superintendent Government Printing, 1908. No. 33. The Production of Alkali in Liquid Media by the Bacillus Pestis. By Lieut.-Colonel W. B. Bauman, M.D., B.Sc., I.M.S. Cardboard. Pp. 12. Price, 12c. Calcutta: Superintendent Government Printing. No. 34. Standards of the Constituents of the Urine and Blood and the Bearing of the Metabolism of Bengalis on the Problems of Nutrition. By Captain D. McCay, M.B., B.Ch., B.A.O., I.M.S., Professor of Physiology, Medical College, Calcutta. Cardboard. Pp. 67. Price, 30c. Calcutta: Superintendent Government Printing, 1908.

CATARACT EXTRACTION. A Series of Papers with Discussion and Comments Read Before the Ophthalmological Section of the New York Academy of Medicine, 1907-1908. Edited by J. Herbert Laiborue, M.D., Instructor in Ophthalmology Cornell University Medical College. Cloth. Pp. 169. Price, \$2.00. New York: William Wood & Co., 1908.

DISEASES OF THE RECTUM, ANUS AND SIGMOID COLON. By F. Swinford Edwards, F.R.C.S., Surgeon to the West London Hospital. Third Edition of Cooper and Edward's Diseases of the Rectum and Anus. Cloth. Pp. 442, with illustrations. Price, \$4.20. Philadelphia: P. Blakiston's Son & Co.

THE EXTRA PHARMACOPEIA. Revised by W. Harrison Martindale, Ph.D., F.R.C.S., and W. Wynn Westcott, M.B. Lond., D.P.H., I.M.S. Coroner for North-East London. Thirteenth Edition. Flexible Leather. Pp. 1,164. Price, \$2.75. London: H. K. Lewis, 1908.

INDUSTRIAL AND PERSONAL HYGIENE. By George M. Kober, M.D., LL.D., Professor of Hygiene, School of Medicine, Georgetown University. A Report of the Committee on Social Betterment. Paper. Pp. 175. Washington: President's Homes Commission, 1908.

MEDICAL GREEK. By Achilles Rose. Cloth. Pp. 262. Price, \$1.00. New York: Peri Hellados Publication Office.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOLUME LI.

CHICAGO, ILLINOIS, SEPTEMBER 5, 1908.

NUMBER 10.

## Original Articles

### ARTIFICIAL RESPIRATION IN ITS PHYSIOLOGIC ASPECTS.\*

E. A. SCHAFER, F.R.S.

Professor of Physiology in the University of Edinburgh.  
EDINBURGH.

In order to estimate the value of any method of artificial respiration it is necessary to bear in mind certain general principles and to determine with some approach to accuracy certain statistics.

The most important of the principles concerned is the elasticity of the lungs and thorax, by virtue of which alterations in volume caused by distortion of shape under the influence of an external force are followed, on removal of the distorting force, by a return to the original volume. It is by virtue of this principle that expiration is ordinarily effected, the distorting force usually acting so as to increase the capacity of the thorax by raising the ribs and depressing the diaphragm; on its removal these parts return to their original position. But, artificially, the distorting force can be made to act in an opposite manner, viz., by diminishing the capacity of the thorax and thereby forcing air out of the lungs; on now removing the distorting force the elasticity of the thoracic wall causes air to pass into the lungs and inspiration becomes produced.

The possibility of effecting artificial respiration in this reversed manner, using pressure as the active agent to cause expiration and the elasticity of the thoracic wall to produce inspiration, was demonstrated by Dr. B. Howard of New York, who in 1868 published an account of a method of performing artificial respiration which has since been largely used by physicians and surgeons in threatened death from asphyxia or from administration of anesthetics; this method was introduced by Dr. Howard for employment in cases of drowning. The method consists in laying the patient on his back, kneeling over the lower part of the body, and alternately pressing on the lower part of the chest and relaxing the pressure, repeating the operation eight to ten times a minute. The advantage of the method is that it is simple and that the patient on the operating table is usually in the supine position. The disadvantages are: that the tongue is apt to fall backward and block the pharynx, therefore, needing to be drawn forward; that the ribs in senile subjects are brittle and may be fractured; and that the liver in asphyxia is congested and greatly enlarged and is liable to be ruptured; this is especially the case in drowned subjects.

Another common method of performing artificial respiration—that suggested by Silvester—appears at first

sight to be more truly physiologic, since it attempts to imitate natural respiration by raising the ribs and thus increasing the capacity of the thorax. This is effected by forcibly drawing the arms upward toward the head; the muscles passing from the arms to the chest wall, which are attached to the ribs, are thus made to drag the ribs upward. Expiration is effected by lowering the arms and pressing them against the sides of the thorax. At least three persons are needed to operate by this method, one to activate the arms, another to hold the tongue out from the mouth—for the patient is in the supine position—and a third to hold down the trunk and prevent its being bodily moved. Silvester's method was described by him in 1858.

Marshall Hall's method, which was published in 1857, consists in rolling the patient alternately from the lateral to the prone position and pressing on the back between the shoulder blades when in the latter position. Its efficacy was supposed by Marshall Hall to depend on the change of posture, which, by altering the pressure on the chest in the successive positions of the body, alters its capacity; he accordingly termed it the postural method. It has the advantage over the other two methods that the tongue does not require to be drawn out of the mouth by a special operator, and that, in cases of drowning, water and mucus tend naturally to flow out and do not accumulate at the back of the throat, as is the case when the patient is in the supine position.

In 1890 the Royal Medical and Chirurgical Society of London appointed a committee to investigate the efficacy of these and other methods of performing artificial respiration, and of this committee I was made chairman. A large number of experiments were performed on the cadaver, which were mostly futile by reason of the difficulties presented by postmortem rigidity. Subsequently transferring the work to Edinburgh, we made similar investigations on the living passive subject, and also investigated in dogs both the physiologic phenomena presented in drowning and the best means of producing recovery in these animals by artificial respiration. In this research I received the aid of Dr. P. T. Herring of the physiology department of the University of Edinburgh and of my other assistants there.

As the outcome of this work we concluded that, for the performance of artificial respiration without the aid of bellows or other apparatus, a pressure method is best, and that such a method is most efficient with the patient in the prone position and with the pressure applied vertically over the lowest ribs. In this way not only is the thorax compressed, but also the abdomen, against the ground. The pressure on the abdomen forces the viscera against the diaphragm, which is thereby itself moved upward, driving air out of the lungs. On relaxing the pressure the elasticity of the parts causes them to resume their former shape and

\* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



volume, and air is drawn in through the glottis. The pressure is exerted gradually and slowly, occupying some three seconds; it is then removed during two seconds and again applied: and so on some twelve times a minute. To this method I have given the name of the "prone pressure method." The method is illustrated by the appended cut (Figs. 1 and 2), which are from photographs taken for the Royal Life Saving Society.

In performing it the operator kneels or squats by the side of or across the patient, places his hands over the lowest ribs and swings his body forward and backward so as to allow his weight alternately to fall vertically on the wrists and to be removed; in this way hardly any muscular exertion is required. The efficiency of a pressure method of artificial respiration depends on the fact that after an ordinary expiration the thorax still contains some 1,500 c.c. of air which can be expelled by a forced expiratory effort; this is the reserve or supplementary air of Hutchinson. It is easy to conceive that one-third of this reserve air, i. e., 500 c.c., can be forced out from the chest by pressure, and, as a matter of fact, considerably more than that amount can be expelled when the pressure is applied in the prone position as just described. By repeating the movements—pressure and relaxation—twelve times a minute, we easily get an air exchange of 6,000 c.c., which is more than the average normal amount.

It is somewhat curious to find that up to the time of



Fig. 1.—First position of operator and patient for effecting artificial respiration by the "prone pressure method" described by Professor Schäfer. The operator's hands are over the lowest ribs of the patient.

into and out of the chest in a single respiratory movement be measured, but, what is of more importance, the amount which is pumped in and out in a given time—say, one minute or five minutes.

It is known from the experiments of Vierordt that the average amount of air which a man breathes in and out of the lungs per minute is between 5,000 c.c. and 6,000 c.c. If the rate of respiration is twelve per minute, this will give a tidal air volume of nearly 500 c.c. Any method of artificial respiration which fails to provide for an air exchange of less than 5,000 c.c. per minute is therefore less efficient than normal, and a marked deficiency of air exchange should lead us to reject such method. The importance of subjecting all proposed methods of artificial respiration to this test is obvious.

The following figures represent the results of one of a series of comparative experiments made to test the efficacy of the Silvester, Howard, Marshall Hall, and prone pressure methods as compared with natural respiration. Both the subject and operator were the same throughout. In the first place the amount yielded by natural respiration was determined. The rate of respiration was thirteen per minute; the amount of air exchange per minute was 5,850 c.c.; the amount of tidal air works out therefore to 450 c.c. Pumping by the Silvester method at the rate of the natural respiration of the same individual, the amount of air exchange per



Fig. 2.—Second position of operator, who is throwing his weight vertically on his wrists, thus putting pressure on the thorax and abdomen of the patient. This pressure is exerted slowly, occupying some three seconds and is then removed for a period of two seconds and again applied.

our investigations no one seems to have tested the efficacy of the current methods of performing artificial respiration by determining the quantity of air per minute which can be pumped into and out of the lungs. Attempts had been made on the cadaver to test the effect of single inspiratory or expiratory movements, but these all proved of little value, for the reason already given. In any case it is of first importance to know what would be the result of keeping up the efforts of artificial respiration during a given time at the normal rate. To this matter we accordingly directed our attention. To measure the amount of air delivered per minute by the several methods above described we employed a spirometer with counterpoise devised by Marcat, so arranged that when the inner cylinder is raised from the water in the outer cylinder its increasing weight is *pari passu* counterbalanced. A mask was fitted over the mouth and nostrils of the subject (or a mouthpiece was used, the nostrils being closed) and a double set of water valves was so arranged in connection with the mask that the air could pass through one valve into the mask and air passages during inspiration and through the other valve into the spirometer during expiration. In this way not only can the amount of air pumped

minute was 2,280 c.c., giving a tidal air amount of only 175 c.c., which we recognize as quite inadequate.

With the Marshall Hall method the results are similar; an exchange per minute of 3,300 c.c. is registered, giving a tidal air volume of 254 c.c.; also inadequate. With the Howard method the results approach more nearly to the normal; the exchange per minute is 4,030 c.c. and the tidal air volume is therefore 310 c.c., i. e., some two-thirds of what was determined to be the natural amount of exchange in the individual who was the subject of the experiment. On the other hand, by the prone pressure method the amount pumped through the lungs per minute was 6,760 c.c., giving a tidal air volume of 520 c.c. That is to say, this method proves to be completely efficacious and capable of effecting an air exchange greater than that produced in normal respiration.<sup>1</sup>

In cases of drowning there can be no question that the prone pressure method of artificial respiration is

1. The efficacy of the prone pressure method was demonstrated to the Section by measuring the amount of air which could be exchanged in a given time as compared with that exchanged by natural respiration.



always indicated. Its advantages are: 1, That it is fully efficient; 2, that it can be performed without fatigue by a single individual; 3, that it is simple and easily learned; 4, that it allows the tongue to fall forward and the mucus and water to escape from the mouth so that the tendency of these to block the passage of air, which is inherent to the supine position, is altogether obviated. It can be applied equally well in attempting to revive a patient whose respiration has ceased in consequence of an overdose of chloroform or other anesthetic. One of the difficulties and dangers of a general anesthetic is the excessive secretion of saliva and mucus. This, with the subject in the prone position, would tend to flow out of the mouth. With chloroform another source of danger is the tendency of the heart to undergo fatal inhibition, owing to the influence of the drug on the vagus center. Both these dangers are obviated by the hypodermic administration, prior to the operation, of a small dose (1/50 grain) of atropin sulphate. It seems strange that anesthetists do not generally adopt this simple precaution as a routine method. They would thereby be saved much anxiety, and the paragraphs in the newspapers headed "Death During Administration of an Anesthetic" would be much more rare than they are at present.

I have spoken hitherto of methods of artificial respiration which do not require the use of apparatus. Such methods are the only ones which are usually available in cases of drowning, and of these the prone pressure method is certainly as efficacious as any method which involves apparatus. Circumstances, however, may and do arise in surgery in which artificial respiration is called for but which would not permit of the employment either of this or of the other methods above described. In these cases the simplest apparatus which can be employed is an ordinary bellows or a piston cylinder. It is not even necessary to introduce the air directly into the trachea, for, as Horvath observed, if the nozzle of a bellows is introduced into one nostril, the other nostril being left open but the mouth kept shut, it is possible by a vigorous movement of the bellows to distend the lungs quite efficiently, and, by repeating the movement regularly, to carry on artificial respiration. In dogs I have repeatedly obtained recovery after drowning by the employment of this method, in spite of the much greater intricacy and narrowness of the nasal passages in these animals. But in surgical operations which involve the opening of both sides of the chest it would be safer to perform intubation of the larynx, or even temporary tracheotomy. In any case it is highly desirable in such circumstances to adopt, if possible, the prone position for the patient. Under some circumstances a tendency to dyspnea is increased by the supine position. This is the case in dogs with artificial pneumothorax and appears to depend on the position assumed by the heart. Dr. Elsberg recently showed me, at the Rockefeller Institute in New York, an experiment which illustrates this in a striking manner. An animal with a single pneumothorax, which was highly dyspneic when on its back, passed into natural and quiet respiration as soon as it was turned over onto its belly.

Whether for certain surgical procedures it is necessary to carry on artificial respiration by enclosing the body of the patient along with the operators in a chamber within which the air is rarified, it is no part of my function in opening this symposium to consider. We shall doubtless be made acquainted by Professor Sauerbruch with his reasons for adopting this relatively com-

plex method in preference to the simpler positive pressure method which is adopted in physiologic laboratories for similar operations. But there must obviously be a sufficient air exchange whether this be furnished by rhythmic fluctuations in the air pressure of the chamber, permitting the lungs to draw in or drive out air from their cavities, or by a steady stream of air or oxygen passed into and out of the air passages. If this exchange is carried out there is no reason why a method in which respiration depends on the production of expansion of the lung by negative pressure outside it should not be as efficacious as one which depends on positive pressure applied through the air passages. The principle is, in fact, really the same in both cases and in the Sauerbruch chamber, as in natural respiration, it is actually the positive pressure of the atmosphere which produces the lung expansion; the difference between the two methods being that, in the one, pressure on the inside of the alveoli is increased by the action of the bellows, while in the other the pressure on the outside of the alveoli is decreased by the action of the exhaust pump.

## ARTIFICIAL INTRAPULMONARY POSITIVE PRESSURE.

### EXPERIMENTAL APPLICATIONS IN SURGERY OF THE LUNGS.\*

SAMUEL ROBINSON, M.D.  
BOSTON.

The ingenuity of Professor Sauerbruch in conceiving the use of negative pressure to prevent collapse of the lung and in constructing his cabinet can not be denied. The size and cost of such an apparatus, however, together with its lack of portability, justifies, I think, investigation and experimentation to obviate the difficulties which have been associated with the use of positive pressure. For we must admit that some simple inexpensive positive pressure device would be more practicable for general use.

My investigations have been exclusively in animal experimentation under the positive pressure method. The objects have been, first, to apply a practical surgical test in animals; second, to refute if possible certain well-known objections to the method; and, third, to improve the application of air compression in order better to maintain ventilation of the lungs and consequent oxygenation of the blood.

The method which I have employed is not the rhythmic inflation method but the use of a steady air compression by the method of Brauer. I first performed thirty thoracic operations on dogs. Wide opening of the right chest was established in all of these cases for periods varying from two to four hours. The air compression was introduced through the apparatus shown in the lantern slides (Figs. 1 and 2). A simple glass face mask was used. Several simple thoracotomies were done with wide openings, and the remainder of the operations consisted in the removal of greater or less portions of the right lung. Of nine deaths in these thirty cases sepsis and the incomplete closure of the lung stump or thorax opening were the chief causes of death. None of the fatalities could justly be attributed to the use of positive pressure. The animals withstood the administration

\* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



of compressed air without manifesting unfavorable symptoms during the operation, and in the two months' convalescence of the recovered cases no symptoms developed which could be attributed to the use of air compression.

Dr. Sauerbruch, in a paper of 1904, raised as an objection to my method the fear of "interstitial emphysema as a result of the artificial inpumping of air." But here I would emphasize that under regulated introduction of compressed air the sudden blowing up of the collapsed alveoli, such as occurs in rhythmical inflation, is not an existing danger. The air compression must be regarded as a constant factor. Its passage in and out of the lungs should be obstructed only enough to maintain the lung in a state of inflation a trifle below that which is normal to it. If then the lung is never allowed to become collapsed and then suddenly blown up, and if the outer surface of the lung is never hyperinflated beyond the level of the inner thoracic wall, we have no reason to expect a rupture of the alveoli. In fact interstitial emphysema was not found present in any one of the fatalities or recoveries in this series of thirty operations.

We have been told that in the use of positive pressure dangerous changes in the circulation must occur. This objection led me to perform twenty-five blood-pressure

from the branch to the left lower lobe, and in two instances both methods were used synchronously.

These pulmonary tracings likewise demonstrated that under regulated ventilation changes in blood pressure did not occur. If, however, the air compression was employed several minutes previous to the opening of the chest, a rise in blood pressure occurred which immediately fell to the normal level at the moment of opening. Moreover, if after the opening of the chest the positive pressure was allowed to exceed the limit necessary to overcome the elasticity of the lungs and to preserve oxygenation, changes in aortic and pulmonary pressure were manifest. Lowering the air pressure below the normal limits would cause a fall in blood pressure because of the dyspneic effect of insufficient lung ventilation.

From this series of experiments I conclude that in the presence of wide-open pneumothorax, under properly-adjusted air compression, changes in aortic and pulmonary blood pressure do not occur. Furthermore, in the absence of change in pulmonary pressure I am further persuaded to agree with Professor Brauer that the intra-alveolar tension is no greater when produced by positive inflation than when caused by negative suction applied to the outer surface of the lung.



Fig. 1.—During the removal of a positive pressure apparatus from the face, head, or pharynx, in case of vomiting or ether spasm, the application of a thorax cup as shown converts an open pneumothorax into a closed one and the normal physiologic conditions are more nearly maintained. This cup should be applied at the end of expiration, and thus at inspiration a partial negative intrathoracic pressure is produced. No suction need be applied to cup.

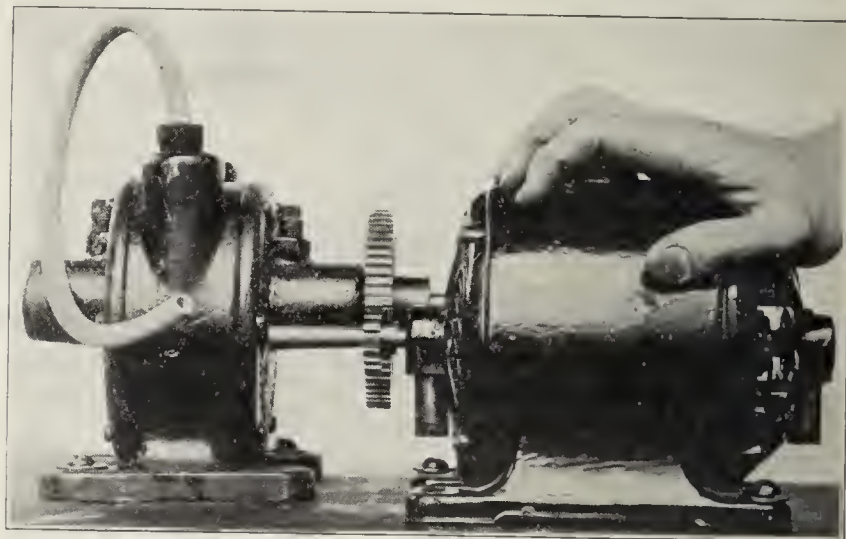


Fig. 2.—This rotary air pump run by a 1/6 horse-power motor supplies a steady air compression with ample cubical volume of afferent air. Its work can be regulated by adjusting the speed of the motor. The use of tanks is thus avoided and it is in other respects preferable to any of the forms of hand or motor bicycle pumps. Its portability is of advantage.

experiments. Dogs exclusively were used. Ether anesthesia was employed without previous morphin injection. In twenty of these experiments aortic pressure was recorded from the left carotid. One or both chests were held wide open with rib-spreaders, and in five cases the entire front of the thorax was removed. The air compression was carefully regulated and all exciting traumatic nerve stimulation, such as traction on the lung or undue irritation of the pleura, was avoided as far as possible.

The aortic pressure in these experiments maintained a normal level and the heart action was not disturbed. But inasmuch as changes in the pulmonary circulation might be present and not manifest in the aortic tracing, the pulmonary pressure was also recorded in ten experiments. In six of these the right ventricular pressure was obtained through a glass sound passed through the right jugular vein entering the tricuspid valve. In two experiments pulmonary pressure was obtained directly

Some observers who have seen Professor Brauer's head chamber clinically applied in surgery of the human, state that cyanosis and dyspnea have been conspicuous factors. In such instances one or two avoidable conditions are present. If unnecessarily high pressure is employed, under-compression of the pulmonary capillaries ensues, the right heart may become engorged and a rise in pulmonary pressure occurs. This should not occur, however, except in the hands of unskilled operators. The more frequent cause of dyspnea in these cases is incomplete ventilation of the lung alveoli due sometimes to the insufficient supply of oxygen, but more often to the stagnation of carbon dioxide, the escape of which is not adequately provided for either in the construction of the apparatus or in its manipulation.

When double wide-open pneumothorax exists, the respiratory excursion of the lung is practically *nil*, with the exception of the slight expiratory effect in the rise of the diaphragm. In other words, the alveoli become dead spaces held in a given degree of steady inflation by air compression. The exchange of gases in these



alveolar spaces is essential but difficult in the absence of the help of the thoracic expansion. A limited dead space is, as has been stated by Yandell Henderson, essential for the retention of the required amount of carbon dioxide.

My experience has been, however, that in the use of a positive pressure apparatus the tendency is to the over-retention of  $\text{CO}_2$  from an excessive dead space resulting in excess of  $\text{CO}_2$ , slowing of the pulse and dyspneic respiration, rather than a tendency to lack of  $\text{CO}_2$  (acapnia), cardiac tetanus, and apnea, described by Henderson as the symptoms of hyperventilation.

I have done six experiments by the method of Volhard and Sollman introducing oxygen by catheter through a tracheotomy wound to the bifurcation of the bronchi, with both chests wide open and lungs collapsed.

The alveoli of a two-thirds collapsed lung can thus be ventilated and the animal kept alive. Not only is a direct access of oxygen to the partially collapsed alveoli thus established, but a ready escape and flushing out of carbon dioxide is also provided through the tracheotomy wound around the catheter. In one of two attempts I found it possible to maintain oxygenation by similarly introducing air and ether mixture by tracheal catheter, with both chests opened and both lungs collapsed.

The secret of the success of these tracheal experiments with semi-collapsed lungs is the absolute prevention of a dead space for carbon dioxide retention. In order to avoid tracheotomy and introduce air by the mouth, the lungs must be kept inflated by resisting the outflow of the air compression. The aerating surface is thus increased and the ventilating air is kept in motion as in the tracheal experiments.

I have also observed that when the lungs are held in expansion by a strong resistance to the escape, together with a low supply of air compression, that dyspneic signs of incomplete ventilation come on, and from these observations I have been led to attempt every possible means of improving the gas exchange in the alveoli and thus preventing an absolute dead space. I have, therefore, increased the pressure and rapidity of flow of the afferent "fresh air" by using higher compression, up to about three pounds, yielding a cubic foot of air each minute.

The resistance to the efferent air I have correspondingly diminished so that the lung inflation has remained at its original level. This profuse flushing out of the alveoli is, therefore, a principle which I recommend to prevent the over-accumulation of carbon dioxide, and since its employment I have seen no tendency to dyspnea or cyanosis.

#### SUMMARY.

The results of thirty operations under positive pressure with 70 per cent. recoveries were encouraging.

Thirty operations and twenty-five experiments proved that emphysema and circulatory changes do not occur with a properly regulated apparatus.

In the use of positive pressure the escape of deoxygenated air must be amply provided for.

I would express my thanks to Prof. Walter B. Cannon for valuable suggestions in the blood-pressure experiments; and to George Adams Leland, Jr. (Harvard Medical School, Class of 1911), for his able assistance.

## THE POSITIVE PRESSURE METHOD OF ARTIFICIAL RESPIRATION

WITH ITS EXPERIMENTAL APPLICATION TO THE SURGERY OF THE THORACIC ESOPHAGUS.\*

NATHAN W. GREEN, M.D.

AND

J. W. DRAPER MAURY, M.D.

NEW YORK.

It is not the intention in this paper to go over the history or to cover the literature of artificial respiration. There are two distinct procedures included in the term. The first applies to postural methods, the second applies to that produced by apparatus. The latter is used in the surgery of the chest. This may again be divided into the positive pressure and the negative pressure methods. It makes little difference which of these is employed. It is in accordance with obvious surgical principles to apply the most expedient.

Matas,<sup>1</sup> Brauer,<sup>2</sup> Tuffier,<sup>3</sup> F. T. Murphy,<sup>4</sup> H. H.

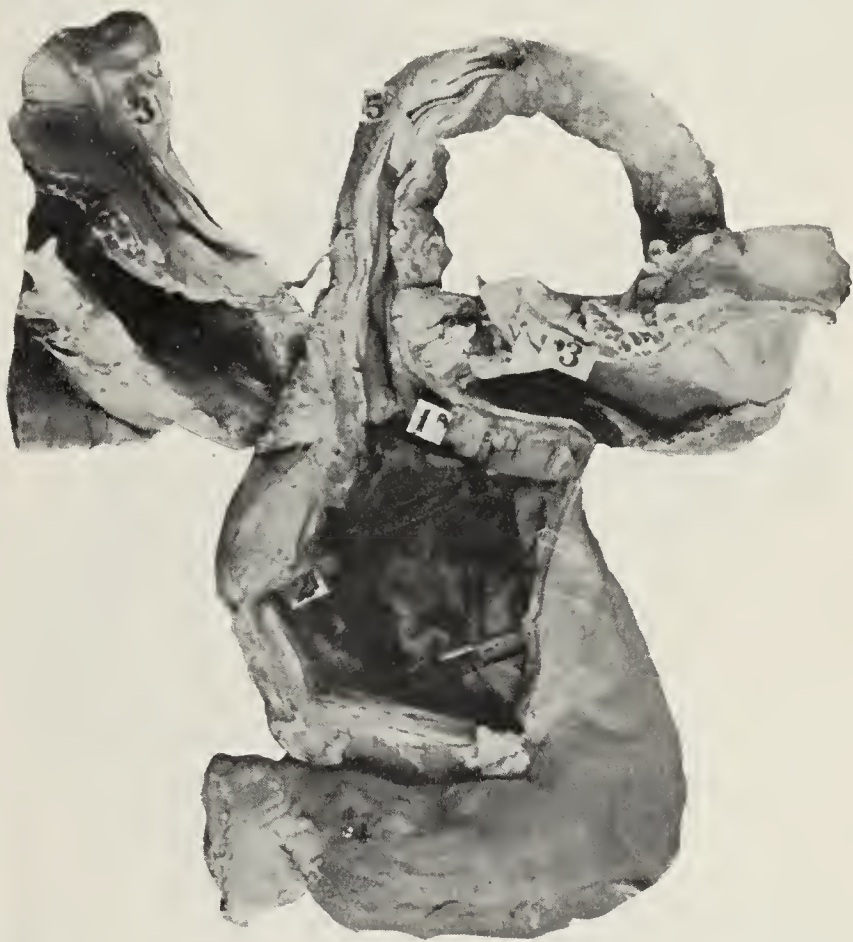


Fig. 1. Result of sectioning operation using silk sutures to make the anastomosis: 1, point of anastomosis which was sequestered in the abdominal cavity below diaphragm 3; 2, the normal esophago-gastric opening closed with silk sutures.

Janeway and others have employed positive pressure. Sauerbruch<sup>5</sup> has been the chief advocate of negative pressure. Woillez,<sup>6</sup> in 1876, also employed a negative-

\* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Matas, R.: Tr. South. Surg. and Gynec. Assn., xii, 52-82; Artificial Respiration by Direct Intra-Laryngeal Intubation, Am. Med., Jan. 18, 1902.

2. Brauer, L.: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1904, xiii, 496.

3. Tuffier, T.: L'Ouverture de la plèvre sans pneumothorax, Presse méd., Jan. 27, 1906.

4. Boston Med. and Surg. Jour., April 13, 1905, ciii, No. 15, pp. 428-431.

5. Sauerbruch, F.: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1904, xiii, 400-480; München. med. Wchnschr., Jan. 2, 1906; Zentrbl. f. Chir., 1905, xxxii, 82; Beitr. z. klin. Chir., 1905, xlv, 405-494. Stetten, DeWitt: The Experiments of Sauerbruch in the Field of Esophageal Surgery, New York Med. Jour., June 10, 1905.

6. Bull. de l'Acad. de méd., series 2, 1876, v., 613.



pressure box. Its application was, however, different from that of the Sauerbruch chamber.

As the technic of intrathoracic work shall improve, and as the underlying difficulties shall be more thoroughly understood, artificial respiration as an aid will become more general. The possibility of intervention in thoracic visceral disease has been made clear by Tuffier, Maffei<sup>7</sup> and others. Dr. Sauerbruch's classic work has given a new impetus to the interest in surgical intervention in the chest.

There are difficulties in the surgery of the chest that are not present elsewhere. The chest is a more or less rigid cavity in which the viscera lie deeply anchored. The condition of negative pressure exists. The walls remain rigidly outstanding after either partial collapse of the lung or the removal of part of the enclosed viscera. This latter causes a failure of the viscera to fill the chest at once completely after it has been opened.

There is an apparent tardiness in the serous membranes of the chest to form rapid and plastic adhesions as compared with the peritoneum. Whether this is real or only due to the other conditions within the thorax has not yet been worked out. As to the fibrous adhe-

side of the chest usually means collapse of the lung on the other side as well, unless the lungs are kept inflated by some artificial means, and frequently we have found a communication of one pleural cavity with that of the opposite side. Prof. George S. Huntington regards these openings as artifacts. Furthermore, even if not patent, the mediastinum in dogs is very thin and easily movable, and does not offer the resistance to atmospheric pressure, when one side is opened, that is found in the human being. On this account it would seem that operations for certain conditions in the human subject will prove more successful than the same class of operations for experimental purposes in dogs. This may seem an extraordinary statement, as it is the popular belief that dogs are more resistant to septic infection than are human beings. Our researches, however, have shown that dogs are not as resistant to infection as is commonly believed. In operations in the chest we may



Fig. 2. Side-tracking operation by means of a Murphy button: 1, is on the edge of the normal esophageal opening; 2, is on the edge of the new stoma; 3, is the diaphragm; 4, is the Murphy button impacted in the pyloric end of the stomach, causing death two weeks after operation.

sions, it is well known that they may be very extensive. In other words, speaking surgically rather than histologically, there are two degrees of adhesions: the first is the plastic form, the second is the fibrous or organized. The rapid development of the first-mentioned is the element which makes a large part of the intra-abdominal work possible. The rate of formation of plastic adhesions within the chest is apparently slower. There is a marked susceptibility of the pleural cavity to infection.

After operations in the chest, as elsewhere, septic manifestations may occur. When these have once occurred, it is very hard to establish drainage. This has been our experience in the Research Laboratory. Infection, when present on one side, may rapidly involve the other. We have found in dogs that opening one



Fig. 3. Side-tracking operation by means of a Murphy button containing an obturator in the male portion: 1, normal esophageal opening into stomach; 2, new stoma; 3, diaphragm. (It must be understood that in these operations the cardiac portion of the stomach was drawn up through the diaphragm into the chest and became thereafter an adventitious thoracic viscus.)

get infection from the skin, the severed bronchial tubes, or the opened hollow viscera. Operations on the lungs appear to be less frequently followed by empyema than operations on the alimentary canal. In work on the lungs it is important to have all the cut ends of the bronchial tubes closed in to prevent it. Any method that accomplishes this well should succeed. In a recent article by Samuel Robinson,<sup>8</sup> of Boston, very good results have been reported. In a previous paper,<sup>9</sup> one of us has outlined a technic for the prevention of sepsis from the bronchi. In work on the esophagus, sepsis more frequently follows, unless special points in technic applicable to the chest are carefully observed. Whether this is due to the aspirating of air down the esophagus

7. Jour. de Chir. et Annal. de la Soc. belge de Chir., 1906, vi, 380-390.

8. Ann. Surg., February, 1908, xlvii, No. 2.

9. Green, N. W.: Surg., Gynec. and Obst., May, 1906, ii, No. 5, 512-538.



while it is opened, thus contaminating the field of operation, or whether it is due to subsequent leakage from some mechanically imperfect closure is hard to determine. It may be from both. H. H. Janeway has suggested that it may, in some degree, be due to the suction of the negative pressure aiding intra-thoracic seepage along the stitches, or retrograde leakage between them.

Dr. Sauerbruch has had very favorable results with the aid of some mechanical device such as the Murphy button. We think that this is due to a more perfect closure of the anastomosis wound and of the lymphatics than can be made by stitches, for when properly applied it makes a tight apposition of the visceral surfaces.

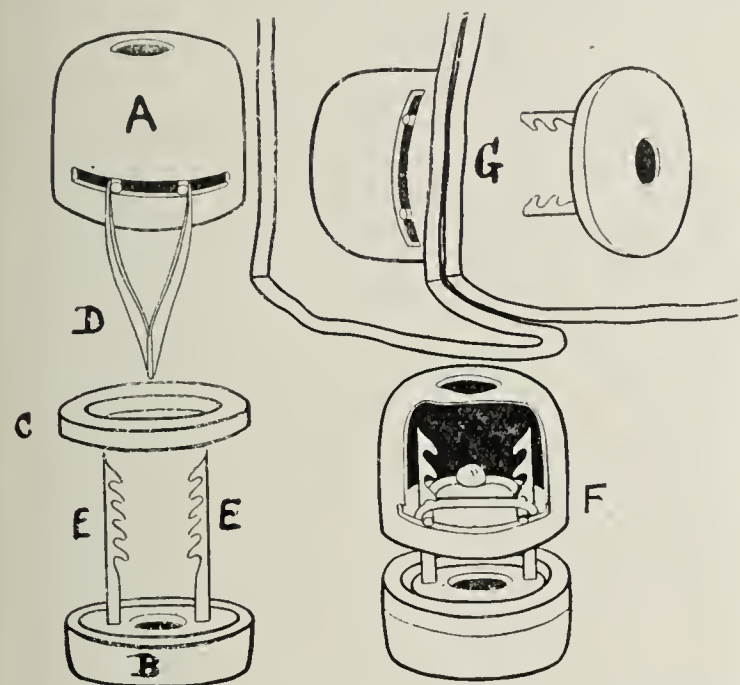


Fig. 4. Special button for esophago-gastric anastomosis (side-tracking operation): A, gastric half of button; B, esophageal half; C, floating ring (elastic) for maintaining continuous pressure on tissues (this is made now as a spring ring); D, forceps for releasing spring which engages needles, E, E; F, complete button partially closed; G, method of uniting halves of button by perforating walls of esophagus and stomach by the needles (the portion of the walls thus included between the halves of the button undergoes necrosis from pressure and sloughs out in a few days). The new stoma shown in Fig. 6 is the result of such a process.

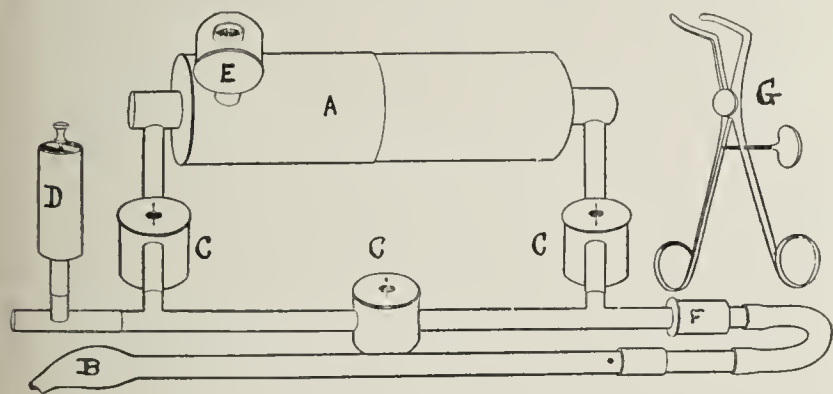


Fig. 5. Apparatus for applying positive pressure in artificial respiration; A, ether chamber filled with gauze; B, intubation tube; C, C, C, valves used to direct current of air either through ether-chamber or directly to intubation cannula; D, safety valve; E, inlet for fresh ether; F, air-filter; G, clamp for holding tube in place.

This, unlike the union made by stitches, is an uninterrupted pressure circle. That made by stitches, on the other hand, even if they be continuous, must have points of varying pressure throughout its circumference. These theoretical points have been suggested to us by the difference in mortality in practically comparing the two methods. Our own experience leads us to believe that some mechanical device which will establish an anastomosis with absolutely no soiling of the serous membrane, forming at the same time a tight joint, will

prove of the greatest assistance in rendering operations of this nature free from disastrous infection. Dead spaces within the chest should be overcome as much as possible, at the termination of the operation by increased air pressure. The absence of omentum with its coapting power is an unfavorable feature which may hinder success. We have carried omentum into the chest and applied it to the wound in one instance. The constant motion of the diaphragm may be a factor which militates against proper union after operation. We have stretched the diaphragm on the operated side, and also interrupted the function of the phrenic nerve in an effort to overcome this.

The difficulty of establishing drainage may, in part, be overcome in the human by some sort of aspirating device.<sup>10</sup> In our experimental work on dogs this is hardly applicable.



Fig. 6. Stomach removed from dog ten days after operation: 1, glass rod passing through esophagus and normal cardiac orifice of stomach; 2, new stoma made by button shown in Fig. 4; 3, diaphragm.

The indications for operation on the esophagus are: stricture of the esophagus, carcinoma of the lower end or of the esophago-gastric juncture, diverticulum of the esophagus, and foreign bodies within the esophagus.

The operations that we have undertaken in the Surgical Research Laboratory on the esophagus may be classified under two types. In one, the esophagus was sectioned, reuniting the proximal end with the cardia of the stomach (Fig. 1). In the other, there was a side-tracking of the cardiac orifice similar to the method of Biondi.<sup>11</sup> The sectioning operation was done with

10. Seidel, H.: *Deutsch. med. Wchnschr.* Feb. 22, 1906. Bryant, J. D.: *Surg., Gynec. and Obst.*, 1906, iii, 296-302.

11. Gosset, A.: *Rev. de Chir.*, 1903, xxviii, 694.



the aid of sutures and of the Murphy button. The results have not been encouraging. The greater amount of traumatism and the more protracted duration, together with the difficulty of making a perfect closure, have limited our success. The side-tracking method has been accomplished with the aid of the twine triangular stitch elaborated in this laboratory,<sup>12</sup> and with the aid of the Murphy button (Figs. 2 and 3). We have also made use of a special button (Fig. 4) designed (by N. W. G.) with the idea of causing an anastomosis with no further opening of the viscera at the time of operation than two needle-like punctures made after the serous surfaces have been coapted.

We have used during these procedures an apparatus for artificial respiration described in previous communications.<sup>13</sup>

It may be well here to present a diagram of it (Fig. 5). Ether has always been the anesthetic used. The loss of body heat was always considerable, but this, in part, has been overcome by warming the ether vapor before sending it into the air-passages.

It may be of interest here to describe in detail one type of procedure which has seemed to us particularly satisfactory. The animal was first placed under ether and the intralaryngeal canula inserted and held in place by a clamp, pinching the tube just oral to the hyoid bone. Through the mouth were introduced, first into the stomach and then into the esophagus, the halves of the button shown in the diagram. The esophageal portion, being the one with the needles attached, was introduced and guarded by a long alligator-jaw forceps. This was left in place while the chest was opened at the level of the eighth rib on the left side. The eighth rib was removed, stripping from it its periosteum, as suggested by Janeway. This gives a much better opening than the intercostal incision and makes it far easier to close the chest at the completion of the operation. The amount of air introduced was regulated by direct inspection of the lung. The seventh and ninth ribs were pressed apart by a self-retaining retractor and care was taken to protect the wound from contamination by a suitable covering. The diaphragm was opened in its tendinous aponeurosis, and the cardiac portion of the stomach drawn up through the opening into the chest and sutured in place to the edges of the diaphragmatic wound. This suture was a continuous one and several reefing stitches were taken in the stomach to one in the diaphragm. This close stitching of the stomach was found to be necessary on account of the tendency of the abdominal viscera to cause fatal prolapse into the chest. We were careful not to include the blood vessels of the stomach in our sutures. Feeling through the stomach wall, we grasped the first portion of the button, previously introduced, and drew it through the new diaphragmatic opening into this cul-de-sac. The forceps were then removed from the esophageal half, the surfaces of the stomach and esophagus brought in apposition and the two halves of the button pressed tightly together. They were held by the spring which engages the serrations at the side of the needles. This completed the intrathoracic part. The chest wall was then closed in layers. The operation here described consumed fifty-five minutes. At the end of ten days the

dog was given a lethal dose of ether. The stoma shown in the photograph was found present (Fig. 6).

We wish to express our appreciation to Mr. Arthur G. Sullivan for his assistance, to Drs. H. H. Janeway and N. B. Leggett for many valuable suggestions and to Dr. Robert M. Brown for his skillful mounting of the specimens.

152 West Fifty-seventh Street—264 West Fifty-seventh Street.

## PRESENT STATUS OF SURGERY OF THE THORAX

AND THE VALUE OF THE SAUERBRUCH NEGATIVE PRESSURE PROCEDURE IN THE PREVENTION OF PNEUMOTHORAX.\*

E. F. SAUERBRUCH, M.D.

Oberarzt and Chief of the Surgical Poliklinik, University of Marburg, GERMANY.

When I was accorded the honor of an invitation to deliver an address before the Section on Surgery and Anatomy, of the American Medical Association, it occurred to me that it would be a suitable opportunity to present the modern methods employed for opening the thoracic cavity and to give you the results of many personal experiences obtained during the past four years in the use of my pneumatic cabinet. The inefficiency of the methods in vogue up to that time prompted me at the solicitation of my then chief, von Mikulicz, to endeavor to devise a method of operation which would obviate the dangers incident to thoracic surgery. I began by analyzing the methods used to prevent the occurrence of pneumothorax, especially the method of artificial respiration which had been used extensively and successfully in animal experiments for more than a hundred years, and, more recently, in an improved manner, by Matas and several others in the human being. I soon became convinced that this method possessed too many disadvantages ever to become practical. That led me to experiment with negative pressure, basing my work on the known principles of the difference between the intrabronchial pressure and the pressure at the surface of the pleura, about 7 to 8 mm. Hg, which serves to keep the lungs distended. If the normal relationship between these pressures is disturbed, as by opening the thorax, the lungs collapse and the result is a pneumothorax, which may be followed by serious disturbances, such as dyspnea, displacement of the diaphragm and heart, vagus reflexes, etc. Believing that these complications would not occur if the normal relationship of these pressures could be maintained, I was led to carry out the following experiments: The ends of a glass cylinder were sealed with gutta percha paper. One end was perforated by three openings, two small ones, and one large one; the opposite end was perforated by a single large opening. The animal was placed in the cylinder, so that the head protruded from one of the large openings, and the legs and lower part of the body through the other opening. I passed my hands in through the small openings, endeavoring to keep the cylinder airtight. Next, the cylinder was exhausted sufficiently to reduce the air pressure 10 mm. Hg; then I opened

12. Maury, J. W. Draper.: *Studies from the Laboratory for Surgical Research*, Columbia University, 1907, i.

13. Green, N. W., and Maury, J. W. Draper.: *Ann. Surg.*, Oct., 1907, xlv, 544-548.

\* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



the thorax—and the lungs did not collapse, nor was the respiration disturbed in any way. This primitive apparatus was replaced by a better and a larger one, and then by a small operating room, in which I performed a number of intrathoracic operations, such as resection of the lung and esophagus and operations on the heart, and always with the same result, total absence of pneumothorax.

The result of these experiments was the building of an operating room for practical use. The first operation done in it (resection of esophagus) proved positively that the results obtained in animal experimentation could be duplicated in the case of the human being—that pneumothorax could be prevented.

Soon afterward Brauer published results obtained with a modification of my procedure, the so-called plus or positive pressure, which has not as wide a range of applicability as has my method, although the improvements that have been made in the apparatus used by Brauer have also increased the advantages of the method.

Having established the correctness of the principle of my method, it became necessary to elaborate the operative technique, by no means a small task. Von Mikulicz, Knettnr, Meyer, Tiegel, Seidel, and Friedrich participated in this work, and the result has been eminently satisfactory. Definite rules have been laid down for certain operations, which I will endeavor to explain to you. So far as the anesthetic is concerned, it is remarkable how small a quantity is necessary to produce complete anesthesia, and then only at the time of opening and closing the thoracic cavity. During the remaining steps of the operation very little of the anesthetic is required. It has been shown that it is unwise to reduce the pressure more than 7 to 8 mm. Hg, and Friedrich has had excellent results with a negative pressure of 3 to 5 mm.; in fact, such a minimum reduction should always be employed during intrathoracic operations, as on the esophagus or lungs, or when it becomes necessary to expose the mediastinum. Before concluding the operation, however, it is essential to raise the pressure to 7 or 8 mm. Hg, so that the lungs may become fully expanded, filling the chest cavity completely. Needless to say, the strictest asepsis must be observed, as in abdominal operations, and complete hemostasis is of the greatest importance, especially when entering the thoracic cavity, so that as little blood as possible will enter.

As to the indications for this method: It was particularly desirable to employ it in the removal of large tumors of the chest wall. Numerous attempts have been made to remove such tumors, especially sarcomata of the ribs, involving the lungs and pleura. Previously, tamponade and drawing the lungs forward into the wound were resorted to, in order to prevent the occurrence of pneumothorax; and, while these measures proved successful in some cases, they are not entirely satisfactory, and serious complications, even death, following these procedures are not unknown.

The first case operated on in the pneumatic cabinet under negative pressure was one of sarcoma of the ribs. No disturbance whatever followed the extensive opening of the thorax; the field of operation was exposed freely, showing the advantages of the procedure in cases where such extensive resection of the chest wall is necessary. Soon afterward I had an opportunity to operate in a case of extensive mammary carcinoma involving the chest wall. The case was considered inoperable, because several ribs and much of the soft parts would

have to be removed to give even a reasonable hope of securing some slight measure of success. The defect caused by the removal of the tumor was so great as to necessitate a plastic operation. In accordance with the usual procedure in such cases, I transplanted the healthy breast to the site of the one that had been removed, placing it directly over the lung, which filled in the defect very nicely. The flaps were sutured to the surrounding soft tissues by means of a two-tier suture. The result was a complete success. The operation was repeated, with equal success, in a number of other instances, and similar results were obtained by Haecker and Knettnr, at the Breslau Clinic.

Practical experience in ten cases has shown that the dangers of these operations, especially from involvement of the pleura, are lessened greatly, and that the contraindications for the employment of more radical procedures are fewer than before; involvement of the ribs and pleura in mammary carcinoma is no longer a contraindication for operation. It is also possible to operate more extensively and with better results in pulmonary emphysema and tuberculosis, and in performing cardiomyolysis, although every effort will be made now as before to avoid injury of the pleura. If, however, in spite of care observed, the pleura is injured, my apparatus will absolutely prevent the occurrence of pneumothorax. The possibilities of the method in lung surgery, especially in the surgical treatment of pulmonary tuberculosis, will constantly become greater, but a final opinion must be withheld for the present and we must not expect too much; in fact, I believe that in such cases thoracoplastic operations or the artificial pneumothorax will yield better results.

Before proceeding to discuss the use of my method in the treatment of diseases of the lungs in general, I wish to speak more particularly of its use in the treatment of empyema, where my results have been excellent. It is important not to be content with the lessening of the size of the opening in the pleura through expansion of the lungs; the operation must be performed under differential pressure. The expansion of the lung forces out the exudate that may be present, and prevents the occurrence of pneumothorax, while shrinkage of the lung, with subsequent scar formation, is lessened considerably. All recent empyemas and a considerable percentage of the chronic ones yield quickly without the formation of a fistula; the patient is spared tedious after-treatment and subsequent plastic procedures.

The operation is performed in the usual manner, with a negative pressure of 7 mm. After evacuation of the pus a gauze dressing is applied without drainage, and a mammoth dressing is put on over all, thus preventing the entrance of air into the pleural cavity. The dressings remains in place until the fifth day, when it is removed and a new one applied in the pneumatic cabinet. The lung is now adherent to the edges of the wound, and the subsequent treatment is that for an infected granulating wound.

The diseases of the lung in which surgical treatment is particularly indicated and successful are gangrene and abscess; in fact, it is in the treatment of these conditions that lung surgery had its inception. When the disease is superficial, the treatment is simpler, and pneumothorax need not be feared. The treatment is the same as for the same conditions elsewhere in the body. It is only when the lesion is central that the operation is of magnitude. An operation performed under negative pressure possesses several advantages.



Aside from the fact that the possibility of pneumothorax is obviated, the anatomic relationship of the parts is more apparent, because of the expansion of the lungs. The diseased portion of the lung is brought into view and the lung is sutured to the edges of the wound. The abscess is opened by means of the galvano-cautery. It is here that my method is especially advantageous in that it prevents the aspiration of foreign material into the healthy parts of the lung. The excess pressure in the bronchi prevents gravitation of fluids and forces every particle of free blood to the wound surface, where air-bubbles are seen to burst, driving before them particles of blood and pus. Experiments on animals have proved the correctness of these statements. Even when a large blood vessel has been severed, one which empties itself directly into the lumen of the bronchus, aspiration does not take place. The blood is forced out by the excess pressure.

This fact is also of the greatest importance in the after-treatment, and experience has shown that changes of dressings, at least at the beginning, should be made under differential pressure, not because of pneumothorax, but solely because it tends to remove blood and pus from the bronchi.

As to the bronchiectases: Here we must distinguish between the varieties of this affection. When the lesions are multiple, operative intervention, with the hope of a radical cure, is out of the question, and the same is true of the tuberculous bronchiectases, even when only one lung is involved. Thoracoplasty, with extensive resection of ribs and mobilization of the chest wall, is preferable to intrapleural treatment. At present an operation is indicated in bronchiectasis only when the lesion is isolated in one lobe of the lung. This lobe must be resected.

Two years ago I saw a case of this kind, occurring in a girl 22 years old. The lesion was circumscribed and confined to the lower lobe of the lung. The operation was done under negative pressure. The whole lower lobe was of a deep, dark, bluish-red color, contrasting clearly with the grayish-red color of the remainder of the lung. The diseased portion of lung was of a firm consistency, hard and airless. In these cases the best procedure is resection of an entire lobe, as in the case of tumors.

Primary carcinoma of the lung is exceedingly rare. Only once have I resected a considerable portion of the lung for this affection. The case was a very interesting one. A woman 34 years old had severe pains of about three months' duration in the left side. The pain was radiating in character, paroxysmal, resembling a typical intercostal neuralgia. Pressure on the nerves promptly induced a paroxysm of pain. Inasmuch as the examination failed to disclose any pathologic condition, the patient was treated with the usual remedies, but without securing relief. She was sent to the clinic for nervous diseases at Greifswald, where a diagnosis of intercostal neuralgia was made. At her discharge her condition was the same as before.

She then was referred to the surgical clinic. Her physician informed us that there was a circumscribed area of dullness in her left side, which did not convey the impression of either an exudate or of pneumonia. He suggested a malignant growth. The examination confirmed these findings, and we further succeeded in making an absolute diagnosis of carcinoma of the lung because of the finding of nests of carcinoma cells in the sputum. Failing to find a similar tumor elsewhere in

the body, we concluded that this was a case of primary carcinoma of the lung.

An incision, 30 cm. long, was made in the left fourth intercostal space. There were no adhesions between the pleura. The tumor involved the left lower lobe, except at its most dependent portion, and in two places extended into the upper lobe. The surface of the tumor was nodular. Two of these nodules, about the size of a small apple, situated in the parietal pleura under the fifth rib, pressed on the intercostal nerve, thus explaining the intercostal neuralgia. At this particular spot the tissues had grown together and there was also some necrosis of the ribs, the result of pressure. I resected extensively the third, fourth and fifth ribs and the attached soft tissues, so as to secure free access to the lung. I was successful in isolating the diseased tissue, but was unable to extirpate because the pleura was firmly adherent to the pericardium and the diaphragm. Only the top of the tumor was removed.

The patient recovered quickly from the operation and was discharged after four weeks. Three months afterward she was still free from pain, but was rather weak.

Operative intervention in bronchiectasis and tumors of the lung should, if possible, consist in amputation of an entire lobe of the lung. Occasional attempts have been made to do this, but the procedure has been discouraged. The main difficulty in such resections is caring for the bronchus afterwards. On it depends the success of the operation. It is rather difficult to suture a bronchus, and if the sutures loosen, air will enter into the mediastinal tissues, producing mediastinal emphysema, a serious complication. Various operators, have called attention to this fact, especially Garré, Talke, Tiegel and Friedrich. According to the latter, the technic of the operation is as follows: After exposing the bronchus at the hilus, and, if possible, freeing the vessels from it, it is clamped loosely with forceps protected by rubber tubing. The forceps were passed in from before backward. The bronchial mucous membrane is curetted away with a small sharp enrette. Three cm. above the opening of the bronchus in the diseased area a ligature is passed around the tube and tied tightly. The proximal clamp is then removed. The lumen of the bronchus will eventually be closed by granulation tissue. If necessary, a second ligature—one of catgut—may be applied proximal to the main ligature, so as to act as a dam to lessen the tension on the main ligature that might be caused by attacks of coughing. The principal ligature, of fairly heavy silk, must be tied securely. The wound in the lung must be easily accessible. The dressings must be changed in the pneumatic cabinet, because in that way only can pneumothorax be prevented. I have seen this accident occur once because this precaution was not taken. The patient died from a suppurative pleurisy. The immediate danger of pneumothorax, while serious, is not to be feared as much as the infection which may occur.

It was to be expected that, as soon as it was possible to obviate the occurrence of operative pneumothorax, surgeons would view the treatment of intrapleural injuries differently. Many surgeons, particularly Tuffier and Garré, recommended care in the treatment of injuries of the lung, particularly when there was much hemorrhage. The principal reason for this caution was the fear of pneumothorax and infection. Nevertheless, operative procedures proved successful in many



cases of lung injury (Garré, Tuffier, Grunnet, etc.). I have operated under negative pressure twice for rupture of the lung, and Kuettner performed suture of the lung hilus successfully in two severe cases of injury. He operated solely to check hemorrhage. In my cases the lung was ruptured or torn by fragments of the rib causing a tension pneumothorax. Both patients were highly dyspneic when they came to operation and there was extensive emphysema of the skin in both cases. It was in these cases that I was particularly impressed with the disastrous results following pneumothorax and emphysema of the diaphragm caused by displacement of the heart and the healthy lung. But above all was I impressed with the inefficiency of the previous methods of treatment and the particularly happy results that were to be obtained from operating under negative pressure. As soon as the skin incision was made, I noted that the air contained in the tissues was pouring out into the pneumatic cabinet and very soon all evidence of emphysema had disappeared. When the thoracic cavity was opened, the collapsed lung was seen to be resting on the distended mediastinum, but while we were watching, it began to expand and at the same time the mediastinal emphysema gradually disappeared. The two layers of the pleura again were in contact and the heart action became normal after the air pressure was removed. These observations led me to examine into the clinical history of tension pneumothorax more closely; but of this I will speak at another time.

I wish to mention in this connection that, when operating under negative pressure in these cases of lung injuries, the injured area is easily located. The air is seen to pass out from it in the form of blood-red foam; or the hand may feel the air current as it passes out from the injured area. Of the various methods employed for suturing the lung tissue, I prefer those of Tiegel and Friedrich. It is important to bring the serous surfaces in apposition, as in intestinal suturing. Whether drainage should be employed is a question that I would answer in the negative. My experience has been that it is preferable to close the wound immediately, unless the operation is performed some time after the occurrence of the injury and when infection is present in the pleural cavity.

My method of operating under negative pressure is indicated particularly in operations on the thoracic portion of the esophagus. Heretofore, this has always been a great problem. After many trials and tribulations and much experimental work on animals (in which I had the guidance of von Mikulicz), I succeeded in developing a technic which made it possible, at least in the case of animals, to resect successfully large portions of the esophagus. The essential feature of the method is the avoidance of sutures and the use of the Murphy button to secure anastomosis. Operations which may be and have been employed successfully on human beings are gastro-esophageal anastomoses and resection of the cardia. I have on previous occasions described this operation and have employed it in nine cases. All of the patients died. Similar results were obtained by Tuffier in three cases, Kuettner in two cases, and Wendel in one case of carcinoma of the esophagus. It may seem venturesome for me still to believe in the possibility of resection of the thoracic portion of the esophagus, and yet the repeated observation that the tumor was too large or that it was operated on when already far advanced, or the belief that the technic was

at fault, led me to conclude that in favorable cases the operation must prove successful.

A case that pursued the most satisfactory course of any of the esophagus resections was one in which an operation was done last year. A woman 45 years old had a carcinoma of the esophagus about ten cm. in diameter, the upper end extending slightly above the left bronchus. In spite of its position, it was possible to isolate the tumor and not injure the vessels and nerves. I resected that portion of the esophagus, but unfortunately I could not bring the ends together. The upper end was switched off sideways. The patient died on the fifth day from pleurisy and pericarditis. However, the operation itself was technically successful, and I believe will prove entirely successful in suitable cases. The most favorable cases are of carcinoma of the cardia. An examination of twelve thousand dissected cases has shown that this class of tumor is relatively frequent, metastases late, and does not spread rapidly locally. Our operative results thus far have shown that these tumors should be attacked through the thorax and not through the abdomen. If the tumors are small, the end of the esophagus is invaginated into the stomach, and at a second operation the tumor is excised through the stomach. In the case of larger tumors, the tumor is resected and an anastomosis is done between the stomach and esophagus. It is advisable to make this a lateral anastomosis, using the Murphy button, passing the male portion of the button into the esophagus through the mouth by means of a long sound.

The thoracic cavity is opened in this operation in the fifth interspace, with or without resection of the ribs. In order to expose the field of operation as much as possible, the incision is kept open by means of Mikulicz's rib clamp or retractor. The negative pressure during the operation ought not to be higher than three to five mm., being raised to seven or eight mm. toward the end of the operation. After having sutured the periosteum, the skin and fascia are closed by means of tier sutures.

On basis of extensive studies and one experience on the living subject, I have come to the conclusion that in cases of deep-seated carcinoma of the cardia, i. e. cases in which the upper border lies below the diaphragmatic slit, resection of the costal arch, as recommended by Dr. Willy Meyer, of New York, for this purpose four years ago, is a procedure of great practical value.

Surgery of the heart has been advanced the least by this new procedure. The reason for this is that injuries to the heart always occur accidentally and any treatment is done in an emergency. A series of operations on the heart has shown that it is possible to expose the heart freely without opening the pleural cavity, and that the patient usually recovers from pneumothorax when this occurs. But it is probable that surgery of the heart will profit and be advanced by this new method. A year ago I proved experimentally that the use of negative pressure was advantageous in many ways, which I can not mention specifically at this time.

I can not close my remarks on this subject without referring briefly to exploratory thoracotomy. I believe that this is justifiable more often than is thought, because of our shortcomings in the diagnosis of diseases of the thoracic cavity. The same is true of the thorax as of the abdomen; an exploratory laparotomy or an exploratory thoracotomy will often clear up a doubtful case. This is particularly true in the case of foreign bodies in the lung, when the Roentgen ray fails



to make the diagnosis. The operability of esophageal carcinoma may also be determined by thoracotomy when both the Roentgen ray and esophagoscopy have failed. Of course, the incision should not be a large one, and rib resection should not be resorted to. If done quickly and cautiously, the incision is free from danger and will prove valuable in many cases. Only in this way can we hope to make haste slowly.

## DISCUSSION

ON PAPERS OF DRS. SCHÄFER, SAUERBRUCH, ROBINSON, GREEN  
AND MAURY.

DR. GEORGE W. CRILE, Cleveland, Ohio: The ultimate object of artificial respiration is that of affording the fixed tissues, especially the central nervous system, the exchange of gases necessary to life. To accomplish this the circulation and the respiration are equally essential. Air hunger is just as marked in failure of the circulation as in failure of lung ventilation. When the total amount of blood and the vigor of its circulation is above normal less than normal respiratory effort is needed. For the best results in artificial respiration, then, a good circulation is required. In considering artificial respiration one must take into account the effect which alterations in the intrapulmonary pressure exert on the circulation. The blood pressure in the pulmonary capillaries is low. Intrapulmonary pressure is exerted directly on all these capillaries; hence, the entire blood stream is affected. The lower the blood pressure the less intrapulmonary pressure is necessary to block the blood stream. In sheer emergencies there is opportunity for only the simple methods, of which the most effective is the one that supplies a sufficient exchange of air and gives the greatest aid to the circulation. These requirements are fully met by the methods of Professor Schäfer. The thread of life may for a time be unbroken if even a very small amount of oxygen be supplied. When one tries to kill an animal by asphyxiation, one is constantly surprised at the wonderful rejuvenating power of only a slight amount of air. Both experimental and clinical evidence show that the circulation may be remarkably energized by pressure on the thorax and abdomen. In the majority of operative emergencies there are many obstacles opposing the change from the supine to the prone position. I conclude that rapid, rhythmic pressure on the thorax, with the patient lying on the back, when the prone posture is contraindicated, is the simplest and most generally useful emergency method.

As for planned cases of artificial respiration, I would add a strong word of caution against any considerable change in the intrapulmonary pressure. There is scarcely any more certain and sudden method of killing an animal than by an excessive intrapulmonary pressure. Now, the circulation in a normal animal may not be much hampered by a certain amount of increased pulmonary pressure, but in the states of low blood pressure the circulation may unexpectedly collapse. Recent experimental research has proved that the circulation of an animal carefully overtransfused with blood from another animal becomes stable and the blood pressure is raised. Changes in intrapulmonary pressure affect the circulation far less, and such an overtransfused animal endures intrathoracic pressure far better. When there is an increased volume of blood and increased circulatory vigor, the respiratory movements diminish. Conversely, when there is a failing circulation, respiratory movements become increased. In planning a hazardous chest operation, if the heart is normal, the chances for a successful issue seem to be greatly increased by first rendering the circulation stable. There are a number of methods whereby a sufficient amount of oxygen may be supplied, but there are few methods that do not in the case of weak circulation threaten the circulatory stability. On the whole, the problem of supplying the required amount of oxygen *per se* is not difficult. The real difficulty is met in providing lung ventilation without interfering with a weakened circulation.

DR. WILLY MEYER, New York: Surgical pneumothorax has, up to date, been the principal barrier to further advance in intrathoracic surgery, and that up to a time when abdominal

surgery has had its triumphs the world over. Dr. Fell of Buffalo devised and Dr. O'Dwyer improved the apparatus for intubation, and Dr. Matas has further improved it, adding an arrangement for general anesthesia. But tracheotomy or intubation is not what we surgeons want for practical purposes. Tracheotomy means a grave addition to the surgical trauma, especially for older patients, and an intubation apparatus is unreliable for cases of retching and vomiting. Besides, the accumulating intrabronchial secretions can not be expectorated. Even rectal anesthesia would probably not overcome this trouble.

What is essential for good surgical work is that the narcotizer should have free access to the patient's head, especially the mouth, at all times. He must be able to turn the patient's head to one side, and clean out his throat just as thoroughly and easily as he is accustomed to doing this during other operations.

In 1893 the late Professor von Micklez charged his assistant, Dr. F. Sauerbruch—to-day our guest—to find a more practical procedure in order to overcome the dangers of pneumothorax. This he accomplished by constructing an operating cabinet, within which he has done five operations on the human subject, and a great many on animals. The beauty of this cabinet is that it can be used for negative as well as for positive pressure. If the operation with negative pressure is desired, the patient's head is placed outside of the cabinet and the body inside; if positive pressure is desired, the head is placed inside and the body outside.

In either case the anesthetizer has free access to the patient's head. If he is inside of the cabinet and positive pressure is used, the excellent ventilation provided for will prevent his becoming anesthetized himself. The same suction pump, arranged with a T tube, provides for negative and positive pressure. This cabinet allows of free intrathoracic operating with impunity. Simultaneously with Sauerbruch, though independently, Professor Bräuer of Marburg, in 1904, designed an apparatus for positive pressure which though since improved, labors under the same drawbacks as all other devices for positive pressure, namely, that any accidents, occurring in the course of the anesthesia, can not be met properly.

The drawbacks to a more general use of Sauerbruch's cabinet thus far have been its cost and its size. In its present shape, however, it is much less expensive (about one-third of its original price) and, to cheapen it still more, Dr. Sauerbruch has planned to have one made of canvas, properly painted. He also intends to have a small cabinet placed on castors so that it can be wheeled to the patient's bedside, should it become necessary to change the first dressing under pressure difference. Sauerbruch has solved the problem in either direction. It now remains for us surgeons to adopt and try the procedure.

We all know that esophageal cancer is the least malignant of all the types of carcinoma, including the colonic. And yet, what do surgeons do in these cases up to the present time? They perform gastrostomy or dilate the stricture as long as this can be done, and then let the patients die. This must be changed. In resecting the esophagus by the intrathoracic route, or in attacking a cardiac cancer from the abdomen with the help of osteoplastic resection of the costal arch, we must be prepared for opening the pleural cavity. The abdominal operation also must, therefore, be done under differential pressure. The greater majority will, as a matter of course, be done by the intrathoracic route. Professor Sauerbruch has greatly improved the operative technique. He closes the proximal cut end of the esophagus by infolding, and after having pulled the stomach into the thorax—and this for the reason that the esophagus can not be stretched—does esophago-gastrostomy by means of Murphy's button introduced on a long forceps or stiff bougie by way of the mouth. Care must be taken to have the stem of the button penetrate also the pleura in order that this serous membrane may be pressed against the peritoneal covering of the stomach within the grasp of the button. The latter has of late been improved for this operation at the research laboratory of the College



of Physicians and Surgeons of New York. Professor Sauerbruch, in this way, saved twelve out of thirteen dogs experimentally operated on; surely an excellent showing. The nine human beings operated on by him in the same way were afflicted with malignant esophageal stricture. All died, but every one of the patients was in a decrepit condition when the operation was undertaken, and death was not due to any defect in the method of differential pressure in a single instance. There can be no doubt that if we operate early the results will be correspondingly better. Surgeons should work together toward this end. We must succeed in doing intrathoracic resection of the esophagus for carcinoma under negative or positive pressure and save the patient in early cases as long as the lymphatic glands are not involved. If such involvement has occurred, resection is useless, as it indicates that the growth passes the borderlines of the esophagus.

DR. H. H. JANEWAY, New York: The first experiments which I made in intrathoracic surgery were performed under conditions of negative air pressure. These experiments were made in a hermetically sealed chamber, large enough to hold the operator and two assistants. The work done within this chamber was confined to resections of lobes of the lung, and sufficient successful work was done to render the experimenters familiar with the conditions or operating under negative air pressure. These experiments, however, were interrupted by peculiar outside circumstances, and since then I have adopted the positive pressure method of Professor Brauer. I have found the negative and positive pressure methods equally satisfactory.

The form of apparatus now used to supply positive pressure is essentially the box designed by Dr. Brauer of Marburg and Dr. F. T. Murphy of Boston. The experiments with this apparatus have been entirely limited to attempts at resection of the oral end of the stomach and the aboral end of the esophagus, and certain points of importance have been developed. The first is the fact that greater asepsis must be maintained in intrathoracic surgery than elsewhere in the body. I believe that raw edges of mucous membrane can not be exposed here with the same impunity with which they are within the abdomen. The second fact developed is that resections within the thorax can not be safely, or perhaps even successfully, performed by the suture method. In a series of operations done by this method there was a mortality of 100 per cent. The anastomosis was completed in each case in such a way as not to expose in any stage an infected edge of mucous membrane, and a double line of circular Lembert sutures were introduced. Nevertheless, I doubt whether in any one of them the anastomosis was or could be made tight enough to resist the cupping effect of the partial vacuum existing within the pleural cavity after the chest wall was closed. Indeed, the condition may be likened to a Bier's hyperemia with many of the advantages turned into actual disadvantages. The insufficiency of the suture method to prevent leakage was confirmed by test anastomoses made with the button-and-suture method outside of a dog's body, on segments of intestines removed, and subsequently subjected to a hydrostatic pressure of 250 mm. of mercury. My experience, therefore, and Dr. Sauerbruch's agree that the successful accomplishment of this anastomosis requires the use of the button. The Murphy button is unsatisfactory from the standpoint of time and from that of aseptic introduction. The new button, on the contrary, is quickly and cleanly introduced, and its use constitutes a decided advance. In construction of the button I have suggested to Dr. Green that an elongation of the spring ring would so protect the perforating knives that no harm could be done with them during the introduction of the button, and also that the cutting edge of the knives be broadened out a little below the point so as to give immediate drainage. The success of intrathoracic-gastroesophageal resections depends on hermetically sealed circle of union. This is not safely attempted by suture or by the Murphy button. We deem it most important to provide against the loss of heat during the operation. The inspired air within the box is warmed, and, in order to diminish the general and local shock accompanying intrathoracic work by an adequate supply of external heat

to the body of the subject we have made use of an electric pad, with very definite beneficial effect. In my apparatus the manometer is situated within view of the operator, his assistant and the anesthetist. This manner of regulating the air pressure has been utilized rather than any automatic arrangement: first, because of its simplicity; and second, because it was very rarely found necessary to change the position of the stop-cock, for the purpose of maintaining a constant pressure, after the operation had started. The position of the glass porthole is such that the subject being anesthetized is constantly within full view of the anesthetist. Inside the box is a bracket for the support of the head of the subject. There are also lights along the rear wall. These serve the double purpose of affording illumination and of keeping the atmosphere within the box at the desired temperature. This is a most important point, for in the opening of the pleural cavity, and the exposure of this large surface to the room temperature, much heat is lost, and the respiration of warm air is helpful in keeping the blood at the body temperature. With a temperature of 94 degrees inside the box, the post-operative temperature of some of my dogs has been 101, or about normal for this animal. One hand is sufficient for managing the anesthesia. In an emergency, however, the other hand can be introduced through the second opening.

DR. GEORGE E. FELL, Buffalo: I happen to be probably the first man to demonstrate practically the value of forced artificial respiration in saving human life, and that is now over twenty years ago. I was professor of physiology in a medical school and also a medical practitioner. When I began my work of "forced respiration," the medical world (through Marshal Hall), said that we must not use bellows of any kind. In my physiologic work in opening the chests of dogs I discovered there was much error in this dictum. After I lost my first patient—a man who had taken morphin—after trying the Sylvester method I determined to use my laboratory methods in the next case. A man took 16 grains of morphin. After working two hours and a half by this method I saved his life. On the knowledge of the defects in this apparatus I built the apparatus I now use in my work and exhibit here.

The same principle can be applied to thoracic surgery, and readily applied. With this apparatus I breathed for 18-day-old infant who had been given one grain of morphin accidentally. The little one was held in a tub of warm water when I saw her, and had been under the influence of the poison for two hours. I had no hope of saving the baby's life. I did a tracheotomy, passed a catheter into the trachea and built it up with larger catheters until I could connect it with my apparatus. I succeeded in keeping the child alive for two hours, but it had received so much morphin that it was impossible to save its life.

In all my work I have been trying to simplify the method so that it can be used as an emergency apparatus. A medical student, employed in the postoffice at night, began to take *unx vomica* to brace him so that he could continue both his work and his studies. One night he took instead several hypodermic injections of 1/40 grain of strychnin; then he began to notice the contractions of strychnin poisoning. In order to stop this he took morphin hypodermically. He was found unconscious in the morning. I began breathing for him with this apparatus, using the hard rubber face mask which prevents the air from passing outside. I breathed with that for a while, but found it unsatisfactory. Then I tried tracheotomy, using my tracheotomy tube, and respired for him from 9 a. m., July 3, until 10 p. m., July 7—four days and three nights of interrupted respiratory work. He lived, and is now practicing medicine on the Panama Canal hospital service. A boy 16 years old broke some ribs while playing ball and took chloroform to overcome the pain. After this he took about 26 or 28 grains of morphin in a tumbler of water. I breathed for him through a tracheotomy tube for about eighty hours and saved his life.

When you force air into the lungs you expand them as in normal respiration. I have a pair of bellows of which three movements suffice for the inspiration and three for the expira-



tion in an adult. A valve controls the inspiratory and expiratory action. The apparatus is simple and satisfactory. As the air goes from the bellows it passes through a channel out of the valve, tending to produce a slight vacuum; if attached to the lungs it has a slight tendency to draw out air, which slightly aids expiration. When you press down on the valve the air passes into the lungs. Attached to the valve is a tube connecting with the oxygen apparatus. When you press down on the valve both air and oxygen are forced into the lung. This apparatus illustrates the so-called positive method. In the surgery of the chest both the positive and negative methods will prove of great value. Professor Schäfer's new method is a step in advance, but taking equal cases it will not accomplish what positive forced artificial respiration will, and is not applicable in surgery of the thorax.

Dr. JOHN B. MURPHY, Chicago: The term "pneumothorax" is misunderstood. Pneumothorax, *per se*, does absolutely no harm, as I demonstrated and reported in a paper ten years ago. It is the absence of the expiratory exchange that makes the condition of pneumothorax a dangerous one. In 1,700 cases of artificial pneumothorax, by nitrogen injections, where I used from 30 to 180 c.c. of the gas, I did not have a single case of collapse from the pneumothorax. Why? Because it is not the admission of air into the pleura that makes the danger. It is the absence of respiratory change that makes the condition a dangerous one. You can collapse one lung completely, immobilizing the mediastinal septum, without interfering with the patient's comfort and ease.

Dr. Sauerbruch's cabinet is admirable; it meets every indication. It can be used for negative and for positive pressure, but it is not a question of the air that gets in; it is the fixation after the air is admitted. For instance, remove a section of a dog's chest wall; the mediastinum vibrates freely and ruptures in three to five minutes. On the other hand, let the air enter and clap one hand over the opening, and the dog goes on breathing just as if nothing had happened. If the opening be made large and not small, the subject will not be under respiratory difficulties. It is the little opening that admits more air than goes out that produces the plus pressure, presses the diaphragm to one side, as so commonly occurs in rupture of the lung, and causes the patient so much trouble. The doctor can overcome the difficulty in a moment by taking a large trocar and inserting it between the ribs. The trouble is overcome in a minute, as far as the plus pressure and dyspnea are concerned. Where there is hemorrhage from the lungs, so common in everyday practice, a plus pressure can be produced in exactly the same way. By introducing a trocar, covering the end with cotton so as to prevent the introduction of germs, with each inspiration covering the end of the trocar and removing the obstruction when the subject expires, one can produce a plus pressure that will stop the primary hemorrhage. It will not stop secondary hemorrhage, but a plus pressure is obtained at once simply by placing the finger over the trocar.

With these points kept in mind we can look for better results in the treatment of surgical lesions of the lung. My enthusiasm of ten years ago has diminished materially, however, on account of the incurability of so many lesions of the lung by mere extirpation of a portion of it. But we should have these things under our control in a measure at least because of their scientific value and the probability that they will become of greater practical value. The mere removal of a fragment or lobe of the lung was done four hundred years ago. I have opened a dog's chest, drawn out his lung and let it flatten on the surface, merely preventing the air from going in and out through a small opening, which produced a plus pressure and diminished respiratory exchange. It is this diminished respiratory exchange that must be kept in mind, and not the mere presence of air in the pleura.

Dr. VICTOR J. BACCI, Chicago: At the last meeting of the French surgical congress Broca remarked that a pneumothorax, either accidental or intentional, was not always dangerous to the patient. In his operations on the chest entailing the opening of the pleural cavity, he allows the air to enter through a small opening, thus permitting the lung to collapse slowly. He ad-

vises the withdrawal of the anesthesia temporarily—a few minutes suffice. The patient learns quickly to breathe with one lung. Then the operation is continued. In Broca's hands pneumothorax has never proved fatal.

Dr. M. B. TINKER, Ithaca, N. Y.: We have, most of us, been accustomed to make use of the methods of Hewitt or Sylvester in cases of respiratory failure on the operating table and of foreign body in the air passages in which the patient had not breathed for some time. In case no apparatus is at hand, Professor Schäfer has shown conclusively that the older methods do not give the patient sufficient air. In abdominal and many other operations it is obviously impracticable to turn the patient on his face to practice Professor Schäfer's method. It occurred to me in teaching anesthesia, some time ago, that we could use a combination of the older methods. If we elevate the arms above the head, thus opening the chest wide, we produce forced inspiration, while to produce expiratory effort we bring the elbows together over the chest and compress the chest, thus getting the action of the Hewitt and Sylvester methods combined. A test of this combination method in the physiologic laboratory of Cornell University shows that it gives a fairly satisfactory amount of air to the patient. Before I had tested this method in the laboratory, however, I had used it in two cases of foreign body in the air passages. In one case the patient had stopped breathing for five minutes; in both cases the method was successful.

PROFESSOR EDWARD A. SCHÄFER, Edinburgh: Dr. Tinker failed to state how many minutes he continued this artificial respiration. If you are going to take the trouble to draw the hands up above the head, you are doing a lot of useless work, because you get abundant air into the lungs without such a procedure. In cases of drowning the prone position is most strongly indicated.

Dr. F. SAUERBRUCH, Marburg, Germany: No doubt some of you will expect me to answer the question as to whether for the performance of operations under artificial respiration we should use the apparatus for positive pressure, as devised by Braner, Heller, Robinson, Meyer, Kuhn and others, or whether we should employ negative pressure. The difficulties of any kind of artificial respiration consist in the danger to the lung tissue. If, in animals, no damage results from pumping air into the lungs artificially, this must be ascribed to the fact that the animals experimented on are healthy beings. In the human subject needing operation this is different. Here the changes wrought are frequently so great that artificial respiration of any kind is by no means an indifferent factor. To my mind, it can only be a question of whether positive or negative pressure should be employed. The physiologic apprehensions regarding the positive and negative pressure methods have been shown, by the works of Braner, Seidel, Meyer and Dreyer, to be without foundation. The points in favor of the apparatus for positive pressure are that it is smaller, cheaper and easier of transportation and that communication between operator and anesthetizer is more readily established.

An objection frequently advanced against the chamber for negative pressure is that its use is intolerable to the subject on account of the heat. This objection, however, is unfounded, inasmuch as in the chambers of latest construction the ventilation is so excellent that the air in the chamber does not become overheated any sooner than in the ordinary operating room. Nor is the cost of such a chamber as great as is generally supposed. It is possible to obtain a satisfactory apparatus for from \$1,000 to \$1,200. Furthermore, any ordinary room can be converted into an operating chamber for operations to be done under differential pressure. All that is necessary for the purpose is to provide for a hole through the door or wall of the room through which the patient's head can be passed, and to supply a suction pump, which by the introduction of the T tube can easily be converted into a pump for positive pressure. Eventually one might construct a light, easily portable chamber of duck or canvas which would answer all practical purposes. A point of great importance, in my opinion, is that in all forms of negative pressure ap-



paratus we are in a position to arrange for a reliable narcosis (also when arranged for positive pressure) so that disturbances due to vomiting, the danger of aspiration as present when other apparatus for positive pressure is used, are not encountered. Recently we discovered another advantage of negative as against positive pressure, namely, that in case of "tension-pneumothorax" and consecutive emphysema of the mediastinum and subcutaneous cellular tissue the mere opening of the thoracic cavity under negative pressure is sufficient instantly to relieve this dangerous condition. With positive pressure this is impossible for physical reasons.

DR. SAMUEL ROBINSON, Boston: One side of the human chest has often been opened without the use of any apparatus and without the onset of alarming symptoms of pneumothorax. Operations fatal to the normal dog have been successful on the human being. There are two reasons for this: The mediastinum of the dog is not a rigid partition separating the two sides of the thorax, but a fluttering membrane which in the presence of a one-sided pneumothorax yields to respiratory variations of the intrathoracic pressure of the unopened side and thus seriously affects the function of the sound lung. The human mediastinum, on the other hand, is a firmer structure with better anchorage. Hence the opening of one chest interferes to a less extent with the excursion of the lung of the unopened side, and one lung can to a certain extent compensate for the loss of the other. Furthermore, operations on the human being are generally in the presence of pathologic conditions in which the dangers are lessened by pleural adhesions and thickened mediastinum. What better proof is there, however, of the dangers associated with opening the human chest without apparatus than the reluctance of operators to perform an exploratory thoracotomy. I believe in the simplicity and portability of the positive pressure apparatus. There is need primarily of an apparatus to render exploratory thoracotomy a safe procedure. Rhythmical inflation is a more complicated procedure and requires skilled administration to obviate its dangers. I believe that the best method is the employment of a constant pressure with ample supply. The tubes conducting this pressure to the respiratory tract should lead either to a face mask or to an intubation apparatus, and my purpose is to perfect this method until simple enough for practical usage. Of the practicability of the method, as such, I am now convinced.

It is to be regretted that the discussion to-day has consisted in the results of animal experiments under positive pressure versus the results of operations on the human being under negative pressure. The latter would at first seem more convincing. Professor Brauer, whose absence at this symposium is much regretted, would have reported the results of the application of positive pressure to the human being as administered with his own apparatus and with modifications of it in European clinics. The operations performed with this simple method, although fewer than those performed in the negative pressure cabinet, are nevertheless equally promising in their results. The cabinet mortality may be higher than that of the positive method, but the serious nature of Professor Sauerbruch's esophageal operations must, of course, be taken into consideration. I urge you, therefore, to bear in mind that the results of operations on the human being under positive pressure have been favorable. We present the results of our animal experimentation to support the method on the basis of physiology and to report improvements in technique.

DR. N. W. GREEN, New York: The point Dr. Schäfer brought out is valuable. Atropin is a great aid in preventing the effect of reflex irritation in work on the chest. It is a cardiac stimulant. You probably well know the physiologic experiment with the frog's heart, which was excised, stopped by muscarine, and which began to beat again when atropin was dropped on it. We ought to bear that in mind in our surgical work to combat shock. In the experiments on dogs I have opened both pleurae in some cases. In other cases I opened only one pleura. It is well to remember that the mediastinum is very movable in the dog and also in children. Opening one side

in a child in case of an empyema or anything like that may be a very serious matter, unless some aid is present, because the mediastinum collapses so easily toward the side that is not opened. If by any chance you have given too much ether—and ether kills by failure of the respiration—you can resuscitate the animal or person by means of rhythmical inflation. If you have not rhythmical inflation, you can produce it by pressure with the hands on the chest. When failure of respiration occurs, quite a time elapses between the time when you have such failure and heart failure, and rhythmical respiration carried on during that time may save the life of your patient.

## LARYNGEAL CRISES AND PARESIS OF THE ABDUCTORS OF THE VOCAL CORDS

AS IMPORTANT EARLY SYMPTOMS OF TABES, WITH THE REPORT OF A CASE.

OTTO T. FREER, M.D.

WITH SUPPLEMENTARY REPORT BY STANTON A. FRIEDBERG, M.D.

CHICAGO

Among the symptoms of tabes dorsalis those furnished by the larynx commonly appear early in the disease, may be the first ones to attract attention, and may, indeed, be the first evidences of the affection. Those unacquainted with the possibility that such laryngeal manifestations may indicate tabes fail to understand their significance and usually fall into the error of supposing some local disorder of the larynx, perhaps of slight or no importance, to be the cause of the laryngeal symptoms, whose significance, as evidences of a grave nervous disease, is thus not appreciated. As an example, in the case reported in this paper the opinion was advanced that a small cyst of the lingual surface of the epiglottis, of no consequence whatever, was the cause of persistent recurrence of spasms of the glottis characteristic of tabetic crises. In distinction to the ease with which those are led astray who are ignorant of the laryngeal phenomena of tabes, they suggest the disease at once, even when they are present in the slightest degree, to those having a knowledge of them, and they thus lead to a search for the well-known and positive signs of tabes, such as ataxia and rigid pupils, which unequivocally demonstrate its existence.

The usual laryngeal manifestations of tabes are the so-called laryngeal crises, which are recurrent attacks of prolonged spasm of the glottis, and paralysis of the abductor muscle of the vocal cord, the posterior cricoarytenoid. So significant of tabes is the isolated paralysis of this muscle that Sir Felix Semon speaks of it as the tabetic form of laryngeal paralysis *par excellence*. While at first merely indicated by deficient abduction of one or usually, as it is commonly bilateral in tabes, both cords, in time a spastic contracture of the adductor muscles of the cord is superadded to the abductor paralysis, which draws the vocal cord inward toward the mid-line, so that it finally remains permanently in the median position. This permanent adduction creates no symptoms when the affection is unilateral, but may lead to serious dyspnea when it causes both cords to be in continuous contact in the mid-line. The contracture of the adductors referred to is very slow in developing and years may pass by before it is complete, so that in very chronic cases of tabes the cords may even never meet in permanent contact before the individual dies, and, therefore, in many cases the posticus paralysis, even when bilateral, either creates no symptoms at all or only



after a long period. For this reason it is usually only discovered when a laryngoscopic examination is made.

As a typical illustration of the laryngeal symptoms of tabes I submit the following case report, which is followed by a description and consideration of the manifestations of tabes as they affect the larynx:

*History.*—The patient was 37 years old and a cabinet maker. He had been married sixteen years and had five healthy children. Twenty-one years ago he had gonorrhea, but denied syphilis. The only other previous illness he remembered was typhoid fever, at the age of 13. His present disease began six months ago with a severe vomiting spell which seemed to be merely seasickness, as it occurred while he was crossing Lake Michigan in rough weather. After he went ashore, however, he continued to have attacks of vomiting at intervals for four months, when they ceased to trouble him. His vomiting occurred whether his stomach was empty or full, the seizure on some days returning three times, on others but once and occasionally several days passing without a vomiting spell. Three months ago while in a room where men were smoking his breath was suddenly shut off by a catch in his throat, which passed off when he went out. Two days later, on the street, he had a much more pronounced attack of spasmodic stoppage of breathing which began with a cough, arrested suddenly by a closure of his throat, so forcible that he could not breathe. He then fell to the ground unconscious and when he recovered, found himself lying in the street. He then arose and walked away. The next attack occurred while he was working. He fell over against his bench, unable to get air, but did not fall down or become unconscious. After these first two suffocative spells others followed at intervals of hours or days, but they never caused him to become unconscious again or to fall down. The attacks began with a cough, followed by a closure of the throat, lasting from one-half to three-quarters of a minute and preventing breathing or utterance of a sound. After this period of complete closure, the air entered his lungs with difficulty, while a loud crowing noise was created in his throat by his breathing. The suffocative seizure also occurred during his sleep, awakening him and preventing his going to sleep again for fear of another attack. A month ago he went to the German Hospital and was treated there with potassium iodid, 72 grains daily. During this time his attacks increased in severity. Of late, since he had been taking potassium bromid in fifteen-grain doses three times a day, the spells of throat spasm had become much less severe and frequent, and no longer happened in his sleep. A characteristic of the attacks was their invariable onset with a coughing spell, which led at once to the suffocative spasm described. The patient had no pain in the limbs, or girdle sensation about his trunk. He had a neuralgic sensation in his left leg, where it was perforated by a bullet and pierced by a bayonet along the inner surface of the tibia in a war some years ago. Four years ago, during a number of months, he had to employ abdominal pressure in order to urinate and at that time he was apt to have urine escape without his knowing it, when he was walking. Two months ago he had a return of this symptom for six weeks.

*Laryngeal Examination.*—The vocal cords although coming well together on phonation, were only insufficiently abducted during deep inspiration to the extent shown in the illustration. In other respects the interior of the larynx presented no abnormalities. Nose and nasopharynx normal. A small cyst occupied the left vallecula on the lingual surface of the epiglottis.

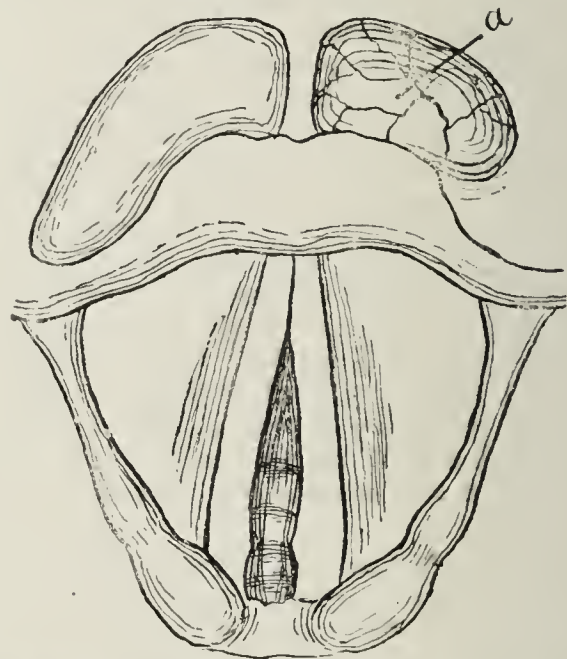
The following neurologic examination was made by Dr. William Healy:

*Neurologic Examination.*—In both eyes pupillary reaction to light was much less than it should be and sluggish. No pupil reaction when staring into distance. Incomplete Argyll-Robertson pupil (pupillary reaction to accommodation, but not to light, when staring into distance). Fundi normal. Ocular motions normal. Patient admitted having ptosis for three days a month ago. The Achilles reflexes were both absent. Knee reflexes absent even on reinforcement. Anesthesia

to camel's hair brush, beginning above the mamillary line and reaching down nearly to the umbilicus, on the anterior surface of the thorax. Partial, but distinct analgesia below the knees in both limbs. Testes insensitive. Sense of smell normal. Some incoordination when pointing with fingers. When eyes were closed he could not guide the tips of his index fingers together so as to make them touch. Slight incoordination of lower extremities. Romberg's symptom (swaying of body when standing with both feet together and eyes closed) was present in moderate degree. Blood pressure normal. Some dizziness in descending stairs. He finds that he has no trouble in walking about in the dark.

Since writing the above history the patient has entered the laryngologic service of Dr. Stanton A. Friedberg in Cook County Hospital, who gives a further account of his affection in a supplementary report, with a more accurate observation than I could make of an ambulant patient. The report follows this article.

The pupillary changes, the absence of the knee and Achilles reflexes, the area of slight anesthesia found below the mamillary line, the incoordination, the insensitive testes, the partial analgesia below the knees and the history of a spell of bladder insufficiency and ptosis are, even without the other characteristic symptoms of tabes detailed, sufficient to prove its existence



Freer's case of laryngeal crises. View of larynx showing abnormal approximation of cords during respiration; a, cyst of epiglottis.

in this patient. The features of laryngologic interest in the case are the spells of interrupted breathing, which the patient describes and which I regard as tabetic laryngeal crises, and the parietic state of the abductors of the cords demonstrable by laryngoscopy.

In my study of the phenomena presented by this patient I have been guided mainly by the classic section on the nervous diseases of the larynx and trachea written by Sir Felix Semon in Heymann's *Handbuch*. It is unfortunate that this perfect exposition of this difficult theme, a work of 207 pages, does not exist in English, for it makes its intricate subject so clear to the understanding and so vividly interesting that its study becomes a pleasure and not a task. An English edition of Semon's work would tend to arouse the interest in laryngeal neurology in America which it has inspired in Germany and which has led to such important recent researches there in the innervation of the larynx.

I will precede a consideration of the first of the phenomena, the sudden shutting off of the patient's breath, by the following translation of Semon's description of the symptoms of the laryngeal crises of tabes:



The symptoms vary greatly in gravity. In the mildest cases they appear merely in the form of sudden, severe, spasmodic attacks of coughing, possessing no demonstrable organic cause and obstinately resisting all treatment. In cases of medium intensity the cough is preceded by a feeling of tickling, stinging, scratching, burning, or of a foreign body in the laryngeal region. These sensations are followed by a feeling of being throttled, associated with intense anxiety. The breathing becomes labored and then a coughing spell follows, accompanied by long-drawn inspirations, short explosive expirations and evidences of general disturbances of the circulation, such as cyanosis. Retching, attacks of sneezing, salivation, dizziness, sweating and pain in the extremities have been observed and Semon has seen an attack of laryngeal crisis which changed into a gastric one. The paroxysm, most alarming in aspect, ceases after a few seconds or minutes with long, stridulous respirations, which gradually grow less distressing, while the cough dies away. In the severest cases the phenomena described are associated with dizziness, involuntary defecation and urination, loss of consciousness, epileptiform convulsions and cessation of respiration, but even in such extreme instances, as a rule the threatening symptoms disappear spontaneously.

The attacks described by the patient present, typically, the symptoms here quoted from Semon, and may be regarded as belonging to the order of medium severity. In his statement to Dr. Friedberg the patient has described the preliminary abnormal sensations in the larynx or "aura" mentioned by Semon. The characteristic feeling of being throttled, following the aura, is a constant accompaniment of his attacks and also the intense feeling of anxiety mentioned in the description. The typical long-drawn, stridulous respirations succeeding the worst part of the spasm and the final coughing spell are also a part of the seizures. To Dr. Friedberg also the patient spoke of two phenomena often present, dizziness during the attacks and sweating. The second spell even led to the loss of consciousness and falling down characteristic of the severer onsets of the affection. Enough evidences of the disease are therefore present to warrant positively the diagnosis of laryngeal crises of tabes. The only other condition coming into question is *ictus laryngis*. The symptoms in the seizures of this affection in sequence and quality are identical with the crises of tabes. There is a preliminary cough, then a more or less pronounced spasm of the glottis and falling down and unconsciousness, such as also occurs in the severer type of tabetic crises. The entire lack of any of the signs of tabes, however, serve to distinguish *ictus laryngis* from a laryngeal crisis.

It has not been my fortune to witness one of the patient's attacks, but Dr. Friedberg's report contains the description of some seen by the attendants at the hospital and of one with laryngoscopic findings seen there by himself. In these seizures the patient complained of severe pain in the laryngeal region lasting for some minutes and also of pain in the region of the heart, indicating irradiation from the medulla into the sensory as well as the motor portion of the vagi nerves. Another evidence of general irritation of the vagi nerves exists in the gastric crises which occurred for so long a period some months ago and which seem to have been supplemented by the laryngeal crises he had later.

Semon says that difficult swallowing, gastric crises and rapid pulse are nervous symptoms often coexisting with the laryngeal crises, but that their most important accompaniment, in a pathologic sense, is paralysis or paresis of the openers of the glottis, the posterior crico-arytenoid muscles or abductors of the cords. Observation has proved this combination of loss or impairment

of motion of the abductors, with a tendency to spastic contraction of the adductors in the crises, to be so frequent in tabes that it constitutes a typical phenomenon and is not to be regarded as a mere chance association. The evidence of paresis or paralysis of the abductors in our patient is found in the lack of the outward motions of the cords which should occur during deep inspiration and their permanently close approximation, which narrows the opening of the glottis about one-half (see illustration).

The isolated paralysis of the abductors found in this case is in accord with the rule formulated by Semon, that an organic interference of slow development with the functions of a recurrent laryngeal nerve, always leads first to paralysis of the abductor, (posterior crico-arytenoid) muscle, of the affected cord, paralysis of the adductors, with total loss of motion of the cord, following later if at all. In accordance with this, total paralysis of a vocal cord, which implies, of course, total paralysis of a recurrent laryngeal nerve, is extremely rare in tabes. This discovery of the greater vulnerability of the nerve fibers going to the posterior muscle constitutes the celebrated law of Semon, as it is called. It is especially and strikingly found in the laryngeal paralyses of tabetic origin, so strikingly that Broeckaert, who attempted to disprove the law of Semon so far as it applied to the trunk of the recurrent laryngeal nerve, admits its truth as applied to slow degeneration of its nuclear origin as it is found in tabes. Recent animal experiments and clinical observations extending over twenty-five years, in which exceptions to the law have been searched for by a multitude of observers with the diligence inspired by an ardent controversy, make the conclusion of Kuttner, that the constancy of Semon's law may be regarded as proven, the only one which may be reasonably arrived at. But one exception to the law has been discovered in the long time since it was formulated, and is acknowledged by Semon with characteristic frankness—the celebrated case of Saundby, in which a carcinoma of the esophagus caused degeneration of the portion of the recurrent laryngeal nerves supplying the adductors of the cords while sparing the abductors. As Kuttner says, such an example merely proves the rule.

The greater vulnerability of the nerve fibers going to the abductors has been strikingly shown in the animal experiments of Fränkel and Gad, who isolated and gradually chilled the trunk of the recurrent laryngeal nerve. In all of their investigations, confirmed by Kuttner later, the abductor motions of the cords ceased first and only later did the adductors become paralyzed with fixation of the cord in the cadaver position. As the nerve trunk recovered, on warming, the motions of the adductors were the first to be restored. In explaining the common association of posticus paralysis in tabes with the laryngeal crises Semon says in Heymann's *Handbuch*:

As shown in the chapter on laryngeal paralysis, the medullary nuclei of the abductors of the glottis are the first to degenerate where laryngeal paralysis occurs at all in tabes. At the same time, however, the ganglion cells of the closers of the glottis are in a state of increased latent irritability and react more quickly and energetically to reflex irritation than normally, so that conditions that would for instance excite a mere cough in a healthy person create spasm of the glottis in tabes on account of this excitable state of the vagi nuclei.

The abnormal sensations in the throat which introduce the crises Semon regards as also dependent on the excessive irritability of the medullary centers and per-



haps also the peripheral course of the sensory nerves of the larynx. Burger, Semon states, also regards irritations of the sensory part of the nerves as present in the crises of tabes. The unusual symptom of the occurrence of pain in the region of the larynx during the crises complained of by this patient is in accord with this view and indicates central irradiation into the superior laryngeal nerves.

The laryngeal paralyses found in tabes, though often the first and possibly the only paralytic symptoms to occur, are but a portion of a group of paralyses found as results of pathologic degenerative changes in the cranial nerves or their medullary origin. Thus paralyses of the ocular muscles, the levator palati, the trapezius or sternomastoid muscles may be found. Indeed, the paralyses due to cranial nerve involvement in tabes may be so numerous and extensive that bulbar paralysis is simulated.

The degenerative changes found in the laryngeal paralyses of tabes may be found in the nucleus of the vago-accessorius nerve, in the ascending root of the glossopharyngeal nerve, or in the intrabulbar root fibers of the vagus and accessorius or in their peripheral extensions. The degeneration may also be limited to the vagus trunk or that of the recurrens, the medullary portions of the nerves being intact.

#### LATER HISTORY OF THE CASE BY DR. STANTON A. FRIEDBERG.

The patient was brought to Cook County Hospital in a police ambulance on Feb. 10, 1908. He stated that his illness began about eight months before this date when he was seized with attacks of vomiting at irregular intervals, which lasted for a period of five months. For the past two months he had had dyspneic attacks on going from a warm atmosphere into a cold one and *vice versa*. For fourteen days he had suffered from pain on swallowing solids. More recently he had complained of some ill-defined "sticking" pains in his legs. His main complaint was on account of the dyspneic or choking spells which had been more frequent of late. About half an hour before the attack there would be a general feeling of warmth over the entire body. Immediately preceding it there was a tickling sensation in the larynx, which caused him to cough once or twice and then the spasm followed. Vertigo was present during the attack, not before. There was no loss of consciousness. He had repeatedly been aroused from his sleep by the tickling in the throat which preceded his attacks, the latter following on such awakening.

*Examination.*—Patient stalwart German, well nourished, muscular. Pupils equal, reacted imperfectly to light and very sluggishly to distance. Marked Romberg symptom. No patellar or Achilles reflexes. Areas of analgesia. Examination of the larynx disclosed a small tumor on the anterior surface of epiglottis, left side, which yielded to touch of probe. Vocal cords were slightly congested. On inspiration the right cord moved slowly outward to about half the normal distance. The left moved a little more slowly than the right to about the same distance. On phonation the cords did not approximate completely, leaving a small opening throughout the anterior three-fourths. In the posterior one-fourth the opening was a little larger and was slightly triangular in shape.

Since his entrance into the hospital, his pulse had varied from 84 to 120. The temperature from 98 F. to 99.5 F. At various times he complained of difficulty in breathing other than that produced by the spasmodic attacks. More or less cough was present due to an almost continual irritation in the larynx and trachea. At times he had pain in his throat independent of any efforts at swallowing. What may be considered as characteristic of his condition was his extreme nervousness due to the ever present fear of an attack. He slept very poorly. Cleared his throat often. The greatest number of attacks in any one day have been four, although before coming into the hospital he had had as high as seven. Recently

several days elapsed without any. Several attacks were produced by the irritating effects on the throat of the bromid solution he has been taking.

*Objective Signs.*—The objective signs during a crisis were as follows: Marked inspiratory dyspnea; interrupted stridor; expression of great fear; face suffused; eyes wide open and staring. Referred to throat and precordium as seat of great distress. This latter was not due to pain, as in an anginal attack, but to the inability to obtain sufficient air. The hand would be clasped about the throat as if in an effort to obtain relief from choking. He walked about unsteadily on account of the vertigo which was present. The pulse increased in rapidity and became irregular in quality. After an attack it was usually about 120. His face was pale, respirations were increased, and he was markedly agitated. The attacks lasted from a few seconds to 15 minutes although in the latter instances the greatest intensity was usually for about 5 minutes.

*Laryngeal Appearance.*—In attempting to cocaineize the larynx a crisis was produced. As the laryngeal mirror was in position at this time an excellent opportunity was given to view the larynx. The cords were fixed firmly in the position of phonation. In spite of the violent inspiratory efforts there was not the least abduction. This position was held for at least 15 seconds. The small elliptical opening between the cords as described above was present and undoubtedly it was due to this factor that the stridor was interrupted. The edges of the cords were seen to vibrate slightly, which demonstrated that a little air at least must be passing through the glottis. Perhaps to this fact may be due the absence of the loss of consciousness which one would expect in a complete closure of the glottis and which occurred in his first attack. This evident involvement of the internal thyreo-arytenoid seems to be due to the strain placed on these muscles by the severe inspiratory efforts, which has caused them to yield a little. In other words it may simply be an effort to counteract the effects of the posticus paralysis. With the recurrence of abduction of the cords the attack subsided, to immediately recur, as would happen at times, or to be held in abeyance for a variable length of time.

At the present writing he has had no attack for the past eight weeks.

## FORMALDEHYD DERIVATIVES.

### THEIR FATE AND ACTIONS IN THE BODY TOGETHER WITH OBSERVATIONS ON SOME OTHER URINARY, INTESTINAL AND WOUND ANTISEPTICS.

#### *Report to the Council on Pharmacy and Chemistry.\**

TORALD SOLLMANN, M.D.

Professor of Pharmacology and Materia Medica, Medical Department Western Reserve University; Member of the Council on Pharmacy and Chemistry of the American Medical Association.  
CLEVELAND, OHIO.

#### I. INTRODUCTION.

The consideration of certain proprietary "internal antiseptics" by the Council on Pharmacy and Chemistry revealed important discrepancies between the claims of the manufacturers and the results obtained by other investigators with analogous products. It appeared to me that a fair disposition of the questions thus raised could only be obtained by a direct experimental investigation, which I, therefore, undertook. I also believed it worth while to compare the antiseptic value of these products with those of the older and better known drugs. In the determination of the antiseptic value I have departed from the ideal, but highly artificial, conditions of the customary culture experiments, and have aimed to re-

\* From the Pharmacological Laboratory of Western Reserve University.

\* Because of lack of space, the article as here published is a condensation of the original report, reprints of which may be obtained by application to the author.



produce, so far as possible, the conditions under which the drugs are actually used. Exception may, of course, be taken to the application of any laboratory experiments to clinical problems; but until a clinical method of comparing antiseptic values is invented, it seems to me unwise to discard the positive and definite data obtainable under these artificial conditions.

## II. THE LIBERATION OF THE ANTISEPTIC RADICLES IN PURE SOLUTION.

The claimed antiseptic qualities of most of these drugs are based on the assumption that they are decomposed in the body, with the regeneration of the formaldehyd, salicylate, or other active radicles. Before investigating the more complex problem, whether or not these decompositions occur in the body, I investigated the decompositions in simple solutions under the influence of reagents which are somewhat, but not much, more powerful than the conditions obtaining in the body. I am indebted to Dr. W. W. Williams for aid in these tests.

### A. THE LIBERATION OF FORMALDEHYD IN PURE SOLUTIONS.

*Method.*—A knife point (about 0.05 gm.) of the substance was placed in test tubes with about 10 c.c. of water, 1 per cent. hydrochloric acid, or 1 per cent. sodium hydrate. The first set of tubes was boiled;<sup>1</sup> if a positive result was obtained, a second set of tubes was prepared and tested immediately after mixing. If the result was negative, a third set of tubes was allowed to stand at room temperature for an hour. In a few instances, tests were also made after the tubes had been kept at from 37° to 40° C. for varying periods.

Before testing, the solutions were filtered if they contained any undissolved material. Some of the solutions were too much colored to be suitable for the direct application of the Jorissen test. In these cases, 1 gm. of the substance was placed in a flask with 100 c.c. of the reagent and distilled, the first 50 c.c. (approximately) of the distillate being collected and tested.

The Jorissen test for formaldehyd was used throughout, applied as follows: About 10 c.c. of the solution were rendered distinctly alkaline with sodium hydroxid and if no marked change occurred, there was added a very little dry phloroglucin, or 2 c.c. of a 1 in 1,000 solution. A control test was always made with water, so that even a very slight positive reaction could be identified. The results are given in Table 2, where the apparent solubility is also noted.

*Summary.*—These results may be summarized as follows, in the order of readiness with which formaldehyd is liberated.

(1) Glutol contains considerable free formaldehyd ( $C H_2 O$ ) and an additional quantity is liberated by boiling, in all media; most strongly in the alkaline, less in the acid and least in the neutral medium.

(2) Citarin and novaspirin develop formaldehyd promptly, in all media, even in the cold. The reaction is greatest in the alkaline, less in the neutral and least in the acid medium. The citarin liberates the formaldehyd somewhat more readily.

(3) Hexamethylenamin and tannopin (see below) develop formaldehyd in all media, most in acid, less in neutral and least in alkaline. The reaction occurs slowly at room temperature, more rapidly at 37° C. and promptly on boiling.

(4) With iodomuth, tannoform and tannopin the lower temperatures could not be tried completely by our method on account of discoloration; on distillation, they all liberate formaldehyd as follows:

Iodomuth: Most with alkali, doubtful trace with acid, none with water.

Tannoform: Most with alkali, some with acid and water.

Tannopin: Most with acid, less with water, least with alkali.

However, Tannoform filtered cold gave the reaction at once in acid and especially in neutral solution, indicating that it contains some free formaldehyd.

Tannopin gave no reaction at once with water so that it contains no free formaldehyd; this is liberated in the cold, at once by hydrochloric acid, more slowly by water.

(5) Formidin, Guaialin, Sodi-forma-sal and Ur-asol: These do not liberate formaldehyd in any reaction, even on boiling or distillation.

### B. THE SALICYLIC ACID TEST.

The manufacturers of several of these products cite a positive salicylic acid test in the urine or intestine as evidence of the decomposition of the molecule. Before this can be accepted as a proof, it must be investigated whether the compounds themselves do not give the ferrie chlorid reaction. This was done in the experiments shown in Table 3. The disposition of the experiments was similar to that of the preceding section; the alkaline filtrates were neutralized and again filtered.

It is evident that all the products which are soluble give the test directly; the intensity of the reaction being practically proportional to the solubility. The positive outcome of the salicylate reaction can not, therefore, serve as evidence of decomposition since it is certainly given by the undecomposed products.

### C. THE LIBERATION OF IODID.

Formidin and iodomuth contain iodine in the molecule, and the application of the iodid test might possibly serve as a means of recognizing decomposition. The experiments in Table 4 were made and show that formidin contains some free iodine; iodomuth does not contain this impurity. Dilute acid alone does not liberate iodine from either product; but the ordinary iodid test (dilute acid and nitrite) is positive with both, so that it can not be utilized to demonstrate a decomposition of these products.

## III. THE LIBERATION OF THE ANTISEPTIC RADICLES BY PANCREATIC DIGESTION.

In the medicinal use of these drugs, any decomposition of compounds of this class would occur principally in the intestine, through the agency of the pancreatic juice, as has been shown by the researches of Nencki<sup>3</sup> and Lesnik<sup>4</sup>. This would indeed be the only possibility for the insoluble drugs; with those which are soluble, the possibility of decomposition elsewhere in the body must be reckoned with; but the decomposition by pancreatic ferment is certainly of prime importance. The method of digestion outside of the body was deemed by me preferable to the alternative method of introducing the drug into a ligatured loop of the duodenum of living animals. The decomposition would be the same in both methods; but the absence of decomposition products in living animals might be attributed to their absorption.

1. In "boiling" the solution, the temperature is merely brought to the boiling point and the tube plunged at once into cool water. The same method was used with the urines.

3. Arch. f. exp. Path. u. Pharm., 1886, xx, 367.

4. Arch. f. exp. Path. u. Pharm., 1887, xxiv, 167.



Several series of these digestive experiments were made, following closely the general methods of the authors just cited. The antiseptic effects were observed incidentally, but these will be described in a later section.

## RESULTS.

The results are presented in Table 5. The corresponding results with pure watery solutions are added for comparison. These results indicate that pancreatic digestion does not decompose these drugs more readily than does water; the only exception to this rule are the saponification of salol, and, to a slight extent, of urasol. The fact that glutol is not decomposed is particularly striking; the pancreatic digest contained even less free formaldehyd than the watery solution. This was doubtless due to the evaporation of the free formaldehyd which is present in the original product.

be transferred unhesitatingly to residual ammoniacal fermentation in the bladder. As to other cystic infections, the possibility of a specific susceptibility of pathogenic bacteria to selected antiseptics needs scarcely to be considered; first, because the claimed antiseptic radicals (formaldehyd and salicyl) are alike for all of these drugs; and second, because the observed differences in the antiseptic effects are so large that they would overshadow any individual actions.

The principal results are as follows: Hexamethylenamin rendered the urine strongly antiseptic; novaspirin, salol and sodium salicylate rendered it feebly antiseptic. None of the other drugs had any discernible effect on the keeping qualities of the urine.

The urine did not contain any free formaldehyd with any of the drugs. Formaldehyd was formed in the hexamethylenamin urine, but in none of the others. The

TABLE 5.—Tests on the Pancreatic Digests.

	Tests on the Filtrate.				Tests on the Distillate.			Reaction of Distillate.	
	Series 1.	Series 2.	Series 3.	Pure Watery Solution.	Series 2.	Series 3.	Pure Watery Solution.	Series 2.	Series 3.
A. Jorissen's Reaction for Formaldehyd.									
Control.....	Negative.	Negative.	Negative.	Negative.	Negative.....	Negative.....	Negative.....	Neutral..	Strongly acid.
Hexamethylenamin..	.....	.....	Trace...	Trace...	.....	Fair.....	(Fair)...	Neutral..	Neutral.
Tannopin.....	.....	Positive.	.....	Trace...	.....	Good.....	Positive..	Acid....	Strongly acid.
Formidin.....	Negative.	.....	Negative.	Negative.	.....	Very doubtful tr.	Negative..	.....	Slightly acid.
Ur-a-sol.....	Positive?	Negative.	Negative.	Negative.	Doubtful trace.	Negative.....	Negative..	Neutral..	Slightly acid.
Sodi-forma-sal.....	Negative.	Negative.	Negative.	Negative.	Trace??...	Good.....	(Negative).	Neutral..	Fairly acid.
Iodomuth.....	.....	.....	.....	.....	.....	Negative.....	Negative..	.....	Strongly acid.
Gualalin.....	Negative.	Negative.	Negative.	Negative.	Negative.....	Negative.....	(Negative).	Neutral..	Strongly acid.
Citarin.....	.....	.....	Fair.....	Good...	.....	Good.....	Good.....	.....	Strongly alkaline.
Novaspirin.....	.....	.....	Good...	Good...	.....	Good.....	Good.....	.....	Acid.
Glutol.....	.....	.....	Negative.	Good...	.....	Trace.....	(Good)...	.....	Strongly acid.
Tannoform.....	.....	.....	.....	.....	.....	Fair.....	Positive..	.....	Strongly acid.
B. Ferric Chlorid Reaction for Salicylates.									
Control.....	Negative.	Negative.	.....	Negative	.....	.....	.....	.....	.....
Formidin.....	Positive.	.....	Fair....	Positive	.....	None.....	None.	.....	.....
Ur-a-sol.....	Positive.	Positive.	.....	Positive	.....	Fair (winter-green odor). Trace?	.....	.....	.....
Sodi-forma-sal.....	Positive.	Positive..	.....	Positive	.....	.....	.....	.....	.....
Gualalin.....	Negative.	.....	.....	Negative.	.....	.....	.....	.....	.....
Novaspirin.....	.....	.....	.....	Doubtful.	.....	Positive.....	(Positive on boiling).	.....	.....
Salol.....	.....	Trace...	Strong...	Negative.	.....	.....	.....	.....	.....
C. Iodid Reaction.									
Formidin.....	.....	.....	Positive.	Positive.	.....	Negative.....	Trace.	.....	.....
Iodomuth.....	.....	.....	Positive.	Positive.	.....	Negative.....	Negative.	.....	.....

## EXPERIMENTS ON OTHER TISSUES.

Intestine and liver were tried by the method of Series 1. with the same results as those found for the pancreas.

## IV. EVIDENCE OF DECOMPOSITION FURNISHED BY THE URINE; EFFICIENCY AS URINARY ANTISEPTICS.

The absorption, and in some cases, the decomposition of these substances in the body might be demonstrated by the examination of the urine. Accordingly a considerable number of experiments were made, all on one person. The drugs used were: hexamethylenamin; tannopin; formidin; ur-a-sol; sodi-forma-sal; iodomuth; citarin; novaspirin; tannoform, and as controls: Salol; sodium salicylate, sodium benzoate, sodium phenolsulphonate, and boric acid; all in doses of 0.5 and 1.0 gm.

In addition to the chemical examination of the urines, their keeping qualities were determined by exposing them in the incubator. This approaches the conditions of cystic fermentation so closely that the conclusions may

formic acid excretion was not increased by any of the drugs (save possibly a trace with hexamethylenamin).

The urine furnished evidence that ur-a-sol, sodi-forma-sal, and novaspirin were absorbed, either as such or with decomposition; that iodomuth was absorbed to a slight extent only (with decomposition); that formidin was not absorbed; there was no definite evidence as to tannopin and tannoform.

The urine did not furnish any definite evidence of the decomposition of tannopin, formidin, ur-a-sol, sodi-forma-sal, citarin, novaspirin or tannoform; iodomuth was decomposed to a slight extent only.

The taste of ur-a-sol and sodi-forma-sal is markedly objectionable.

## METHODS, EXPLANATIONS AND PROTOCOLS.

*Doses.*—It will be noted that the doses are generally the largest single doses which are advised therapeutically.

*Collection of Samples.*—The urine was collected continuously from two to three hours before taking the drug to five or six hours after taking, and again on the following day. An aliquot part of each sample was used for the qualitative and incubator



tests, and the remainder was used for the formic acid determinations. All tests were controlled on the sample of urine collected before taking the drug.

**Formaldehyd.**—The Jorissen test was used throughout. It was applied directly to the urine; after momentary boiling, and after standing in the incubator. The negative results of the direct test will not appear strange to any one acquainted with the chemical properties of formaldehyd; Blum, Pohl, Ebert and Giannelli<sup>3</sup> have already shown that even large quantities of formaldehyd, administered as such, do not reappear in the urine.

**Salicylate.**—The urine was acidulated with hydrochloric acid and dilute ferric chlorid added. When the test was negative the urine was boiled with the dilute acid and also with concentrated acid, and tested after partial neutralization. The direct test by the first method gave the best results.

**Iodid.**—The urine was acidulated with 25 per cent. sulphuric acid, a few drops of 1 per cent. sodium nitrite were added, and the solution shaken with chloroform.

**Bacterial Turbidity.**—At the end of the day, from 50 to 100 c.c. portions of each sample were placed in small flasks, loosely stoppered, and set in the incubator, which varied between 37 and 42° C. The control samples were always turbid on the following morning.

#### FORMIC ACID DETERMINATIONS.

Pohl<sup>4</sup> has shown that formaldehyd and methylene derivatives are (at least partly) oxidized into formic acid in the body; and formic acid is excreted (in part) unchanged in the urine, provided the quantity exceeds a certain minimum. This minimum is about 1 gm. for a 7 kilo dog—its amount has not yet been determined for man. Smaller quantities are oxidized completely. The larger part of the formaldehyd also underwent complete oxidation. Since corresponding experiments on man have not been recorded, it was not altogether impossible that some of the methylene of these compounds might be excreted as formic acid, so that the determination of this substance might serve as an index of their decomposition. I am indebted to Dr. J. D. Pilcher for these determinations.

The method described by Pohl<sup>4</sup> was used, always neutralizing with lime water. We can confirm his observations that this expedient gives reliable results in the presence of formaldehyd. The determinations were made in duplicate, using from 100 to 300 c.c. of urine for each test, and averaging the results.

Since a somewhat variable quantity of formic acid is excreted normally, it was necessary to make control estimations. Instances of these are given. In over thirty determinations, the normal quantity of sodium formate in the urines of the first period of the day (i. e., between 6:30 and 10 a. m.) varied from 0.28 to 3.37 mg. per 100 c.c. mean 1.25 mg.; and from 0.6 to 4.58 mg. per hour, mean equals 2.25 mg. In the second period of the day (i. e., between 9 a. m. and 4 p. m.) it varied between 0.12 and 3.86 mg. per 100 c.c., mean equals 1.5 mg.; and from 0.19 to 6.31 mg. per hour, mean equals 1.90 mg. In calculating the "normal excretion," 2 mg. an hour was taken as a basis. The theoretically possible quantity was calculated on the assumption that all the methylene ( $\text{CH}_2$ ) groups of the drug were excreted as sodium formate ( $\text{NaCO}_2\text{H}$ ). It will be seen that the excretion of formic acid after these drugs remained within the normal limits, and certainly did not correspond to the quantity which could be formed from the drugs. Since such drugs as citarin are certainly absorbed and decomposed in the body, the results prove that the oxidation of medicinal quantities of the methylene radicle is complete in the human organism, and does not give rise to the excretion of either formaldehyd or formic acid.

An abstract of the protocols for the individual drugs is herewith submitted, followed in each case by the conclusions which seem to me justified:\*

#### CONCLUSIONS.

A considerable part (if not all) of the hexamethylenamin is excreted unchanged, the excretion starting within eleven minutes and being completed, with single doses, in 5 hours.

A part of the hexamethylenamin of the urine is converted into formaldehyd outside of the body. This takes place to a slight extent only, at room temperature; much more extensively at body temperature; but even then the conversion is so slow that it is not completed in three weeks, when fairly large doses have been taken. The formic acid excretion shows a very slight, somewhat doubtful increase; at most an insignificant portion of the drug is excreted in this form. The urine, containing hexamethylenamin, resists bacterial fermentation indefinitely; it is not quite so resistant to the growth of molds and algae.

The urine, after taking tannopin, does not contain it, nor any of its decomposition products. The urine is not antiseptic.

Neither formidin nor any of its decomposition products are found in the urine. Considering the delicacy of the iodid and salicylate reactions, it is apparent that no appreciable amount can have been decomposed, or absorbed from the intestine.

Some of the *nr-a-sol* is absorbed and excreted, either as such or after decomposition; it could not be decided which. The quantity excreted is not sufficient to act antiseptically on the urine. The taste is seriously objectionable.

*Sodi-forma-sal* behaves like *nr-a-sol*.

An insignificant trace of iodid is split off and absorbed. There is no evidence of further decomposition. There is no antiseptic action on the urine.

Neither citarin, formaldehyd nor formic acid is excreted in the urine; this has no antiseptic qualities. The urine was alkaline in the first experiment, but not in the other two experiments.

The appearance of salicylate in the urine proves that some novaspirin has been absorbed either as such or with decomposition. Since novaspirin itself liberates formaldehyd readily, while no formaldehyd can be liberated from the urine, it appears that the methylene group has been split off and altered. Since there is no additional formic acid in the urine, this substance can not be the end product of the reaction.

One of the urines was fairly antiseptic, the other not.

The urine after tannoform does not contain formaldehyd or formic acid; nor is it antiseptic.

#### THE "OLDER URINARY ANTISEPTICS."

The following substances were used to control the preceding observations.

Salol is absorbed and excreted, after cleavage. The urine is but slightly antiseptic.

Sodium salicylate renders the urine slightly antiseptic.

Sodium benzoate did not render the urine antiseptic.

Sodium phenolsulphonate did not render the urine antiseptic.

Boric acid did not render the urine antiseptic.

#### V. ANTISEPTIC ACTION AS TESTED ON PUTREFYING PANCREAS AND BLOOD.

##### EFFICIENCY AS INTESTINAL AND WOUND ANTISEPTICS.

As has been previously explained, I aimed to use methods which would approximate the conditions of the body more closely than the ordinary culture tests. I have been rather surprised at the reliability of these rough methods.

The results of the urine tests have already been detailed. For estimating the usefulness of intestinal antiseptics, I utilized the retardation of pancreatic putrefaction. The pronounced odor renders this method peculiarly satisfactory. The saponifying action of the pancreas reproduces the intestinal liberation of the guarded antiseptic radicles, which (as in salol) forms the basis of most of the synthetic intestinal antiseptics.

The transference of these results to clinical conditions requires some judgment. A soluble and irritant substance of high antiseptic power might be clinically in-

5. Hefter: *Ergebnisse d. Physiol.*, 1905, iv, 219.

6. *Arch. f. exp. Path. and Pharm.*, 1893, xxxi, 281.

7. *Loc. cit.*, pp. 285 and 292.

\*Only the conclusions are printed in this abstract. The protocols are contained in the reprints.



ferior to a weaker but insoluble and non-irritant antiseptic. Side actions, such as those of bismuth, tannin or salicyl might be clinically desirable or otherwise. These irritant or specific side actions are so well known that I need scarcely point them out. A more serious matter is that my observations are confined to putrefactive organisms, but this criticism is again obviated by the fact that the antiseptic radicles are identical in nearly all of these products, so that specific susceptibility need not be seriously considered.

For judging the usefulness of these drugs as tissue or wound antiseptics, I observed the effect on the putrefaction of the blood. The odor in this method is less pronounced, but sufficiently distinctive. I have more hesitation in transferring the results obtained with blood, directly to the clinical conditions of wound infection, not only because the bacterial organisms are so markedly different, but also because any direct effects on the inflammatory process are clinically so vastly important. The conclusions in this case are, therefore, mainly suggestive.

#### RETARDATION OF PANCREATIC PUTREFACTION (USEFULNESS AS INTESTINAL ANTISEPTICS.)

The method is that previously described. The results are shown in Table 6. The efficiency of sodium benzoate and sodium salicylate, of creosote, and of bismuth subnitrate, are especially remarkable. The relative inefficiency of citarin, glutol, guaiacol carbonate, and even of salol, are equally surprising. The partial efficiency of those methylene products, which the chemical tests showed to be undecomposed, is evidently due to the action of the original substances, and not to the liberation of formaldehyd.

TABLE 6.—RETARDATION OF PANCREATIC PUTREFACTION.

A.—Putrefaction prevented.		Odor.
Sodium salicylate.....	{	More after 4 days in incubator and 3 days at room temperature.
Sodium benzoate .....		
Creosote .....		
Bismuth subnitrate.....		
Novaspirin .....	{	None after 4 days in incubator (urasol has a slight wintergreen odor).
Ur-a-sol .....		
Hexamethylenamin ...		
B.—Putrefaction retarded (in descending order).		
Tannoform .....	Very slightly putrid in 3 days.	
Sodi-forma-sal .....	Very slightly putrid in 2 days.	
Iodomuth .....	Very slightly putrid in 1 day (does not increase).	
Formidin .....	Slightly putrid in 1 day, more marked in 4 days.	
Salol .....	Slightly putrid in 1 day, more marked in 3 days.	
Guaiacol carbonate.....	Slightly putrid in 1 day, more marked in 2 days.	
Tannopin .....	{	Slightly putrid in 1 day, very putrid in 2 days.
Glutol .....		
Guaialin .....	Markedly putrid in 1 day, very putrid in 2 days.	
C.—Putrefaction not retarded.		
Citarin .....	{	Equally putrid in 1 day.
Water .....		

#### PUTREFACTION OF BLOOD (USEFULNESS AS WOUND ANTISEPTICS.)

Duplicate samples, each of 15 c.c. of fresh defibrinated beef blood and 0.2 gm. of the drugs, were kept in stoppered test tubes at about 40 C. from the morning of February 10 to the evening of February 17, being observed at the end of 2, 4, and 7 days. The tubes to which no drug was added were slightly putrid and of a garnet color at the end of 2 days. The odor was more marked in 4 days and remained about the same at 7 days.

The antiseptic effect is shown in Table 7. The succeeding tables show the associated effects on the color of the blood. The relative inefficiency of glutol is again

remarkable. On the other hand, the efficiency of iodoform, boric acid, and bismuth are worthy of notice.

As regards bismuth subnitrate, I have frequently encountered the statement that it should not be used on delicate surfaces, because the sharply pointed crystals of which it consists, must render it irritant. This seems to be purely theoretical, and would, of course, hold only if the crystals possessed some degree of hardness. As a matter of fact, it is easy to convince oneself to the contrary by dusting a little of the powder into the conjunctival sac. Delicate as this is to any mechanical irritation, the subnitrate causes absolutely no pain.

TABLE 7.—PUTREFACTION OF BLOOD.

A.—Prevented completely.		Odor.		
Boric acid.....	}	None in 7 days.		
Iodoform.....				
Quinine sulphate.....				
Teranaphenol.....				
Xeroform.....	}			
B.—Almost completely prevented.				
Bismuth subnitrate...			}	None in 4 days, very faint in 7 days.
Acetanilid .....				
Orphol .....				
Formidin .....				
Ur-a-sol .....	}	No odor in 2 days, slightly putrid in 4 days, not more in 7 days.		
Iodomuth .....				
Chloretone .....				
C. Putrefaction delayed.				
		(That is, the odor developed more slowly but in the end was pronounced, although not as strong as in the next class.)		
Glutol .....	None in 2 days, slightly putrid in 4 days; markedly putrid in 7 days.			
Guaiacol carbonate ...	}	None in 2 days, marked in 4 days.		
Tannoform .....				
Tannopin .....				
Tannin .....	Slight in 2 days, marked in 7 days.			
Salol .....	Slight in 2 days, marked in 4 days.			
D.—No antiseptic action. (The odor in 2 days is as pronounced as in the control tubes).				
Calcii carbonas.				
Carbo Ligni.				
Cerri oxalis.				
Zinci oxidum.				

#### VI.—DISCUSSION OF THE INDIVIDUAL PRODUCTS.

It will be interesting to compare the results of these experiments with those of other investigators, and from the standpoint of the Council, especially with the claims and statements of the manufacturers of the several products.

##### HEXAMETHYLENAMIN.

This substance was introduced into medicine mainly through A. Nicolaier,<sup>8</sup> after careful chemical, physiologic and clinical studies. His results are in complete agreement with mine; except that I am not completely satisfied but that the substance as such may have some antiseptic action. The main results are that the substance is absorbed and excreted promptly and mainly unchanged; that it liberates formaldehyd readily but slowly and persistently under the conditions of the body and urine; that it is the urinary antiseptic par excellence, vastly surpassing all the other substances tried; that it is not quite so effective as other preparations against molds; that it also prevents pancreatic putrefaction, although its prompt absorption would probably preclude its use as an intestinal antiseptic. My experiments did not bear on the reported diuretic and urate-solvent properties.

##### TANNOPIN.

This is recommended as an intestinal astringent and antiseptic, passing unchanged through the stomach, but slowly developing in the intestine the actions of tannin and formaldehyd. It is also claimed on the authority

8. Deutsche Archiv. Clin. Med., 1899, xxxviii.



of E. Schreiber<sup>9</sup> that some of the hexamethylenamin passes unchanged into the urine.

My results indicate that it is probably acted on to some extent in the stomach. No trace of it could be discovered in the urine, which was not rendered antiseptic. The pancreas and the blood experiments would assign to it a very low value as intestinal antiseptic; they give no information as to its astringent action.

#### FORMIDIN.

I have not seen the advertising literature for this product, so that I shall merely quote my conclusions:

The substance contains methylene, salicyl, and iodid groups. These are not liberated by water, dilute acid or alkalies, or distillation. (This agrees with the observations of Zernik and Puckner). It contains a small quantity of free iodine as impurity; it was not decomposed by pancreatic digestion. This negative result of the salicylate and iodid tests in the urine proves definitely that formidin was not absorbed and therefore, that it was not decomposed in the human intestine. It had only a slight retarding action on pancreatic putrefaction, and a somewhat stronger action on the putrefaction of blood.

Formidin is an inferior wound and intestinal antiseptic; it is not a urinary antiseptic.

It may be fair to add that the manufacturers, in a letter to the secretary of the Council, submit evidence that relatively enormous doses of formidin, when confined in a ligatured intestine, may sometimes be decomposed to a slight extent. The description of the experiments was not very detailed, nor could they materially affect the above conclusions.

#### FORMA-SAL COMPOUNDS.

The Organic Chemical Company markets under this group-name various salts of methylene disalicylic acid. In regard to them, the circulars of the company remark:

"The demerits of salicylic acid which cause its disuse—the positive irritation to all mucous membranes; that awful sense of rawness and burning in the stomach, along with a disgusting nausea . . . are absent in the Forma-sal Compounds." I have found both ur-a-sol and sodi-forma-sal pronouncedly and persistently nauseating.

The advertisements claim that formaldehyd is gradually split off, and acts as a urinary antiseptic and uric acid solvent. I have found no evidence that formaldehyd is split off, and the compounds have no discoverable antiseptic action on the urine. This agrees with Frankel's statement.<sup>10</sup>

It is claimed that these compounds are superior to other salicylates in rheumatism. Since they are to some extent absorbed, it is quite possible that they produce some of the actions of salicylates; but I can discover no grounds for the claimed superiority. The claim that "they are the most valuable salicylic acid compounds known" must be stamped as a gross exaggeration, to say the least.

Ur-a-sol might serve as a fair intestinal and wound antiseptic, but would be inferior to other and much cheaper drugs, such as bismuth subnitrate.

In a letter to the Council, the manufacturers state that the urine, after taking ur-a-sol, gives the iron re-

action for salicylates. This assertion is correct. But the conclusions which they draw from it, namely, that formaldehyd has been liberated, are absurd since the undecomposed methylene disalicylic acid gives the same reaction. Since the manufacturers mention iron as an incompatibility of the drug, they must have been perfectly familiar with this fact. A letter addressed by the secretary to the chemist to whom the statement was attributed, sent several months ago, has remained unanswered.

#### IODOMUTH.

This substance is advised as a wound powder and intestinal antiseptic. The advertisement reads in part as follow:

"Appreciating the sedative and healing properties of bismuth, in union with the desiccating properties of gallic acid, we added to them the antiseptic properties of formaldehyd and the alterative and stimulating properties of iodine and created *the* healing agent."

This implies that the various constituents are liberated on the local application of the powder, and this is further and more specifically stated in other advertisements.

The experiments show that these constituents are not liberated to any marked extent under the conditions of the body; and while the drug may serve as an intestinal antiseptic and as a wound powder, it is in both respects inferior to the cheaper bismuth subnitrate.

#### GUAIACIN.

This is advised as an internal, intestinal and urinary antiseptic in tuberculosis, typhoid, etc. It is stated that its absorption into the blood inhibits the multiplication of pathogenic bacteria. Its decomposition into benzoic acid, formaldehyd and guaiacol is implied, rather than directly stated.

My experiments fail to show any evidence of such decomposition. As an intestinal antiseptic it would be nearly useless; and as it is probably not absorbed, the possibility of its being an internal or urinary antiseptic is too remote for serious consideration.

#### CITARIN, NOVASPIRIN AND SIMILAR PRODUCTS.

Anhydromethylene citric acid is marketed in the form of its sodium salt (citarin); urotropin salt (helmitol or urotropin-new), and salicylic ester (novaspirin). These are rapidly decomposed, when in aqueous solution, with the formation of formaldehyd. This change must necessarily occur also in the body.

In the case of citarin, the manufacturers claim that the formaldehyd thus liberated dissolves uric acid in the body, even to the extent of dissolving the uratic topi of gout! Citarin is, therefore, advertised as an "Anti-Lithemic" in gout, chronic rheumatism, etc. No claims are made for it as an antiseptic. With urotropin-new, however, the methylene was credited with the transmissions of formaldehyd to the urine. Nicolaier,<sup>11</sup> however, successfully challenged this claim and showed that the antiseptic effect on the urine was due solely to the urotropin part of the compound. As a result, I understand that this compound has now been withdrawn from the market.

In the case of novaspirin, no action is attributed to the anhydromethylene-citric acid, beyond that of delaying the absorption of the salicyl radicle. It is classed by the manufacturers purely as a salicyl product.

My experiments do not bear on the urate solvent

9. Deutsch. med. Wchnschr., 1897, No. 49.

10. Arzneimittel Synthese, 2nd edition, p. 293. "Während Methylensalicylsäure im Organismus keine Formaldehyd abspaltet, sondern unverändert im Harn erscheint, . . ."

11. Deutsch Arch. f. klin. Med., 1906, v. 89, p. 170.



properties of citarin, nor on the proclaimed superiority of novaspirin over other salicylic esters. The taste of novaspirin is certainly an improvement on that of the forma-sal products. Its excretion is certainly slower than that of sodi-forma-sal, but does not differ materially from that of ur-a-sol or salol. Both citarin and novaspirin tend to render the urine alkaline, after the manner of citrates, which may in part account for an antirheumatic action.

Although formaldehyd is so readily liberated from the products, it does not seem to exert any antiseptic action, presumably because it is instantly bound by the alkali. Citarin had the weakest antiseptic action on the putrefying pancreas, of all the products studied. It was entirely inactive, so far as the urine is concerned. This failure of antiseptic action makes me feel somewhat skeptical as to the claimed urate-solvent action. The novaspirin was markedly antiseptic to the pancreas, and slightly so to the urine; but this action is evidently referable entirely to the salicyl component.

#### GLUTOL.

This is advised as a wound antiseptic, with the claim that it is itself inactive, but is decomposed by living cells with the continuous liberation of minimal quantities of formaldehyd. Its mechanism of action would therefore be similar to that of hexamethylenamin, but its insolubility would assign to it a very different field of usefulness. My experiments show the following:

Glutol contains some free formaldehyd and a further quantity is liberated in all media. The amount of this free formaldehyd is probably not sufficient to be a serious objection to its use. Pancreatic digestion does not split off a materially greater amount. Since this process is analogous to the digestion by living cells, the specific liberation of formaldehyd by the latter seems somewhat doubtful. The quantity liberated by pancreatic digestion is not sufficient to markedly check putrefaction, the glutol being inferior as a preservative to nearly all the other substances which were tried. Its efficiency on the blood was also poor.

While glutol may be more or less useful in the conditions in which it is advised, the claimed superiority over antiseptics is not borne out by my experiments. It would be distinctly inferior to iodoform, boric acid, or bismuth subnitrate.

#### TANNOFORM.

This is advised externally as a siccative, antiseptic and deodorant, and also as an intestinal antiseptic—presumably on the assumption that it liberates its two components.

My results indicate that it would be decomposed to some extent in the stomach, better in the intestine; that the urine is not rendered antiseptic; that it is a fairly efficient intestinal and wound antiseptic, superior to tannopin in both respects. I can say nothing as to its astringent action.

#### ORPHOL AND XEROFORM.

Orphol (betanaphthol-bismuth) is advertised as an intestinal antiseptic and astringent; xeroform (tribromphenol-bismuth) as an iodoform substitute, and also as an intestinal antiseptic. My experience with both is confined to the observation on the preservation of blood. In this respect, xeroform proved the equal of boric acid, iodoform and betanaphthol; orphol was but little inferior, equalling bismuth subnitrate and acetanilid. While both products would doubtless accomplish

the purposes for which they are advised, my experiments do not show any evidence of their superiority over the other products.

#### VII. GENERAL CONCLUSIONS.

1. The methylene radicle is transformed very readily into formaldehyd with some compounds; much more difficultly or not at all with others.

2. The formaldehyd thus liberated is completely oxidized in the human organism and does not exert any antiseptic action on the urine.

3. Formidin is neither decomposed nor absorbed to any appreciable extent in the intestine.

4. Hexamethylenamin is the only reliable urinary antiseptic (by mouth) of the various substances tried. The salicylates (sodium salicylate, salol, novaspirin) have a distinct, but much inferior, preservative effect. The following are practically useless: Boric acid, citarin, formidin, iodomuth, sodi-forma-sal, sodium benzoate and sodium phenolsulphate, tannoform, tannopin and ur-a-sol.

5. As intestinal antiseptics, the most efficient drugs appear to be bismuth subnitrate and creosote, (also novaspirin and ur-a-sol). These are closely approached by tannoform and iodomuth. Distinctly inferior are formidin, salol, guaiacol carbonate, tannopin and glutol. Guaialin appears nearly useless.

6. As relatively insoluble wound powders, the greatest antiseptic power appears to be possessed by betanaphthol, boric acid, iodoform, quinin sulphate and xeroform. These are closely approached by acetanilid, bismuth subnitrate and orphol. Somewhat inferior are chlorotone, formidin, iodoform and ur-a-sol. Distinctly inferior are glutol, guaiacol carbonate, tannoform, tannopin, tannin and salol. Not antiseptic are cerium oxalate, charcoal, chalk and zinc oxid.

7. Of all the products examined for antiseptic value, hexamethylenamin is the only one which offers undoubted advantages over the older antiseptics. This statement is not intended to reflect on the antirheumatic value of the salicylic products, or on the astringent value of the tannin products.

#### SERUM DIAGNOSIS OF SYPHILIS.\*

WILLIAM J. BUTLER, M.D.

Attending Physician, Cook County Hospital,  
CHICAGO.

The investigations of Bordet and Gengou first directed attention to the possibility of determining the presence of antibodies by an indirect method known as complement deviation. By this means not only could bacterial antibodies be determined, but likewise their corresponding antigen. (The latter term is applied to any bacterium or substance which, when injected into an organism, gives rise to the formation of an antibody.)

It was found by this method that organ extracts, albumins, peptones, etc., produce antibodies, and that this could be shown *in vitro* by bringing together the antigen and its corresponding antibody in the presence of complement. The anchoring of complement was demonstrated by failure of hemolysis to occur in an added inactivated hemolytic system.

\* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



Wassermann and Bruck used this method to show the presence of bacterial substances in organ extracts and corresponding antibodies in sera of patients immunized against them. They employed this method with considerable success in typhoid, tuberculosis and meningitis epidemics.

It occurred to Wassermann that this principle might be applied to demonstrate antibodies in the sera of syphilitics. With this in mind he, with Neisser and Bruck,<sup>1</sup> began a series of investigations.

Their first experiments were made with monkeys. They obtained immune sera by injecting into monkeys extracts of syphilitic organs or lesions procured from syphilitic monkeys or human beings. They afterward mixed the immune serum of the prepared monkey with the extract of syphilitic organs obtained from a dead luetic new-born, added complement, and found that in many instances a fixation of complement occurred, whereas it did not occur when mixed with similar extracts of normal organs nor when normal serum was mixed with syphilitic or normal organ extracts.

They looked on this as a means of demonstrating *in vitro* syphilitic antibodies in the blood serum and syphilitic substances in the organs of luetics.

The first clinical application of this method was reported by Detre,<sup>2</sup> who found specific antibodies in the blood of two out of six luetics he examined.

The examination of 257 specific cases in the dermatologic clinic of Breslau reported by Neisser, Bruck and Schucht<sup>3</sup> showed positive results in only 19 per cent. Their experiments were conducted also with a view of demonstrating antigen, which they found in extracts of blood corpuscles of luetics in a much larger percentage.

The above results have never been quite clear, as they were entirely out of accord with the results of all other investigations and likewise of Bruck's<sup>4</sup> later work in company with Stern.

Wassermann and Plaut<sup>5</sup> examined the spinal fluid of forty-one progressive paralytics and obtained a positive reaction in 78 per cent; nineteen controls, whose spinal fluid was examined, all gave negative results.

Schutze<sup>6</sup> examined twelve tabetics and found antibodies in the spinal fluid of eight. Morgenroth and Stertz<sup>7</sup> obtained a positive reaction with the spinal fluid of eight paralytics and a negative reaction with the lumbar fluid of eight control cases.

Marie and Levaditi<sup>8</sup> confirmed the findings of Wassermann and Plaut by reporting a positive reaction with the spinal fluid of 73 per cent. of thirty-nine paretics, four out of five tabetic paralytics, and two out of four tabetics. They had negative results in a number of controls among cases with diseases of the nervous system not depending on syphilis.

These investigations served to clinch the etiologic association of progressive paralysis and tabes with syphilis.

Although Wassermann first believed this test to be a reaction between luetic antibodies and syphilitic substances contained in the luetic organ extract, it became

evident to those working with the reaction that this was not the case.

Attention was attracted to this by Marie and Levaditi, and confirmed by Fleischmann, Michaelis and others. Levaditi observed that with normal liver extract some delay in hemolysis occurred and that when the normal extract was used in larger quantities a strong anti-complement reaction occurred. A parallel anticomplement reaction was not noticed when the luetic and normal extracts were used in the same proportions.

Levaditi, however, considered the reaction, in view of his negative results in control cases, specific for syphilis.

Weil,<sup>9</sup> following the observation of Levaditi, attacked the specificity of the test. He experimented with extracts of tumors (sarcomas) which he used instead of luetic liver extract, and obtained a positive reaction with syphilitic sera, the same as had been obtained with extracts of normal organs when used in similar quantities. Kraus asserted that he, with Volk, had reported this observation with regard to normal organ extracts before Levaditi.

Michaelis<sup>10</sup> confirmed the work of Levaditi, and held the reaction specific for syphilis.

Landsteiner, Müller and Pötzl,<sup>11</sup> in their investigations, used extracts of guinea-pig liver as antigen. They compared the results of this in the reaction with luetic liver extract and found that they coincided.

Since it has become clearly evident that the active constituents of the extracts concerned in the reaction do not consist of luetic substances, to-wit, *Spirochaeta pallida* of Schaudinn, numerous experiments have been made and are still going on to determine their identity.

Wassermann,<sup>12</sup> with Porges and Meier, Landsteiner, Müller and Pötzl,<sup>13</sup> Levaditi and Yamanouchi,<sup>14</sup> independently of each other, made extracts of syphilitic and normal liver with alcohol and found that such extracts contained the antigen and served for evoking the reaction. Landsteiner used alcoholic extracts of guinea-pig heart and showed that results were obtained similar to those obtained with luetic liver extract.

This observation of Landsteiner, Müller and Pötzl is of great practical importance and will prove of immeasurable advantage in promoting the use of the Wassermann reaction because of the readiness with which guinea-pig's heart can be secured and prepared.

In view of its solubility in alcohol, Wassermann thought that the active constituent must be closely allied to the lipoid bodies. With this in mind, Porges<sup>12</sup> and Meier, under Wassermann's direction, experimented with lecithin and, in fact, found that it caused a deviation of complement with luetic sera.

This has led to investigations with other substances, cholesterin, glycogen, sodium tartrate and glycocholate, vaselin, etc.

Levaditi found lecithin and the sodium salts of the bile acids to work satisfactorily. Fleischmann<sup>15</sup> found cholesterin more satisfactory, compared with the luetic liver extract, than the lecithin.

I have employed both lecithin and cholesterin, using

1. Wassermann, Neisser and Bruck: Deutsch. med. Wchnschr., 1906, xxxii, 745.

2. Detre: Wien. klin. Wchnschr., 1906, xix, 619.

3. Neisser, Bruck and Schucht: Deutsch. med. Wchnschr., 1906, xxxii, 1937. Wassermann, Neisser, Bruck and Schucht, Ztschr. f. Hyg., xlv, 45.

4. Bruck and Stern: Deutsch. med. Wchnschr., 1908, xxxiv, 459.

5. Wassermann and Plaut: Deutsch. med. Wchnschr., 1906, xxxii, 1769.

6. Schutze: Berl. klin. Wchnschr., 1907, lxi, 126.

7. Morgenroth and Stertz: Virchow's Arch. f. path. Anat., 1907, clxxxviii, 166.

8. Marie and Levaditi: Ann. de l'Inst. Pasteur, 1907, xxi, 138.

9. Weil: Wien. klin. Wchnschr., 1907, xx, 527.

10. Michaelis, L.: Berl. klin. Wchnschr., 1907, lxi, 1103.

11. Landsteiner, Müller and Pötzl: Wien. klin. Wchnschr., 1907, xx, 1565.

12. Wassermann: Berl. klin. Wchnschr., 1907, lxi, 1599.

13. Landsteiner, Müller and Pötzl: Wien. klin. Wchnschr., 1907, xx, 1564.

14. Levaditi and Yamanouchi: Compt. rend. Soc. de biol., 1907, lxii, 741.

15. Fleischmann: Berl. klin. Wchnschr., 1908, lxi, p. 490.



guinea-pig heart extract as control in the reaction with luetic sera. My experience is as follows:

I examined eleven syphilitic sera with extract of guinea-pig heart and with lecithin. Eleven were positive with the extract and ten with lecithin. The intensity of the reaction with the same serum varied somewhat as between the extract and lecithin. In six the reaction resulted alike. In two the reaction with extract was more marked and in two more marked with lecithin.

Seven syphilitic sera were examined with both extract of guinea-pig heart and cholesterolin. Seven were positive with extract and six with cholesterolin. The result of reaction was alike with both in four cases. In two cases the extract gave a more marked reaction than cholesterolin.

In the search for the active chemical constituent of the extracts Sachs and Altmann<sup>17</sup> used sodium oleate as antigen and obtained positive reactions with syphilitic sera. Continuing their experiments, Sachs and Altmann<sup>18</sup> found that they could prevent the reaction between luetic sera and alcoholic extract of luetic liver by the addition of an appropriate dilution of sodium hydrate, and likewise in some instances could convert a negative reaction between normal sera and luetic extract into a positive reaction by the addition of properly-diluted hydrochloric acid. They came to the conclusion that either syphilitic sera differentiate themselves from other sera by a lessened alkalinity, or that (which they considered more likely) the special quality of the syphilitic sera is to be sought in another factor, for the reaction of which, with the lipoids, the diminished alkalescence is necessary.

Following close on the experiments with lecithin as antigen in the syphilis reaction, Porges,<sup>19</sup> in company with Meier, worked out a modification of the serum diagnosis for syphilis. They found that luetic or meta-luetic sera precipitated lecithin from solution. The test consists in mixing equal parts of a 0.2 per cent. suspension of lecithin in distilled water and serum of a suspected patient in a test-tube and incubating for five hours. If it is a syphilitic serum, a flocculent precipitate forms. Kraus, in discussing the subject at the time, asserted that the specificity of the Porges test was supported by the experiments of Eisler. Nobl and Arzt<sup>20</sup> shortly thereafter published their results of the Porges reaction. They examined eighty-three cases and found a positive reaction in 81 per cent. of them.

Fritz and Kren's<sup>21</sup> investigations of the Porges reaction showed that while it was positive in 63 per cent. of fifty-one cases of manifest syphilis, it was also positive in 65 per cent. of seventeen cases of tuberculosis of the lungs and skin that they examined. Using sodium glycocholate in place of lecithin in twenty-six cases of syphilis they obtained positive results in 65 per cent., while they obtained only 18 per cent. of positive reactions with this salt in tuberculosis.

The complete shattering of the specificity of this test is found in the report of Eisler,<sup>22</sup> whose results Kraus<sup>23</sup> had apparently misinterpreted when he quoted them as sustaining the specificity of the Porges reaction. Eisler reports that precipitating and non-precipitating animal

sera give the lecithin but not the Wassermann reaction, and that sera of tuberculosis cases give it in about the same proportion as cases of syphilis.

Porges and Meier<sup>24</sup> have recently published the results obtained in the examination of 100 syphilitic sera by means of the watery extract, the alcoholic extract of luetic liver, the lecithin suspension and by their method of precipitation with lecithin. They found the results of the lecithin reaction to run parallel to those obtained by the complement fixation method.

Another modification in the serum diagnosis of syphilis was presented by Klausner,<sup>25</sup> who reported that on mixing one part of serum with three of distilled water and allowing it to stand at room temperature a flocculent precipitate formed in from one to fifteen hours.

In a subsequent report by Klausner<sup>26</sup> he states that in his controls he obtained positive reactions in five severe lupus cases, five typhoid cases and three cases of pneumonia. The reaction depends on the precipitation of globulin which is increased in infectious diseases. It would seem to lack specificity for syphilis.

Parallel tests carried out by me with the Wassermann, Porges, and Klausner reactions gave the following results in nine cases of syphilis:

	+	-
Wassermann reaction .....	9	0
Porges " .....	6	3
Klausner " .....	2	7

Although we are apparently closer to a solution of the theoretic basis of the Wassermann reaction, any final statement at this time would seem, from the experimental results so far recorded, unwarranted.

It would appear from the evidence at hand that there is some substance in the sera of syphilitics not contained in non-syphilitic sera which has an avidity for certain substances contained in luetic and normal organs, and also in guinea-pig organs, and for certain lipid bodies, as lecithin, cholesterolin, etc. (Wassermann).

After this extended consideration of the development and theoretic basis of the serum reaction I shall take it up in its practical aspect.

The specificity of the test is a matter of paramount importance from a practical standpoint. Fortunately the statistical proof now before us from different and reliable sources is sufficient to establish the specific character of the reaction.

In practically every case the controls examined by various investigators have proved negative. Even Weil, who attacked the specificity of the reaction in the first instance, and later with Brann the specificity of the antigen, was not able to secure the reaction with non-syphilitic sera. At the same time their results with syphilitic sera bespeak its specificity.

Following are some of the results of examinations recorded:

DETBE<sup>2</sup> obtained positive reactions with the sera of 2 out of 6 luetics.

WASSEMMANN AND PLAUT<sup>3</sup> examined the spinal fluid of 41 paralytics; 78 per cent. of the reactions were positive. They also examined 19 controls; findings all negative.

MORGENROTH AND STERTZ<sup>4</sup> examined the spinal fluid of 17 paralytics and metasymphilitics; 53 per cent. of the reactions were positive; in the spinal fluid of 8 controls, the findings were negative.

MARIE AND LEVADITI<sup>5</sup> examined the spinal fluid of 39 progressive paralytics; 74 per cent. of the reactions were positive;

17. Sachs and Altmann: Berl. klin. Wehnschr., 1908, lxy, 494.

18. Sachs and Altmann: Berl. klin. Wehnschr., 1908, lxy, 699.

19. Porges: Wien. klin. Wehnschr., 1908, xxi, 206.

20. Nobl and Arzt: Wien. klin. Wehnschr., 1908, xxi, 287.

21. Fritz and Kren: Wien. klin. Wehnschr., 1908, xxi, 386.

22. Eisler: Wien. klin. Wehnschr., 1908, xxi, 422.

23. Kraus: Wien. klin. Wehnschr., 1908, xxi, 206.

24. Porges and Meier: Berl. klin. Wehnschr., 1908, lxy, 731.

25. Klausner: Wien. klin. Wehnschr., 1908, xxi, 213.

26. Klausner: Wien. klin. Wehnschr., 1908, xxi, 363.



in 5 tabetic paralytics, 80 per cent. of the reactions were positive.

CITRON<sup>27</sup> examined 108 cases of evident or suspected syphilis; 74 per cent. of the findings were positive.

FLEISCHMANN AND BUTLER<sup>28</sup> examined 41 syphilitics and suspected luetics; in 70.7 per cent. of the cases the findings were positive.

MICHAELIS<sup>29</sup> examined 12 cases of certain and suspicious lues; 75 per cent. of the reactions were positive; of 23 controls, 2 reactions were positive.

M. WASSERMANN AND MEIER<sup>30</sup> examined 39 suspicious cases; 69 per cent. of the reactions were positive.

SCHUTZE<sup>31</sup> examined 12 cases of tabes; 75 per cent. of the reactions were positive.

FISCHER AND MEIER<sup>32</sup> examined 114 syphilitics; 83.7 per cent. of the reactions were positive.

MEIER<sup>31</sup> examined 118 cases of lues; 81.7 per cent. of the reactions were positive; in 21 controls all the findings were negative.

KRONER<sup>32</sup> examined 40 cases of suspected lues; 75 per cent. of the reactions were positive; in 10 controls all the findings were negative.

MÜHSAM<sup>33</sup> examined 80 cases; obtained positive results in 48. All of the latter proved syphilitic by examination or as the result of treatment.

KAREWSKI<sup>34</sup> examined 18 suspected cases; the reactions were all positive.

WEIL<sup>35</sup> examined 9 luetics; 88 per cent. of the reactions were positive.

WEIL AND BRAUN<sup>35</sup> examined 15 metasyphilitics; 80 per cent. of the reactions were positive; of 7 controls all the findings were negative.

MICHAELIS AND LESSER<sup>36</sup> examined 63 syphilitics and suspected syphilitics; 74 per cent. of the reactions were positive.

MÜLLER<sup>37</sup> examined 197 cases of syphilis; 94 per cent. of the reactions were positive; of 500 controls 97 per cent. of the reactions were negative.

BLASCHKO<sup>38</sup> examined 270 luetics; 87 per cent. of the reactions were positive.

The varying percentage of positive reactions obtained depends on the class of cases examined. In the statistics of some writers, cases with manifest symptoms dominate; in others, metasyphilitic and latent cases make up a good share.

The uniformly negative reaction found in controls and the large percentage of positive reactions in luetic and suspiciously luetic cases not only establish the specificity but likewise the reliability of the test.

On these two points the clinical value of any blood test depends, and when they have been fulfilled, as with the serum diagnosis of syphilis, it is evident that its clinical value is settled as a diagnostic test.

Right here attention should be directed to what a positive reaction implies and what may be interpreted from it. A positive reaction only indicates that the patient has syphilis, whether acquired or inherited. Whether or not this systemic infection is the cause of a pathologic change in some organ or tissue must of necessity be learned from other clinical facts. In other words, a positive reaction may be valued as an indication

of systemic infection and not used decisively in making specific organ diagnosis.

Unfortunately the performance of the reaction itself is attended with difficulties which may discourage many who undertake it. Some of these difficulties have been removed by the employment of alcoholic extracts, as the watery extracts were decidedly unstable.

The substances employed in the reaction and their preparation are as follows:

1. *Blood Serum of Suspected Luetic*.—This is obtained as follows: Collect blood from the vein or finger, allow it to clot; remove the separated serum; centrifugate to clearness; pipette off into test-tube, and inactivate at 56 C. for one-half hour.

2. *Organ Extract*.—Take luetic liver or guinea-pig heart and rub up fine with sand in mortar, add 95 per cent. alcohol in proportion of 50 c.c. to one gram of guinea-pig heart. Place in flask and heat in water bath at 60 C. for an hour. Filter through paper filter and keep at room temperature ready for use.

3. *Complement*.—Guinea-pig serum is used. Collect blood from heart of guinea-pig in sterile flask; allow to coagulate and remove the separated serum. Keep on ice ready for use.

4. *Hemolytic Serum*.—Inject a 5 per cent. mixture of washed sheep's-blood corpuscles into a rabbit every week or ten days for four or five times. A week or ten days after the last injection the blood may be removed from heart, serum collected, inactivated, and kept on ice ready for use.

5. *Washed Sheep's-Blood Corpuscles*.—Sheep's blood is obtained from the jugular of a sheep in a sterile flask and defibrinated by glass pearls. It is washed with salt solution two or three times and then mixed with salt solution either in the proportion of 5 per cent. or 50 per cent., according as one adheres to the cubic centimeter plan or drop method for measuring quantities.

As the serum reaction is usually performed, all constituents of test are calculated in fractions of a cubic centimeter and the quantities so diluted with salt solution that each cubic centimeter of dilution represents the desired quantity.

The suggestion of Landsteiner, Müller and Pötzl greatly simplifies this method and takes far less material. They measure the proportion of ingredients to each other by drops.

Before the actual performance of a reaction it is necessary to test material to be used:

1. To standardize the amboceptor.
2. To see that extract alone does not bind complement, or hemolyze sheep's corpuscles.
3. To see that the blood corpuscles have not hemolyzed.
4. To see that the complement is active.

The standardizing of amboceptor is effected by determining what dilution of amboceptor in a drop dose will dissolve in a half hour in an incubator one drop of 50 per cent. suspension of sheep's corpuscles with one drop of complement; a definite amount of salt solution, ten drops, is added as diluent. Twice the strength of this is used in test.

It is desirable to test the extract before each reaction is undertaken to see that it alone does not delay the hemolysis. With this point in view, a drop of extract and one of complement, in ten drops of salt solution in test-tube, are incubated one-half hour and then amboceptor and blood corpuscles are added. Hemolysis should occur within a half hour.

If the blood corpuscles have stood for some days they may have hemolyzed, as may be judged by color of supernatant fluid.

Complement should not be used after the third day.

When all ingredients used in the test are suitable the

27. Citron: Deutsch. med. Wchnschr., 1907, xxxiii, 1165.

28. Fleischmann and Butler: THE JOURNAL A. M. A., 1907, xlix, 934.

29. Wassermann, M., and Meier: Deutsch. med. Wchnschr., 1907, xxxiii, 1287.

30. Fischer and Meier: Deutsch. med. Wchnschr., 1907, xxxiii, 2169.

31. Meier, G.: Berl. klin. Wchnschr., 1907, xxxiii, 1636.

32. Kroner: Berl. klin. Wchnschr., 1908, xxxiv, 149.

33. Mühsam: Berl. klin. Wchnschr., 1908, xxxiv, 14.

34. Karewski: Berl. klin. Wchnschr., 1908, xxxiv, 15.

35. Weil and Braun: Berl. klin. Wchnschr., 1907, xxxiii, 1572.

36. Michaelis and Lesser, F.: Wien. klin. Wchnschr., 1908, xxi, 289.

37. Müller: Wien. klin. Wchnschr., 1908, xxi, 282.

38. Blaschko: Berlin klin. Wchnschr., 1908, xxxiv, 694.



performance of the reaction is facilitated and never disappointing.

It is necessary to introduce a few known syphilitic sera and at least as many normals in every test, these serving as controls for suspected sera.

In performing the reaction each serum is tested with and without the extract to see if in the first instance the combination inhibits the hemolysis, and in the second instance that the serum alone does not do so.

Occasionally the serum alone will hasten the hemolysis over the control in which the complement, amboceptor and blood corpuscles are contained, because of the fact that some sera possess a slight amount of amboceptor for sheep's blood corpuscles (Michaelis<sup>10</sup>).

The performance of the reaction is as follows:

For each serum two small test-tubes are required and several tubes for controls of the materials as above, these being repetitions of the tests of material made before beginning the reaction. Add ten drops of salt solution to each tube. Add a drop of serum to each of the two tubes used for a given serum. Then add two drops of organ extract to one of them. To one of the control tubes add two drops of organ extract. To all add a drop of complement. Shake tubes and place in incubator for one hour. Remove and add a drop of standardized amboceptor and one drop of 50 per cent. suspension of sheep's blood corpuscles. Incubate for an hour and a half and then read the result. All controls with sera alone, with normal sera, and with organ extract alone, should be hemolyzed. If in tubes containing suspected sera and organ extract hemolysis has occurred they are regarded as negative. Those containing sera and organ extract, in which hemolysis has not occurred at all or only incompletely, are positive.

Uncertainties not infrequently arise in reading the result of reaction. These are invariably traceable to a failure to test materials used in the reaction, failure of sufficient controls on the material, or of control sera, both syphilitic and non-syphilitic.

I have examined 125 cases. Twenty of these were controls in which syphilis could be, from examination and history, reasonably excluded. Among the control cases were typhoid, pneumonia, neurasthenia, etc., all of which reacted negatively.

Various classifications are used in reporting cases by different authors. I have grouped mine under two main heads, with subdivisions. These include:

First, cases with manifest or suspected syphilis and cases giving a history of syphilis.

Second, cases with lesions of the nervous or cardiovascular systems in which syphilis was either acknowledged, denied, suspected or unsuspected.

Of the first division there were 61 cases.

1. There were in the primary stage, either with initial lesions or before appearance of secondary symptoms, 4 cases: four positive.

2. In the secondary stage were 25 cases: 24 positive, 1 negative.

3. In the tertiary stage were 17 cases: 16 positive, 1 negative.

Of latent cases there were 15: 8 positive, 7 negative.

In the second division there were 44 cases: positive reaction in 75 per cent. Forty per cent. of these either had no knowledge of infection or denied same.

CLASS 1.—Taking up the first group of cases it will be observed that of the cases with luetic manifestations, forty-six in number, 93 per cent. gave a positive reaction. This coincides closely with the recent publications already cited for this class of cases. Some variations in percentages will necessarily result because of the method

of classification used by different authors, some of whom have classed metasyphilitic cases among the syphilitic with manifest symptoms, for which there is undoubtedly much justification, in view of the recent light thrown on the subject by this test.

Of interest to the syphilologist is the result of this reaction in the primary stage. In a large percentage of cases with the initial lesion, this reaction is found positive. This is of great value, not only in analyzing a venereal infection, to-wit: chancreoid with possible chancre, urethral chancre, etc., but it is of immense advantage from a therapeutic standpoint, deciding the diagnosis in many instances at once, in case any doubt existed from a point of view of clinical diagnosis and indicating the therapeutic course.

Attention should be directed to the advantage of this test in syphilophobia.

Of the latent cases, fifteen in number, 54 per cent. gave a positive reaction. This forms one of the interesting phases of the syphilis question developed by this reaction. Some of these patients, which number among them those that have been well treated and others indifferently treated, have been free from symptoms for a number of years.

The question whether the latent cases that are negative to the reaction may be regarded as safe and whether those that give a positive reaction are in danger of a recurrence, is of great practical importance and at the same time presents difficulties of solution not easily overcome at this time.

Recently Fleischmann<sup>15</sup> has reported three cases that did not give the reaction, but in which the patients within a few months had a recurrence of symptoms. He does not state how long it was from the time of the initial lesion.

The following interpretation of a negative result of the test may be considered as according with our present knowledge. The absence of reaction, even when symptoms are lacking, does not necessarily mean that the patient is cured, but simply that his infection is quiescent, but it gives no assurance beyond this point.

While it may be rash to express an opinion as to the existing anatomic condition or destiny of latent cases, free from symptoms for a number of years, which give a positive reaction, the following statement of Lesser, made a number of years ago and recently quoted by Blaschko,<sup>18</sup> may be of some interest and also of value. Lesser stated that certain diseases occur in late syphilis, besides the so-called tertiary manifestations, which are not exactly to be reckoned in the gummatous affections, diffuse changes which develop slowly in apparently healed luetics and which also under circumstances can lead to death. He was able to find in about 9.5 per cent. of all autopsies, investigated by him, signs of such specific disease processes, which during life had produced no symptoms or at least were not generally diagnosed as syphilis, viz.: aortitis, etc.

On statistics collected by Blaschko and Jacobsohn, Lesser estimated that about 20 per cent. of the male population of Berlin were infected with syphilis and he maintained that the 9.5 per cent. which had shown evidences of specific processes, postmortem, represented 50 per cent. of those earlier infected with syphilis. Blaschko and Jacobsohn, from a study of insurance statistics, came to the conclusion that in one-third of the cases of syphilis, death could be traced to the disease. In luetics, therefore, syphilis is a cause of death



in about 33 per cent. of the cases; but there are demonstrable changes in the organs of deadluetics in 50 per cent. of the cases, which latter percentage coincides with the percentage of positive reactions found in latent cases of syphilis.

While it would be unjustifiable at this time to draw any conclusions from this coincidence, it would seem a safe proposition that cases which give a positive reaction, even though they may not show evident manifestations, should receive serious consideration for treatment, because, irrespective of the above statements of Lesser, it is observable in a certain proportion of the cases that a diminution or disappearance of the reaction will occur under treatment. Just what the latter indicates at this time with regard to cure or abeyance of the infection, no one is prepared, supported by statistics, to state.

Fleischmann and I in our first communication on this subject made note of the observation that the reaction failed in some cases under anti-specific treatment and in others that had been previously well treated, thus coinciding with Citron's observations. On the other hand we examined cases under similar circumstances that gave the reaction.

Müller<sup>27</sup> and Blaschke<sup>28</sup> and also Citron found a disappearance or diminution of the reaction in a third of their cases under treatment. In this matter the factor of time must be of importance; one patient may require a much more prolonged treatment (as is the case clinically with regard to disappearance of symptoms) to bring about a negative reaction, than is needed in another case.

This point has apparently not received any attention, namely, that the factor of time is not defined as it should be in estimating the effect of treatment on the reaction.

Just what effect antiluetic treatment may have on a patient to influence the serum reaction is a matter of conjecture.

While examining sera I tried to determine the effect of a 1-10,000 mercuric chlorid solution on various substances used in the reaction. No effect was produced on complement, amboceptor, or blood corpuscles in whatever combination used. It exerted anything but a uniform action where it was used in the reaction with the extracts.

This may be best shown by presenting results of examinations by extracts without and with mercuric chlorid solution.

The results only are recorded under headings "extract" and "extract and mercuric chlorid solution." The number of + signs express the intensity of the reaction. I have included results of examinations with lecithin and cholesterolin.

Extract.	Cholesterolin.	Extract + Mercuric Chlorid Sol.
2+	1+	3+
1+	1+	—
1+	—	—
4+	2+	2+
1+	1+	1+
1+	1+	2+
2+	2+	—
	Lecithin.	
2+	1+	—
1+	1+	1+
1+	—	—
4+	4+	4+
1+	2+	—
1+	2+	1+
1+	1+	1+
1+	1+	1+
3+	2+	1+
3+	3+	3+
3+	3+	—

Reaction with extract and mercuric chlorid solution equal to reaction with extract alone 7 times.

Reaction with extract and mercuric chlorid solution stronger, 2 times.

Reaction with extract and mercuric chlorid solution weaker, 2 times.

Reaction with extract and mercuric chlorid solution abolished, 7 times, whereas with extract from 1+ to 3+.

Mercuric chlorid solution abolished the reaction in 39 per cent. of cases.

Class 2.—Following is a synopsis of the diagnosis and result of reaction:

- Brain syphilis, 5 cases: All gave positive reaction; two of these denied luetic infection.
- Cerebrospinal syphilis: 1 case gave positive reaction; patient gave history of lues.
- Hemiplegia, 9 cases: 7 gave positive reaction, 2 negative. Six patients gave history of specific infection, 5 of whom gave a positive reaction. Two (no specific history obtainable) gave a positive reaction. One denied infection and gave a negative reaction.
- Spinal lues, 3 cases: 2 gave a positive reaction. One of these denied infection. The third patient gave history of infection. Reaction was negative.
- Transverse myelitis: The patient in one positive case acknowledged syphilis; in one negative case the patient denied infection.
- Case of uncertain diagnosis in which the patient gave a history of syphilis proved positive to the test.
- Tabes, 15 cases: 8 gave a positive reaction, 7 a negative. In the positive cases 7 patients acknowledged lues, 1 denying it. In the seven negative cases 2 patients gave history of syphilis, 1 denied infection. From history of 3 others previous infection was strongly probable. In 1 no record was obtainable.
- Epilepsy, 2 cases: in women, developed in middle life; the reaction was positive.
- Neuritis, 3 cases: Two of the patients denied syphilis. All gave a positive reaction.
- Vascular disease, 5 cases: All gave positive reaction. One of these with intermittent claudication, denied lues.

In the tabes cases examined by me the percentage of positive reactions is somewhat low. This class of cases, and likewise many of the other metasymphilitic cases that gave a negative reaction, are so often subjected to antiluetic treatment that it is more than probable that this is the cause of failure of reaction in some of them. Schutze found eight of twelve cases of tabes positive; Citron<sup>27</sup> reported thirteen of fifteen cases and Fleischmann<sup>15</sup> thirteen of eighteen cases positive.

A detailed consideration of cases is deemed impractical in this brief paper.

#### CONCLUSIONS.

The serum reaction for syphilis is specific.

It is found positive in from 90 per cent. to 95 per cent. of all cases with syphilitic manifestations.

It is found positive in 50 to 60 per cent. of latent cases.

It is found positive in from 70 to 80 per cent. of parasymphilitic diseases.

The reaction is in many cases influenced by treatment of the patient and it is not improbable that this number would be greatly increased if the reaction were pursued throughout prolonged treatment.

A positive reaction indicates activity of the specific virus, and is an indication for antisymphilitic treatment.

While a positive reaction indicates syphilis, a negative reaction does not have an equal negative value.

It is diagnostic of a systemic infection whether acquired or inherited and not an organ diagnostic measure.

The reaction will be found of enormous advantage in differential diagnosis in every department of medicine.



## DISCUSSION.

Dr. KARL K. KOESSLER, Chicago: Dr. Butler says that it makes no difference whether the reaction is made with syphilitic organ extract, with an alcoholic extract of a normal rabbit's heart, or with lecithin, according to Porges and Meier. I can not confirm his opinion. Although the Porges-Meier reaction is said to work with lecithin only, researches made in this line at Vienna have shown that results are obtained in only 45 per cent. of cases, while the Wassermann reaction gives about 90 per cent. The Porges-Meier method, however, involves quite a different principle from Wassermann's, being a precipitin reaction having nothing to do with the deviation of the complement. Any one who, like Dr. Butler, has worked out a great many cases, knows what a long process Wassermann's method is. Certainly it would be much simpler to use the alcoholic extract instead of the syphilitic; but comparison between positive results in each method gives preference to the original procedure of Wassermann. It is perhaps better, in accord with Levaditi's modification, to use a dried extract of the liver of a syphilitic fetus, in order that it may be preserved and a solution made when needed. On account of the enormous responsibility for the physician in making the diagnosis of syphilis he should use the method which gives the greatest number of reliable results and in uncertain cases repeat the test three times at intervals of ten days and make the positive diagnosis only within the month.

Dr. WILLIAM J. BUTLER, Chicago: Time would not permit the reading of that part of the paper referring to the Porges-Meier reaction. I used the Porges reaction in a small number of cases and compared it with the Wassermann and the Klagsner reactions. Recent investigations show that it is not specific, because it is found that tuberculosis will give a positive reaction in about as large a number of cases as will syphilis. I did not find it positive as often as I did the Wassermann reaction in the cases of syphilis in which I used it. I notice, however, that Porges and Meier in a recent publication have compared the Wassermann and lecithin reactions and report almost as many positives with the latter as with the complement fixation method.

As to the relative value of alcoholic and salt solution extracts, Wassermann contends that the latter extracts give a more reliable reaction than the alcoholic. I can not say that in my own observation I have had an opportunity to compare the aqueous saline solution and the alcoholic extracts with the same sera; but it seems to me, comparing my previous experience with the aqueous extract, that the alcoholic works as well as the salt solution and it has the immeasurable advantage of being stable. I do not know of anything more difficult than to work with the salt solution extracts. They are most unreliable; sometimes in a few hours, or over night, a large quantity of liver extract will go wrong and be useless. Every test made is controlled by a series of normal and syphilitic sera. The use of these controls obviates any chance of error. If under these circumstances a suspicious serum is found positive, it can be said without hesitancy that the patient has syphilis.

## THE NATURE AND THE CAUSE OF EDEMA.\*

MARTIN H. FISCHER, M.D.

OAKLAND, CAL.

## INTRODUCTION.

The remarks that follow represent one of the possible applications of a principle which for some time past I have been interested in establishing experimentally, namely, that in the variable affinity of colloids for water we have the explanation of many of those physiologic

phenomena which are characterized by a storage or a migration of water.<sup>1</sup>

If we ignore certain "vitalistic" conceptions of edema in which fantastic properties of "living" cells are supposed to account for the phenomena observed, the increased amount of water held by tissues in a state of edema is usually attributed to "changes in blood pressure," and to "alterations in the permeability of vessel walls." The alterations in the permeability of vessel walls have never been demonstrated experimentally, and all efforts to produce states of edema through simple increase in blood pressure have failed. The slight edema observed by some investigators after prolonged intravenous injections at high pressure of enormous amounts of various liquids can be explained more easily by changes brought about in the colloids than through simple pressure effects.

Here and there one meets a phrase in the discussion of edema which suggests that the author at least assumes the possibility of a cause for this condition in the tissues themselves, but I know of no experiments planned to actually prove this point, or of any attempts to define the nature of these tissue changes physico-chemically, except those of Jacques Loeb,<sup>2</sup> who, ten years ago, tried to find in an increase in the osmotic pressure of the tissues the cause of the increased absorption of water. The inadequacy of this explanation has since become apparent, but the experimental facts adduced by this author to show that the cause of edema resides essentially in the tissues are of permanent value, and should have received a recognition at the hands of pathologists which has never been accorded them.

## THE CAUSE OF EDEMA RESIDES IN THE TISSUES.

For a starting point in our discussion it is well to take the results of some experiments which prove conclusively that the cause of edema resides primarily in the tissues. When this is proved we can say that tissues become edematous not because water is forced into them, but because they absorb water from liquids flowing through or about them. An analysis of the changes in the tissues leading to the increased absorption of water may then be attempted.

My experiments consisted in passing a ligature about one hind leg of a frog or a toad sufficiently tightly to close both the veins and the arteries of that leg, and then placing the animal in a vessel containing enough water to cover the legs. A ligature placed just above the knee where lack of musculature makes ligation of the vessels an easy matter proved most satisfactory. In such an entire absence of the circulation the ligated leg begins to swell and in the course of a few days develops an intense edema. The edema is well marked at the end of twenty-four hours, and in two or three days the weight of the ligated leg may come to be almost twice that of the unligated leg.

The picture presented by the edematous legs is a duplicate in every way of the most intense states of edema observed clinically. The tissues are boggy, pit on pressure, and when incised allow the escape of fluid. If the ligature is left in place for two to three days small vesicles form which may enlarge into great blebs con-

\*From the Laboratory of the Livermore Sanatorium, Livermore, Cal.

\*Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Fischer, M. H.: Physiology of Alimentation, New York, 1907, pp. 268, 182-187, and 267-269. Fischer, M. H., and Moore, Gertrude, *Am. Jour. Physiol.*, 1907, xx, 330.

2. *Pflüger's Archiv. für die gesammte Physiologie*, 1898, lxxi, 468.



taining a blood-stained serum.<sup>3</sup> Later, these blisters rupture and allow the escape of their contents, and the weight of the ligated leg diminishes. This progressive diminution in weight continues due, in part, to loss of substance, in part to changes which no longer allow the leg to hold the large amount of water it once held,<sup>4</sup> until finally the ligated leg weighs no more than the unligated. If the animal is kept sufficiently long (two to three weeks) the ligated leg is lost entirely (gangrene).

The increase in the weight of the ligated leg is entirely due to the absorption of water. This water is held in the skin, in the tissues composing the body of the leg—chiefly the muscles—and in the lymph spaces found between the skin and the underlying tissues. With this third division must be mentioned the fluid found in the blisters, which it is well to point out, in passing, are formed in the body of the skin.

As is to be expected, the development of an edema in the ligated leg of a frog or a toad kept in a little water will occur when the animal has been pithed just as well as in the normal animal, but if the frog or toad is killed, the difference in the weight of the two legs does not appear. This is not, however, because the edema does not develop in the ligated leg, but because it develops equally well in the other leg (which has through the death of the animal been deprived of its circulation). Herein is found the explanation of the fact that the tissues of dead bodies which are kept in water swell.

An objection which is likely to be lodged against my experiments is that I did not tie the ligatures sufficiently tightly to shut off both veins and arteries. That this was accomplished is proved by the fact that if the frog or toad was kept in a dry vessel the ligated leg soon dried so as to become brittle, while the unligated leg remained moist.

#### CHARACTER OF THE TISSUE CHANGES IN EDEMA.

It is clearly shown by these simple experiments that the severest grades of edema may exist without the presence of any "blood pressure" or a demonstrated "increased permeability of blood vessel walls." I shall try to show now that edema represents nothing but an increased affinity of the tissue colloids for water. Such an increased affinity of the colloids may be brought about in either or both of the following ways: *First*, in conditions leading to edema, various substances (particularly acids) capable of greatly increasing the affinity of colloids for water are not removed as they should be or are produced in abnormal amounts, and *second*, colloids having but little affinity for water are changed into such as have a greater affinity.

The first of these two factors plays the predominant rôle and is the only one discussed in this paper. We may regard it as settled that the amount of water held by a tissue under normal circumstances is essentially a function of its colloidal constitution for the same external circumstances which make certain so-called hydrophilic colloids either take up or give off water, make animal tissues do the same.<sup>5</sup>

If, now, the conception of edema as a condition in

which this affinity of the tissue colloids for water has been abnormally increased is correct, it must be possible to prove three things: (1) That protoplasm is colloidal in constitution. (2) That in the variable affinity of colloids for water we have a force of sufficient magnitude to account without strain for the maximum amount of water ever found absorbed by tissues in a state of edema. (3) That conditions leading to an increased affinity of their colloids for water exist in the tissues under circumstances associated with the development of an edema. We shall briefly consider each one of these.

1. Since the classical researches of Hofmeister, Pauli, Hardy and a few others, it is no longer questioned by any one that protoplasm represents a colloidal solution in which may be found embedded or dissolved a greater or smaller amount of extraneous material that need not be directly connected with the vital activities of the cell. Since colloids may, however, exist in several states, it is well to decide in which they are present in the cells. For our purposes it is best to distinguish between such colloids as have the power of swelling when placed in water (the so-called hydrophilic colloids) and such which do not possess this property. Many reasons can be adduced to show that protoplasm represents essentially a mixture of several hydrophilic colloids. Not only do dried albumin, fibrin, gelatin, etc., swell when placed in water, but a direct analogy can be proved to exist between the swelling of muscle, for example, and fibrin. The same conditions which make fibrin either take up or lose water, make frog muscle do the same.<sup>5</sup>

2. It must now be shown that in the affinity of colloids for water we have a force of sufficient magnitude to account without strain for the maximum amount of water ever found to be absorbed by tissues in a state of edema. This can be done very easily. The severest edemas found in frogs no more than double the weight of the normal leg. Some observations made on patients indicate that the severest states of human edema give values which lie far below this.

We will now, for the sake of argument, neglect the inorganic constituents of the tissues, and say that three-fourths of the body represents water, and only one-fourth various organic substances. These organic substances belong almost all of them in the group of the colloids. On the basis of the figures which I have just given, 1 gram of dry body substance would therefore equal 4 grams of moist body substance, and this in a state of edema may absorb enough water to double in weight, that is weigh 8 grams. In terms of the dry weight of the body, the colloids are therefore required to absorb in a state of edema, seven times their weight of water. It will be sufficient evidence to show how easily colloids accomplish such an absorption of water when I use as an illustration the amount of water that fibrin will absorb under appropriate circumstances. In a weak solution of acid or alkali, dry fibrin may absorb from 20 to 40 times its weight of water.

3. Lastly, it must be proved that in conditions leading to edema substances are formed which are capable of increasing what we may call the normal affinity of the tissue colloids for water. Various substances are capable of markedly influencing the amount of water held by a hydrophilic colloid.

With the exception of alkalies, we find that acids, including carbon dioxide, are the most powerful substances thus far known for increasing the affinity of colloids for water, and it is in either the retention or the abnormal

3. A circulatory system and the pressure of circulating liquids have therefore, nothing to do with the formation of blisters. The necessary elements for the formation of such pathological structures reside entirely in the tissues themselves.

4. The tissues of the leg undergo autolysis. In consequence colloids having a great affinity for water are changed into such as have a lesser affinity, or they may be reduced even to crystalloids.

5. Fischer, M. H., and Moore, Gertrude: *Am. Jour. Physiol.*, 1907, xx, 339.



production of acids in the tissues as rendered possible in conditions leading to an edema, that I see the chief cause for its development. To illustrate how powerfully a little acid modifies the amount of water absorbed by a colloid, we need only recall the fact that while fibrin will scarcely swell sufficiently in distilled water to double its weight, it will hold twenty times its weight of water if a little acid is added.

The production of acids in conditions leading to edema has been shown repeatedly. In the described experiments in which one leg of a toad or a frog is ligated, the acid reaction of the tissues may be sufficiently pronounced to evidence itself with the use of any of the common indicators. In some analyses of various edema fluids made in Prof. Friedrich Müller's clinic in Munich I found that these always showed an acid reaction toward phenolphthalein, even after the carbon dioxid contained in them had very largely been allowed to escape. We know, moreover, from Hoppe-Seyler's analyses that edema fluids contain various acids—lactic, valerianic, succinic, butyric—from Strassburg and Ewald's accounts that their carbon dioxid tension is far above that of ordinary venous blood and from Araki's studies that in conditions associated with a lack of oxygen—just such a state as is produced through circulatory disturbances—organic acids are produced in excessive amounts. Ranke's observation that a muscle after exercise absorbs more water than a resting one, coupled with the fact that acids are produced during muscular activity, also finds a ready explanation through changes brought about in the state of the colloids and lends support to the ideas advanced here.

#### CONCLUDING REMARKS.

It may not be amiss, in conclusion, to point out a number of facts which in a sense are corollaries of what has been said. Attention has already been called to the fact that dead bodies kept in water become edematous. This is due to the fact that after death the tissues become acid, and absorb water from their surrounding medium. For the same reason gangrenous tissues swell if a source of water is furnished them either from without or through the blood and lymph vessels. In gangrene due to occlusion of a vein it is well-known that the tissues are ordinarily moist and swollen, while a gangrene due to occlusion of an artery is ordinarily dry.

The conception of edema offered here holds for local as well as generalized edemas. In fact, one form of local edema furnishes what amounts to experimental proof of the ideas advanced. Reference is made to the rapidly developing edema which follows the stings or bites of various animals capable of carrying formic or other acids into the wound produced by them. Formic acid is exceedingly active in increasing the affinity of various colloids for water. This explains why its introduction into the tissues—as through a flea bite—is followed by such a rapidly developing local edema. That circulatory disturbances are not primarily responsible in this case is indicated very clearly by the fact that the edematous tissues are initially white and only after resolution has commenced does an increased flow of blood occur through them. "Flea bites" can, in fact, be perfectly mimicked with a needle, a little formic acid and a hydrophilic colloid. If a gelatin plate is pricked with a needle dipped into formic acid, and a little water poured over the gelatin plate, wheals soon develop on the surface of the gelatin, which, in shape and in the rate

of development, are identical with those which follow the bite of a flea or the prick of a formic-acid-laden needle in the skin of a human being.

As another form of local edema which finds a ready explanation on the basis of the ideas advanced here, we may mention glaucoma, and the imbibition of water by the crystalline lens. Even if we do not accept the view that no circulation whatsoever occurs through the vitreous and aqueous humors, we must at least admit that a well defined circulation as maintained through blood and lymph vessels is difficult to demonstrate experimentally. Workers on the eye have therefore been unable to find the explanation of glaucoma in any disturbances in the pressure, *per se*, of circulating fluids; and no attempt has ever been made to account for the absorption of water by the crystalline lens, for here the absence of a circulation is only too apparent. The facts observed are, however, easily explained when it is remembered that the humors of the eye and the crystalline lens represent typical colloidal bodies and that not alone the production of the slightest amount of acid or an accumulation of carbon dioxid, even a mere decrease in the absolute or a slight shifting of the relative concentrations of the various salts found in these substances is followed by so great an absorption of water that the severest grades of clinical glaucoma are easily accounted for.

I wish, finally, to say a word regarding the active or passive migration (diapedesis) of the formed elements of the circulating fluids into the tissues. My reason for bringing up this point at this time is because in the later stages of edema the red blood corpuscles frequently pass over into the tissues, and I would like to protest against the present generally accepted belief that the red blood corpuscles, for instance, pass out of the blood vessels through so-called stomata. Such an idea, is, on its very surface, gross, if not absurd, for how can such holes exist in the blood vessel walls? The histologic evidence of their existence is entirely inconclusive. I would like to call attention to a property of colloids which allows a ready explanation, not only of the passive passage of such formed elements as the red blood corpuscles through the walls of the blood vessels, but also the active movements of the amoeboid cells. It is perfectly possible for one colloid to pass through another without losing its identity or leaving any mark behind indicative of its passage. The passage of a liquid body through a colloid can be very nicely illustrated by the movement of a mercury drop through a solidified gelatine of the proper concentration. Under the influence of gravity a mercury drop will move anywhere through a gelatin mass, in which, of course, there are no stomata, and leave no evidence of its passage behind. Similarly red blood corpuscles can, under the influence of a pressure not exceeding that in the blood vessels, be blown into a stiffened gelatin. Here one colloidal body moves through another. Whether one such body will pass through the other is simply a matter of relative surface tensions. Under ordinary circumstances this relation is not such in the body as to allow the red or white blood corpuscles to pass into the tissues (we might say be swallowed), but in lack of oxygen, under the influence of chemical agents (chemotaxis), etc., the proper ratio may be produced.

For the same reason that red and white corpuscles are capable of passing into and through the tissues, bacteria may be taken up by either fixed or motile cells.



Pathologists have often wondered how a bacterium may enter the tissues at one point, and leave behind no evidence of entrance. This is because one colloid body may pass through another: from the alimentary tract, for instance, into the walls of the intestine and through this into one of the circulatory systems, and again out of these through the substance of the kidney into the urine.

In this way an infectious agent may wander through any of the tissues of the body, provided the proper surface tension relationships are present, without leaving behind any mark indicative of its passage. Through discussion of the opsonin special interest has recently been attached to the methods by which the surface tension relationships of bacteria to fixed or motile cells may be altered under physiologic and pathologic conditions. An opsonin is nothing but a substance to which has been given an evanescent name, which is capable of so altering the relationship of surface tension of bacterium to cell as to allow the former to be taken up. Many conditions are capable of markedly changing surface tension relationships, and there can be no doubt that we shall on some day not far distant become acquainted with innumerable simple chemical bodies which will, when added to mixtures of leucocytes and bacteria act as our now mysterious "opsonins." We must, however, carefully distinguish between the mere inclusion of an infectious agent and its destruction. Many workers on the opsonin take the swallowing of a bacterium by a cell and its destruction to be synonymous. This is a grave mistake and can not be too vigorously guarded against. Inclusion and destruction are two separate processes, and their mechanism must be separately considered.

#### DISCUSSION.

DR. A. J. CARLSON, Chicago: I am not familiar with the pathologic side of edema as such. Of course, when one ligates a frog's leg, as Dr. Fischer has done, one produces very abnormal conditions. As far as I know, in the case of local edema at least, there is no evidence of the formation of this specific substance. I think, however, that there is something in this suggestion, but it is only one of the factors in the tissue cell. I do not know that we can throw away the conception of such terms as secretion, inasmuch as terms like that stand for a mass of material the nature of which we do not understand. Nobody, of course, pretends to say that such terms are positive. I think that perhaps two more factors must be considered in edema, namely, the lymphatics and also the blood vessels.

DR. A. D. HIRSCHFELDER, Baltimore: The conditions of edema in which the limb is ligated and both circulation and lymph flow are cut off are to be differentiated sharply from those in which there is some residual circulation. In the former case, as shown by Loeb ten years ago, differences of osmotic pressure are possible, and probably actually occur. I am under the impression that Loeb did demonstrate some difference between the osmotic pressure of the tissues of the frog's legs above the ligatures as compared with the parts below them. In the latter case the circulation is always rapid enough to allow osmotic interchanges to go on, and marked differences in osmotic pressure do not take place. I therefore think that this is the difference between the two forms of experimental dropsy. The injection of formic acid and other substances certainly brings about injury of the endothelial walls of the capillaries quite as much as it does the very interesting phenomenon of absorption by colloids.

DR. W. H. WELCH, Baltimore: Are the phenomena Dr. Fischer finds applicable to all forms of edema? It can hardly be that a single explanation can apply to all varieties of edema, the mechanical as well as the cachectic. We shall

probably not have a clear understanding of edema, of the events, for example, which intervene between the occurrence of passive hyperemia and the accumulation of fluid in the tissues, before the physiologists have settled many disputed matters connected with the production and absorption of lymph. There are certain striking peculiarities of pulmonary edema which must be taken into account on any hypothesis framed to explain this variety. As is well known, general pulmonary edema can appear very suddenly and can disappear with equal rapidity. Can the factors which Dr. Fischer believes to be operative explain these features of pulmonary edema?

DR. H. G. WELLS, Chicago: One thing which Professor Welch just said has always troubled me in applying most of the questions in relation to edema forms: that is the formation of pulmonary edema, particularly the alveolar form in which edema occurs where there are practically no cells and where there is nothing to cause fluid to run. Why should there be an accumulation of fluid in the alveolar space where there are no cells to attract the fluids? To provoke the alveolar fluid? But there is too little of it to account for the rapid production of edema.

DR. W. B. CANNON, Boston: Dr. Fischer stated that gelatin was capable of taking up fifteen to twenty times its weight of water. As I understand it, that is the dry weight. I should like to know whether the initial amount of water normally associated with the colloids would still allow enough more to be taken to account for the results we see.

DR. MARTIN H. FISCHER, Livermore, Cal.: It seems to me that when marked edema can be produced, as it is certainly produced in these frogs, it is going out of the way to limit trouble to insist that the lymphatic circulation must play a rôle. The burden of proof rests on this side of the argument. I am much more inclined to believe that the lymphatic circulation is the consequence of tissue activity than that it causes tissue activity. There is no circulation in these ligated frog's legs and the edema has to be explained without a circulation.

So far as the physiologic functions of the endothelium are concerned we may, of course, if we wish, use the word "secretion," but the word is not an explanation. I believe that we are going to find the explanation of the secretion of fluid into the alveoli of the lungs and into tissue spaces generally in changes in the colloids of the surrounding tissues. These after having become edematous seem to suffer a secondary change, an autolysis perhaps, through which their affinity for water is decreased, and they drop a part of their water, as it were "secrete" it into the alveoli or tissue spaces. I do not care to discuss this point further because I am experimenting on it.

To illustrate my remarks to-day, I spoke only of such colloids as can absorb water and maintain their shape. This was done to prove that colloids have an intense affinity for water independently of any osmotic conceptions. As a matter of fact the lymph and different body fluids often have enormous amounts of colloids suspended in them, and these particles in such pseudosolution also have an immense affinity for water, which I have not at all considered in my paper.

I consider it quite immaterial whether an edema is produced slowly or rapidly—whether the circulation is shut off in a moment by tying a string around the leg, or the leg is deprived of oxygen more slowly, the condition affecting only the rate of development of the edema and having nothing to do with its essential cause.

The question whether the ideas advanced are applicable to all forms of edema is one that must be tested and answered by the future. My answer now is "yes." There are a large number of edemas. The simplest forms develop in consequence of heart lesions, thrombosis, and things of that sort. When edemas similar in nature to these are produced in frogs the acid formed is so high that it shows itself readily when litmus paper is touched to the muscles. The edemas of nephritis, for instance, I explain by saying that poisonous substances are produced or retained in this condition which act on the tissues of the body and so alter their metabolism that substances capable of increasing the affinity of the colloids for water, such as acids, are produced. These acids would



then influence the colloids of the tissues. Various irritant oils when painted on the skin will produce an inflammatory edema, but these oils when applied directly to such colloids as gelatin or egg albumin, do not increase the affinity of these substances for water. We know, however, that there are a number of poisons which produce changes in the tissue that are entirely analogous to those produced through direct lack of oxygen. Potassium cyanid when present in a tissue produces all the changes characteristic of lack of oxygen—the production of acids and the swelling and bursting of the cells affected. But the details of how edema is produced by such indirect means has to be worked out.

All my remarks had to be more or less dogmatic. I do not believe that my ideas must necessarily account for everything in the pathology of edema. Just now it looks to me as though changes in the colloids would explain 97 per cent. of it. Osmotic ideas seem to account for less than 3 per cent. Some day probably with new conceptions in physical chemistry, my own 97 per cent. will be reduced to 40, 30 or 20 per cent.

A question raised was that of the rate of development of edema. I consider it one of the best arguments in favor of the views advanced that colloids are capable of changing their affinity for water in the short periods of time sometimes allowed tissues to develop an edema. In five minutes fibrin will readily take up or give off an immense amount of water. Were I to add a little calcium chlorid to a tube filled with swollen fibrin, it would make the fibrin shrink to the bottom in a few minutes, the change is so rapid. The reverse experiment can also be made. This very rapidity I consider one of the best arguments against the osmotic conception of edema. As a matter of fact, the most rapidly developing edemas observed clinically take more than minutes. One of the substances which is most markedly capable of influencing the affinity of fibrin for water is calcium. Calcium is about the only drug that ever does any good in many of the so-called urticarial diseases. Since urticarial eruptions are essentially local edemas, is it not probable that through administering calcium salts by mouth, we increase the calcium content of the tissues and thereby lessen the tendency of the tissues toward a development of these local edemas?

## THE CARE OF PATIENTS AFTER ABDOMINAL SECTION:

WITH ESPECIAL REFERENCE TO THE PERIOD OF TIME THEY SHOULD BE KEPT RECUMBENT.\*

C. C. FREDERICK, B.S., M.D.

BUFFALO.

Having heard so much in discussion and having read so much in medical journals about allowing patients to get out of bed after abdominal operations in from five to ten days, it has occurred to me to ask why it is needful to do these things; what are the results from doing these things; and, wherein is the new idea an improvement on the old.

I am just old-fashioned enough to believe that it is harmful, in a vast majority of the cases generally subjected to severe abdominal operations, to get patients up in the short periods of time which are being advocated by so many at present; and I still adhere to my plan of keeping most patients recumbent for two or three weeks. With the exception of appendectomies, not acute. I would say that no patient having an abdominal section should sit up before sixteen or eighteen days, and for the following several reasons:

1. From two to three weeks are required to secure more perfect and more solid union of the incision, thus

preventing postoperative hernia. Early in my operative experience I used only the through and through silk-worm gut suture, then in vogue, in closing abdominal wounds. These sutures were removed in from seven to ten days, and the patients generally sat up in two weeks. Either I or someone else had the felicity of closing postoperative ventral hernias for about one in every three of the patients who were thus treated, and I assure you I had no small proportion of them on my hands, with all their discontentments, complaints and scoldings. No doubt all of you, as I have myself, have been obliged at various times to re-open an abdomen in a week or ten days after the first operation, and often the catgut or other suture material is cut, the incision may be opened down to the peritoneum by the fingers or handle of a scalpel with the greatest ease; although the parts are adherent, the line of union is so tender that separation by pressure is easily done. In another week or ten days you will find the effort to separate the line a very different proposition; the line of union is strong and resists separation.

During the past twelve to fourteen years I have used the tier suture and kept my patients recumbent for eighteen days, and I have not seen a postoperative hernia in 1 per cent. of my cases. I admit that buried animal sutures play a part in the success, but I believe that the same care in suturing and allowing patients to be about in a week will be followed by frequent hernias.

2. The majority of subjects of abdominal section are reduced physically and need rest, in order to build up bodily vigor. Especially if nervous exhaustion is present the principles of the rest treatment should be carried out and the patient placed in a better condition to proceed to normal recovery.

We are liable, in surgical work, to lose sight of the patient and his general bodily condition and center our attention on the surgical lesion for which we operate. Does the removal of the surgical lesion which has made a patient ill, or which has invalidated him, restore his health? No; no more than putting out a fire restores the building which it has demolished. It is simply the removal of a cause of invalidism, but it does not at once tend to set in motion the normal performance of all the functions of assimilation and upbuilding of blood, muscle and nerve which the patient needs to be well.

A sick person undergoes operation for the purpose of getting well, not to be sent home in a week or ten days and remain sick. I know personally of many such who are still sick and ailing, simply because their body was never given the chance to build up. Patients expect to be well as soon as the operation is finished. They always expect that. The surgeon allows them to return to their homes and their usual round of duties—the result being that they use their strength as fast or faster than they can make it, and remain semi-invalids. I am speaking now of patients who are really sick and debilitated when operated on. A person in full vigor, with an operation for strangulated hernia, or some similar acute condition is a different proposition. Such patients will, if they avoid the danger of hernia, recuperate in spite of getting about so soon.

The shock to the digestive apparatus, in the debilitated is often severe and requires from a week to ten days before the normal functions of these organs are re-established. In the meantime decrease in quantity of ingested food and consequent lack of nourishment has

\* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



still further debilitated the patient. I can not see how it is possible to advise a person in such physical condition to try to be about. We might as well, for instance, advise a bankrupt, where everything is on the minus side of the ledger, to go into the market and take advantage of great bargains in the prices of stocks and bonds. He must be built up, accumulate some working capital, before venturing into investments.

This is an age of specialism. Unfortunately, the class of specialists who are growing up to-day are specialists from the college to the grave; not as they were among the earlier and older men in the special departments, first general practitioners and then specialists. The older and earlier specialists saw beyond the focus of their specialist lenses. I fear the horizon of the coming specialists is becoming narrowed. There are coming into active prominence many young men who have known from practical experience very little of the interrelations of local and general conditions. I feel that it is a mistake to allow this doctrine of looking at the local conditions and ignoring the general conditions of the patient to gain ground with these rising young specialists; for their view is going to be narrow enough without any such teachings.

By keeping debilitated patients in bed after operation, feeding them well as soon as they can digest and assimilate food, assisting assimilation by favoring elimination of waste products by keeping the skin, bowels and kidneys active, together with massage to help on the lymphatic and venous return circulation, thus building up muscular tissue, are we doing our best to restore the patient to a condition whereby he can continue to improve after he is able to arise from enforced rest?

64 Richmond Avenue.

#### DISCUSSION.

DR. H. J. BOLDR, New York: I do not think any one who practices surgery would for a moment consider treating his patients in one manner without exception. We have all gone over this field so frequently that I do not think it would be necessary for any one to emphasize again that patients must be treated individually, and that the general system must be considered in the after-treatment. Has Dr. Frederick ever tried the early mobility of abdominal section patients to such an extent as to permit him to form an opinion as to the result of this form of treatment? I believe that Dr. Ries deserves credit for first calling attention to the early mobility of patients a number of years ago. I was doubtful of the results, as were many others, until I had tried the plan and accumulated a large experience from personal observation. I repeat what I said three or four years ago, that if one will observe his patients, there is no other treatment that will compare for the rapid convalescence of the patients, with early mobility, provided that everything is favorable for such treatment.

So far as subsequent hernias are concerned, I do not wonder that one-half of the patients by the old method of suturing did subsequently have hernia. If, however, we use the present method of suturing and subsequently place a properly adjusted abdominal support on the patient, there is no reason why any such patient should get hernia. I have re-examined several hundred patients and have failed to see a single instance of hernia from a clean case. This is true not only from my own observation, but from that of some of my pupils and assistants who have carried out that line of treatment.

I maintain that if patients feel inclined to get up within twenty-four hours, they may do it with perfect safety. It is not necessary that they get up, but if they feel so inclined and do it, convalescence is more rapid. They should eat whatever they want unless it is especially contraindicated. Atten-

tion should be paid to the general health of the patient, and then, following out this line of treatment, I am confident that a more rapid convalescence and early resumption of household duties will be accomplished.

PROF. AUGUST MARTIN: My own experience is in favor of allowing patients to move as soon as they like after laparotomy. Usually they do not like to get up the first day, but on the second day they like the fun of moving, and if they wish to get out of bed the third or fourth day, I do not object. I do not hurry them, and if any one wishes to stay somewhat longer in bed, I do not object, but I make them sit up on the third or fourth day. My own experience in this question is a somewhat long one. I recall one of my earliest cases of splenectomy. When I came to look after the patient on the fourth day, I did not find her in her bed and was told that she had gone out. I found her sitting out of doors and enjoying it very much, and there was no trouble whatever.

We must differentiate these cases and if there is any other trouble, from the lungs or the heart, or any other condition, we should be cautious and look after the patients with some care, not allowing them to go out if there is any symptom of any kind of disorder. The question as far as abdominal operations is concerned, I think is settled by sufficient experience so that we may recommend this treatment. The question is not, however, settled regarding the lying-in cases. We do not keep patients in our puerperal cases in bed as long as we did before. We have undergone another change in respect to puerperal cases; we do not force patients to starve. We nourish them from the very beginning. This is another point that must also be kept in mind for cases of abdominal operation; we do not withhold food as long as we did before. In puerperal cases the conditions are different in that there is an organ in which we find a large wound which must heal, which is not fixed as we can fix the abdominal organs.

When the puerperal interns is moving and sinking, I think that the danger of any disorder may be more imminent. In spite of that, it seems to me that the permission to get out of bed early is dependent only on the necessity of the case. If puerperal women are forced to go to work early, then I think it is better to keep them in bed for a longer time. But if they can be cared for quite comfortably, they might be allowed to go out of bed as soon as they like. In the question of thrombosis or other disorders, my experience is that these conditions are less frequent if the patient is not kept in bed a long time. We have made progress by following the advice to allow patients to get out of bed rather early after laparotomy.

DR. C. C. FREDERICK, Buffalo: I think that many young men beginning operative work are liable to be led away from the principles of taking into consideration the individual and not the operation. A great many of these young men are turning out patients who should not be turned out early and not discriminating between the different cases. I do not keep every patient in bed. I spoke of a certain class, of neurasthenic women particularly, who do better if they are kept in bed for ten days or two weeks with rest treatment. I still maintain that there is a class of debilitated women that do better under the rest treatment. I know the value of this method, because I have tried it in my own family. If those patients are made to get up early, within a week or ten days, they do not do so well. If, however, they are carried along under the rest treatment, they get up in better condition.

---

**Prevention of Typhoid.** F. S. Hammond, Trenton, N. J. (*Jour. Med. Soc. New Jersey*), states that in so far as the specific cause of the disease is definitely known and its means of dissemination understood, typhoid fever is a preventable disease, the only rational prophylaxis being not only the safeguarding of common food and water supplies, but the early recognition and isolation of infective individuals and the immediate destruction of the specific organism as it leaves the body.



## ANAPHYLAXIS INDUCED BY BACTERIAL PROTEINS.\*

D. H. BERGEY, M.D.

Assistant Professor of Bacteriology, University of Pennsylvania, PHILADELPHIA.

The discovery of the production of hypersensibility, in animals to horse serum, egg white, etc., suggested the possibility of a similar hypersensitization to other proteid materials. It was thought possible that the protoplasm of bacterial cells might lead to similar effects, and in consequence there might be danger from the employment of bacterial vaccines where for some reason the interval between a first and second dose was sufficient for the hypersensibility to develop.

In order to determine whether the foregoing conceptions were correct, a series of experiments was outlined in which guinea pigs received a small dose of a living bacterial culture which was followed, after an interval of fourteen or more days, by a second injection of the same organism.

I selected for the organisms to be employed in these experiments some of the common saprophytic bacteria so as to exclude the possibility of infection. The organisms employed were: *Bacillus cereus*, *B. megatherium*, *B. subtilis* and *B. mesentericus*. These organisms were selected because they are generally regarded as being non-pathogenic and they grow readily on the ordinary culture media, so that it is easy to secure a considerable mass of bacterial cells for injections.

The injections were always made into the peritoneal cavity, and the size of the sensitizing doses was either 0.2 c.c. or 0.5 c.c. of a bouillon culture. The second injection ranged from 5-10 c.c. and was always administered intraperitoneally.

There were fourteen experiments with *B. cereus*, of which nine resulted in the production of what was considered as a typical reaction, and two of the results were regarded as atypical. Three of the animals died as the result of the first injection or of some intercurrent cause.

There were six experiments with *B. megatherium* in one of which there was an atypical reaction, and in one case there was induced a purulent peritonitis which terminated fatally three days after the second injection. The other four animals had rather mild symptoms (hypersensitization) from which they recovered.

There were three experiments with *B. subtilis* in one of which there was an atypical result, while the other two had severe symptoms, but subsequently recovered.

There were three experiments with *B. mesentericus* in one of which there was a typical result, while in the other two severe symptoms were developed, but the animals recovered in twenty-four hours.

There were also three experiments in which the guinea pigs had been sensitized with *B. megatherium*, *B. subtilis* and *B. mesentericus* respectively, and received a second injection of *B. cereus*. Though each of these animals died, as well as two normal animals injected with the same culture to serve as controls, it is evident from the symptoms and lesions that these results were due to the toxic effects of the organisms. In none of these five instances was a typical effect produced, and death resulted in from three to five hours after the injection.

Contrary to my expectations at least some of the cultures which I employed in my experiments were found to be capable of producing fatal effects, especially *B. cereus*, and hence it is impossible to be certain as to the outcome of the experiments. It seems, however, that, as a rule, the fatal termination occurs far more rapidly in the sensitized animal than in the normal control animal, and there is also a more marked pathologic reaction in the sensitized than in the normal animal.

The results which have been regarded as typical were as follows: In a few minutes after the injection of the second dose, the animal manifests movements which indicate irritation of the peritoneal cavity, followed at times by scratching of the head and face, followed later by profound prostration, twitchings, convulsions, stupor, and death in one-half to two or three hours.

At autopsy there was at times marked subcutaneous edema, and the peritoneum, stomach and intestinal walls showed marked hyperemia, with local hemorrhages into the submucous coat of the stomach and intestines, and at times into the kidney and spleen. The peculiar nervous symptoms which these animals manifest indicate that the central nervous system is involved, and on removing the cranium the meninges are seen to be markedly hyperemic, though no hemorrhages were noticed.

The theories that have been advanced to explain the nature and cause of the hypersensitization of animals to various proteid materials are quite variable, and none appear altogether satisfying. Courmont believes that the first injection leads to the absorption of a natural protective substance and leaves the animal defenseless against a second injection. Bail believes that death is due to the production of a substance which impedes the activity of the leucocytes. Richet suggested that the phenomena are due to the presence in the proteid material of the two bodies, the one causing immunity and the other hypersensibility. Wolff believes that there is no immunity to foreign albumins of the endotoxin class, and that through the solution of the cell walls of the bacteria as the result of protective substances formed because of the first injection, the endotoxins are liberated suddenly and in large quantities. Besredka and Steinhardt believe that the first injection produces a brain lesion which renders the organ especially susceptible to the second injection. Currie believes that the antibody formed because of the first injection unites with the antibody-forming substances of the second injection; their union is rapid and the whole charge of the poisonous substance is freed, giving rise to sudden and severe effects.

Rosenau and Anderson state that it is probable that the first injection induces a reaction resulting in the production of antibodies, so that when the second injection is made there is probably either a union or a reaction between the antibodies and the substances in the material injected subsequently which produces the poisonous effect. Vaughan believes that proteid susceptibility and immunity are different manifestations of one and the same process. Both depend on the development in the animal body of a specific proteolytic ferment which acts on the proteid that brought it into existence. This specific proteolytic ferment stored up in the cells of the animal as a result of the first injection remains in the cells as a zymogen until activated by the second injection of the same proteid. Rosenau and Anderson<sup>1</sup>

\* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Bulletin 36, Hygienic Laboratory, U. S. P. H. and M. H. S.



state that "profound chemical changes, perhaps in the central nervous system, are probably produced by the first injection of a strange proteid." Otto believes he has discovered a specific antibody in the blood serum of the sensitized animal. Gay and Southard attribute the hypersensibility to a "rest" remaining in the blood of the animal from the first injection which they designate "anaphylactin." Lewis states that the hypersensitive reaction depends on the development of a special antibody during the incubation period, which antibody may be transferred to a second animal in the blood serum.

My experiments have been too limited in number and too indefinite in results to permit very positive statements as to the nature and cause of the hypersensibility. However, the definite period of incubation which is necessary for the development of the hypersensibility indicates that some form of antibody is developed as a result of the first injection which takes part in the production of the symptoms and lesions after the second injection. It seems evident that either a poisonous compound is liberated from the proteid of the second injection through the influence of the newly formed antibody or else there is formed such poisonous substance through the union of the newly formed antibody and a portion of the proteid material of the second injection.

Although I have not studied the histologic changes produced in the abdominal organs and in the central nervous system, it seems probable that the poisonous substance formed as the result of the second injection has a direct action on the central nervous system and on the sympathetic nervous system as indicated by the profound influence on the respiratory center of the brain and the pathologic effects as shown by the focal hemorrhages into the internal organs. Histologic study of these organs may throw additional light on this point.

Several attempts were made to prevent the development of the effects from the second injection by two methods; the first consisting of the etherization of the animal before administering the second dose, and the second in the employment of small doses at short intervals instead of one large dose for the second injection. Neither of these methods yielded very encouraging results, but this was probably due, in large part, to the fact that the cultures employed were possessed of some toxic properties.

No attempts were made to inhibit the effects of the second injection through the use of the serum of an animal rendered immune to the particular organism employed. It was found possible to neutralize the effects of a second dose of horse serum by the use of the serum of an animal immune to horse serum. I am unable to say whether the same results would follow with cultures.

The results of the investigation showed that there might be some danger in the use of second injections of bacterial vaccines when the first injection precedes the second by an interval sufficiently long for the development of the sensitizing effects. It is evident, however, that the danger under these conditions would be very remote because the dosage of bacterial vaccines employed ordinarily is too small to be dangerous.

3965 Brown Street.

#### DISCUSSION.

DR. VICTOR C. VAUGHAN, Ann Arbor: I object to the term anaphylaxis. Anaphylaxis means decreased protection, and it seems to me this is overprotection rather than decreased protection, because, as all the work done along this line shows,

the second dose must be, as compared with the first, quite an appreciable quantity.

Dr. D. H. BERGEY, Philadelphia: The cultures I employed were presumably non-pathogenic, but if I were to do the work over again I would use cultures that were killed by some means so as not to produce infection, that I might use the full organism and not the proteid from the organism. That is an important criticism of my work, and I should be guided by it in continuing it.

#### THE ALLEGED URINARY MANIFESTATIONS IN DISEASES OF THE PANCREAS.\*

J. HENRY SCHROEDER, M.D.

Clinician in Medicine, Medical Department University of Cincinnati, Clinical Chemist to the Jewish Hospital.

CINCINNATI.

It has long been an accepted fact that through experimental operations on the pancreas conditions may be produced that lead to certain changes in the urine. On the other hand, until 1901, when the work of Cammidge first appeared, there was not known in clinical medicine any alteration in the constituents of the urine, which was regarded as characteristic of, or as indicating, disease of the pancreas.

At that time Cammidge, of London, described in the *Arris and Gale Lecture*<sup>1</sup> his studies on the urine of patients suffering from pancreatic disease, and the reaction he then described has since become known as the "pancreatic reaction of Cammidge." As the direct result of criticism of his technic and conclusions, that author modified his procedure until he finally published his "improved" or "C" reaction, which is supposedly free from error.

#### THE WORK OF CAMMIDGE.

Briefly stated, the present contention of Cammidge is, that there occurs in the urine of patients having an inflammatory disease of the pancreas, a substance, which, on being boiled with strong hydrochloric acid, will split off, or yield, a body that forms an insoluble compound with phenylhydrazin, after the method of preparing ozazones. With the exception of one case which he studied, Cammidge, in all his writings on the subject, has never attempted to define the nature of the body in question, or of the mother-substance. In the case referred to he determined the body to be pentose. On wholly insufficient evidence, or on no scientific evidence at all, Cammidge declares the crystals to be of a different substance in different diseases, and that their peculiar behavior to certain reagents may, within a minute or two, determine the particular disease from which the patient is suffering.

In an examination of 87 cases of disease of the pancreas, Cammidge found a positive reaction in 71, or in 82 per cent., and a negative reaction in 12. These 12 cases were out of 16 cases of cancer of the pancreas, all cases of acute and chronic pancreatitis having been positive. Of 117 cases of various conditions supposedly non-pancreatic 113 were negative in reaction and 4 positive. Of 50 specimens of normal urine all were negative. Cammidge, therefore, states<sup>2</sup> "The result of the improved or C reaction is an absolute one and is,

\* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. *Lancet*, March 19, 1904; also the complete history of the test and its application, Robson and Cammidge: *The Pancreas, Its Surgery and Pathology*, 1907.

2. Robson and Cammidge: *The Pancreas, Its Surgery and Pathology*, p. 250.



therefore, independent of the personal bias of the investigator." And, again, "We maintain that a positive reaction is strongly suggestive of inflammatory disease of the pancreas, but we are not prepared to contend that it is pathognomonic of disease of the pancreas." Cammidge further states that the reaction disappears when the cause of the inflammation disappears.

#### CRITICISM OF CAMMIDGE'S WORK.

Whatever else is recorded in medical literature on this subject is relative to the work of Cammidge. It was unfortunate that the earlier reports by that author were lacking in that spirit of directness which is found in his later work. Until Cammidge finally determined that the body, which he described in his improved or C reaction, was the substance to be looked for, he worked in the earlier, so-called A and B reactions, with glycuronic acid compounds admixed with the latter. The unscientific and ambiguous claims which he set forth, and his faulty technic called forth a spirit of antagonism in the critical mind. Those who repeated the early experiments of Cammidge unhesitatingly declared them to be wrong in principle and faulty in method,<sup>3</sup> and the subject was then ignored. The few clinical references as to the applicability of any other than the improved or C reaction are, therefore, without value.

With the appearance of this improved or C reaction a working basis was offered for further study. From a scientific standpoint by far the most important work was done by Felix Eichler<sup>4</sup> in the department of experimental biology of the University of Berlin. Eichler produced experimentally in two dogs a pancreatitis purulenta diffusa, and in one dog a pancreatitis hemorrhagica. Before the operation the urine of each dog was found to give a negative reaction. After the operation the urine in each case was found to give a positive reaction. Moreover, he determined the melting point of the crystals to be 182 C, which is not that of an ozazone of glucose, nor that of the compound of glycuronic acid. Beyond that he did not define the substance. It should be noted that Cammidge did not carry out this simple experiment, which should have been the fundamental study in the work, the importance of which he, above all others, conceived.

Eloesser<sup>5</sup> reported from the University Clinic at Heidelberg sixteen cases in which a positive pancreatic reaction was found in the urine, and in which the diagnosis was confirmed by operation. In one case the reaction was positive and there was no pancreatic involvement.

Edgecombe,<sup>6</sup> of London, reports a case of mumps in which the pancreatic reaction was positive. Cammidge himself made the test.

An interesting report is furthermore contained in the article of Watson.<sup>7</sup> Watson obtained a markedly positive reaction in all cases of chronic and acute pancreatitis, the diagnosis having been confirmed by operation, or postmortem; also in the course of other diseases, which were diagnosed as chronic pancreatitis because of the recurrence of suggestive clinical symptoms, such as epigastric pain and jaundice. A marked reaction was also found in a case of constipation, which improved by

proper treatment, and he suggests that pressure of fecal masses on the pancreas may interfere with its function. In this case, and in several others, an alimentary glycosuria was noticed. Watson found, furthermore, a moderate or slight reaction in various other diseases, as of the heart, kidneys, liver, gall bladder, in colitis, gout, arteriosclerosis, alcoholism, and in two cases of exophthalmic goiter, one of which was benefited by the administration of pancreas emulsion, and in one the histologic examination showed round-celled infiltration of the pancreas. Positive reactions were also obtained in gastric ulcer and in malignant disease of the stomach. In many of these apparently non-pancreatic diseases an involvement of the pancreas, at least functional, can not be excluded.

Further contribution to our knowledge of urinary manifestations of pancreatic disease must be made from studies along definite lines. The experimental work of Eichler must be repeated. When the clinical diagnosis of pancreatitis is made it must be verified by operation during life or by necropsy. Lastly, clinical observations must be made in cases in which there are no pancreatic manifestations. The difficulties which are encountered in the effort to produce results that are entirely free from objection, considering the complexity of the material, need not be especially emphasized.

#### ORIGINAL INVESTIGATIONS.

The following observations, which I present as a small contribution to the subject, were made primarily with the object of investigating the occurrence of the pancreatic reaction in the urine in various conditions. During the past six months I have examined the urine from 85 individual cases. In all, 110 chemical analyses were made. Of the 85 patients 50 have been under my personal care, having come under observation for various stomach and digestive disorders. Ten specimens were examined through the courtesy of other physicians, and twenty-five specimens were from patients in hospital wards, having no specific evidence of pancreatic disorders.

#### RESULTS OF THE ANALYSES OF URINE FOR THE PANCREATIC REACTION.

Clinical Diagnosis.	Cases.	Positive.	Negative.
Chronic pancreatitis.....	4	3	1
Cancer of pancreas.....	1	1	
Cancer of stomach.....	3	2	1
Abscess of pancreas.....	1		1
Gallstones.....	4	1	3
Catarrhal jaundice.....	4	1	3
Tuberculosis of peritoneum.....	1	1	
Tumor of upper abdomen, probably of pancreas.....	2	2	
Cancer of liver.....	1		1
Cholecystitis.....	3		3
Tuberculosis pulmonalis.....	2		2
	26	11	15

The remaining 59 cases included arteriosclerosis, myocarditis, angina pectoris, nephritis (uremia), cirrhosis of the liver, constipation, ulcer of the stomach (blood), achylia gastrica and nervous disturbances of the gastrointestinal tract. In all these cases the reaction was negative. Twenty-five of these were miscellaneous hospital ward cases. Thus in the urine of sixty patients complaining of digestive disorders or having diseases of the digestive organs, the reaction was positive eleven times. In three of these eleven cases the clinical diagnosis of pancreatitis had been made. A few details of these cases may be of interest.

*Cancer of the Pancreas.*—The patient was under the observation of Dr. Forchheimer, who made the clinical diagnosis.

<sup>3</sup> Ham and Cleland: *Lancet*, May 14, et seq., 1904; Schroeder: *Amer. Med.*, September, 1904; Wilcox: *Lancet*, July, 1904; Haldane: *Edinburgh Med. Jour.*, November, 1905.

<sup>4</sup> Berl. Klin. Wchnschr., xlv, 1907.

<sup>5</sup> Mitt. a. d. Grenzgeb. d. Med. u. Chir., xviii, 42, 169.

<sup>6</sup> *Practitioner*, February, 1908.

<sup>7</sup> *Brit Med. Jour.*, April 11, 1908.



The patient died shortly after that; no necropsy. The urine gave a more pronounced reaction than any other I have observed. I obtained enough of the crystals to determine the melting point, which was 180 C. So far as I know, this is the only clinical record of a melting point determined of this substance. In view of the fact that Eichler in his experiments on dogs found a body having a melting point of 182 C., it is likely that I obtained the identical substance.

*Chronic Pancreatitis.*—One patient was under the observation of Dr. Bettmann, suffering with violent, colicky abdominal pains, epigastric tenderness and recurring chills and fever. The reaction was well marked and subsided gradually with the patient's symptoms (six analyses). A specimen was immediately re-examined on the recurrence of fever in the course of recovery. The reaction was negative and the cause of the fever was found to be tonsillitis. In a second case, where the clinical diagnosis had been made by Dr. Forchheimer, the urine was examined after the patient had practically recovered. The reaction was negative. The two remaining patients were under my own observation, complaining of "intestinal indigestion": the feces showed excess of fat and muscle fibers. (Reaction positive.)

*Cancer of the Stomach.*—In two cases a positive reaction was obtained. One case under my own observation developed an alimentary glycosuria. The diagnosis was confirmed by operation. There were dense adhesions so that the degree of involvement of the pancreas could not be determined. One case was under the observation of Dr. Bettmann. The operation also confirmed the diagnosis and found the pancreas involved. In a third case, which I was asked to see in consultation with Dr. Schulze, I made the clinical diagnosis of cancerous ulcer of the stomach. The pancreatic reaction was negative. The patient died within ten days, and I had the opportunity of making a postmortem examination. The clinical diagnosis was confirmed; the pancreas was found adherent, but the gland itself was not involved. There were no gallstones.

*Abscess of the Pancreas.*—Under observation of and operation done by Dr. Whitacre. A specimen of urine three days after operation gave negative reaction.

*Gallstones.*—Of four cases operated on, one case, having a stone in the common duct, gave a positive reaction (case of Dr. Bettmann and Dr. Ransohoff); one case, with a stone in the common duct, gave a negative reaction; one case, having much post-operative pain, gradually subsiding, gave a negative reaction (case of Dr. Ransohoff); one case, gall bladder packed with stones, gave a negative reaction. The pancreas at the operation was found to be hard and nodular.

*Catarrhal Jaundice.*—Of four cases examined, one was positive and three were negative.

*Tumor of the Upper Abdomen.*—One case was from Dr. Holt's service at the Cincinnati Hospital. The tumor was regarded as possibly of pancreatic origin. The reaction was positive. No operation. The second case was under observation of Dr. Bettmann. Clinical features the same. The reaction was positive. The feces contained fat and muscle fiber.

*Tuberculosis of the Peritoneum.*—This case was under my observation for three weeks. The reaction was positive during a period marked by attacks of sharp pain (four examinations). Two months later the examination gave a negative result.

#### TECHNIC.

In these examinations the method as described by Cammidge has been strictly followed. His procedure consists in boiling the urine with strong hydrochloric acid, neutralizing the excess of acid with lead carbonate, removing the glyconic acid and other interfering substances with tribasic lead acetate, and the excess of lead in solution with sodium sulphate, and the forming of the ozazone in the usual manner. This method does not permit of modification, except in one particular, which facilitates the work, namely, that one may work with smaller quantities after the initial boiling with acid.

The method that I have found convenient is as follows: 40 c.c. of the urine, filtered, acid reaction, free

from albumin and sugar, are boiled with 2 c.c. of strong hydrochloric acid for ten minutes. After partly cooling, 8.0 gm. of lead carbonate are gradually added. When the reaction is complete, the mixture is chilled, filtered, and 10 c.c. of filtrate diluted to 20 c.c. with distilled water. This solution is precipitated with 2.0 gm. of tribasic lead acetate, filtered, and the excess of lead in solution removed by the addition of 2.0 gm. of sodium sulphate, bringing the mixture to a boil, chilling and filtering to 20 c.c. To this filtrate there is now added a mixture of phenylhydrazin hydrochlorate 0.80 gm., sodium acetate 2.0 gm. and of 50 per cent. glacial acetic acid 1 c.c., and the whole is boiled on a sand bath for ten minutes. The solution is then filtered while hot, and set aside to crystallize. The precipitation of crystals, sometimes only in microscopic quantities, of the characteristic formation of ozazones, makes a positive reaction.

The following precautions must be observed:

1. The urine must not contain albumin or sugar, and must be fresh and filtered clear.

2. Positive reactions must be verified by making the phenylhydrazin test for free sugar in the urine, using the same method without previous boiling. Fehling's test is not sufficiently delicate. The sufficiency of removing sugar by previous fermentation has not been proved.

3. Tribasic lead acetate ( $\text{Pb}(\text{C}_2\text{H}_3\text{O}_2)_2 \cdot 2\text{PbO}$ ) must be employed. The solution of lead subacetate of the U. S. Pharmacopeia is not satisfactory. I have employed it side by side with the tribasic lead acetate and have obtained misleading results with the former. Before realizing this difference I had some correspondence with Cammidge on the subject, and I agree with him that the tribasic lead is the only suitable precipitant, because of the uncertain and indefinite composition of the pharmacopeial preparation. The positive reaction may be marked or may require microscopic examination. I have noted precipitates that were not crystalline and, therefore, negative. Precipitation may take place immediately on filtering or may occur after standing twenty-four hours. Except as to size, the crystals that I have observed in various positive reactions were apparently of the same system. I can not concede any value whatever to such tests as solubility in sulphuric acid, as tending to point to the nature of the disease, and I have, therefore, never applied this test.

#### PATHOLOGY.

The apparent value of the pancreatic reaction in the urine makes it reasonable and of interest to reflect on the nature of the conditions that may give rise to this manifestation. The proven results so far obtained would suggest, first, that inflammatory conditions in the pancreas give rise to the reaction. Second, we may infer that chronic pancreatitis *per se* does not give rise to the condition, because the reaction disappears when the cause, such as gallstones in the common duct, has been removed, the infiltration of the gland, the mark of the chronic inflammation, remaining. The reaction, therefore, can not be said to be the direct result of the chronic pancreatitis, but rather of a functional disturbance coincident with the existence of causative factors. Third, it has been shown that pancreatic tissue contains a larger amount of pentose yielding material than any other tissue in the body. Therefore, disintegration, as in cancer and abscess, may lead to absorption and subsequent excretion of pentose. Fourth, pancreatic



disturbance may lead to incomplete combustion and excretion of substances of the nature of aldehydes and ketones. Fifth, in the presence of fat necrosis, glycerin products, incompletely oxidized, may give the reaction. Sixth, impaired pancreatic digestion in the intestines may lead to absorption of certain substances that give the reaction.

Cambridge himself suggests that in the absence of pancreatitis, conditions accompanied by rapid tissue changes may produce substances giving the test.

#### CONCLUSIONS.

The conclusions that may be drawn at this stage of the investigation are limited. They are as follows:

1. It has been proved that inflammatory and destructive disease of the pancreas may give rise to the appearance of certain, as yet undefined, bodies in the urine, belonging possibly to the sugars or related compounds.

2. The reaction is not pathognomonic for disease of the pancreas, in the clinical sense.

Extensive clinical observations on the urine in pancreatic and other diseases must finally determine the value of the pancreatic reaction.

22 West Seventh Street.

### Clinical Notes

#### A CASE OF EXTRAUTERINE PREGNANCY.

ROBERT L. GIBBON, M.D.

CHARLOTTE, N. C.

*Patient.*—Mrs. Q., aged 41, married seventeen years, had never been pregnant before unless a very indefinite history of miscarriage many years ago, be admitted as such.

*History.*—The last regular menstrual period occurred July 11, 1907. A few weeks later there was a flow from the uterus which was not very free, but persisted for one or two weeks, stopped, and then returned for a time. She was at home in Philadelphia at this time and was examined in the latter part of October by her family physician, who pronounced her pregnant. Returning to Lincolnton, N. C., she came under the care of Dr. Wise, who took her to the Presbyterian Hospital at Charlotte during the last week in November. At this time, about four months after the last menstruation, the patient had become very uneasy about her condition and feared an abdominal tumor.

*Examination.*—Examination disclosed an abdominal mass corresponding in size with the supposed stage of pregnancy. Bimanually ballottement was easily obtained, but the presenting part of the fetus was not readily made out. No fetal heart sounds were heard, but uterine souffle was pronounced. The diagnosis of pregnancy was confirmed and the patient returned home.

*Subsequent History.*—Nothing more was heard from the patient until May, 1908, when her physician told me that the patient had gone a month or more over her time, that fetal movements had entirely ceased for six weeks, although they had been vigorous and even annoying up to that time, and that the patient's general condition was not good.

May 6: She was brought to the hospital again, and the following history was obtained covering the period since the previous November: Abdomen continued to enlarge up to six weeks ago, when severe pains, of an intermittent character, came on and the patient, supposing she was in labor, summoned her medical attendant. Matters did not progress, however, and after a time the pains ceased. Fetal movements were not noted after this pseudolabor. From the fourth to the end of the ninth month the patient suffered continuously from abdominal pain and gastric disturbances. On several occa-

sions a membranous substance was discharged from the vagina, and on one of these occasions the membrane discharged resembled a cast of the uterine cavity.

*Examination.*—It was easy to make out by palpation the parts of a well-developed child. Vaginal examination disclosed the head presenting, it being felt apparently in the posterior enl-de-sac; the os was not patulous. In addition, two masses were felt through the abdominal wall which were supposed to be fibroids. Uterine souffle was absent.

*Operation.*—On May 9, the abdomen was opened in the median line. The omentum was found firmly adherent to two medium-sized fibroid tumors on the anterior surface of the uterus and completely prevented any view of the organs beneath. What was more surprising, however, was the condition of the omentum itself; it was almost perfectly black, as though on the point of becoming gangrenous. As a consequence, a large portion, about two-thirds, was ligated in sections and removed. The uterus was then seen to be enlarged to the size of a four-months' pregnancy, while behind and to the right was a dirty, brown colored mass, which on being opened disclosed a fully developed male child, in a somewhat macerated condition. In spite of the fact that the child had been dead at least a month, the placenta was found firmly attached and no effort was made to detach it, but instead it was found possible to remove about three-quarters of the sac, including that portion to which the placenta was fixed. The remaining portion of the sac was brought out at the lower angle of the wound, the edges clamped with forceps and the cavity packed. The abdominal incision was closed in the usual manner, except at the lower angle.

*Result.*—The patient ran a moderate temperature during the separation of the remainder of the sac, and developed a mild phlebitis of the right leg, but in other respects the recovery was uneventful. I am unable to explain the condition of the omentum, which may have been due to an infarction, but at time of operation its appearance gave rise to the gravest apprehension.

#### HYPERSUSCEPTIBILITY TO HORSE SERUM.

MAX DREYFOOS, M.D.

CINCINNATI.

As a contribution to the reports of cases of reactions following the injection of antitoxic sera, I wish to add the following report. It is, I believe, the first case reported in which this reaction has followed the injection of tetanus antitoxin.

*Patient.*—A young man of 24 years, on June 16, 1908, sustained a punctured wound of his left foot by stepping on a rusty nail at an iron-yard. He went to the Jewish Hospital, where he was placed on the service of Dr. Joseph Ransohoff. Under local cocaine anesthesia a triangular-shaped area of skin and subcutaneous tissue about one-half inch deep, and containing the wound, was excised from the plantar surface of the foot, and the resulting wound thoroughly cleansed. Throughout the operation the patient was perfectly composed and was not distressed in any way.

*Administration of Serum.*—A prophylactic injection of 10 c.c. (1,500 units) of tetanus antitoxin was then given under the left breast, and a moist bichlorid dressing was applied to the wound.

*Effects.*—About one-half to one minute after the injection of the serum the interne bandaging the foot noticed that the patient began turning this foot from side to side, and then flexing and extending the knee. When asked why he did not keep his foot quiet, the patient replied very brokenly: "Oh—I wish—you hadn't—given—me—that—injection; the—operation didn't—hurt—me—but—that injection—makes me—feel so—sick." By that time (about two minutes after the injection) the restlessness became more marked, rapidly extending to trunk and head; the patient rolled from side to side and had to be held, to prevent his falling from the operating-table. His face was very pale, not cyanotic, and presented a very anxious expression; there was no froth at the mouth, and



his pulse was but slightly accelerated. He was very dyspneic and wanted to sit up in order to "catch his breath"; he complained of a sense of great constriction of his chest, especially on the left side, and in back, and wanted to be left on the table for a few minutes. He was, however, placed on the stretcher and wheeled to his room, and in spite of restraint struggled to assume a sitting position on the stretcher. After being in his room (five or ten minutes after the injection) he complained still more of the constriction and oppression in his chest, the pain in his back and the dyspnea, and asked to have some one press on his chest and support his back. Propping up on pillows afforded no relief; he tossed about in bed very restlessly and felt as though he were going to die. Twenty to twenty-five minutes after the injection he began to feel more easy, but was still greatly distressed and very restless. Later he was given a hypodermic injection of one-fourth grain of morphin, but this did not seem to influence the symptoms. The symptoms gradually abated, but were not entirely gone four hours later. At this time (8 p. m.) his temperature was 100.1 F., pulse 80. He was somewhat restless that night, but slept a good part of the time. The next day he felt perfectly well, apparently none the worse for his experience.

In this case there was none of the itching or pulling of the skin noted in most of the cases, also no froth pouring from the mouth, nor cyanosis.

It is perhaps fortunate for all concerned that the patient was not given a full dose of 20 or 30 c.c. of the serum, as this would in all probability have resulted much more seriously—perhaps in death.

19 West Seventh Street.

## INTESTINAL OBSTRUCTION PRODUCED BY A GAUZE SPONGE.

R. C. COFFEY, M.D.

PORTLAND, ORE.

In the August *American Journal of Obstetrics* is an article by Palmer Findley on "Foreign Bodies Left in the Abdominal Cavity." He discusses various results following the leaving of sponges in the abdominal cavity and the method by which they are eventually extruded. After relating many cases he closes with an admonition to the surgeon by all means to avoid publicity to the laity concerning these things. In this connection I report the following interesting case:

On August 8, 1908, I was called to Albany, Ore., in consultation with Dr. Booth of Lebanon, Ore., and Dr. Davis of Albany, to see a case of intestinal obstruction. The patient had had a hysterectomy performed thirteen months before. There was a palpable enlargement in the right inguinal region. We all agreed that the probable condition was strangulation of a knuckle of intestine, due to postoperative adhesions. In the abdomen we found practically no adhesions in the neighborhood of the former operation, but a lump the size of a man's wrist, five or six inches long, in the lumen of the small intestine, which was entirely free. The intestine above the tumor was much distended and ecchymotic spots were numerous. The intestine below the enlargement was collapsed. An incision was made into the bowel and the lump was discovered to be cloth of some kind. Owing to the fact that it was four or five feet from the stomach and in the jejunum, and as the only adhesions in the abdominal cavity were just back of the transverse colon around the stomach, the conclusion which we all reached was that the patient was probably hysterical and had swallowed a variety of things, including this piece of cloth. A thorough search, therefore, was made of the stomach, with the idea that it possibly contained a variety of foreign bodies. Nothing was found.

As soon as the operation was completed a thorough investigation was made, and it was soon found to be a sponge which had apparently been left there thirteen months before. During this time the patient had gained twenty pounds in

weight and had noticed no disturbance prior to the immediate attack, except pain in the region of the stomach and this "lump." This sponge had evidently made its way through the walls of the stomach, and thus down the intestine or through the upper part of the jejunum back of the colon. This had been well done, for while the incision was so located that we were unable to make a thorough exploration in the neighborhood of the stomach, there was scarcely anything visible aside from adhesions in front of the stomach proper and in the neighborhood of the jejunum just back of the transverse colon. These adhesions back of the colon were not strong.

Several cases have been reported in which a sponge, or other foreign body, sloughed into the large intestine, but very few, I think, in which a sponge penetrated the extreme upper part of the alimentary canal, except Ries's case referred to by Findley, in which a woman pulled a sponge from her mouth after an abdominal section. Ries was called before the state's attorney to explain and so impressed the attorney with the impossibility of the occurrence that the case was dismissed.

Notwithstanding this, the fact that our patient had had pain and a lump in the neighborhood of the stomach much of the time since the first operation, that there were no adhesions in the abdomen, except in the region of the stomach, that the cloth was beyond question a surgical sponge, makes this case authentic with scarcely a doubt that the sponge passed through the wall of the stomach and down the small intestine about four or five feet where it rolled up and produced the obstruction.

## Special Article

### FOURTH OF JULY INJURIES AND TETANUS.

For the sixth consecutive year we are presenting statistics regarding injuries received during the celebration of the Fourth of July, with particular reference to tetanus resulting from these injuries. Considerable effort has been made to secure reliable data, and all serious cases have been carefully investigated, so that dependence may be placed on the figures here given. We have received thousands of letters from physicians in all parts of the country, reporting cases which otherwise could not have been included in these statistics, and there are doubtless many other cases not reported, although this would refer more to the minor injuries. Our thanks are due for the many careful reports which have made these statistics more complete and the figures more reliable. The data are presented in the same manner as heretofore, in order that comparison may be made.

#### CASES OF TETANUS.

There were 26 tetanus cases this year, or three more than last year, but 13 less than in 1906. Since 1903, when *THE JOURNAL* began publishing these statistics, there has been a constant decrease until this year. It is interesting if not significant to note how the injuries from blank cartridges correspondingly decreased until the slight increase this year (see Table 5).

The most common cause of the wound is the blank cartridge, and the usual site is the hand. The duration given is the number of days between inoculation and death or recovery. Following the injury it required from 5 to 9 days before the symptoms of tetanus appear,



TABLE 1.—CASES OF TETANUS.

Name	Age	Cause of Wound	Site of Wound	Duration in Days	Result
CONNECTICUT.					
Errico	8	Bl. c.	Hand	11	D.
ILLINOIS.					
Foster	13	Bl. c.	Thigh	7	D.
Fox	6	Bl. c.	Finger	8	D.
Gilbert, J.	35	Bl. c.	Finger	..	R.
Marlo	11	Bl. c.	Hand	7	D.
Marx	..	Gunshot	Hand	..	R.
Miller	..	Bl. c.	Arm	..	..
Pearson	9	Bl. c.	Hand	7	D.
Roginski	..	Bl. c.	Hand	..	..
Szczepanski	13	Bl. c.	Hand	8	D.
Thiele	4	Firecracker	Neck	4	D.
Toma	35	Firecracker	Hand	8	D.
Wells	Boy	Firecracker	Foot	..	..
IOWA.					
Rudig	7	Cane	Leg	..	..
KANSAS.					
Gates	Adult	Bl. c.	Hand	..	..
KENTUCKY.					
Devoto	9	Bl. c.	Hand	6	D.
MAINE.					
Edgar	8	Bl. c.	..	14	D.
MASSACHUSETTS.					
Acheson	36	Bl. c.	Hand	7	D.
Carroll	14	Bl. c.	Hand	11	D.
Costello	12	Bl. c.	..	7	D.
Forzley	19	Bl. c.	Hand	7	D.
Stokes	12	Bl. c.	Leg	16	R.
MICHIGAN.					
Gilbert	11	Bl. c.	Hand	14	D.
Glogofsky	14	Bl. c.	Thigh	36	R.
MISSOURI.					
Barlow	10	Bl. c.	Hand	10	D.
Brock	15	Bl. c.	Hand	10	D.
Carman	13	Bl. c.	Hand	11	D.
Carriger	12	Bl. c.	Hand	9	D.
Tannyhill	15	Cannon	Hand	18	R.
NEBRASKA.					
Bryant	12	Bl. c.	Hand	9	D.
NEW JERSEY.					
Benz	9	Bl. c.	Hand	6	D.
Carroll	12	Bl. c.	Finger	5	D.
Parasaidiz	8	Bl. c.	Hand	8	D.
Hall	14	Bl. c.	Hand	8	D.
Johnson	14	Bl. c.	Leg	..	..
Kolcabage	25	Firecracker	Hand	6	D.
Paglis	8	Bl. c.	Hand	5	D.
Sharpley	12	Bl. c.	Hand	7	D.
Sindle	14	Bl. c.	Finger	12	D.
Terasino	8	Cannon	Hand	8	D.
NEW YORK.					
Ashley	6	Firecracker	Hand	..	..
Bushman	16	Cannon	Hand	..	..
Czebowski	13	Bl. c.	Hand	..	D.
Dobucki	13	Bl. c.	Hand	10	D.
Fogarty	49	Firecracker	Hand	25	D.
Erie enberger	19	Bl. c.	Finger	4	D.
Nolan	12	Bl. c.	Hand	10	D.
Sherwood	Boy	Bl. c.	Hand	..	D.
Zemrok	15	Bl. c.	Hand	13	D.
OHIO.					
Vinkley	40	Fireworks	..	..	..
Held	19	Bl. c.	Hand	8	D.
Herweh	10	Bl. c.	Hand	..	..
Kastler	Adult	Gunshot	Thigh	13	D.
Lukaz	11	Cannon	Foot	9	D.
Olmstead	20	Bl. c.	Hand	9	D.
Ricker	16	Bl. c.	Hand	..	..
OKLAHOMA.					
Fine	12	Bl. c.	Hand	13	D.
OREGON.					
Moore	10	Bl. c.	Hand	..	..
PENNSYLVANIA.					
Conmill	15	Bl. c.	Finger	11	D.
Gilbert	13	Bl. c.	Hand	..	R.
Marlo	..	Gunshot	Hand	..	D.
Mucka	5	Fireworks	Foot	9	D.
Ronne	24	Bl. c.	Hand	11	D.
Smith, M.	16	Bl. c.	Finger	10	D.
Smith, T.	19	Bl. c.	Finger	7	D.
SOUTH DAKOTA.					
Baker	11	Bl. c.	Hand	12	D.
WASHINGTON.					
Bauer	8	Bl. c.	Hand	10	D.
Slaab	13	Bl. c.	Hand	15	D.
Stingsby	16	Bl. c.	Hand	12	D.
Storah	10	Bl. c.	Hand	10	D.
WEST VIRGINIA.					
Glendenning	14	Bl. c.	Thigh	11	D.
WISCONSIN.					
Hartzheim	15	Bl. c.	Hand	22	R.
Hertziger	Boy	Bl. c.	Hand	22	D.
Horneke	5	Fireworks	..	33	R.
Koch	..	Fireworks	..	..	..
Winkler	10	Bl. c.	Hand	14	D.

the average of all cases reported being 8 days. In one case the symptoms began on the third day, while in one of the cases which finally recovered the symptoms did not appear until 16 days after the accident. Following the appearance of the symptoms death resulted in from 16 hours to 3 days, the average of all cases reported being about 36 hours. In 7 cases the entire duration of time between inoculation and death was six days or less. The average for all fatal cases reported was about 9 days. The list of tetanus cases is given in Table 1.

Tetanus cases occurred in 20 different states, or in 3 less than last year, and in 5 less than in 1906. For the fourth consecutive year Illinois reports the largest number, having 12 cases this year, 12 last year, 16 in 1906 and 20 in 1905. In 1903 and 1904 Pennsylvania reported the highest numbers. For the third consecutive year New Jersey reports the next highest number, having 10 cases this year, 8 last year and 10 in 1906. New York this year reports 9 cases or 5 more than last year. Ohio and Pennsylvania each report 7 cases this year. For the first time in the six years California had no cases, while South Dakota reports its first case this year. Table 2 gives a comparison of the number of cases in each state for the six years.

TABLE 2.—COMPARISON WITH PREVIOUS YEARS.

	1903	1904	1905	1906	1907	1908
Alabama	..	..	1	..	..	..
Arizona	..	..	..	..	1	..
California	2	4	4	3	1	..
Colorado	4	..	1	..	..	..
Connecticut	3	..	3	..	4	1
Delaware	..	..	1	1	1	..
District of Columbia	1	..	..	..	..	..
Florida	..	..	..	..	..	..
Georgia	..	..	..	..	1	..
Idaho	1	..	..	..	..	..
Illinois	49	15	20	16	12	12
Indiana	11	6	3	8	2	..
Iowa	14	2	3	4	4	1
Kansas	11	1	..	..	2	1
Kentucky	4	2	..	1	..	1
Louisiana	..	..	..	..	..	..
Maine	2	4	1	1	..	1
Maryland	1	..	1	1	..	..
Massachusetts	16	5	7	3	2	5
Michigan	29	7	9	4	4	2
Minnesota	15	2	2	2	2	..
Missouri	29	1	3	3	1	5
Montana	2	1	1	..	1	..
Nebraska	4	3	3	1	..	1
New Hampshire	2	..	..	1	..	..
New Jersey	8	9	3	10	8	10
New York	36	9	6	8	4	9
North Dakota	..	..	..	..	..	..
Ohio	67	9	5	7	6	7
Oklahoma	1	..	1	1	..	1
Oregon	2	..	..	1	1	1
Pennsylvania	82	17	12	5	7	7
Rhode Island	3	..	..	1	..	..
South Carolina	..	..	..	..	..	..
South Dakota	..	..	..	..	..	1
Tennessee	..	..	..	..	..	..
Texas	..	..	..	..	2	..
Utah	..	1	1	..	..	..
Vermont	3	2	..	2	2	..
Washington	2	1	..	..	2	4
West Virginia	3	..	..	2	..	1
Wisconsin	10	4	13	2	3	5
Wyoming	..	..	..	1	..	..
Total	415	105	104	89	73	76
No states having cases	30	21	23	25	23	20

Blank cartridges continue to be responsible for the great majority of tetanus cases, 58 or 76.3 per cent. of all cases this year being due to that cause, as compared with 71 per cent. last year and 60 per cent in 1906. Giant firecrackers caused only 5 cases this year, as compared with 8 cases last year and 17 in 1906. Four cases resulted from toy cannon injuries and 3 from gunshot wounds, while 6 were caused by explosions of powder or by other varieties of fireworks. Table 3 gives



a comparison of the causes of tetanus cases for the six years.

While there were 16 cases of tetanus due to Fourth of July injuries this year, only 55, or 72 per cent. of these were reported to have ended fatally, as compared with 85 per cent. of deaths last year and 84 per cent. in 1896.

TABLE 3.—CAUSES OF TETANUS CASES.

Year.	Blank Cartridge.	Giant Cracker.	Cannon.	Fire-arms.	Powder, etc.	Total.
1903.....	363	17	5	3	27	415
1904.....	74	18	5	1	7	105
1905.....	65	17	4	5	13	104
1906.....	54	17	1	7	10	89
1907.....	52	8	6	4	3	73
1908.....	58	5	4	3	6	76

DEATHS FROM FIREWORKS, ASIDE FROM TETANUS.

Besides the 55 deaths due to tetanus, there were 108 persons who were killed this year by various forms of fireworks, making a total of 163 deaths, or one less than last year, but 5 more than in 1906. While the

deaths from tetanus are decreasing, the deaths from other causes are increasing, so that the total still remains high. Thirty were killed outright this year by fire-arms, 23 by giant crackers, 22 were burned to death by fire and fireworks, 19 were killed by explosions of powder, 7 by toy cannon and 7 by various causes, such as blood poisoning, by sky rockets, chemicals, etc.

As heretofore, all accidents not directly due to the discharge or handling of fireworks or other means of

TABLE 4.—CAUSES OF DEATHS NOT DUE TO TETANUS.

Year.	Gunshot.	Fire from Fire-works.	Powder, Torpedoes, etc.	Giant Crackers.	Cannon.	Other Causes.	Total.
1905.....	37	23	6	5	7	17	95
1906.....	38	18	18	3	3	3	83
1907.....	20	31	13	13	3	11	102
1908.....	50	22	19	23	7	11	108

TABLE 5.—SUMMARY BY STATES OF JULY FOURTH CASUALTIES.

	Deaths.			Injuries.							Total Persons Dead or Injured.	Causes of Tetanus Cases.		Causes of all Cases Aside from Tetanus Cases.					
	From Tetanus.	From Other Causes.	Total.	Loss of Sight.	Loss of One Eye.	Loss of Legs, Arms or Hands.	Loss of Fingers, One or More.	Other Injuries.	Total Non-Fatal Injuries.	Blank Cartridge.		All Other Causes.	Blank Cartridge.	Fire Crackers.	Cannon.	Firearms.	Powder and Fireworks.		
Alabama .....	.....	.....	.....	.....	.....	.....	1	5	5	.....	.....	.....	1	2	.....	.....	1		
Arizona .....	.....	.....	.....	.....	.....	.....	.....	5	5	5	.....	.....	.....	1	1	3	.....		
Arkansas .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
California .....	.....	3	3	1	2	2	6	122	133	136	.....	.....	5	46	18	2	59		
Colorado .....	.....	.....	.....	.....	.....	.....	.....	13	13	13	.....	.....	.....	4	4	2	3		
Connecticut .....	1	1	2	.....	.....	1	4	98	103	105	1	.....	30	24	17	9	24		
Delaware .....	.....	.....	.....	.....	1	.....	.....	11	12	12	.....	.....	.....	3	5	.....	4		
District of Columbia .....	.....	.....	.....	.....	.....	.....	.....	21	21	21	.....	.....	.....	9	.....	5	7		
Florida .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
Georgia .....	.....	1	1	.....	1	.....	.....	2	3	4	.....	.....	.....	.....	1	2	1		
Idaho .....	.....	.....	.....	.....	.....	.....	.....	4	4	4	.....	.....	.....	.....	.....	.....	.....		
Illinois .....	7	13	20	1	7	7	24	499	538	558	8	4	113	183	26	44	180		
Indiana .....	.....	2	2	.....	2	.....	.....	244	253	255	.....	.....	22	99	28	16	99		
Iowa .....	.....	1	1	.....	3	2	3	165	173	174	.....	1	5	73	6	4	85		
Kansas .....	.....	.....	.....	.....	4	1	4	63	72	72	1	.....	15	11	16	10	19		
Kentucky .....	1	1	2	1	1	.....	1	28	31	33	1	.....	.....	4	3	13	12		
Louisiana .....	.....	.....	.....	.....	.....	.....	.....	4	4	4	.....	.....	.....	.....	.....	.....	4		
Maine .....	1	1	2	.....	.....	.....	1	13	14	16	1	.....	.....	3	4	2	6		
Maryland .....	.....	1	1	.....	.....	.....	1	19	20	21	.....	.....	3	4	3	3	8		
Massachusetts .....	4	11	15	2	9	2	11	391	415	430	5	.....	72	125	22	30	176		
Michigan .....	1	3	4	.....	6	.....	8	183	199	203	2	.....	20	82	11	18	70		
Minnesota .....	.....	1	1	.....	3	.....	.....	61	64	65	.....	.....	1	17	11	4	32		
Mississippi .....	.....	.....	.....	.....	.....	.....	.....	1	1	1	.....	.....	.....	.....	.....	1	.....		
Missouri .....	4	3	7	.....	.....	2	7	359	368	375	1	1	165	97	12	24	72		
Montana .....	.....	2	2	.....	2	.....	1	6	9	11	.....	.....	.....	3	2	1	5		
Nebraska .....	1	.....	1	.....	1	.....	5	39	45	46	1	.....	3	8	11	9	14		
Nevada .....	.....	1	1	.....	.....	.....	.....	3	3	4	.....	.....	.....	1	.....	.....	3		
New Hampshire .....	.....	1	1	.....	1	.....	1	10	12	13	.....	.....	1	1	5	3	3		
New Jersey .....	9	6	15	1	9	7	21	119	157	178	8	2	107	150	23	52	159		
New Mexico .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
New York .....	7	13	20	2	9	12	26	578	627	647	6	3	58	212	42	76	250		
North Carolina .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
North Dakota .....	.....	3	3	.....	.....	.....	3	7	10	13	.....	.....	1	6	1	1	4		
Ohio .....	4	13	17	1	8	.....	11	506	526	543	4	3	65	217	27	40	187		
Oklahoma .....	1	.....	1	.....	.....	1	1	6	8	9	1	.....	3	1	1	3	.....		
Oregon .....	.....	.....	.....	.....	.....	.....	.....	1	8	9	1	.....	.....	4	3	.....	1		
Pennsylvania .....	6	15	21	1	17	13	15	920	966	987	5	2	82	311	32	68	487		
Rhode Island .....	.....	1	1	.....	1	.....	.....	37	38	39	.....	.....	3	9	4	4	19		
South Carolina .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
South Dakota .....	1	.....	1	.....	.....	.....	1	8	9	10	1	.....	3	1	.....	1	4		
Tennessee .....	.....	.....	.....	.....	.....	.....	.....	5	5	5	.....	.....	.....	.....	1	3	1		
Texas .....	.....	1	1	.....	.....	.....	1	9	10	11	.....	.....	1	1	4	2	3		
Utah .....	.....	.....	.....	.....	.....	1	1	10	12	12	.....	.....	.....	3	1	.....	8		
Vermont .....	.....	3	3	.....	.....	.....	2	14	16	19	.....	.....	.....	3	4	8	4		
Virginia .....	.....	.....	.....	.....	.....	.....	.....	5	5	5	.....	.....	.....	.....	1	.....	4		
Washington .....	4	3	7	.....	3	1	3	24	31	38	4	.....	4	11	10	.....	9		
West Virginia .....	1	1	2	.....	1	.....	3	23	27	29	1	.....	6	8	4	5	5		
Wisconsin .....	2	3	5	1	2	3	11	165	182	187	3	2	23	56	35	7	61		
Wyoming .....	.....	.....	.....	.....	.....	.....	.....	1	1	1	.....	.....	.....	.....	.....	.....	1		
1903 totals .....	55	108	163	11	93	57	184	5,115	5,460	5,623	58	18	816	1,793	399	481	2,058		
1904 totals .....	62	102	164	12	75	57	237	3,868	4,219	4,413	52	21	554	1,483	267	502	1,528		
1905 totals .....	75	83	158	22	72	56	227	4,931	5,308	5,466	51	35	925	1,690	408	532	1,822		
1906 totals .....	87	95	182	25	106	80	221	4,562	4,994	5,176	65	39	744	1,775	474	404	1,675		
1907 totals .....	91	92	183	19	61	61	208	3,637	3,986	4,169	74	25	931	1,268	508	406	1,056		
1908 totals .....	406	60	466	10	75	54	174	3,670	3,983	4,449	363	29	1,309	1,152	397	236	731		
Grand totals .....	776	540	1,316	99	482	365	1,251	25,783	27,980	29,296	666	167	5,279	9,167	2,453	2,561	8,870		



noise production on or about the Fourth of July have been omitted. Accidents which occurred in regular occupations and gunshot wounds received in brawls have likewise been omitted.

Table 4 shows a comparison of the causes of death other than from tetanus for the past four years.

In Table 5 will be found a summary of all injuries, including tetanus, and of all causes, arranged by states. Beneath the totals at the bottom of the table are given the totals for the five previous years, in order that comparisons may be made. The grand totals are also given. Table 6 is arranged to show a more ready comparison by states of the total deaths and accidents for the six years.

Pennsylvania again swings into the lead with 987 casualties, New York coming second with 647, followed by Illinois with 558, Ohio with 543, New Jersey with 472 and Massachusetts with 430. Altogether there were 5,623 accidents this year, the largest number reported in any one year. There were 1,210 more than last year and 157 more than in 1906.

TABLE 6.—TOTAL DEATHS AND ACCIDENTS BY STATES DURING SIX YEARS.

	1903	1904	1905	1906	1907	1908
Alabama	2	7	1	2	1	1
Arizona	1	..	4	5	2	5
Arkansas	..	..	3	4	..	5
California	100	138	142	96	121	136
Colorado	39	44	26	23	25	13
Connecticut	162	133	132	169	63	105
Delaware	1	5	14	8	16	12
District of Columbia	2	10	24	5	12	21
Florida	1	2	2	..	..	..
Georgia	..	..	..	4	2	4
Idaho	4	4	3	3	4	4
Illinois	366	423	542	598	468	558
Indiana	160	211	217	250	..	255
Iowa	168	137	328	255	231	174
Kansas	63	88	56	61	64	72
Kentucky	30	72	17	21	18	33
Louisiana	..	2	3	7	8	4
Maine	31	32	29	15	11	16
Maryland	21	22	13	10	23	21
Massachusetts	637	193	467	329	168	430
Michigan	144	157	288	193	163	203
Minnesota	157	102	174	95	95	65
Mississippi	..	..	..	2	2	1
Missouri	147	81	218	325	299	375
Montana	5	17	40	3	6	11
Nebraska	46	63	43	47	58	46
Nevada	..	1	2	..	1	4
New Hampshire	37	23	9	29	13	13
New Jersey	228	204	350	398	402	472
New Mexico	..	4	5	1	6	..
New York	522	549	563	681	752	647
North Carolina	..	..	1	1	..	..
North Dakota	10	8	29	11	8	13
Ohio	143	327	329	490	375	543
Oklahoma	1	3	7	14	194	9
Oregon	16	13	9	11	5	9
Pennsylvania	537	744	721	969	491	987
Rhode Island	61	30	11	21	39	39
South Carolina	..	..	..	1	..	..
South Dakota	4	10	15	5	8	10
Tennessee	4	1	5	6	4	5
Texas	2	2	4	11	7	11
Utah	23	22	25	18	30	12
Vermont	45	14	10	14	18	19
Virginia	..	11	5	8	..	5
Washington	21	25	15	25	23	38
West Virginia	19	16	34	64	27	29
Wisconsin	190	215	230	155	150	187
Wyoming	1	2	8	3	..	1

#### NON-FATAL INJURIES.

There were 5,460 non-fatal injuries this year, an increase of 1,211 over last year. Only 11 persons were totally blinded this year, being one less than last year and one-half as many as in 1906. There were 93, however, who lost one eye each, an increase of eighteen over last year. Fifty-seven people lost a leg, an arm or a hand this year, this being the same number as last year. One or more fingers were lost by 184 persons, a decrease of 53 below last year. The giant cracker holds the first rank as a cause of mutilating wounds and is

responsible for the majority of losses of eyes, hands and fingers during this celebration of the Fourth. In the awfulness of its destructiveness, the giant cracker is equaled in a few instances only by the explosions of home-made cannon. The fact that the wounds made by the giant cracker are so lacerated and laid open is the very reason it does not cause more lockjaw. Then, also, these cases are taken to the physician, while the supposedly insignificant wounds made by blank cartridges are neglected. This year 1,793 accidents, including 23 deaths and 5 cases of lockjaw, were due to the giant cracker.

Firearms caused 481 accidents, including 30 killed and 3 cases of lockjaw. Of the total number thus injured 194 were struck by stray bullets from the reckless shooting of firearms by others. Toy cannons caused 399 injuries, including 7 killed and 4 cases of tetanus.

TABLE 7.—NUMBER REPORTED KILLED AND INJURED IN OUR LARGEST CITIES.

City.	Population Census Bureau Est. 1906.	1907.		1908.	
		Killed.	Injured.	Killed.	Injured.
New York, N. Y.	4,113,043	22	422	11	316
Chicago, Ill.	2,049,185	16	151	12	202
Philadelphia, Pa.	1,441,735	7	248	6	426
St. Louis, Mo.	649,320	3	189	4	229
Boston, Mass.	602,278	3	59	6	190
Baltimore, Md.	553,669	0	5	1	10
Cleveland, O.	460,327	3	63	12	93
Buffalo, N. Y.	381,819	0	18	3	11
Pittsburg, Pa.	375,082	10	88	0	30
San Francisco	364,667	..	..	0	11
Detroit, Mich.	353,563	2	46	0	10
Cincinnati, O.	345,230	2	89	1	112
Milwaukee, Wis.	317,903	2	93	0	70
New Orleans, La.	314,146	0	8	0	4
Washington, D. C.	307,716	0	12	0	21
Newark, N. J.	289,634	1	129	2	81
Minneapolis, Minn.	273,825	0	13	0	10
Jersey City, N. J.	237,952	0	31	5	34
Louisville, Ky.	226,129	0	13	0	10
Indianapolis, Ind.	219,154	1	31	1	14
St. Paul, Minn.	203,815	0	20	0	13
Providence, R. I.	203,243	0	20	1	21
Rochester, N. Y.	185,703	0	12	0	19
Kansas City, Mo.	182,376	1	46	0	55
Toledo, O.	159,980	1	5	0	8
Denver, Colo.	151,920	0	8	0	13
Columbus, O.	145,414	5	36	0	5
Allegheny, Pa.	145,240	0	0	0	0
Worcester, Mass.	130,078	1	6	2	20
Memphis, Tenn.	125,018	0	0	0	3
Omaha, Neb.	124,167	0	25	0	10
New Haven, Conn.	121,227	0	2	0	0
Syracuse, N. Y.	118,880	0	20	0	14
Seranton, Pa.	118,692	0	5	1	17
St. Joseph, Mo.	118,004	1	23	1	41
Paterson, N. J.	112,801	1	29	2	31
Portland, Ore.	109,884	0	2	0	3
Fall River, Mass.	105,942	0	0	0	12
Atlanta, Ga.	104,984	1	4	0	3
Seattle, Wash.	104,169	1	3	0	1
Los Angeles, Cal.	102,479	0	35	0	40
Dayton, O.	100,799	0	11	0	14
Totals		84	1,985	71	2,167
Totals Elsewhere		80	2,251	92	3,293
Grand Totals		164	4,249	163	5,460

#### TOTALS IN CHIEF CITIES.

This year Table 7 has been added, showing the number reported killed and injured in the largest cities during the past two years. The population figures are taken from the U. S. Census Bureau's estimate of 1906. These figures will be of special interest from year to year, since they will show the results of the adoption and enforcement of ordinances restricting or prohibiting the use of fireworks. Chicago and Cleveland had 12 deaths



each this year. New York had 11, Philadelphia and Boston had 6 each, Jersey City had 5 and St. Louis had 4 killed. In 1907 New York City had 22 killed, Chicago had 16, Pittsburg had 10, Philadelphia had 7, and Columbus (Ohio) had 5 killed.

Of non-fatal accidents this year Philadelphia leads with 426, followed by New York with 316, St. Louis with 229, Chicago with 202, Boston with 190, Cincinnati with 112 and Cleveland with 93. In 1907 New York had 422, the largest number of non-fatal injuries, followed by Philadelphia with 248, St. Louis with 189, Chicago with 151, Newark with 129, Milwaukee with 93 and Pittsburg with 88.

TETANUS FROM OTHER THAN FOURTH OF JULY INJURIES.

Besides the cases of lockjaw due directly to Fourth of July injuries, many other cases were reported this year, which occurred during the Fourth of July season, but which were due to penetrating injuries from nails or splinters, to crushing injuries, or to other causes. There were 166 such cases reported this year, as compared with 94 last year and 60 in 1906. The increase may be largely due to a more complete reporting of such cases rather than to an actual increase. The apparent increase, however, emphasizes the fact that in the treatment of all penetrating wounds the possibility of tetanus should be borne in mind and prophylactic measures employed.

Of the 166 cases of tetanus due to other than Fourth of July injuries Ohio reported 23, Pennsylvania 21, Illinois and New York each 17, and Missouri 12. Altogether 28 states reported cases. Table 8 shows these cases by states and will be interesting for comparison with Table 2.

TABLE 8. CASES OF TETANUS FROM OTHER CAUSES.

	1908.		1908.
Alabama	..	Nevada	..
Arizona	..	New Hampshire	..
Arkansas	2	New Jersey	7
California	4	New Mexico	..
Colorado	3	New York	17
Connecticut	2	North Carolina	1
Delaware	2	North Dakota	1
District of Columbia	..	Ohio	23
Florida	2	Oklahoma	..
Georgia	..	Oregon	..
Idaho	..	Pennsylvania	21
Illinois	17	Rhode Island	..
Indiana	6	South Carolina	..
Iowa	2	South Dakota	2
Kansas	4	Tennessee	3
Kentucky	5	Texas	4
Louisiana	1	Utah	..
Maine	..	Vermont	..
Maryland	3	Virginia	4
Massachusetts	3	Washington	2
Michigan	4	West Virginia	..
Minnesota	4	Wisconsin	5
Mississippi	..	Wyoming	..
Missouri	12		
Montana	..	Total	166
Nebraska	..	States reporting cases	29

RESTRICTIVE MEASURES.

As a result of the extensive publicity in regard to Fourth of July injuries, many efforts are being made to lessen or prevent this annual carnage. Gradually but surely, the lines are being drawn closer, and more restricting ordinances are being adopted each year. Many cities prohibit the toy pistol and the use of fire-arms. Many limit the size of the giant firecracker. Other cities limit the time of celebration to the one, two or three days around the Fourth, while two cities, Baltimore and Toledo, have practically prohibited all fireworks, with the result that where formerly large numbers were injured annually, now the accidents in those cities are comparatively few, most of those reported having occurred in the outlying suburbs not directly

under the jurisdiction of the city ordinances. Other cities are said to have passed prohibiting ordinances, but the number of injuries reported indicate that they have not enforced them. Following an unusual number of fatalities this year, Cleveland has passed a prohibitory ordinance which should be strictly adhered to and enforced, although it is understood that "business interests" are trying to have it repealed.

PREVENTION BY SUBSTITUTION.

Another method is that adopted by St. Paul, Detroit and other cities, whereby efforts were made to change the form of celebration. At St. Paul it is said that just before the Fourth a mammoth children's meeting was held at the Auditorium, which seats 10,000 people. Here bands were playing, flags and bunting were displayed, confetti was showered about from boxes and balconies and a generally good time given, after which several coupons were given to each child, which on the Fourth would be accepted at Harriet Island in exchange for toys or refreshments. The Detroit plan was somewhat similar, but details were not learned. It is interesting to note that comparatively few injuries were reported from these cities this year.

SUBSTITUTION AND RESTRICTION COMBINED.

Possibly a combination of the two methods would solve the problem. Have the parades, the flags, the bunting, the picnics and the children's outings, but also prosecute the idiot with his giant cracker and the hoodlum who recklessly fires off his revolver, as well as all others who persist in death-dealing methods. Let the shooting of fireworks be limited to displays in the evening in charge of adults experienced in their handling.

How could we better celebrate the anniversary of our independence than by an extensive display of flags and bunting? Give to the boys bright colored soldier caps and uniforms. Give to the girls bright colored parasols and aprons. Already this modern sort of celebration is on the increase, as evidenced by the statements frequently made by dealers, who say, "Never have we sold so many flags and lanterns." In one of our large cities the remark was commonly heard: "Never have I seen so many houses decorated or so many flags displayed." Really, would it not be better for all to boycott the fireworks counter and patronize the flag store? Let us at least unite to secure a more sane and, therefore, a more patriotic celebration of the Fourth of July.

Therapeutics

VOMITING OF PREGNANCY.

A series of papers in the *New York Medical Journal* for Dec. 28, 1907, and Jan. 4, 1908, completely cover this subject, and the following includes the essential points brought out by the different contributors:

Etiology is touched on but little, and perhaps well so, since the subject is treatment, and the cause, other than that it is unquestionably an intoxication, is largely speculative. There is, however, a considerable number of factors which may modify the underlying cause of this condition so that it ranges from a trivial affair, amenable to domestic remedies, to a condition which baffles the most expert treatment and taxes the facilities of the most complete institutional equipment. Among



these may be named reflex influences such as are occasioned by pressure on nerves connected with the uterus, stomach and other abdominal viscera (and of these the most important are those due to displacement of the uterus and its adnexa) neurotic or hysterical, and toxemic. The latter naturally gives the most trouble because, primarily an autointoxication, it is almost invariably a combination of several evils.

The condition most frequently makes its appearance between the third and fifth week of pregnancy.

The liver, the great physiologic filter, has at this time a more than ordinary amount of work to do and not infrequently is at fault through inability to care for the extra burden put on it. Then, too, elimination is greater than under any other conditions, and the organs of elimination being unduly worked, may be inadequate.

Also, into the blood are poured the waste products of fetal origin, and to combat and eliminate these more work must be done.

First, then, a complete history of the patient should be taken, an opinion formed as to her normal mental or nervous temperament, and a thorough and complete physical examination made. If the condition is due to hysteria, the patient should generally be isolated and moved if possible to a situation where she will have an entire change of surroundings and attendants; the treatment then becomes mostly hygienic and suggestive.

If examination reveals a misplaced uterus (and probably a retroversion is that most frequently found), replacement should be made immediately and a properly adjusted pessary placed to maintain the correction until such time as the enlarging uterus will retain its proper position unaided. Occasionally adhesions may be found which prevent the manual correction of the fault. The condition then becomes more formidable, and recourse must be had to surgery. The same holds good in incarceration, and in this condition not infrequently corrective measures result in abortion. Erosions of the cervix, cicatrices, and polypi may be causes of the nausea and vomiting, and these if found should receive proper attention. However, surgical procedures, unless of a most trivial nature, should be reserved as a last measure, since they are liable to induce abortion, as are also such procedures as may require either a tampon of any considerable size, or packing of the vagina.

If the vomiting still persists after all corrective measures possible have been made, there remain two conclusions: the vomiting is either idiopathic, or due to autointoxication. The former term, of course, dodges the issue, but nevertheless brings the treatment under two headings, and the conclusion to be drawn from the mass of statistics seems to confirm unquestionably the comparative uselessness of drugs to meet either condition. Almost everything has been used, and with no further benefit generally than a temporary mitigation of the symptoms.

The two great difficulties that confront us are the maintenance of the patient's nutrition and the combating of the prostration caused by the vomiting. Under whichever heading we choose to meet the case, hygienic measures stand pre-eminently first and nothing should be omitted which tends to their furtherance. The diet should be of the simplest, and milk should form its bulk. One after another of the simple dishes must be tried, to be discarded if they are not retained. When the patient is first seen, if the stomach is washed out and nothing allowed but water for twenty-four hours,

the bowels being thoroughly cleaned out meanwhile, milk will generally be retained. Just before giving the milk a small dose of cocaine, 0.01 gram (1/6 grain) or chlorotone, 0.25 gram (4 grains) may cause it to be retained. If it is retained, one or the other of these drugs may precede the further administration of food, lessening the dose each time, and, not infrequently, when a placebo is ultimately substituted for them, the food will be retained as well. Sooner or later, unless conquered, even these so-called idiopathic cases are found to have their etiology in autointoxication and elimination becomes the main point of all treatment.

The urine of course should be examined with great frequency and close watch should be kept on the elimination of solids, but an undue anxiety because of their diminution should not be felt when the intake of food or the food retained is small. A due regard to this should be kept in mind.

The bowels should be moved freely once a day. A single dose, 0.25 gram (4 grains) of calomel with a little bicarbonate of soda, 0.25 gram (4 grains) is preferable if it can be retained; if not, a daily enema must be given. If there appears to be any sluggishness on the part of the small intestines, 0.001 gram (1/60 grain) of physostigmin salicylate should be given hypodermatically once or twice a day, as may be sufficient.

Daily warm baths, with massage, plenty of fresh air, the patient kept in bed, the avoidance of the odor of cooking food, and the avoidance of all measures that tend toward excitement are of advantage. Counter irritation by mustard plaster or turpentine stupes placed over the stomach is generally a help and sometimes efficient. Also carbonated or effervescent drinks will often be retained when "still" liquids are vomited.

The one drug which has been of most service appears to be sodium (or potassium) bromid. It is best given in one gram (15 grains) doses, well diluted, by mouth, if possible; if not, by rectum, and repeated every two or three hours until the vomiting is conquered or the treatment proves useless.

Although bromids appear to be the most efficient drug, thyroid is not infrequently of use. It should be tried in small doses, say 0.20 gram (3 grains), and if retained, perhaps larger doses, up to 0.50 gram (7 1/2 grains) every four hours for a sufficient number of times to prove or disprove its efficiency. When successful it acts by neutralizing some autoelaborated toxin, which toxin or toxins are present because of an insufficiency of the thyroid gland.

The food, as above stated, should be liquid, and preferably milk, while buttermilk (cold), koumiss, and egg albumin lemonade are useful. Generally small quantities only should be given, and at frequent intervals. When the liquid food becomes well tolerated, semisolid food and the simpler dishes, one after another, may be tried.

When all measures have failed to control the vomiting, and before the patient has actually reached a dangerous condition of prostration, consultation should be had and measures should be taken to empty the uterus. Naturally, of course, one waits as long as possible before doing this, and not infrequently waits too long; hence this caution.

#### ECLAMPSIA.

There is probably no condition that the medical man has to cope with that makes, from prodrome to sequelae, such demands on his capabilities, his judgment, and his



tact as does the symptom complex of this toxemia, for intoxication it is, poorly though we may understand it and little as we may know of its etiology. Having its cause in some wrong going chemistry of either internal secretion or metabolic function, or both, its treatment must necessarily be elimination until an increased knowledge of the condition permits it to be corrective.

When it is possible to take the patient to a hospital, this should be done at once, for a case of eclampsia can at any moment present conditions which even the resources of a hospital, with its trained attendants, find difficulty in meeting, and these conditions can change with a rapidity which none but institutional resources may attempt to meet. Whatever difference of opinion there may be concerning other features of this condition, there can be no question that more cases are saved under institutional treatment than under any other, and only by reason of their increased facilities. If it be impossible to take the patient to an institution, and home treatment becomes a necessity, then the first thing to do is to prevent self injury to the patient by instructing some one present how to hold a towel, a cork, or a rubber eraser between her teeth, and to keep her on the bed.

Next, a thorough examination should be made, and if there are convulsions present or the examination starts one, a sufficient amount of chloroform may be given to allow the examination to be completed, and that thoroughly, for it is more important to know the exact conditions present than to start any treatment with an incomplete knowledge of the case.

The examination having been completed, if delivery is indicated the cervix can usually be completely dilated under chloroform without instrumentation, (*i. e.*, with the hand), forceps applied, and delivery completed. The placenta should generally then be removed, not waiting the usual twenty minutes, and the method of Cr  d   is preferable.

Generally there is a tendency to profuse hemorrhage, and the placenta having been removed, the uterus should be thoroughly irrigated with hot physiologic saline solution and it and the vagina packed with sterile gauze. However, the packing being in readiness, it is good judgment to wait a few moments before using it to see if the hot irrigating solution provokes sufficient contraction to stop the bleeding, for if it does, there is avoided the presence of an unnecessary foreign body in the uterus.

Laceration, if present, should generally be repaired at once, always if it has caused hemorrhage. If not, the patient's condition may occasionally make the postponement of the repair advisable.

If indications for immediate delivery are not found, *i. e.*, if the cervix is not much shortened or not much softened, the os undilated, and few or no uterine contractions (and this last is the most important determining factor, since uterine contractions appear to excite the eclamptic convulsions) eliminative treatment should be started. If there is stertorous breathing, with small pupils, and slow, full, high tension pulse, and if the patient be more or less comatose, "bleeding" is indicated, and from 150 to 250 c.c. of blood should be removed, but whether or not this should be replaced with physiologic saline solution only the condition of the patient at the time can determine, certainly not if there is any edema. If it seems desirable, the quantity of saline introduced should be not less than three or four times that of the blood withdrawn. Next flush out the colon with saline

solution and allow 1,000 c.c. or more to remain for absorption, provided of course that there is no edema, and particularly should the lungs be carefully examined with this in mind. Next, wash out the stomach if possible, and if done at all do it thoroughly, leaving in it 0.50 gm. (1½ grs.) of thyroid extract and 0.40 gm. (6 grs.) of calomel, with a little sodium bicarbonate. Then apply the hot pack, and when perspiration ceases, usually in about half an hour, dry the patient's skin thoroughly and keep her between blankets.

If thought advisable, veratrum viride may be given hypodermatically, in 0.5 c.c. doses until 2 c.c. have been given. The hot pack may be repeated in two or three hours if necessary, and if there is vomiting the stomach may again be washed out, leaving in it another dose of thyroid, and a smaller dose of calomel should there be reason to believe that the first dose was vomited. In short, this eliminative treatment must be kept up until the uterus can be emptied. If it seems inadvisable to wash out the stomach the thyroid and calomel may be given by mouth in the dose above referred to, and the thyroid repeated every three hours until six doses, or 3 grams have been given. It should then be discontinued.

Bladder distention is common and must be borne in mind, catheterization frequently being necessary every six or eight hours for several days after delivery.

Should stimulation be necessary, whisky by rectum and adrenalin hypodermatically, with or without physiologic saline solution, may be used to advantage. Strychnin is generally advised, but its use in conditions of cerebral excitation seems inadvisable. Certainly not more than one dose should be given and that not over 1/30 of a grain. If further stimulation appears to be needed, another drug should be substituted for it—either caffeine hypodermatically, or as black coffee by the mouth, and this may be followed, if another change seems advisable, by the hypodermatic use of camphor in olive oil (1 c.c. of the saturated solution), and this may be continued at half-hour intervals.

After delivery, if a sedative is needed, there is none better than a combination of sodium bromid, 2 grams (30 grains), and chloral hydrate, 0.50 gram (1½ grains), well diluted and given by rectum. This may be repeated in an hour if necessary, but a single dose is generally sufficient. Morphin is only too frequently advised and given, but in such a condition as this it would seem distinctly contraindicated. There is no pain to combat, and usually the patient will sleep from mere exhaustion if her "nervousness" is controlled.

The quantity of morphin required to control this nervousness will of necessity be altogether more than necessary to meet every other condition, while on the other hand, if her condition is approximating coma, morphin becomes about as dangerous a drug as could be given her.

When delivery is completed the danger is by no means over, and a careful watch of the patient is necessary, for it must be remembered that the sequel   of this condition are numerous and a patient can not be called out of danger until at least ten or twelve days have passed, and prognosis at any time before this is little more than a guess.

Should the child survive, it is in all probability also toxic. It should be given water freely, and also, perhaps, colon irrigation once or twice daily. Prognosis as to its survival should be absolutely declined.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . "Medic. Chicago"

Subscription price . . . Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, SEPTEMBER 5, 1908.

## THE ANNUAL FOURTH OF JULY RECORD.

Our sixth annual compilation of statistics on the injuries and accidents of the Fourth of July, in this issue, contains several interesting features. In the first place it shows that the steady decrease in tetanus, which has been recorded each year, seems now to have stopped, the number being practically the same as last year. However, this minimum number of tetanus cases resulted from the highest number of injuries that has yet been reported in any year since the compilation of statistics was begun, so that the actual proportion of tetanus is really somewhat less than in any previous year. That the total number of injuries, and also the total number of deaths from causes other than tetanus, were both greater than in any previous year since 1903, in spite of the widespread agitation against dangerous celebration that has been waged by the public press for years, is striking evidence of the callousness and recklessness of the public. Every one of these 5,460 injuries, 108 deaths, 104 blinded or half blinded unfortunates represents an absolutely unnecessary and wanton sacrifice to a senseless and barbaric notion of what constitutes a "good time," and is an additional evidence of the cheapness of human life in the United States. Furthermore, the greater part of these casualties represent actual violations of the law, for there are few towns or cities which have not statutes forbidding the use of revolvers and cannon crackers, at least, in Fourth of July celebrations. But no matter how much agitation there may be, or how much legislation the "city fathers" may provide, the "spirit of independence" continues to manifest itself by violating every law of public safety or common sense, and patriotism is attested by loss of lives, fingers, eyes and cuticle. All this absurd personal and civic mutilation is, after all, but one of the many manifestations of the disregard for life and property with which our country continually shocks and amazes the rest of the world.

On the other hand, we take much satisfaction in the continued success which the medical profession has met in its endeavor to hold in check the tetanus epidemic, for, while the deaths from other causes have increased from 60 to 108, the tetanus mortality has dropped in six years from 406 to 55. We have made extensive inquiries into the treatment received by those injured in

Fourth of July accidents, and have yet to learn of a single case in which tetanus developed in a person who had early received a prophylactic dose of antitoxin. The successful experience with the prophylactic use of antitoxin after this class of injuries, according to both current medical literature and personal communications, has led to its much more general application in cases of accidents from other causes, in which tetanus infection seems possible; and here, too, the results have been favorable. Curative treatment still remains deplorably ineffective in Fourth of July tetanus, in which the infection seems to be of exceptional virulence as shown by the short period of incubation which averaged but seven days, and the rapid course of the symptoms which terminated fatally in 36 hours on the average. Recovery rarely follows any form of treatment of tetanus when the incubation period is less than ten days, but becomes more and more frequent as the period of incubation lengthens, a fact that must be considered in estimating the value of any method of treatment.

Besides the continued success with the prevention of tetanus, perhaps the most hopeful feature of this year's record lies in the reports from a few cities where earnest efforts have been made to hold the violence of the annual celebration in check. Baltimore and Toledo are reported as having practically prohibited all fireworks, with a very satisfactory diminution in the accidents of the day. With the example of these cities before them it is to be hoped that other communities will see the practicability of refusing longer to tolerate the useless disorder, slaughter, destruction and waste to which they have submitted every year without making any honest effort to suppress them.

## MARITAL INFECTION IN TUBERCULOSIS.

If tuberculosis is actively contagious it would appear that, of all conditions, the marital relation would afford the most favorable opportunities for contracting the disease. If either of the partners is a victim, the chances of the other becoming one would seem to be especially favorable. Nevertheless statistics apparently do not support this probability to such an extent as would be anticipated, and it is in the experience of almost every observer that the percentage of husbands infected by wives and *vice versa* is not nearly so great as the opportunities would seem to render almost inevitable. This has been noticed in various medical articles, and one or two investigators at least have attempted to handle the statistics in a scientific way, as, for example, Weinberg, who used the actuarial data as to life expectancy in his discussion of the subject. There are, however, so many possible factors to be considered that positively accurate conclusions have been lacking and in most cases the figures were not sufficiently extensive to warrant drawing such conclusions.

The latest published investigation is that of the late



Mr. Ernest G. Pope, of the Adirondack Sanitarium, which has been very extensively edited and revised by Professor Karl Pearson in the Draper's Company Research Memoirs under the title of "A Second Study of the Statistics of Pulmonary Tuberculosis: Marital Infection." Mr. Pope in his studies took up the subject of the influence of assortative mating and this has been much more extensively developed by Professor Pearson in his additions to the paper. It is a well known fact that there is a tendency among the subjects of certain diseases to select in marriage those with like marked tendencies to themselves. This has been especially noted among the insane, and while apparently it was not admitted by Mr. Pope as a factor to any great extent in producing marital tuberculosis, Professor Pearson shows that it must be considered. His conclusions are summed up in the slightly modified words of Mr. Pope: "It would seem probable then that (1) there is some sensible but slight infection between married couples; (2) this is largely obscured or forestalled by the fact of infection from outside sources; (3) the liability to the infection depends on the presence of the necessary diathesis; (4) assortative mating probably accounts for at least two-thirds and infective action for not more than one-third of the whole correlation observed in these cases.

"But demonstration of this result depends on the acceptance of the inherited diathesis to be effective, and the existence of assortative mating of equal intensity in the cases of want of mental balance must prevent dogmatism." He speaks of the necessity of more complete data in such statistics. It is especially important, he says, that the age of husband and wife at marriage and the age at onset and death should both be recorded. Similar data as to the age at onset and death of the parent at the birth of the child and the age at onset and death of the child should also be secured. The family history is essential: "if we find that the marriage of two ultimately tuberculous persons took place before either was suspected of the disease and that there is in such cases a larger percentage of family histories of tuberculosis than in the case of non-married tuberculous individuals, we should have definite evidence of the assortative mating that seems probable. If, on the other hand, the percentage were smaller we would have definite evidence for the infection theory."

In an appendix, tables are given which show that the insane, epileptic, markedly eccentric, or alcoholic, do tend to mate together, and while more extended data on this point are still wanted, the facts so far as ascertained should be, as Professor Pearson says, vigorously impressed on those who dogmatically assert that the association of tuberculous husband and wife beyond a due proportion in a population taken at random can only be attributed to infection. They must be prepared to admit that insanity is still more transmissible between husband and wife, though in all forms except perhaps paresis and some toxic insanities, one does not

usually think of attributing it to a bacillus or to any other organism.

Professor Pearson's views on the importance of the hereditary element, or perhaps we should say, the congenital diathesis, are well known, but he has in his favor the results of the scientific discussion of statistics. There is a wide field yet to be cultivated, and perhaps the question can be considered absolutely decided only after a much larger amount of material has been obtained for investigation. The subject is an excessively complicated one when we take into account all the possible factors which will have to be considered in its solution. The ubiquity of the tuberculosis infection is in itself a very important factor. If the general practitioner could be thoroughly interested in such questions, and especially in this question of tuberculosis, which is probably the most important disease afflicting mankind at the present time, and could be induced to make the needed careful observations and records, data might be obtained that would settle all such questions as the etiology, etc., beyond cavil. At present it would seem to be fairly well established, if statistics discussed according to the mathematical formulas of probability are of any value, that consumption is not actively contagious between husband and wife, and that a certain previous constitutional condition or predisposition is essential for its contagion to act in any case. The question of an acquired immunity, of course, intervenes here and still further complicates the matter, but probably does not practically affect the general conclusions above stated. It may be perhaps a subject amenable to statistical investigation.

We may deery statistics, but the fact is that all our certain knowledge in these matters of sanitary importance is obtained only through the proper application of their laws. Intermarriage of consumptives or those of known predisposition to the disease should be discouraged, not only on account of the danger of propagating offspring with like pathologic tendencies, but also because of the actual physical disabilities of the tuberculous, especially in the female, for fulfilling the duties of married life. There still remains, also, as stated above by Professor Pearson, a certain possible risk of contagion, though this has apparently been overestimated. The paper emphasizes a fact hitherto little appreciated—the possible danger from selective preference of the tuberculous for each other in choosing married partners, with its consequent bearings on the propagation of the disease.

---

#### REVOLVING HOUSES.

Somewhat more than twenty years ago a popular farce was constructed on the "wildly fantastical" idea—as the authors termed it—of a summer hotel which was made to revolve by means of a windlass and mule power. Since then revolving habitations have been designed and constructed in sober earnest; they have been made



to turn on pivots, so that their rooms could face in any direction. Dr. Pellegrin and architect Petit, both of Paris, together devised such a house; in its axis of rotation there was a shaft, through which passed the water pipes. A gas engine moved the platform on which the structure was erected; and the machinery could be harnessed to clockwork. Such a house was intended especially for invalids, for whom it was most appropriate. Less ambitious "shelters" having one of the four sides entirely open, have long been in use in the outdoor treatment of consumption, whereby the sufferer can easily bask in the sunshine, or can shield himself from snow, rain or unduly fierce winds—an excellent contrivance for the sick.

It is now planned<sup>1</sup> to build on the northern shore of Long Island, New York, a house which, by means of electricity, will revolve on a pivot. One will need but to press the button for the view to be changed or the breezes to be caught, as may be desired. There are to be noiseless ball-bearings; and bells will tinkle on the piazzas to warn those about to leave or enter whenever there is to be a turning. The lawns will be so laid out that the front entrance will sit at any point of the compass. The scheme is the result of "many years of thought" on the part of the projector, and has grown out of a desire for "genuine home comfort."

On little reflection one will conclude that the ideal state projected will not be realized in such a house. In getting the shade for the room in which he is luxuriating, the owner, unless he lives like a hermit, will be sure to inflict the glaring sunshine on someone else. Nor would the lack of "genuine home comfort" be experienced only by guests or other members of the family. Should the owner himself, after dining out, not wisely but too well, arrive to find the front door, which he left facing due north, supplanted by the tradesmen's entrance, it is not hard to imagine the mental anguish that would be experienced in attempting to find a key-hole which had actual as well as psychic instability. The sight, too, of the iceman, well loaded with his product, racing around the gravel walk in a vain effort to reach the rear entrance while he was relentlessly pursued by the front piazza, would cause one to question whether a more conventional, if less exciting, homestead might not be desirable.

#### THE HOBBIES OF PHYSICIANS.

Hobbies, apart from medicine, should be developed by the physician during his virile years; so that in the afternoon and evening of his life they will sustain and comfort him, and provide such light interest and occupation as are essential to most venerable men who have in their prime been of a robust and achieving habit. Many examples from the varied walks of life, of such fads and hobbies, come at once to mind. Salisbury knew much of electricity, Gladstone of Homer, Chamberlain

of orchids. Balfour is immersed—literally, some fear—in psychic research; Lodge has become absolutely submerged in this regard. Joseph Choate knows a great deal more than the law; that is why he is so excellent a lawyer; and why it has been said that there are three kinds of lawyers—those of the old school, those of the new school, and Choate. Billroth was a superb pianist; Strümpell is a clever violinist; many among our colleagues are excellent performers on musical instruments, and are all the better surgeons and physicians, for their genial and humanizing accomplishments, all the better qualified to comprehend the sufferings they must alleviate. To have a hobby of any sort, one need not be a producer or originator; to be an appreciator will be all-sufficient. Especially with regard to literature and the arts would it be well that the ambition to be original should not generally prevail; "'tis better so," we might well observe with Mulvaney, when we reflect on the present appalling literary over-production. We had best offer up all our originality to Medicine, who is an exceedingly jealous mistress; as one will surely find who would presume to exalt his hobby from the secondary position it should occupy, above her claims. But we can all be appreciators. A taste for literature is one of the greatest sureties of a happy old age. There was a man who, having read but one of Thackeray's books, deliberately refused to read any of the others, reserving for his latter years substance so productive of quiet pleasure. Another old gentleman kept a diary, in which he preserved carefully the dates when he saw the first buds on his trees; when the first robin appeared; when he heard the first bobolink. "Do not," says Osler, "become too deeply absorbed in your profession to exclude all outside interests. No matter what it is, have an outside hobby. When tired of anatomy refresh your minds with Holmes, Keats, Shelley or Shakespeare." And to these may well be added the works of our fellow professionals, Oliver Goldsmith, Sir Thomas Browne, Weir Mitchell and Sir James Paget. It is the all-round man who succeeds best, in medicine as elsewhere—the physician who is thoroughly informed in his own work, and who knows, besides, something regarding the things which are vital to others.

#### PUBLIC OPINION AND THE FOURTH OF JULY HOLOCAUST.

Public opinion is gradually arraying itself against the present intolerable method of celebrating the Fourth of July, whereby so many people, mostly bright, active children, are condemned to an agonizing death by lock-jaw or to be killed outright, and whereby thousands annually are rendered blind, lose legs, arms, or hands or are otherwise maimed for life. That public opinion will eventually force the lessening or prevent this annual carnage is evidenced by the fact that each year more cities are adopting ordinances to restrict the sale of fireworks. Several large cities have limited the sale and use of fireworks to two, three or four days preceding the Fourth, while some have rigidly limited the nuisance to one day. Two cities, Toledo and Baltimore, have practically prohibited all fireworks for the past two and three years respectively, with the result that

<sup>1</sup> New York Times, July 7, 1908.



the numbers of killed and injured are far less than in other cities of equal size. This year Cleveland had a record of 12 persons killed and 93 injured. This so aroused the people that the city council has passed an ordinance prohibiting hereafter the use of any kind of fireworks in the celebration of the Fourth of July. We understand that manufacturers of fireworks are trying to secure a repeal of the ordinance, but it is hoped not only that the law will stand and be vigorously enforced, but also that other cities will adopt and enforce similar measures.

## Medical News

### CALIFORNIA.

**Beriberi in Alviso.**—Beriberi is reported present on ranches in Alviso, Santa Clara County, where 41 cases are said to exist.

**Smallpox in Orphanage.**—The Good Templars Orphans' Home, near Vallejo, has been quarantined on account of the appearance of 5 cases of smallpox.

**Medicine Vendors Licensed.**—The city council of Santa Cruz has passed an ordinance providing for a license of \$50 a day for medicine vendors accompanied by shows.

**Prohibits Sample Distribution.**—Sacramento has passed an ordinance prohibiting the distribution of samples of drugs and medicine unless they are actually handed to adults.

**Faculty Members Resign.**—Ten members of the faculty of the College of Physicians and Surgeons, San Francisco, have resigned. This is said to be the culmination of internal dissension which has continued in the college since 1906.

**Physicians Injured.**—Dr. Alden M. Gardner, Belmont, sustained a dislocation of the right shoulder and contusions by being thrown from a street car in San Francisco, August 22. —Dr. William F. Jones, San Rafael, who was operated on for malignant disease of the abdominal cavity, is reported to be critically ill in the College Hospital, San Rafael. —Dr. Melvin B. Huff, Colma, while cranking his automobile August 4, suffered a Colles' fracture of the right arm.

**Personal.**—Dr. James W. Jesse has purchased the contents and appliances of the old Santa Rosa Hospital. —Drs. J. Underwood Hall and Roscoe A. Whiffen have resigned as members of the board of health of San José. —Dr. John F. Burns has been appointed a member of the board of health to fill vacancy. —Dr. Frank A. McMahon, chief surgeon of the United States Veteran's Home, Yountville, has resigned. —Dr. A. Lincoln Cothran has been elected president, and Dr. John F. Burns, secretary and health officer, of the San José board of health. —Dr. Luther M. Leisenring has been made a member of the board of health of Placerville.

### ILLINOIS.

#### Chicago.

**Physician Exonerated.**—Dr. O. J. Price was exonerated from all blame in connection with the death of a young child, August 19. It was found that the prescription for creosote given by Dr. Price was filled by a druggist's clerk with 90 per cent. carbolic acid.

**Communicable Diseases.**—To the total of 246 cases of communicable diseases reported during the week ended August 29, diphtheria contributed 86; typhoid fever, 47; tuberculosis, 41; scarlet fever, 37; whooping-cough, 13; measles, 12; pneumonia, 5; chickenpox, 2; and diseases of minor importance, 3.

**Personal.**—Dr. and Mrs. Edward L. Moorhead and son have returned from Europe. —Dr. Jacob Frank has donated 400 volumes on medical and surgical subjects to the Columbus Hospital to provide a reference library for internes. —Dr. P. J. H. Farrell has been elected commander-in-chief of the Army of the Philippines. —Dr. Frederick W. Mercer was seriously injured by a fall from the third floor to the parlor floor of his house, August 9.

**Mortality of the Week.**—There were 584 deaths reported for the week ended August 29, 9 more than for the preceding week and 32 fewer than for the corresponding week of 1907, the respective death rates being 14.9, 13.84 and 15.24 per 1,000.

Chief among death causes were the following: Acute intestinal diseases, 173; consumption, 65; violence (including suicide), 48; heart diseases, 47; cancer, 33; and nephritis, 31. Diphtheria and typhoid fever each caused 9 deaths; scarlet fever, 5; and whooping-cough, 1 death, during the week.

### KENTUCKY.

**State Board of Health Meets.**—The annual meeting of the State Board of Health was held in Louisville, August 21. The board resolved to levy an assessment on the members to defray the expenses of a commissioner to investigate the water conditions of the Ohio River and its tributaries. The secretary was authorized to make the selection and instruct the commissioner in his duties. The consolidation of the medical schools was endorsed and the requirements of the American Medical College Association were adopted by the board. The executive committee of the board will confer with a similar committee from the university regarding the curriculum. At the last state board examination 82 applicants appeared, one of whom withdrew, one was expelled for fraud, 45 passed and were licensed, and 35 failed. The board is making an effort to prosecute all quacks and illegal practitioners in the state, especially some who are alternating in Kentucky, Indiana and Ohio. —On April 3 the board completed the thirtieth year of its existence. It was created in 1878 in order to cope with yellow fever. The board recommended the cooperation of physicians to obtain the placing of the names of Drs. Pinckney Thompson, R. W. Dunlap and R. C. Thomas in the Hall of Fame in the state capitol.

### MARYLAND.

**Increase in Typhoid.**—The state health department reports an increase in typhoid in July as compared with June of 120 per cent., and this is attributed to the prevalent drought and continued high temperature.

**Hospital Not Needed.**—The comptroller of the state, Dr. Joshua W. Hering, declares that there is no need for a hospital at Annapolis, owing to the proximity of the city to Baltimore. The legislature last year appropriated \$50,000 for a hospital at Annapolis, but the governor reduced the appropriation to \$25,000.

**State Medical Examiners Suggested.**—The governor suggests the appointment of state medical examiners to visit factories in search of tuberculosis patients; when found the patients are to be treated free until cured or until death occurs. He proposes that a new department be created as an adjunct to the Bureau of Labor and Industrial Statistics. He also proposes segregation of the tuberculous insane.

**New Building for State Society.**—The work on the new building for the Medical and Surgical Faculty of Maryland has commenced. There is on hand \$26,000 from the Osler fund, the Friedenwald fund, and paid subscriptions. The available unpaid subscriptions the state appropriation and the estimated value of the present property amount to \$35,000. The expenses so far have been \$1,000, leaving available funds amounting to \$60,000. Up to the present time 344 physicians of Baltimore, 37 physicians outside of Baltimore, 36 business men and 89 pharmacists have subscribed to the fund.

**Resolutions.**—At the August 20 meeting of the Baltimore County Medical Association resolutions were adopted setting forth the loss sustained by the association in the death of the late Dr. George Junkin Preston and condoling with his family. —At the same meeting resolutions were adopted that the Baltimore County Medical Association has among its members more physicians who are interested in the care and treatment of the insane than any other county medical society; that it views with alarm the proposed division of authority at the Springfield Hospital for the Insane; that it desires to express its most emphatic disapproval of this division of authority which it is felt would be a step backward in the care of the insane; that it registers its protest against this division of authority and expresses its confidence in its executive ability of the present superintendent, Dr. Joseph C. Clark, successfully to carry on the work begun so ably by the late Dr. George H. Rohé.

### MASSACHUSETTS.

**Communicable Diseases.**—An epidemic of diphtheria was reported August 24 at the South Athol fresh air camp. —Despite rumors to the contrary, Boston is said to be free from scarlet fever.

**Health Report.**—During July there were reported in the state 893 deaths from infectious diseases, 110 deaths from acute



lung diseases, 203 from tuberculosis, 30 from diphtheria, 20 from typhoid fever, and 17 from measles.

**Personal.** Dr. Joseph H. Pratt, Boston, sailed from Liverpool, on his return, August 11.—Dr. Thomas E. Cavanaugh, Holyoke, is in Paris.—Dr. Benjamin T. Loring, Roslindale, Boston, has been elected a medical inspector of schools to succeed Dr. Henry M. Emmons.—Drs. Charles L. S. Swan and Michael Glemou are the medical members of the committee appointed by the selectmen of Stoughton, to investigate the matter of a sewerage system for the town.

#### MISSISSIPPI.

**Election of Officers.** At the annual meeting of the faculty of the Mississippi Medical College Dr. William W. Hamilton was elected president; Dr. Nathan L. Clark, vice-president; Dr. Samuel H. Hairston, secretary; O. W. Bethea, treasurer; and Dr. T. Alexander Brown, dean.

**Practitioners Must Show License.** Dr. Samuel H. McLean, Jackson, secretary of the State Board of Health, is preparing a circular to each county health officer, in which he calls attention to the section of the medical code regulating medical practitioners, and to the fact that the prohibition against practicing medicine without a state license is being disregarded, not only by older practitioners, but by medical students. He states furthermore that it is a matter of common report that men who have failed in the examination have returned to their communities or some other, and commenced practicing medicine.

#### NEBRASKA.

**State Board Appointments.** Dr. W. H. Wilson, Lincoln, has been reappointed by the state medical board as health inspector for the coming year, and Drs. J. H. Wallace and C. F. Ladd, Lincoln, have been made members of the dental board.

**New Institution Formed.**—The Eaton Laboratory for the Study and Prevention of Tuberculosis in Children has been organized in Lincoln as an auxiliary of the Nebraska Orthopedic Hospital. It is intended to accomplish three principal results: First, to make special study of the records of the results at the hospital and of the care of the tuberculosis children in general; second, to record children suffering with tuberculosis in Lincoln or elsewhere in the state, who are in need of special care, and give special instruction when advisable and to arrange with parents to have children placed in the hospital; and third, to conduct a campaign of education on all questions relating to health of children, and the cure of those who are ill with tuberculosis. Hon. H. N. Eaton is president of the laboratory; Dr. H. B. Ward, dean of the College of Medicine of the University of Nebraska, a member of the board of directors; and Dr. H. Winnett Orr, assistant superintendent of the Nebraska Orthopedic Hospital, director of the laboratory.

#### NEW YORK.

**Used Physician's Name.**—George W. Doty, alias Dr. James Doty, has been arrested for practicing medicine in New Rochelle under a false certificate and assumed name. The original Dr. James Doty has been dead five years and was a graduate of the University of New York, class of 1857.

**Working Against Bovine Tuberculosis.**—The commissioner of state agriculture has made plans for the eradication of bovine tuberculosis with the leading representatives of various farms and dairy organizations and the directors of agricultural colleges. Methods of educational work were discussed. The nature of bovine tuberculosis will be explained by competent speakers at farmers' institutes throughout the state, and demonstrations will be given.

**Plans for Long Island Hospital.** Bayside, Long Island, is soon to have an up-to-date hospital. A stock company has been formed for the purpose of the erection and maintenance of such an institution which will be incorporated under the title of the Bayside Infirmary Company. A lot has been purchased on Broadway overlooking Little Neck Bay. The hospital will be ready for occupancy by May 1, it is hoped. Physicians may send their patients here and care for them personally.

#### Buffalo.

**Tag Day.**—Tag day for the benefit of the District Nursing Association was held September 4. The public extended generous aid to this charity, appreciating the excellent work done in conjunction with the tuberculosis committee of the Charity Organization Society.

**Personal.**—Health Commissioner Wende, who, while on his way to attend the American Public Health Association at Winnipeg, Man., was taken ill and obliged to return to Buffalo, is still confined to his bed.—Dr. George F. Cott is spending several months in Europe.—Dr. Charles Howard, chairman of the New York State Prison Commission, is ill in Buffalo.

#### New York City.

**Bequest to Charity.**—The will of Sigmund Rosenwald bequeathes \$5,000 to the United Hebrew Charities, \$1,000 to the Montefiore Home, and \$500 to the Mount Sinai Training School for Nurses.

**Wants Prison Sentence Rather Than Fine.**—Dr. Darlington, Commissioner of the Health Department, has requested that hereafter violations of the pure food law shall be made punishable by imprisonment instead of by fine. He claims there are scores of groceries throughout the city that are selling jams and jellies in which sulphurous acid is used as a preservative.

**New Rockefeller Hospital.** Plans have been filed for the main hospital building and isolation annex of the Rockefeller Institute for Medical Research. The main building is to be a seven-story brick edifice, and the isolation wards will be in a two-story building connected with the main building by steel bridges. The estimated cost of the hospital is \$350,000, the isolation annex \$50,000, and the additional power house \$4,000.

**Eye Trouble from Public Baths.**—Dr. Herbert J. Knapp, oculist of the Eastern District Dispensary, says that at present there are a large number of cases of catarrhal conjunctivitis, due to bathing at the public baths in that vicinity. A sewer empties into the river a short distance above the bath. The attention of the Board of Health has been called to the existence of this epidemic and has urged the removal of the bath.

**Tuberculosis Exhibit in Battery Park.** The department of communicable diseases of the Health Department has just given a stereopticon exhibition in Battery Park for the purpose of helping along the war on tuberculosis. The show demonstrated graphically what the Health Department is doing at present to prevent, supervise and treat pulmonary tuberculosis, and to instruct the people how not to get the disease and how to avoid giving it to others.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ended Aug. 22, 437 cases of tuberculosis with 153 deaths; 157 cases of diphtheria with 12 deaths; 132 cases of typhoid fever with 14 deaths; 66 cases of measles with 5 deaths; 72 cases of scarlet fever with 5 deaths; 17 cases of whooping cough with 7 deaths; 7 cases of cerebrospinal meningitis with 3 deaths, and 13 cases of varicella, a total of 901 cases and 199 deaths.

**Junior Sea Breeze Hospital.**—Dr. L. R. Williams reports that the rapid recovery of the sick babies at the Sea Breeze Hospital has so depleted the infant colony that only 38 of the 65 available beds are at present occupied. All mothers of sick babies are urged to take advantage of the present accommodations and have their children treated. During the summer of 1907 the infant mortality resulting from summer complaint was reduced from 253 in 1906 to 226 last year, although the summer of 1907 was more disastrous in its effect on babies than the year previous.

#### PENNSYLVANIA.

**Communicable Diseases.** Several cases of cerebrospinal meningitis were reported from Pottsville, August 24.—Typhoid fever continues prevalent in the Northampton County jail, Easton, where the fourteenth case was reported on August 25.—The typhoid fever epidemic in Spring City and Royersford does not show any sign of abatement. On the contrary, several new cases were reported during the past week. The state health board is in charge, and all houses are being placarded as soon as a new case is reported. Posters have been placed about the town warning the public to boil all water for drinking and cooking. The local water company has cleaned one-half of its reservoir and the entire water system will be thoroughly flushed.—Typhoid fever continues epidemic at Canonsburg and 34 cases were reported up to August 24. Six new cases were reported in the Morganza Reform School on the same day, making the total number of cases in that institution 34.—Typhoid fever is epidemic in the northeastern section of the city of Reading, and since August 1, 74 patients have been removed to the various hospitals while as many more are being treated at home.—In Wilkes-Barre typhoid fever is also prevalent, and 7 new cases



were reported August 28, making a total of 41 for the week. Dr. Coleman of the state board of health has charge of the investigation.

#### Philadelphia.

**Vital Statistics for July.**—During July the number of deaths reported was 2,598, and the total births for the same period was 3,505. The department of medical inspection ordered 432 fumigations, examined 26 cases for special diagnosis, collected 145 cultures, made 116 injections of antitoxin, and performed 27 vaccinations.

**Guarding Milk Supply.**—Dr. Neff, director of Public Health and Charities, is using every effort to safeguard Philadelphia from the danger of typhoid contagion, as the result of the epidemic of this disease in nearby towns. There are many dairy farms in the vicinity of the infected places, from which milk is shipped to the city. Specimens of this milk are collected daily on arrival and analyzed bacteriologically in the municipal laboratories.

**New Children's Department for Woman's Hospital.**—Plans and specifications have been prepared for a new department for children in the Woman's Hospital. The building will be a three-story structure of colonial design and will be built of red brick with blue marble trimmings. The interior wall and partitions will be of terra-cotta fireproofing. The building will contain eye, ear, throat, medical and children's clinics, with wards and baths on each floor. A diet kitchen and x-ray room are also provided.

**Health Report.**—The total number of deaths reported for the week ended August 29 aggregated 389. This is a decrease of 101 from the previous week, and a decrease of 45 from the corresponding week of last year. The principal causes of death were: Typhoid fever, 5; measles, 2; pertussis, 4; diphtheria, 5; consumption, 37; cancer, 23; apoplexy, 11; heart disease, 34; arteriosclerosis, 6; acute respiratory disease, 21; enteritis, 76; hepatic cirrhosis, 8; appendicitis, 4; Bright's disease, 25; premature birth, 10; congenital debility, 12; senility, 7; suicide, 3; accidents, 10; and marasmus, 7. There were 165 cases of contagious disease reported with 11 deaths, as compared with 120 cases and 11 deaths reported in the preceding week. Typhoid fever shows a marked increase, 102 cases being reported. This is nearly double the number reported in the previous week and four times as many as were reported in the week of July 17. Investigations made by Chief Medical Inspector Dr. Cairns show that in the great proportion of cases the disease was contracted outside of the city.

#### SOUTH DAKOTA.

**Addition to Hospital.**—An addition is being built by Dr. C. W. Hargens to his hospital in Hot Springs, which will increase the accommodations of the institution to 48 beds.

**State Board Election.**—At the annual meeting of the State Board of Medical Examiners, held in Deadwood, the following officers were elected: President, Dr. Leslie G. Hull, Watertown; vice-president, Dr. Harry S. Graves, Hurley; and secretary, Dr. Hiram E. McNutt, Aberdeen.

**Personal.**—Dr. Romeo R. Stevenson, Sioux Falls, was recently injured in a runaway wreck between Paris and Lyons, France.—Dr. A. V. Rock, Hoven, narrowly escaped drowning by the capsizing of a boat in the Missouri River, near Le Beau.—Dr. H. J. F. Bright, White Lake, has been appointed a member of the State Board of Medical Examiners.—Dr. Arthur B. Hawes, Elk Point, has been appointed examining physician on the board of lunacy of Union County; vice Dr. Leroy S. Moore, resigned.

#### TENNESSEE.

**Colored Physicians Meet.**—At the annual meeting of the Colored State Medical Society, held in Clarksville, July 14 and 15, Dr. Robert T. Burt, Clarksville, was elected president; Dr. R. L. Fields, Mason, secretary; Dr. Charles O. Hunter, Columbia, treasurer; and Dr. J. H. Hale, Nashville, historian.

**Infectious Diseases.**—An epidemic of smallpox is reported among negroes from McMinn County, near Niota, where 10 or 15 cases are said to exist.—An epidemic of throat trouble is reported from Henning, where several deaths have occurred.—Franklin is reported to have an epidemic of typhoid fever.

**Medical Library.**—After many years' work a modern medical library is almost ready for the use of physicians of Nashville and Davidson County. The library will have about 3,000 volumes and many medical journals will be kept on file. The library will be kept and cared for as a separate part of Carnegie Library.

**Personal.**—Dr. J. C. Brennan, Woodbury, was assaulted August 17 and sustained a fracture of the skull.—Dr. Rufus E. Fort, Nashville, has been appointed chief surgeon of the Tennessee Central Railroad.—Dr. William H. Smith, Memphis, has been appointed United States prison physician, vice Dr. Joseph T. Spence, resigned, to accept the position of surveyor of customs and collector of the port.—Dr. William E. McCampbell, Nashville, has been elected chairman of the Civic Sanitary League.

#### TEXAS.

**Diphtheria Epidemic.**—Diphtheria is reported from Livingston and in the neighborhood of Round Top and Littig.

**Hospital for Denison.**—The Denison Medical Society presented a proposition to the city council August 10, offering to furnish ground and equipment for a hospital, provided the council would appropriate \$50,000 for the construction of a building and \$3,000 a year for its maintenance.

**Fire in Medical Journal Office.**—The Continental National Bank Building, Fort Worth, in which the office of the *Texas Medical Journal* is located, caught fire July 19 and considerable damage was caused, but fortunately the files, indices, legislative records, etc., were not irreparably injured. Local officials view this as a demonstration of the importance of providing a fireproof depository for the records and library of the society.

**State Board Meeting.**—At the annual meeting of the State Medical Board, held in Fort Worth, August 3, Dr. James D. Osborne, Cleburne, was elected president; Dr. John D. Mitchell, Fort Worth, vice-president; and Dr. Marquis E. Daniel, Honey Grove, secretary-treasurer. A resolution was adopted providing that in cases where license to practice medicine in the state had been granted, and the individual to whom such license was granted uses it in the interest of advertising hospitals, the license would be revoked.

**Personal.**—Dr. and Mrs. John O. McReynolds and daughter, Dallas, returned from Europe July 29.—Dr. Manton M. Carriek, Dallas, has been appointed assistant quarantine inspector, with headquarters at Galveston.—Dr. George W. Emory, Bryan, was painfully hurt in a runaway accident August 11.—Dr. Cuvier Lipcomb, Denton, in stepping from a street car August 16, fell and sprained his hip.

#### UTAH.

**Tuberculosis Not Admitted.**—The regents of the University of Utah have promulgated a decree that no teacher, student or employé infected with tuberculosis will be admitted hereafter to the class rooms or buildings of the university.

**Personal.**—Dr. Robert S. Joyce, Ogden, has resigned from the board of education.—Dr. David C. Budge, Logan City, has been elected medical director of the new Utah-Idaho Hospital.—Dr. Edward J. Rich, Ogden, is said to be seriously ill with typhoid fever.

**Health of Salt Lake City.**—During July there were only 72 deaths in Salt Lake City, or 16 fewer than for the corresponding month of last year. The birth record for the month was 194. There were reported 86 cases of communicable disease, as follows: Whooping-cough, 46; smallpox, scarlet fever and diphtheria, each, 10; measles, 5, and typhoid fever, 4.

#### VIRGINIA.

**Dispensary Established.**—Drs. C. E. Verdier and Karl Osterhaus have established a surgical dispensary in Norfolk, working in connection with the City Dispensary and Infant Sanitarium at Virginia Beach.

**Personal.**—Dr. Stanley H. Graves, Norfolk, has been appointed chief surgeon of the Norfolk & Portsmouth Traction Company.—Dr. Charles W. Massie, Richmond, was thrown from his buggy August 17, and suffered a fracture of the skull and other injuries.

#### WISCONSIN.

**Gives Hospital to City.**—Charles B. Clark, Neenah, has given the city a hospital costing \$75,000, in memory of his sister, who died several months ago.

**Sample Ordinance Passed.**—The ordinance framed by the commissioner of health of Green Bay, Dr. Henry Rhode, prohibiting the distribution of "patent" and proprietary medicines in the city, under penalty of fine, has been passed.

**Communicable Diseases.**—Kossuth reports 41 cases of smallpox and 16 houses are in quarantine.—At a meeting of Eau Claire physicians it was decided to quarantine all local cases of spinal meningitis, of which 15 cases are reported in the city.—Oshkosh reports an epidemic of typhoid fever.



**Personal.** Dr. William A. Sickels, Milwaukee, has been elected professor of electrotherapeutics in the medical department of Marquette University.—Dr. John W. Fisher has been elected medical director; and Drs. George A. Harlow, William Thorndike and David E. W. Wenstrand, assistant medical directors of the Northwestern Mutual Life Insurance Company, Milwaukee.—Dr. H. B. B. Poppe, Wantoma, has been appointed United States pension examining surgeon, vice Dr. Charles A. Lathrop, resigned.—Dr. Wilhelm Becker has resigned as a member of the faculty of Milwaukee Medical College.—Dr. Uranns O. B. Wingate, Milwaukee, has been made medical director of the Peerless Springs Hotel and Sanitarium, Fox Lake.

**Medical Staff Selected.**—The Misericorde Hospital, Milwaukee, announces the following medical staff: Medicine—Drs. Walter H. Nielson, Louis F. Jermain, Nelson W. Reynolds and Joseph A. Purtell; gynecology—Drs. Dennis J. Hayes, Robert G. Sayle and Peter H. Jobse; obstetrics—Drs. Timothy L. Harrington, Willard T. Nichols, Milo R. Hewitt, Henry McCabe, William Jobse, Carl Wagner, Thomas Fitzgibbons, Joseph P. McMahon; Charles M. Schoen, John T. Seollard, Daniel Hopkinson, Edward J. Purtell, Frank R. Wasielewski, William F. Lochemes and William H. Halsey; diseases of children—Drs. Lorenzo Boorse and A. W. Meyers; nose and throat—Drs. Franz Pfister, Herman Stolte and James Cavaney; skin diseases—Dr. Albert H. Purdy; eye and ear—Drs. Anthony J. Tangher and James A. Bach; and nervous diseases—Dr. William F. Wegge.

#### GENERAL.

**Pure Food and Drugs Congress.**—We referred recently to the First International Congress for the Repression of Adulteration of Alimentary and Pharmaceutical Products to be held in Geneva next week. Further information just received shows more fully the objects of the congress, which are to determine definitions that may serve as standards for unadulterated products and to establish a sort of international alimentary codex of commercially pure products. Besides the general opening meeting, at which organizations will be effected and addresses made by the official delegates, there will be five general sessions on the following divisions: 1, wines, alcohols and other intoxicating beverages; 2, milk, butter, cheese, eggs, edible oils and fats, preserves, meats, pork butchers' meat, and salted provisions; 3, cocoa, chocolate, coffee, tea, cereals, flour, semolina, starchy products, bread, alimentary pastes, pastry, sugar, sirup, confectionery, honey, mustard and spices; 4, natural mineral waters, artificial gaseous waters, lemonade, cooling effervescent drinks, crude materials, chemicals and galenical products employed in pharmacy. The published list of members and delegates is a long one, including twenty-one from the United States. The number expected to attend from European countries is naturally much larger, the list of French delegates and members far outnumbering those of any other country.

#### CANADA.

**Provincial Medical Association Meeting.**—The ninth annual meeting of the British Columbia Medical Association was held in Vancouver, August 20 and 21. Dr. John M. Pearson, Vancouver, presiding and Dr. R. Eden Walker, New Westminster, acting as secretary. The more interesting discussions hinged around three papers. The first was that read by Dr. R. V. Dolbey, Victoria, entitled "A Plea for the More Rational Conception of Appendicitis." Reference was first made to the starvation method as advocated by Ochsner, but which was considered madness by the French school; and the speaker thought every man should follow his own opinion and views in the matter. Should the doctor operate on sight was the first interesting point taken up. While in America they believed in operation on sight, in Europe they inclined to the "ward off" principle. The speaker prophesied that in ten years' time surgeons will look on appendicitis from a blood-pressure standpoint. Dr. Joseph Price, Philadelphia, stated he had not heard such a masterly discussion on appendicitis for over a quarter of a century. In his opinion, while Ochsner's treatment had been dangerous and fatal in many cases of children, yet the English surgeons were not aggressive enough; he believed in operation at sight. Dr. W. D. Brydone-Jaek, Vancouver, read an exhaustive paper on the medical inspection of schools. Vancouver is farther ahead than any other place in British Columbia, as they have appointed a medical inspector of schools. South Vancouver also has a medical inspector. This is all that has been done in this direction in British Columbia. The speaker said that it would pay that province to have a staff of medical men paid by the education department

of the province under the supervision of a medical board, giving lectures in hygiene and inspecting the school children in the different districts. Dr. Arthur L. Kendall, Vancouver, presented a paper on pure milk. In British Columbia there is no law of any kind governing the sale of milk. The conditions under which milk is marketed in Vancouver are a lasting disgrace; there is no one to whom power is delegated to prosecute; the situation calls for the gravest consideration. The amalgamation of all medical associations in the west and also of all similar bodies throughout Canada was discussed, but no action was taken. The election of officers resulted as follows: President, Dr. Charles J. Fagan, Victoria; vice-president, Dr. John H. Hogle, Nanaimo; treasurer, Dr. James D. Helmcken, Victoria (re-elected); and secretary, Dr. R. Eden Walker, New Westminster (re-elected).

#### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Aug. 22, 1908.

#### The Mortality of Occupations.

Dr. Tatham, superintendent of statistics, has presented to the registrar general a report on the occupational mortality in the three years 1900-02, which has just been published, and is a continuation of a somewhat similar report made ten years ago. The time which has been taken in the preparation of the report may seem considerable, but it is explained by Dr. Tatham's account of the difficulties encountered and the numerous sources of error against which he had to guard. His object has been to furnish material for continuing the study of the mortality of workers in various occupations. A valuable aid to increased accuracy has been given by the inclusion in the census of 1901 of returns showing the original occupation of persons who from age or infirmity had become unable to work and who were formerly described only as "retired." Dr. Tatham has taken the interval between the twenty-fifth and sixty-fifth year as that representing the period of industrial capacity and for this period has prepared "comparative mortality figures." In the three years referred to there were registered the deaths of 284,009 males between the ages of 25 and 65. Among the professions the clergy showed the lowest mortality; the proportion of them living beyond 65 enormously exceeded the average. Their comparative mortality figure (524) is lower than that of any other occupation except farmers. On the other hand, the medical profession shows a high comparative mortality, 952. Compared with lawyers, doctors die more rapidly at every stage of life. The mortality of publicans (saloon keepers) exceeds the standard at every age, and between 25 and 45 their mortality is more than double the average, but the figures are a distinct improvement on those of previous years. Diseases of the nervous and circulatory systems contribute the largest share to their mortality. The mortality of dangerous occupations shows a decline. Thus among woolen manufacturers, potters, stone quarriers and coal miners there has been a marked decline in the mortality due to phthisis. In lead workers and potters the amount of fatal lead poisoning has been reduced more than 50 per cent.

#### Deaths Under Anesthetics.

Public attention has been attracted to the number of inquests held recently on patients who have died in London under chloroform and other anesthetics. The home secretary has been asked in parliament whether his attention had been called to the fact that three inquests had been held in one day on persons who had died under anesthetics. In reply Mr. Gladstone said that he was in communication with the lord president of the council, and through him with the general medical council, on the question whether a course of instruction in the administration of anesthetics can be included in all cases in the course of study required for medical qualification.

#### The Registration of Deaths Bill.

A bill has been introduced into parliament amending the law on the registration of deaths, and is supported by Sir Walter Foster and other medical members. Its object is to give effect to the principal recommendations of the select committee on death certification which sat in 1893. It enacts that any stillborn child born after the twenty-eighth week of pregnancy shall be deemed to have been born alive and to have died after birth. By this legal fiction the registration of deaths is brought into line with that of births under last year's act. It is also proposed that the certificate of death shall be so framed that the physician signing it must have inspected the body, thus abolishing the clause "as I am informed" of the present certificate. The certificate must also specify the signs



from which the fact of death is inferred and state that the certifier has personally attended the deceased on two occasions, one of these two being within eight days of death. The latter modification decides a question—at present difficult—whether an inquest should or should not be held in certain cases of sudden death. The rule is to hold an inquest in all cases in which a person dies without having been attended by a registered medical practitioner. But it frequently happens that a doctor is called in for the first time to a patient who is taken suddenly ill and dies soon afterward. The problem then arises, is the doctor justified in stating on the certificate that he “attended” the deceased in his last illness. This question has never been dogmatically settled as the proposed law will do by making a minimum of two attendances necessary. At present the doctor can, according to his own discretion, give or refuse a certificate. However, some coroners have ruled that seeing a patient only once before death does not constitute “attendance.” Another provision is the appointment of public certifiers of death who must be physicians. The functions of these officials will be to verify and countersign the certificate given by a coroner after an inquest. They will thus be medical advisers to the coroners. The public certifier is also to be informed by a registrar when there is doubt about any death or its certification, to inspect the dead body, and to issue a certificate of death if he thinks fit.

#### Oxygen Inhalations in Athletics.

Mr. Leonard Hill, F.R.S., lecturer on physiology at the London Hospital, has been conducting some remarkable experiments on the use of oxygen in athletics, which he believes will lead to the breaking of records. For the past year, in co-operation with his demonstrator, Mr. Flaek, he has been engaged in a research on the cause of hard breathing. He has found that a man can hold his breath for three times the normal period by taking three inhalations of oxygen. Dr. Vernon of Oxford succeeded in holding his breath for eight and one-half minutes. These experiments led Mr. Hill to think that the panting and distress of athletes might be largely mitigated by breathing oxygen deeply before and after a race, the former to prevent distress and to increase running powers, the latter to relieve whatever distress occurs. At the London Hospital athletics oxygen was given to some of the runners immediately after the races and greatly relieved their distress. A well-known athlete, Mr. Holding, ran an unpaced quarter of a mile in fifty seconds after breathing oxygen for three minutes. In the trials for the Olympic games he had been unable to do this in less than fifty-two seconds. The onlookers declared he was not more distressed than if he had run 100 yards, and Mr. Holding agreed with this. There was a notable absence of that stiffness of the muscles and grogginess in the legs which follows a great exertion in running. Another athlete, Mr. Just, after breathing oxygen for three minutes, ran half a mile in one minute and fifty-five seconds, slightly beating his record. Mr. Hill is now trying to get a world's record-breaker to run for him.

#### Vital Statistics in Edinburgh.

The report of Sir Henry Littlejohn, health officer of Edinburgh, contains much matter of interest. Once more the falling birth rate has touched its lowest figure, 21.68 per 1,000. The death rate also is falling, but whereas the death rate has fallen since 1861 from 23.15 to 14.38—a drop of 60 per cent.—the fall in the birth rate is still greater—from 33.40 to 21.68, about 63 per cent. The falling birth rate is not due to diminution of the number of marriages, for that has slightly increased. It is evidently due to the widespread desire of married people to have a limited number of children.

#### Are Londoners Poisoned by Coal Gas?

This question is propounded by the *Lancet* in consequence of the report of the largest of the metropolitan gas companies that no less than 110,000,000 of cubic feet of gas had not been accounted for during six months. The loss of this large amount of gas is attributed to leakage in consequence of the increased weight and speed of vehicles since the development of motor traffic disturbing the gas mains. The chairman of the company in making the report was only concerned as to the monetary loss. But the *Lancet* points out that 10 per cent, and probably more of this gas consists of the poisonous carbon monoxid and that it is no wonder when there is no movement in the air and there is a stagnant mist or fog (a time when there is a great demand for gas) Londoners complain of headache, dizziness and oppression—symptoms of chronic carbon monoxid poisoning.

#### DUBLIN LETTER.

(From Our Regular Correspondent.)

DUBLIN, IRELAND, Aug. 20, 1908.

#### The University Bill.

During the past few months there have been under debate in Ireland two public matters of much interest to the medical profession, the university bill and the tuberculosis bill. The former has now passed both houses of parliament and only awaits the royal assent to become a law. Under its provisions two new universities are established in Ireland, one in Belfast and one with its center at Dublin, but with constituent colleges in Dublin, Cork and Galway. The college in Dublin is yet to be started, while the Queen's colleges in Belfast, Cork and Galway take their place in the new universities. During the sixty years of their existence the three Queen's colleges have had a varied course. For thirty years they together constituted the Queen's University. Then the university was abolished and for thirty years the colleges have been in the cold, though teaching students for the examining board designated as the “Royal University.” Now this board has been abolished and the colleges are arranged in the new combination.

#### The Tuberculosis Bill.

The tuberculosis bill introduced by the Irish government and designed to give local sanitary authorities additional power to deal with tuberculosis has given rise to a great deal of debate in medical circles. It was drafted apparently without consultation with any competent medical advisers, and at the dictation of the local government board, the government department which has the responsibility for dealing with the public health. This board has distinguished itself even among government departments by its inactivity and incompetence, and as large added powers are proposed to be given to it under the bill, much hostility to certain provisions of the bill has been aroused. The bill itself is, indeed, a very small one, and the principal powers conveyed in it are in the direction of providing sanatoria and isolation hospitals, of inspecting dairies and destroying tuberculous cattle, and of giving instruction in the methods of avoiding tuberculous infection. One clause, however, that rendering it compulsory for the medical attendant to notify the medical officer of health of the district concerning the existence of cases of tuberculosis has called forth a regular tornado of opposition. Curiously enough, it is a reform demanded for years past by all those interested in the tuberculosis question. It is not easy to see any rational ground of opposition to it. The same principle is applied to the case of the other infectious diseases, and has not been found to press unpleasantly on any one. If the public health authorities are to attempt to deal with tuberculosis at all, it is necessary that they should have some means of learning where the disease is situated. We are likely to hear more about the question in the next month or two, as through pressure of business the bill has had to be postponed till the autumn session of parliament.

#### Registration of Nurses.

Within the past few days another Irish grievance has come into being, the aggrieved parties being the Irish nurses. For many years past the trained nurses of England, Ireland and Scotland have been agitating for a system of state registration. During the last session of parliament a bill drawn up by the nursing organizations was introduced into the house of lords, and has passed that house, but with the extraordinary amendment added that Ireland should be excluded from its provisions. The amendment was added at the instance of the government, and the Irish nurses, who are clamoring like their English sisters for registration, want to know the reason why. No one can tell them, though there are rumors that the religious orders, in whose hands is much of the nursing in Ireland, are opposed to the principle of registration. The net result is that the bill is likely to be wrecked, and many medical men will not be sorry, since they regard a state-registered nurse as a probable rival in practice.

#### Death of Sir John Banks.

During the past few weeks Ireland has lost the dean of the medical profession in the person of Sir John Banks, who had reached the age of 97. He had long retired from practice, and some years ago quite lost his sight, but his intellect was clear to the last, and he retained his interest in current affairs. Sir John had been one of the leading figures in Irish medical life for many years while occupying the position of regius professor of medicine in Dublin. He had been president of



the Royal College of Physicians in Ireland, and president of the British Medical Association. It is related of him that on one occasion being offered a knighthood by Queen Victoria, he replied in the following laconic telegram: "No, thanks. John Banks."

#### BERLIN LETTER.

(From Our Regular Correspondent.)

BERLIN, Aug. 13, 1908.

#### University Personal News.

The position of teacher of orthopedics left vacant by the death of Hoffa, against the filling of which difficulties were raised on the part of the faculty, as I have mentioned in a previous letter, has now found an occupant. Professor Joachimsthal, a pupil of the renowned Prof. Julius Wolff, who may be mentioned as one of the founders of orthopedic surgery, has been appointed as the successor of Hoffa. Professor Joachimsthal can show some noteworthy accomplishments in his special field. He has the reputation of being a good teacher and successful in practice. To be sure, he does not equal the brilliant personality of Hoffa, and I believe that I am not making too severe a criticism when I assert that he has been chosen because a better man could not be procured.

The various vacancies which have occurred in the chairs of pharmacology in the Prussian universities have also been filled. Privat-docent Dr. Heubner, a son of our regular professor for children's diseases, has been called to Göttingen as the successor of Professor Jacoby, and Gürber, professor of physiologic chemistry, has been called from Würzburg to Marburg as the successor of Professor Heffter (who, as formerly announced, succeeded the deceased Liebreich in Berlin). The change in Gürber's sphere of teaching will not seem striking to you in America, where, as in England, changes in the subjects taught are not uncommon. In Germany, also, it was formerly frequently the case that an anatomist obtained the chair of physiology or of surgery. In late years, however, changes of this sort have scarcely occurred. That such a change was possible in the case of Professor Gürber is to be explained by the fact that pharmacology in the Prussian universities at the present time is treated in somewhat step-mother fashion. The fundamental conditions of pharmacologic instruction have changed so materially in late years that the proper disposition of the subject is unsettled. The discovery of new remedies is a rare occurrence in our university pharmacologic institutes; this work is carried on in the laboratories of the great manufacturing chemists in which scientific chemists are working continually with great success in the development of synthetic chemistry, pharmacology and pharmacy. The important remedies which have been discovered of late, viz., veronal, sajodin, aspirin, etc., etc., originated in the great factories, such as the Elberfeld color works, the Höchst color works, Merck's factory at Darmstadt, etc. The university pharmacologic institutes confine themselves, as a rule, to testing these products after their introduction. But as these institutes have no clinical material available the testing can extend only to animal experiments. The clinical trial of the new medicines naturally takes place in the clinics and hospitals, and this field of study is lacking in the pharmacologic instruction. There remains for it only the art of prescription writing, and this task does not seem a sufficient basis for a special chair of pharmacology. What I have set forth here is the opinion of many clinicians who, for this reason, have come to the conclusion that instruction in pharmacology should be attached to clinical medicine. That the pharmacologists, on the other hand, object to this is easily understood. I refer in this connection in particular to an article which Prof. Hans Horst Meyer, of Vienna, a pharmacologist very prominent at the present time, published in one of the latest numbers of the *Deutsche med. Wochenschrift*. But it appears, as noted above, that with the Prussian authorities the trend of opinion is in a direction unfavorable to pharmacology. This is well illustrated by the fact that when the noted pharmacologist, Professor Binz, at Bonn, resigned his chair a short time ago on account of age, a pharmacologist was not appointed to succeed him, but the professor of internal medicine, Professor Leo, although Leo's achievements in the pharmacologic field are quite unimportant.

Moreover, Prof. George Klemperer, who is at present a privat-docent of special pathology and therapeutics at Berlin, has been selected by the government as the successor of Professor Leo. The Bonn medical faculty are not, however, satisfied with this selection, and for several months negotiations have been in progress regarding this question. The government has, of course, the right to fill the place without

reference to the wishes of the faculty, but in this case it may well hesitate to do so, as not long ago it transferred a professor from the Bonn faculty against their expressed wish, and the repetition of the proceeding might lead to a conflict with the professors at Bonn. Whether a harmonious conclusion will be reached remains to be seen. Certainly the Bonn faculty would gain an excellent teacher in George Klemperer.

Professor Ewald, the well-known author in the field of gastrointestinal pathology, has been appointed an ordinary honorary professor on a regular salary (*ordentlicher Honorar-Professor*). This peculiar position is best characterized by the humorous definition: An "ordinary honorary" professor is a professor who is not an *Ordinarius* and who receives no *Honorare* (fees). Regular (*ordentliche*) professors are those who have a seat and a vote in the faculty. The "ordinary honorary" professors do not belong to the voting body of the faculty, but have a salary and this honorary title. At any rate, it signifies a distinction which the prominent clinician has well deserved. At present we have in Berlin 11 "ordinary honorary" professors, considerably more than in former years.

Of late in Germany, and especially in Prussia, it has become the custom on the part of the government to grant titles and orders in greater numbers and more readily than formerly, and the medical profession comes in for its share as well. That the distinctions lose in value with their greater frequency is beyond question.

#### VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, AUSTRIA, Aug. 18, 1908.

#### Postgraduate Work in Vienna.

I wish to express my heartiest endorsement of your editorial in the issue of July 25 on "Medical Work in Vienna." The man who wrote it shows a very good insight into conditions as they are now here. Indeed, lately the number of men who wanted to obtain all the best of medical knowledge for no money and no time had increased to such a degree that they were really handicapping those who were intent on earnest work. I hope that the editorial will be read by all those who intend coming to Vienna.

#### The New Clinics in Vienna.

To-day the foundations of the three new clinics in the new General Hospital have been laid. The new buildings will not be handed over to the university before 1910. The first is to be a clinic for internal medical cases (Professor von Noorden) with 100 beds, an isolation pavilion, a diet kitchen for special diet in diseases of metabolism, and a special laboratory; the second a clinic for diseases of the nose and throat (Professor Chiari) with 48 beds, an isolation pavilion of 10 beds for diphtheria cases, all necessary annexes, an operating theater and a laboratory; and the third a clinic for diseases of children (Professor von Escherich), which will have 44 beds, an infant ward with 10 cots, and a *coucouse*, or incubator ward, with 72 boxes, for premature or very delicate babies. In separate pavilions will be wards for scarlet fever (24 beds), and diphtheria (21 beds). The lecture hall, where the professors will deliver their lectures, will seat 236 students in the medical clinic, 200 in the pediatrics, and 100 in the laryngologic clinic.

The expenditure for these three clinics has been estimated at 5,000,000 crowns (about \$1,000,000) apart from the cost of the site. The price of the ground will be more than covered by the proceeds of the sale of the old general hospital.

The two gynecologic and obstetric clinics (Professors Schauta and von Rosthorn) are already in working order. Each contains 200 beds, with 35 reserve beds, for obstetric cases, and 52 beds, with 6 reserve beds, for gynecologic cases. There is also a pavilion for 24 infectious cases. All the nurses, the members of the medical staff, and the students practicing their fortnight's *practicum* (the two weeks' service as junior assistant which each student must give at least twice), are lodged within the clinic. The lecture hall will accommodate 200 students. Apparatus for instruction, laboratories and kitchens are provided on a liberal scale. A third obstetric clinic, for the instruction of midwives only, will soon be opened. The expenditure for these three clinics, which is met by the state, also amounts to a million dollars. The new pavilions are only 200 yards away from the old *Allgemeines Krankenhaus* or general hospital, well known to all students, and will enjoy better air and greater quiet, thanks to the closer vicinity of an extensive park and the greater distance from public traffic.



## Pharmacology

[CONTRIBUTION FROM THE LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION.]

### SODIUM PERBORATE.

W. A. PICKNER AND H. A. CLARK.

A chemical compound known as sodium perborate has been put on the market in the last few years and its use proposed in both medicine and the arts. Its therapeutic and technical value depends on its property of forming hydrogen dioxid when brought in contact with water, and it has been proposed as a substitute for hydrogen dioxid solution (Aqua hydrogenii dioxidi, U. S. P.). The advantages claimed for it over the well-known "peroxid" are those of stability, uniformity, convenience, greater oxidizing power and decreased cost. Thus, it is stated that while "hydrogen peroxid preparations are subject to deterioration and loss in strength when once the bottle is unsealed" sodium perborate "will keep and stand transportation in its concentrated powder form and always be ready for solutions of hydrogen dioxid of any desired strength, whereas the bulky hydrogen peroxid 10 volume solution has to be diluted for use in most cases and keeps you always uncertain of its real strength." Another advantage claimed for sodium perborate is that its solutions in water are alkaline, while the available medicinal hydrogen peroxid solutions are always acid.<sup>1</sup>

Since it appeared that sodium perborate might possess some real advantages over hydrogen dioxid the Council on Pharmacy and Chemistry took up the examination of the product as found in the American market with a view to including it in the New and Non-Official Remedies. In this country sodium perborate is advertised and sold chiefly by the Ruessler & Hasslachier Chemical Company, New York, and the firm claims that the preparation contains from 9 to 10 per cent. of available oxygen. Samples of sodium perborate were ob-

tained both direct from the firm and also in the open market. When assayed by the method given below<sup>2</sup> they were found to contain, not from 9 to 10 per cent. of available oxygen as stated on the label, but from 6.54 to 7.66 per cent., as is shown in the account of the examination given in detail below.

The above report was submitted to the Council on Pharmacy and Chemistry. The council having directed publication of the report, it was sent to the Ruessler & Hasslachier Chemical Company prior to publication. The reply of the firm was submitted to the Council by a subcommittee, with the following report:

In accordance with the general procedure followed by the Council, the report of the chemical laboratory as adopted by the Council and ordered published was submitted to the manufacturer. In reply the manufacturer states that the firm is now conducting experiments to overcome the defects found. Your committee regrets that the manufacturer does not agree to withdraw the false claims made for the product until the product possesses the strength claimed. It is understood that the Council will gladly reinvestigate the product any time that the firm believes that their experimentations have led to a successful issue and the product as found on the market complies with the rules. In the meantime your committee recommends that the report be published so that physicians may be informed of the truth and not be misled by the claims of the manufacturer which may in the future be trustworthy but certainly are not so at present.

This report was adopted.

W. A. PICKNER, Secretary.

### Exposure of Fraudulent Proprietaries in Germany.

The need of an unbiased scientific examination of all medicines of a proprietary nature, instead of reliance on the manufacturer's claims for information regarding them, is becoming

1. The chemical formula assigned to sodium perborate is  $\text{NaBO}_3 + 4\text{H}_2\text{O}$ . While sodium meta-borate  $\text{NaBO}_2$  has the constitutional formula  $\text{BO}(\text{ONa})$  and is derived from  $\text{BO}(\text{OH})$  sodium perborate  $\text{NaBO}_3$  has the constitutional formula  $\text{BO}(\text{OONa})$  and is derived from  $\text{BO}(\text{OOH})$ . When sodium perborate is treated with water hydrolysis occurs, thus:  $\text{NaBO}_3 + \text{H}_2\text{O} = \text{NaBO}_2 + \text{H}_2\text{O}_2$ ; the sodium meta-borate so formed gradually absorbs water to form borax and sodium hydroxid, thus:  $4\text{NaBO}_2 + \text{H}_2\text{O} = \text{Na}_2\text{B}_4\text{O}_7 + 2\text{NaOH}$ . From this, it appears that sodium perborate when dissolved in water reacts to a certain extent to form hydrogen dioxid, borax and sodium hydroxid; if acid is added to neutralize the sodium hydroxid then the reaction goes on to completion, and all the sodium perborate is decomposed into hydrogen dioxid. Assuming that every molecule of sodium perborate  $\text{NaBO}_3 \cdot 4\text{H}_2\text{O}$  yields one molecule of hydrogen dioxid, which, in turn, contains one atom of available oxygen, then every 152.94 gm. sodium perborate should yield 15.88 gm. of available oxygen.

2. SPECIMEN 1.—Three one-quarter pound packages (designated A, B and C) received at the chemical laboratory of the American Medical Association direct from the manufacturer, in July, 1907. Package A was assayed at that time and found to contain 6.79 per cent. available oxygen. Package B was left in its original condition, and package C was transferred to a glass stoppered bottle. On June 3, 1908, packages A and B each assayed 7.14 per cent. available oxygen, while package C (the one kept in the glass stoppered bottle) assayed 5.29 per cent. available oxygen.

SPECIMEN 2.—Three one-quarter pound packages (designated A, B and C), received at the chemical laboratory of the American Medical Association direct from the manufacturer Aug. 23, 1907. Packages A and C were not opened when received. Package B was opened and examined at once. The contents were found to weigh 140 gm. It assayed 7.66 per cent. available oxygen. On June 6, 1908, the contents of this package weighed 115.5 gm. and assayed 7.32 per cent. available oxygen. Package A was opened and found to assay 7.2 per cent. available oxygen. Package C is still retained in its original condition.

SPECIMEN 3.—A one-quarter pound package purchased in the open market in Chicago, Aug. 24, 1907. The contents of the package weighed 130 gm. on date of purchase and assayed 6.59 per cent. available oxygen. On June 3, 1908, the contents of this package weighed 106 gm. and assayed 7.34 per cent. available oxygen.

SPECIMEN 4.—A one-quarter pound package purchased from the Chicago branch of the Ruessler & Hasslachier Chemical Co., May 13, 1908. On the date of purchase this specimen assayed 6.54 per cent. available oxygen.

SPECIMEN 5.—A one-quarter pound package purchased in the open market in Chicago on April 21, 1908. On date of purchase this specimen assayed 6.74 per cent. available oxygen. On June 3, 1908, this specimen assayed 6.26 per cent. available oxygen.

The above examination reveals two important facts regarding this substance. In the first place it is not of the strength indicated on the label; in the second place the product seems to be decidedly unstable and unreliable. Specimen 1, in the eleven months intervening between the two assays, increased in strength. The weight of this sample was not ascertained at the time of purchase. Specimen 2 lost by keeping, approximately 17.5 per cent. in weight. If this loss is due to the loss of moisture or water of hydration only, a

corresponding increase in available oxygen should be noted. In other words the specimen should have assayed at this time something over 9. per cent. available oxygen. Instead approximately 4 per cent. of the amount of available oxygen originally present had disappeared, showing that the actual loss of available oxygen was about 26 per cent. of that originally present. Specimen 3 lost approximately 18 per cent. in weight. Again, if this loss was due to water only, the specimen should have assayed approximately 8 per cent. available oxygen. This indicates an actual loss in available oxygen of approximately 10 per cent. of that originally present.

METHOD EMPLOYED.—The following method was used to determine the available oxygen content in sodium perborate: A weighed quantity of the salt was placed in a dry flask and about 200 c.c. of water added. To this was added 10 c.c. dilute sulphuric acid and titration with potassium permanganate solution at once begun. A few of the earlier estimations were checked by the method proposed in Merck's *Prüfungsvorschriften für die pharmazeutischen Spezial-Präparate*, as follows: To a weighed quantity of sodium perborate about 1 gm. was placed in 100 c.c. volumetric flask and treated with 50 c.c. water. To this 10 c.c. of dilute sulphuric acid were added and solution hastened by moderate agitation. Potassium iodid, 5 gm., dissolved in 25 c.c. of water were added and the mixture allowed to stand with frequent agitation during one-half hour. Sufficient water to make the liquid measure 100 c.c. was then added and portions of 10 c.c. titrated with tenth-normal sodium thiosulphate solution.

The results above given were transmitted to the manufacturers. In their reply the manufacturers did not claim that the product sold by them contained from 9 to 10 per cent. available oxygen, but nevertheless appeared to consider it their privilege to sell it under this claim. While not claiming that the product really contained 9 to 10 per cent. available oxygen, they did express surprise at the low results obtained in this laboratory and, as was but natural, suggested that probably the method of assay used by us was faulty and did not do their product justice. Thus, they suggested, that there is danger that some oxygen may be liberated from the solution before the titration is made. They suggested that the liquid should not be heated in order to produce a quicker solution and that the sulphuric acid should only be added after all the perborate has dissolved. To determine whether complete solution of perborate before titration is essential, the following experiments were made:

1. Sodium perborate was treated with water having a temperature of 9 C. (48.2 F.); the dilute sulphuric acid was added before complete solution and titration with permanganate begun at once. Result, 7.89 per cent. available oxygen.

2. The conditions of the experiment were as in (a), except that the water had a temperature of 35 C. (95 F.). Result, 7.76 per cent. available oxygen.

3. The water had, and was kept at, a temperature of 9 C. (48.2 F.); the acid was added only after complete solution had occurred (this required 30 minutes), and the titration then begun. Result, 7.58 per cent. available oxygen.

4. The water had a temperature of 35 C. (95 F.). The acid was added after complete solution had occurred (4 minutes), and titration then begun. Result, 7.59 per cent. available oxygen.

These experiments show that the method of titrating sodium perborate as used in our experiments did not entail loss of oxygen prior to the titration.



generally recognized. In Germany the recent exposure of the products of Dr. A. Horowitz—Arhovin,<sup>1</sup> Pyrenol,<sup>2</sup> Visvit<sup>3</sup> and Iodofan<sup>4</sup>—by Professor Thoms, F. Zernik and others has done much to show that some method of controlling such products is needed to protect physicians from fraud.

At the annual meeting of the Association of German Chemists (Verein deutscher Chemiker), recently held in Jena, Germany, the necessity for an official board or institute to analyze and pass judgment on proprietary medicines was again emphasized.

A paper was read in which it was held that only an official bureau would be in a position to impart information in regard to the character of such preparations, whether misleading statements were being made about it, and whether the product is dangerous to the public health or deficient in therapeutic properties. The warnings issued by the Berlin police, the Carlsruhe Board of Health and the Pharmaceutic Institute of the University of Berlin have generally blown past like an idle wind, leaving no permanent effect, except that those who exposed the fraud were usually put to much inconvenience and annoyance. The author of the paper stated that he was threatened with a damage suit when, ten years ago, he called attention to the chemically incorrectly designated mixture sailing under a scientific flag, Glycosolvul, one of the first representatives of the now ubiquitous fake synthetics.

Lately, he continued, the director of the Pharmaceutic Institute of Berlin University—Professor Thoms—had to appear in court on account of his exposure of Pyrenol. He commented on the audacity of the manufacturers of fraudulent products who try to frighten their adversaries by arrogant impudence; he instances the fact that the manufacturer of Pyrenol twisted, into advertisements of his remedy, the exposures of it made by Thoms, Zernik and Cadamer. While physicians are the ones who are directly humbugged, in Germany the medical profession seems to be the least concerned about the matter if we are to judge by our German exchanges.

## Correspondence

### Contract Practice.

JOHNSTOWN, N. Y., Aug. 3, 1908.

*To the Editor:*—In the Department of Medical Economics, in THE JOURNAL, Aug. 1, 1908, page 425, you state substantially that there is ethically or legally no reason why a physician should not make a contract with lodges, provided he be paid proper prices for his services.

I believe that there is a view of "lodge doctoring" you entirely overlook, and to my mind it is the most important.

As soon as a physician assumes the position of "lodge physician" immediately every member of that lodge becomes an active canvasser for new recruits not alone for their lodge, but to his clientele. They invade the fields of every physician and prevail on their patients to become members of their beneficial society (really Dr. So-and-So's free medical clinic), as the greatest benefit to be derived is the valuable boon of free (?) medical services.

In my opinion, price has nothing to do with it; it is the unfair competition that is and should be the most objectionable feature. I believe it is incorrect, ethically, for any physician to occupy the position of "club physician," regardless of price.

Perhaps it may be all right if every doctor should institute his free medical clinic, "price \$1.50 a year, in advance," but is it a desirable state for the profession to attain.

AUSTIN HOGAN.

## Miscellany

### ASSOCIATION OF NATIONAL FOOD AND DAIRY DEPARTMENTS.

The twelfth annual convention of the Association of State and National Food and Dairy Departments, held at Mackinac Island, Mich., August 4-6, was one of the most important conferences in the history of the movement for pure foods.

In his opening address as president, Hon. E. F. Ladd, of the North Dakota Agricultural College, reviewed the history of the movement and discussed the relation of national legislation to that of the various states. He reviewed in detail the work of the Department of Agriculture and severely criticised the attitude of Secretary of Agriculture Wilson. After quoting President Roosevelt that the action of the various state food and dairy commissioners showed how much good for the whole people resulted from the cooperation of the federal and state officials, President Ladd said that much could be accomplished with a national law left for its enforcement to an unhampered, liberal minded and fearless man like Dr. Harvey W. Wiley. "Then food adulterators and special interests would respect and obey the laws, but when there stand between him and the 'interests' a specially constituted board of doubtful constitutionality, how can we hope for cooperation such as the President calls for? We should not, however, forget the good work that the secretary has done for the cause of agriculture, but should direct our criticisms to the workings under the food law, where, no doubt, enormous political pressure has been brought to bear. . . . It has been recognized that the common ground on which state and national laws can best meet is through the establishment of proper standards which would serve as a guide for both state and national authorities, prove an aid to the courts and enable honest manufacturers to meet the demands of the several food laws. But the establishment of standards is what the food adulterators and special interests fight against, for, with established standards once in force the food adulterator's days are numbered; the honest producer comes to his own and the people receive what they order and pay for."

He then reviewed the efforts made to secure such standards and stated that the Secretary of Agriculture did not favor their establishment. He concluded his address by saying that as a result of a year's experience it must be concluded that there could be no official cooperation between state and national authorities in the preparation of standards as a common basis for action and that special attention should be given to strengthening state laws and enlarging the standard committee and continuing the preparation of standards already begun, which standards should be made a part of the statutes in every state.

Professor Ladd specifically recommended the appointment of a committee to draft a uniform law for adoption by the various states and also made a number of technical recommendations regarding preservatives, bleached flour, etc. As a result of this address the convention adopted resolutions setting forth its views as follows:

*Resolved*, That the Association of State and National Food and Dairy Departments again reaffirms its allegiance to the principle of uniformity of food laws. This association has worked faithfully and consistently towards securing such uniformity, both of requirements and interpretation, as will secure to the consuming public of every State alike, ample and sufficient protection from fraud in and adulteration of food products. In support of this policy this association welcomed the cooperation of the National Government as manifested through the Department of Agriculture in making provision for the work of the joint standards committee. We believed then, and we believe now, that only through the determinations of such a committee can satisfactory foundation be laid for a uniform law.

This association regrets that such cooperation has been withdrawn by the Secretary of Agriculture, and it is with extreme reluctance that, after more than a year's delay, a year spent in fruitless effort to again enlist the support and cooperation which the Department of Agriculture previously volunteered, we are at this time forced to the conclusion that the work of the joint standards committee, if continued, must be provided for and sustained without assistance from the National Government. The following facts have led to this conclusion:

First: The Secretary of Agriculture was authorized by Congress to provide for the joint standards committee.

Second: Under this authorization the support of the National Government was at first freely tendered and results eminently satisfactory were secured.

Third: The Secretary of Agriculture, through his accredited representative, Dr. Calloway, stated before the Senate Committee

1. THE JOURNAL A. M. A., May 9, 1908, p. 1541.

2. THE JOURNAL A. M. A., June 13, 1908, p. 1995.

3. THE JOURNAL A. M. A., May 2, 1908, p. 1440.

4. THE JOURNAL A. M. A., March 7, 1908, p. 781, and April 4, 1908, p. 1135.



on Agriculture that direct authorization of further expenditures for continuing the work of the joint standards committee was entirely unnecessary because of the fact that under the National Food and Drugs Act the Secretary of Agriculture has ample authority for making expenditures to continue this work. Authority for this statement is to be found in the printed records of the proceedings of the Senate Committee on Agriculture. Accepting such statement in good faith, the friends of a vigorous administration of the food law withdrew their demands for said direct appropriation.

Fourth: From that time to the present the Secretary of Agriculture has not again called the joint standards committee together.

Fifth: Because of the failure of the Secretary of Agriculture to again call together the joint standards committee, this association, at its annual convention of 1907, by formal resolution, requested the Secretary of Agriculture to again aid and assist in the further continuance of the work of said joint standards committee.

Sixth: This resolution was promptly transmitted to the Secretary of Agriculture by the secretary of this association, but no reply has ever been received thereto.

Seventh: The Secretary of Agriculture was appealed to in person by four members of the executive committee of this association in November, 1907, and at the close of said conference stated as his definite and final conclusion that he had no power to use any of the funds appropriated by Congress for the administration of food and drug work in paying the expenses of the joint standards committee.

Eighth: When confronted by the written record of the report of the proceedings of the Senate Committee on Agriculture, in which his statement, through Dr. Galloway, is recorded, the Secretary of Agriculture did not deny his responsibility therefor.

Ninth: As a last resort the executive committee of this association, as represented at that conference, tendered the services of the joint standards committee free from expense to the Secretary of Agriculture. The reply of the Secretary of Agriculture was directly to the effect that it would not be legal for the National Government to accept services for which it did not pay.

Tenth: Several months later the Secretary of Agriculture, when requested to call together representatives of the food departments of the several states in order that a proper appeal might be made to Congress for a direct appropriation to continue the work of the joint standards committee, refused to take such action.

However, regardless of these unfortunate conditions, this association believes that the work of the joint standards committee must be continued, and hereby authorizes its continuance, and pledges its good faith that ways and means will be provided for the maintenance of said committee.

This association further pledges its every effort to formulate, within the coming year, a food bill founded upon the determinations of the joint standards committee, which food bill shall be formulated with a view towards uniform requirements throughout the several States.

This association also pledges its best services toward securing effective cooperation between the food departments of the several states in their efforts towards the securing of such uniformity.

*Resolved*, That this association hereby authorizes and directs the present president of the association to appoint a committee of seven, of which he shall be the chairman, to prepare a model state food bill, the determinations of the joint standards committee to be used as a basis of facts in the preparation of said bill.

*Resolved*, That this association is unalterably opposed to the bleaching of flour by the oxides of nitrogen or other chemicals.

*Resolved*, That this association is convinced that all chemical preservatives are harmful in foods and that all kinds of food products are and may be prepared and distributed without them, and pledges its best efforts to use all moral and legal means at its disposal to exclude chemical preservatives from food products, and to this end, we ask the cordial support of all national, state and municipal authorities charged with the enforcement of food and drug laws. And in this connection we desire to express our gratitude for the helpful services of the medical profession generally, and especially to the American Medical Association.

#### COMMENTS.

The appointment of a committee to draft a uniform law for the various states is of the utmost interest and importance to all physicians. It is hoped that arrangements may be made for cooperation between this committee and the Committee on Medical Legislation of the American Medical Association whereby such a bill may be endorsed by the Committee on Medical Legislation and its adoption advocated by physicians throughout the country. Laws adopted by the federal government can affect only articles of interstate commerce. The real regulation of foodstuffs must eventually rest with the various states. Uniform and effective state legislation is, therefore, of the greatest importance.

The association adopted a standard for distilled spirits, which was prepared after careful scientific investigation by the joint food standard commission appointed by the association and by the Association of Agricultural Chemists. This standard is in accord with the order issued by President Roosevelt based on the opinion of Attorney-General Bonaparte as to what constitutes straight and blended whiskies.

#### OFFICERS ELECTED.

Prof. J. Q. Emery of Wisconsin was elected president, and Mr. R. M. Allen of Lexington, Ky., was re-elected secretary. Mr. Allen came into well-deserved prominence last winter as one of the promoters of the Kentucky Pure Food Law, which

was abstracted in THE JOURNAL, March 21, 1908, page 985. He has recently resigned his position on the pure food commission of Kentucky and is now an assistant attorney-general of the United States under Mr. Bonaparte, in special charge of the prosecutions of violations of the pure food law.

**Headache and Eyestrain.** L. H. Mettler, Chicago, in the *Medical Herald*, August, discusses the relationship of the psychoneuroses, especially headache, to eyestrain. He asserts that eyestrain never produces headache in the absence of a congenital or acquired abnormality of the nervous system, and that when there is an abnormal condition of the nervous system present—an abnormality which in itself may account for the headache—the ocular, like other anomalies, may and sometimes does provoke such a nervous apparatus into a distressing degree of indefinite activity along sensory, motor and other functional lines. In upholding these two propositions Mettler appeals to logic, physiology and clinical observation. He says that much of the argument in favor of the headache and the other neuroses being caused by an excess of a physiologic function in an otherwise normal organism is of little real scientific value. In most cases the same sort of reasoning would enable one to fix on other equally probable causes for the cephalalgia. In his appeal to physiology, which clinical medicine seems so often and so strangely to ignore, he quoted many fundamental maxims to show how the great law of habituation and accommodations nullifies the assumed deleterious effects of mere excess of function in an otherwise normal nervous system. In his argument from the clinical side he pointed out the evens and suspicious fact that it is only in the functional and little pathologically known psychoneuroses that these eyestrains play so important a rôle. One would imagine that now and then so persistent and supposedly effective a cause ought to produce an organic trouble; but it never does. In no known organic nervous trouble is eyestrain invoked as a cause. He furthermore showed that it is incomprehensible how in an otherwise normal organism visual anomalies and muscular imbalance can originate such well-established and distinct clinical entities as migraine, epilepsy, chorea or hysteria. A uniform cause is always followed by a uniform result. This is a fundamental axiom of science. He asserted that it is in cloud land of ancient pathology and symptomatic medicine, both of which ignore the plain teachings of modern physiology and physiopathology, that the belief that eyestrain is and can be "the sole and sufficient cause of headache" and other psychoneuroses, flourishes.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

#### VALUE AND TECHNIC OF MERCURIAL INJECTIONS.

*To the Editor:*—I would like an opinion as to the value of mercurial injection; where to inject, and how often, how to prepare the injection, and what form to use. H. F.

**ANSWER.**—Mercurial injections are of undoubted value, since they possess all the advantages of hypodermic treatment as well as giving more prompt results than are secured by medication by the mouth. The technic is the same as in any deep intramuscular injection. A needle, preferably of platinum, of one and one-half inches in length, should be used. The injections are usually made into the deep substance of the gluteal muscles, the needle being introduced at right angles to the surface and forced directly into the muscular tissue. The usual dose is from 5 to 30 minims—depending on what solution is used—at an injection. Of the many mercurial preparations which have been used for this purpose, mercury salicylate and mercury sozoiodolate (the salt of diodo parabenolsulphonic acid) have received much favorable comment. The solution of the sozoiodolate may be prepared by triturating one gram mercury sozoiodolate, Merck, with water, 50 c.c., and adding to this a solution of sodium iodid, 3 grams, in water, 50 c.c. The solution should be filtered. For prescription of mercury salicylate, see THE JOURNAL, July 27, 1907, p. 339. Injections can be given on alternate days or every day for a period of from two to four weeks, depending on the condition of the



patient and the necessity of obtaining immediate results. After giving the injections for from two to four weeks, it is well to suspend treatment for about the same length of time, later resuming it if necessary. During the hypodermatic treatment, iodids can be given by the mouth in the usual way, if desired.

The following articles that have appeared in *THE JOURNAL* may be referred to:

Gottheil, W. S.: Ten Years Experience in the Treatment of Syphilis by the Intramuscular Injection of Insoluble Mercurials, Aug. 3, 1907, p. 365.

Lydston, G. F.: Intravenous Treatment of Syphilis, Nov. 16, 1907, p. 1662.

Therapeutics: Injection Treatment of Syphilis, July 27, 1907, p. 339.

Wernigk, R.: Twelve Years Experience in Treatment of Syphilis by Intravenous Injections of Mercury, Arsenic and Iodid of Sodium, Feb. 1908, p. 609.

#### KEPHIR AND KOUMYS.

PITTSBURGH, PA., Aug. 20, 1908.

*To the Editor:*—How is kephir prepared? What is meant by "mother kephir" and how is it obtained? H. C. FELDSTEIN.

ANSWER.—According to most authors the product of the natural fermentation of mare's milk is called koumys. This fermentation is produced by a peculiar fungus which occurs in masses, called by the Tartars kephir seed or the millet of the Prophet. The imitation product, prepared from cow's milk, is known as kephir. Kephir is prepared by adding the fungus to the milk and keeping it at a temperature below 50 degrees F. During the process of fermentation the bottle should be shaken at least once a day, in order that the part which coagulates may not be unevenly distributed throughout the mass. Kephir is usually distinguished as two-day and three-day kephir. The former contains more milk sugar and less lactic acid than the latter. "Mother kephir" is a term applied to the fungus. The dry fungus is on the market as a non-proprietary article which can be obtained through wholesale druggists. Much of the koumys that is made in this country is produced by adding sugar to milk and fermenting with yeast.

#### BISMUTH PASTE TREATMENT OF TUBERCULAR SINUSES.

GREEN ISLE, MINN., Aug. 25, 1908.

*To the Editor:*—In what numbers of *THE JOURNAL* can I find literature on the bismuth paste treatment of tubercular sinuses? Any other additional references will be welcome.

J. P. SCHNEIDER.

ANSWER.—This treatment was described by Dr. E. G. Beck, Chicago, in *THE JOURNAL*, March 14, 1908, page 869, and in the *Illinois Medical Journal*, April and July, 1908. There was also a discussion of the matter in a society report in *THE JOURNAL*, July 25, 1908, page 342.

#### THE FOLIN METHOD OF ESTIMATING THE QUANTITY OF AMMONIA IN THE URINE.

In *THE JOURNAL*, Aug. 22, 1908, page 692, was a correction of the article by Dr. W. H. Buhlig in a previous issue of *THE JOURNAL*. An error unfortunately occurred in this correction. This error was detected, however, after a few copies had been run off, so that about 95 per cent. of the edition was correct. The first legend should be as follows:

Fig. 1.—Apparatus used in the Folin method of determining the ammonia content of urine, with the addition of an air-filled flask, C: A, dilute  $H_2SO_4$ ; B, 50 c.c. urine, 20 gm. NaCl, 20 c.c. petroleum, 2 gm.  $Na_2CO_3$ , added last; C, air flask; D, 30 c.c.  $n/5 H_2SO_4 +$  distilled  $H_2O$ .

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, for the week ending Aug. 29, 1908:

Bloombergh, H. D., capt., M. C., granted twenty days' leave to take effect about Oct. 5, 1908.

Field, Peter C., capt., M. C., ordered to proceed to Fort Benjamin Harrison, Ind., for duty during the maneuvers.

Griff's, Frank C., first lieutenant, M. R. C., ordered for duty at camp of instruction, Fort Benjamin Harrison, Ind., revoked.

Henning, O. F., first lieutenant, M. R. C., ordered to accompany the command at Fort Sheridan, Ill., to camp of instruction, Fort Benjamin Harrison, Ind.

Halliday, Francis A., first lieutenant, M. R. C., ordered to report in person to Colonel Valery Havard, Medical Corps, president of the board of officers appointed to meet at the Army Medical Museum Building, Washington, D. C., for examination, to determine his fitness for appointment as first lieutenant in the Medical Corps of the Army.

Hasseltine, H. E., first lieutenant, M. R. C., granted two months' leave of absence.

Whiteley, Joseph H., contract surgeon, granted eighteen days' leave of absence.

Kirkpatrick, Thomas J., major, M. C., leave of absence extended fourteen days.

Blanchard, R. M., capt., M. C., leave of absence extended one month.

Snoddy, Cary A., capt., M. C., honorably discharged from the service of the United States.

Brown, O. G., capt., M. C., granted ten days' leave of absence.

Weed, Frank W., capt., M. C., granted leave of absence for thirty days.

Howd, Pascal M., contract surgeon, ordered to proceed from Fort Ontario, N. Y., to his home, Oswego, N. Y., and report to the Surgeon-General of the Army for annulment of contract.

McCown, Thomas B., first lieutenant, M. R. C., assigned to active duty at his present station.

Shortlidge, E. D., capt., M. C., resignation of his commission as a medical officer of the army has been accepted by the President, to take effect Sept. 15, 1908.

Baker, Charles L., first lieutenant, M. R. C., recently appointed from contract surgeon, with rank from July 7, 1908, is ordered to active duty in the service of the United States, and assigned to duty at his present station.

Tyler, George Trotter, first lieutenant, M. R. C., ordered to proceed from Fort Monroe, Va., to Fort Fremont, S. C., for temporary duty.

Bloombergh, H. D., capt., M. C., granted twenty days' leave of absence.

### Navy Changes.

Changes in the Medical Corps of the U. S. Navy, for the week ending Aug. 29, 1908:

Hoen, W. S., P. A. surgeon, ordered to duty with flotilla of lighthouse vessels en route to Pacific coast.

McClurg, W. A., medical director, detached from duty as a member of the naval examining and naval medical examining boards, Washington, D. C., Sept. 1, and ordered home.

Brown, E. M., P. A. surgeon, unexpired portion of sick leave revoked; ordered to the naval recruiting station, Los Angeles, Cal.

Duhigg, J. T., asst.-surgeon, detached from the naval recruiting station, Los Angeles, Cal., and ordered to duty with the Pacific Torpedo Fleet.

Hathaway, G. S., asst.-surgeon, detached from the naval hospital, Boston, Mass., and ordered to Washington, D. C., Sept. 1, for examination for promotion, and then to wait orders.

Biello, J. A., asst.-surgeon, detached from duty with the Pacific Torpedo Fleet, and ordered to the naval hospital, Mare Island, Cal.

Steele, J. M., medical inspector, detached from the navy yard, Portsmouth, N. H., September 18, and ordered home.

Murphy, J. A., surgeon, detached from the *Dolphin* and ordered home to wait orders.

McLean, N. T., P. A. surgeon, unexpired portion of leave revoked; detached from the naval station in New Orleans, La., and ordered to the *Dolphin*.

Bunker, C. W. O., asst.-surgeon, detached from the *Arkansas* and ordered to the *Montgomery*.

Sellers, F. E., asst.-surgeon, detached from the *Nevada* and ordered to the *Texas* when commissioned.

Brooke, F. H., asst.-surgeon, detached from the *Montgomery* and ordered to the naval hospital, Boston, Mass.

Lane, H. H., asst.-surgeon, detached from duty in the department of government and sanitation, Isthmian Canal Zone, Panama, and ordered to course of instruction at the naval medical school, Washington, D. C., October 1.

Turner, H. W. B., asst.-surgeon, ordered to the naval medical school hospital, Washington, D. C., for duty.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Aug. 28, 1908:

#### SMALLPOX—UNITED STATES.

California: San Bernardino, Dec. 11-July 11, 54 cases; 11 cases previously reported; San Francisco, Aug. 9-15, 6 cases.

Indiana: Indianapolis, Aug. 10-16, 3 cases; South Bend, Aug. 9-15, 1 case.

Kansas: Topeka, Aug. 2-15, 2 cases.

Missouri: St. Joseph, July 25-Aug. 1, 4 cases.

North Carolina: Charlotte, Aug. 9-15, 1 case.

Wisconsin: LaCrosse, Aug. 9-15, 7 cases.

#### SMALLPOX—FOREIGN.

Arabia: Aden, July 21-27, 7 deaths.

British South Africa: East London, July 12-18, 5 cases.

Great Britain: Liverpool, Aug. 2-8, 2 cases.

Ceylon: Colombo, July 5-11, 7 cases, 2 deaths.

China: Hongkong, July 5-11, 2 cases, 2 deaths.

Egypt: Cairo, July 22-29, 3 cases, 1 death; Suez, June 25-Aug. 1, 1 case.

France: Marseilles, July 1-31, 1 death; Paris, July 25-Aug. 1, 1 case.

India: Bombay, July 15-21, 18 deaths; Calcutta, July 5-11, 7 deaths.

Italy: General, July 26-Aug. 2, 118 cases; Naples, July 19-Aug. 1, 20 cases.

Japan: Osaka, July 19-25, 1 case.

Java: Batavia, July 5-11, 3 cases.

Netherlands, The: Amsterdam, Aug. 1, 1 case.

Philippine Islands: Manila, June 31-Aug. 4, 17 cases, 10 deaths.

Portugal: Lisbon, July 26-Aug. 8, 6 cases.

Russia: Moscow, July 19-25, 13 cases, 1 death; Riga, July 25-Aug. 1, 1 case; St. Petersburg, July 19-25, 32 cases, 3 deaths; Warsaw, June 6-27, 14 deaths.

Siberia: Vladivostok, June 15-21, 3 cases.

Spain: Malaga, March 1-April 30, 4 deaths; Valencia, Aug. 2-8, 7 cases, 1 death.

Straits Settlements: Singapore, July 5-11, 1 death.

Turkey in Asia: Bagdad, July 5-11, 32 cases, 5 deaths.

Turkey in Europe: Constantinople, July 26-Aug. 2, 6 deaths.



CHOLERA.

Ceylon: Colombo, July 5-11, 3 cases, 3 deaths.  
China: Hongkong, July 5-11, 2 cases, 2 deaths.  
India: Bombay, July 15-21, 2 deaths; Calcutta, July 5-11, 28 deaths; Madras, July 11-17, 9 deaths; Rangoon, July 5-11, 7 deaths.  
Indo-China: Cholon, July 5-11, 7 cases, 7 deaths; Saigon, 3 cases, 1 death.  
Persia: Teheran, June 27-July 3, 1 case, 1 death.  
Philippine Islands: Provinces north of Manila, June 28-July 4, 614 cases, 331 deaths.

YELLOW FEVER.

Brazil: Manaus, July 12-Aug. 1, 5 deaths; Para, Aug. 2-8, 2 cases, 1 death.  
Cuba: Daiquiri, July 31, 1 case.  
Mexico: Merida, Aug. 23, 1 case; Vera Cruz, Aug. 21, 1 case.

PLAGUE.

Chili: Antofagasta, July 14-20, 3 cases; Arica, July 16-22, 1 case; Iquique, July 14-21, 3 cases, 2 deaths.  
China: Foochoo, July 12-18, present; Hongkong, July 5-11, 33 cases, 28 deaths.  
Indo-China: Cholon, July 5-11, 17 cases, 17 deaths; Saigon, 2 cases, 2 deaths.  
Japan: Kobe, July 19-25, 2 cases, 3 deaths.  
Peru: General, July 14-20, 17 cases, 15 deaths.  
Trinidad: July 23-28, 1 case, 1 death.  
Turkey in Asia: Bagdad, July 26-Aug. 2, 3 cases, 2 deaths.

## Marriages

REID NEBINGER, M.D., to Miss Ava Grier Gearhart, both of Danville, Pa., recently.

R. H. PAYNE, M.D., Richland, Iowa, to Miss Ella Bohan of Seaton, Ill., August 11.

ALFRED C. WIEBUSCH, M.D., Cora, Ill., to Miss Anna Fiene of Steeleville, Ill., August 20.

FREDERICK W. WICHMAN, M.D., Seattle, Wash., to Miss Alma M. Bergman of Chicago, July 2.

WILLIAM P. SAWYER, M.D., Nevada City, Cal., to Miss M. Helen Ransom of Sebastopol, Cal., August 12.

E. S. EVANS, M.D., Brooklyn, Iowa, to Miss Mara Baldwin of Whitewater, Wis., at Bisbee, Ariz., July 28.

THOMAS ROBERT FRANCIS, M.D., Connellsville, Pa., to Miss Jeannette Martha Daily of Buckhannon, W. Va., August 10.

ERNEST GREY BINGHAM, M.D., captain Medical Corps, U. S. Army, to Miss Laura Churchill Thompson, at Buffalo, N. Y., August 18.

CARLTON EDGAR UBER, M.D., Parsley, Md., to Miss Nellie Stewart Parker of Pastoria, Va., at Ellicott City, Md., August 3.

WILLIAM R. MOULDEN, M.D., Friendship Heights, Md., to Miss Naomi B. Stewart, at "Woodside," near Boyd's, Md., August 19.

## Deaths

Henry Archibald Tobey, M.D. Miami Medical College, Cincinnati, 1875; of Toledo; formerly a member of the American Medical Association; assistant physician at the Columbus State Hospital from 1877 to 1880; superintendent of the Dayton State Hospital from 1880 to 1884; and in 1886 made superintendent of the Toledo State Hospital for the Insane; said to have been the originator of the cottage plan for segregation of patients in state hospitals for the insane; an alienist of repute; died suddenly at his summer camp at Huntsville, Ont., August 18, from heart disease, aged 56.

William Mavel Nickerson, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1867; a member of the Colorado State Medical Society and Association of Military Surgeons of the United States; assistant surgeon U. S. Navy, retired; who entered the Navy in 1867 and was retired in 1874 for incapacity resulting from incident of service; and has made his home in Denver for 18 years; formerly a member of the state board of pardons; died in Fort Collins, Colo., August 19, from acute gastritis, aged 62.

James P. Scoles, M.D. College of Physicians and Surgeons of St. Joseph, Mo., 1880; a member of the Kansas Medical Society; formerly president of the Southeast Kansas Medical Society; and since its organization, 10 years ago, president of the Cherokee County Medical Society; a member of the American Association of Railway Surgeons; and local surgeon for the Frisco System; died at his home in Galena, Kan., August 16, after an illness of more than a year.

Edward LeRoy Smith, M.D. Bellevue Hospital Medical College, New York City, 1889; a member of the Medical Society of the State of New York; formerly president of the Binghamton Academy of Medicine; surgeon to the Binghamton fire department; coroner of Boone County; consulting surgeon to the King's Daughters' and Lestershire hospitals; died at his home in Binghamton, August 19, after an illness of a year, following an automobile accident, aged 44.

Rufus Baldwin Whitehead, M.D. College of Physicians and Surgeons in the City of New York, 1893; a member of the American Medical Association; of Elizabeth, N. J.; attending surgeon and obstetrician to the Elizabeth General Hospital; is said to have died from the effects of a self-inflicted gunshot wound of the head at Portland, Maine, August 20, while temporarily insane from overwork, aged 36.

Charles E. Parish, M.D. Albany (N. Y.) Medical College, 1880; a member of the Medical Society of the State of New York; coroner of Otsego County for two terms; for 10 years a member of the board of town supervisors, and for several terms chairman of the board; died at his home in Maryland, August 15, from nephritis, after an illness of five months, aged 53.

Walter Julien Sleeper, M.D. Dartmouth Medical School, Hanover, N. H., 1882; a member of the American Medical Association; medical examiner for the tenth (Middlesex) district of Massachusetts; a specialist on diseases of the chest; died at his home in Westford, Mass., August 12, from pernicious anemia, after an illness of eight years, aged 48.

Harvey D. Danford, M.D. Medical College of Ohio, Medical Department, University of Cincinnati, 1870; a member of the Ohio State Medical Association; a veteran of the Civil War; and for several years United States pension examining surgeon for Athen County, Ohio; died at his home in Trimble, August 21, after an illness of several months, aged 63.

Edward G. Thomasson, M.D. Medical College of Ohio, Medical Department University of Cincinnati, 1880; a member of the Kentucky State Medical Association, and one of the best-known practitioners of Newport, Ky.; died in Christ Hospital, Cincinnati, August 23, following an operation for disease of the kidney, after a short illness, aged 43.

Benjamin Douty Ashton, M.D. Cleveland Medical College, 1854; a member of the state legislature in 1887; surgeon in the volunteer service during the Civil War; and president of the village of Traverse City in 1886; died at his home in Traverse City, Mich., August 6, from cerebral hemorrhage, after an illness of five days, aged 79.

James D. Russell, M.D. Kentucky School of Medicine, Louisville, 1870; a member of the Kentucky State Medical Association, and one of the most prominent practitioners of western Kentucky; for several years president of the Daviess County Medical Society; died at his home in Yelvington, August 2, from a congestive chill, aged 62.

Edwards Clemmons McEachern, M.D. Medical Department, University of North Carolina, Chapel Hill, 1899; University of Maryland School of Medicine, Baltimore, 1901; a member of the Medical Society of the State of North Carolina; died in Asheville, N. C., August 17, from tuberculosis, after a long illness, aged 28.

Albert E. Douglas, M.D. New York University Medical College, New York City, 1890; speaker of the provincial legislature of Prince Edward Island; and a member of the provincial parliament since 1900; died at his home in Hunter River, P. E. I., May 6, from pleuropneumonia, after an illness of ten days, aged 47.

Henry Blane, M.D. Vanderbilt University, Medical Department, Nashville, 1886; a member of the Kentucky State Medical Association; assistant surgeon in the Confederate service during the Civil War; died at his home in Cadiz, Ky., August 19, after an illness of several months, from senile debility, aged 72.

Solomon D. Kell (License, Ind., 1897); a member of the American Medical Association; health officer of Union County, Ind.; secretary of the county board of health; and health officer of Liberty; for 40 years a practitioner of that place; died at his home, August 10, after an illness of three weeks, aged 67.

Hugh B. McMaster, M.D. Kentucky School of Medicine, Louisville, 1887; a member of the American Medical Association; and one of the most prominent practitioners of Waynesboro, Ga.; local surgeon of the Central of Georgia Railway; died in Tryon, N. C., August 21, after a long illness, aged 52.



Alpheus Orlando Buster, M.D. Medical Department of Fort Worth University, Fort Worth, Texas, 1899; a member of the American Medical Association; who had recently returned from China; died at his home in El Paso, Texas, from tubercular meningitis, April 25, after an illness of ten days, aged 36.

Georgiana Delaney Read, M.D. New York Medical College and Hospital for Women, 1882; for 14 years resident physician at the Moses Brown School, Providence, R. I.; died in the Homeopathic Hospital in that city August 21, from heart disease, following an attack of pneumonia, aged 66.

Bennett Frank Godfrey, M.D. Chattanooga, Medical College, Medical Department, Grant University, Chattanooga, Tenn., 1897; of Laurens, S. C.; a member of the South Carolina Medical Association; died from internal hemorrhage, 20 hours after a runaway accident, August 14, aged 35.

Peter Dockler, an old practitioner of Onaga, Kan.; said to have been a surgeon in the French army; a veteran of the Mexican and Civil Wars; died suddenly at his home in Onaga, March 30, from senile debility, aged 102.

Frank B. Glenn, M.D. Medical College of Virginia, Richmond, 1907; of Richmond, Va.; an interne at St. Vincent's Hospital, Norfolk; died in that institution, August 11, after an operation for appendicitis, aged 30.

George H. Smith, M.D. New York Homeopathic Medical College and Hospital, New York City, 1869; died at his home in Williamsburg, Brooklyn, August 20, from septicemia due to an operation wound, after an illness of three weeks, aged 64.

Julien A. Smith, M.D. New York University Medical College, 1882; a member of the Medical Society of the State of North Carolina; of Durham, N. C.; died at the Watts Hospital in that city, August 14, after a surgical operation, aged 53.

Ira Benjamin Archer, M.D. Baltimore, 1890; died at his home in North San Juan, Cal., May 31, from the effect of a self-inflicted gunshot wound of the head while suffering from mental aberration, aged 44.

Albert F. Randolph, M.D. State University of Iowa, College of Medicine, Iowa City, 1891; of Koszta, Iowa; a member of the Iowa State Medical Society; died in a hospital in Sioux City, Iowa, January 11.

George Washington Pangle, M.D. King Eclectic Medical College, Des Moines, Iowa, 1885; died at his home in Council Bluffs, Iowa, August 13, from kidney disease, after an illness of three weeks, aged 62.

William Hicks Cunningham, M.D. Medico-Chirurgical College of Philadelphia, 1904; died at his home in Vineland, N. J., August 10, from recto-vesical abscess, after an illness of six weeks, aged 47.

Clempson B. Kennedy, M.D. Jefferson Medical College, Philadelphia, 1870; of Parsons, Kan.; a pioneer practitioner of Labette County; died suddenly at Erie, Kan., August 15, from heart disease.

James A. Lonsdale, M.D. American Medical College, Eclectic, St. Louis, 1891; of Detroit, Mich.; died suddenly from cerebral hemorrhage, at Grace Hospital, Detroit, August 12, aged 63.

Elisha B. Adams, M.D. Vanderbilt University, Medical Department, Nashville, Tenn.; a practitioner of Emory, Texas, for 15 years, died February 15, from pneumonia.

John S. Moore, M.D. University of Louisville (Ky.) Medical Department, 1874; died at his home in New Hope, Ky., August 20, after a prolonged illness.

## Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

### The Doctor as a Public Educator.

The above is the theme of a practical paper in the *New York Medical Journal*, July 25, by Dr. Frank Van Fleet. After emphasizing the duties of the doctor as a public educator and commenting on the spirit of indifference generally shown toward such responsibility, Dr. Van Fleet inquires into the reasons for such indifference, and this he attributes to the tendency of American citizens to allow politicians to make the

laws. In European and South American republics, physicians often participate in public life. In the New York state legislature for last year seven of the 201 members were licensed physicians. Dr. Van Fleet holds it is not opportunity but influence which is lacking. He says:

There is nothing to indicate that the presence of the seven physicians in the legislature of New York exerted any influence one way or the other on the bills introduced in the body having to do with the public health. I think I can say without fear of contradiction that in the thirteen years that I have been connected with the committees on legislation of the state or county medical societies, I can not recall a time when the presence of a physician as a member of the legislature had the slightest influence in any way.

He believes, however, that the medical profession is capable of exerting a great influence for good if it were willing to do so. He says:

People are willing to be guided by us along medical and public-health lines because they think we have knowledge which they do not possess and that we, as a profession, are not actuated by selfish motives. They look to us for enlightenment, or in other words, they look to us to guide them and they ought not to look in vain. This age in which we live is an age of education; indeed, the people are education crazy. They are clamoring for information and if they can not obtain it from reliable sources, they will get it from sources which are unreliable. . . . I am glad to note that our profession is coming to see the logic of this and that many of the leaders of the profession are manifesting a greater willingness to talk to the public on these vital questions than heretofore. . . . We should be public educators, and I hail the coming day when our medical societies will give public lectures on public health subjects as the Medical Society of the County of Kings has been doing the past winter months.

Among the subjects on which the public needs enlightenment is medical legislation. Van Fleet believes that the purpose of medical practice laws is to protect the public, with the infliction of the least possible hardship on those who would practice medicine. He holds, however, that the medical laws in this country do not protect the public, but impose on those who comply with them an unnecessary amount of hardship, while special laws permit a privileged class to practice medicine in special lines for which they are not fitted. This practically amounts to penalizing the properly educated physicians and putting a premium on ignorance.

The management of public schools and the systematic inspection of pupils, the control of tuberculosis and other infectious diseases, the absurdity of the recent antivivisection craze, and the ignorance of governors and legislators in securing laws making physicians out of opticians, are also discussed. The duty of the medical profession to see that questions relating to public health are properly placed before the people is strongly emphasized. Dr. Van Fleet feels that the public, when once enlightened, will support the medical profession in its efforts to secure better conditions and that if the people do not cooperate with the physicians, it is because they do not understand the questions at issue.

### A Reductio ad Absurdum of Ethics.

There is a proverb to the effect that "one can not have too much of a good thing." But we must not forget that in this life at any rate the absolute good is never attainable and that that which was good at a given time and under given conditions may cease to be good at another time and under other conditions. We are moved to these remarks by a discussion on the Ethics of Medical Consultation by the Central Ethical Committee of the British Medical Association,<sup>1</sup> where the following amendment was proposed to the rule regarding the non-supplanting of the attending physician by another physician called in consultation.

"A practitioner who has seen a case in consultation should not supersede the attending practitioner or attend the case in any future illness without the permission of the introducer."

1. Brit. Med. Jour., Aug. 1, 1908, Supplement, p. 125



This drastic amendment appears to have been brought forward at the instance of a divisional ethical committee (a division corresponds organically to a state association in the American Medical Association), which held that "if a patient would not continue with the original practitioner he might call in any other except one who had been introduced as a consultant." This bubble of sapience was pricked by the suggestion that a man, who had been practicing unopposed in a country village, suddenly confronted with a younger and more vigorous man, would only need, in order to protect his own practice, to call the other physician into consultation all round as quickly as possible. Needless to say the amendment was not carried.

The whole argument hinges on a misconception. The proposer of the amendment stated: "It was said that this was an attempt to interfere with the rights of the patient, but the rights of the practitioner must be asserted." The practitioner, however, has no rights at all, so far as regards the patient's freedom of choice, beyond the right that every gentleman has to be treated as a gentleman—i. e., with ordinary courtesy. He has rights, however, against his brother practitioner, the consultant, which can be enforced in a disciplinary manner through ethical committees, if the consultant can be shown to have used any measures tending to cause the patient to waver in his allegiance to his regular attendant. It is true that it is often difficult to prove such treachery, and also that those who are capable of committing it are the very ones least likely to stand in awe of any disciplinary enactments; but that is hardly an adequate reason for penalizing patients generally, to add persuasiveness to the decrees of an ethical committee in occasional instances. The worst injury that can be inflicted on any good cause is to render it ridiculous.

## POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.  
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

### First Month.

#### THIRD WEEKLY MEETING.

### CHRONIC VALVULAR LESIONS. LEFT HEART.

#### AORTIC LESIONS.

##### REGURGITATION.

**Etiology and Pathology.**—Age, sex and frequency. Congenital malformation, usual changes in valves; endocarditis, valvular changes; arteriosclerosis, (a) strain from exertion, occupation, etc., (b) alcohol, (c) syphilis, valvular and aortic changes; rupture of segment of valve; relative insufficiency, dilated ring. **Mechanics:** regurgitation, dilatation of ventricle, hypertrophy later, "cor bovinum," arterial anemia, mitral incompetency, effect on left auricle, on right heart, myocardial changes.

**Physical Signs.**—Inspection: apex beat, pulsation, cardiac and arterial. Palpation: cardiac thrill, pulse, sphygmographic tracings. Percussion: outline of dulness. Auscultation: murmur, time, site, intensity, transmission. Character of normal sounds. Secondary murmur.

##### STENOSIS.

**Etiology and Pathology.**—Age, sex, frequency. Adhesion of segments, thinning or thickening of segments, calcareous deposits. Relative stenosis, with dilated aorta. Associated incompetence. **Mechanics:** increased resistance, hypertrophy, dilatation later, auricular changes, effect on lungs and right heart.

**Physical Signs.**—Inspection: apex beat, impulse, emphysematous chest. Palpation: thrill, intensity and location, pulse. Percussion: area of dulness. Auscultation: murmur, quality, time, location, intensity, transmission. Normal heart sounds. Sphygmographic tracings.

#### MITRAL LESIONS.

##### REGURGITATION.

**Etiology and Pathology.**—Age, sex, frequency. Changes in segments and chordæ tendineæ, endocarditis. Calcareous plates or rings. Associated stenosis. Changes in ventricular walls, dilatation or muscular incompetence. **Mechanics:** regurgitation, dilated auricle, hypertrophy, dilatation and hypertrophy of left ventricle, changes in right ventricle, in right auricle, in pulmonary vessels, in lungs, later in systemic veins, changes in viscera, "dropsy."

**Physical Signs.**—Inspection: apex beat, ventricular and venous impulses. Palpation: thrill, impulse, pulse. Percussion: area of dulness. Auscultation: murmur, character, time, location, intensity, transmission, effect of posture. Normal heart sounds.

##### STENOSIS.

**Etiology and Pathology.**—Age, sex, frequency. Endocarditic changes, in segments, ring, chordæ tendineæ. Associated incompetence. Congenital origin? **Mechanics:** stenosis, dilatation and hypertrophy of auricle, effects on pulmonary artery and veins, changes in right ventricle, relative tricuspid incompetency, effects on systemic veins.

**Physical Signs.**—Inspection: apex beat, impulse, right ventricle. Palpation: thrill, impulse, pulse. Percussion: area of dulness. Auscultation: murmur, character, location, time, transmission. Normal heart sounds. Sounds in "broken compensation."

## Medicolegal

### "Pulling Down Sensation" to be Assumed.

The Kansas City Court of Appeals does not agree with the contention in the personal injury case of Saeger vs. Wabash Railroad Co., that an instruction given the jury was vicious and prejudicial to the defendant in calling special attention to the "pulling down sensation or prolapsus of the womb," when there was no evidence of such sensation. The court says that as the plaintiff's injury resulted in prolapsus uteri, it was not necessary to prove such sensation, for prolapsus is a pulling down of the womb, and it is to be assumed that the sensation naturally and necessarily follows.

### Prior Treatment Subject for Cross-Examination.

The Supreme Court of New York, Appellate Division, Second Department, says, in the personal injury case of Seaman vs. Mott, that when the patient called the physician to give evidence as to injury, pain, and suffering attributed to the accident, the patient could not exclude, as privileged, questions by the defendant as to professional treatment prior to this accident, for such questions might have shown the prior existence of such physical conditions, at least to a degree. The principle of privilege is not intended, as the courts have said, to be both a sword and a shield for the patient.

### Admissibility of Evidence of Condition of Eyes as Proof of Internal Injury.

The Court of Appeals of Kentucky says that one of the questions in Louisville Railway Co. vs. Ellerhorst, a personal injury case brought by the latter party, was what evidence was competent to sustain the allegations of the plaintiff's petition. She alleged in her petition that she was injured in her womb, in her ovaries, in her bowels; that she had had frequent micturition; and that she had sustained a shock to her nervous system. A diseased condition must be manifested by outward symptoms. If the plaintiff had been unable to show any external manifestations of the injuries of which she complained, the jury would reasonably conclude that she was not as badly hurt as she alleged. If she had shown that she had suffered from insomnia since the accident, and had been a healthy woman up to that time, it would have been some evidence of a nervous derangement. A nervous shock often shows itself in the eyes; and, if the plaintiff's eyes had remained normal it would have been some evidence that the



nervous shock was not very serious. Where specific injuries are sued for, any external symptoms which are evidence of the injury may properly be admitted, for it is only by the external symptoms that an internal injury may be judged. As the injury to the plaintiff's eye was not sued for, the court properly excluded it from the consideration of the jury in fixing damages; but, as it furnished some evidence of the internal injury of which she complained, the proof was properly allowed to go to the jury.

#### Restriction on Power to Exclude Unvaccinated Pupils.

The Supreme Court of Illinois says, in *People*, on the relation of *Louise Jenkins vs. Board of Education of City of Chicago*, that not only has the legislature never prescribed vaccination as a condition to the enjoyment of the legal right to attend public schools, but it has never conferred on cities the power to do so. If the city of Chicago has power to pass any ordinance on the subject, the power is derived from the authority conferred on the city council to appoint a board of health and prescribe its powers and duties, to do all acts and make all regulations which may be necessary or expedient for the promotion of health or the suppression of disease, and to pass all ordinances and rules, and to make all regulations proper or necessary to carry into effect such authority.

The general police powers above enumerated to pass ordinances and make regulations for the promotion of health or the suppression of disease do not include the passage of an ordinance making vaccination a condition precedent to the right to an education, such as one passed by the city of Chicago, one section of which provided: "No principal or person in charge or control of any school shall admit to such school any child who shall not have been vaccinated within seven years next preceding the admission or application for admission to any such school of such child, nor shall any such principal or person retain in or permit to attend any such school any child who shall not have been vaccinated as provided in this article."

An ordinance passed by reason of such authority must be reasonable in its character, and rest on the ground that it is a necessary means of preserving the public health. In the case of *Potts vs. Breen*, 167 Ill., 67, it was held that the exclusion of a child from a public school because of a refusal to be vaccinated can only be justified where such course is necessary, or reasonably appears to be necessary, in case of an existing or threatened epidemic of smallpox, and to prevent the spread of the disease. In the case of *Lawbaugh vs. Board of Education*, 177 Ill., 572, the court adhered to those principles, and declined to further discuss them, although earnestly urged to reconsider the former decision.

The section of the ordinance quoted was null and void and afforded no justification for denying the relator admission to the school, whether the denial of her right was at the instance of the health commissioner, the health department, or any other authority.

The answer alleged, as a matter of fact, that on Oct. 29, 1907, the disease of smallpox was prevalent in the district in which the school was located, within such a radius as to make it dangerous for all persons therein residing who had not been vaccinated; that the commissioner of health declared smallpox to be epidemic in said district, and instructions were given by the health department to exclude all children who had not been vaccinated in accordance with the terms of the ordinance.

The terms of the ordinance were that no child should attend the public schools who had not been vaccinated within seven years, and did not constitute a lawful exercise of any power conferred on the city. The health commissioner was a purely ministerial officer and had no legislative powers whatever. The ordinance did not purport to give him authority to exercise such powers or to make any rules or regulations, except in cases of emergency, until they could be reported to the city council for approval or rejection. He could only be authorized to perform administrative duties in pursuance of some ordinance of the city, and there was no valid ordinance authorizing the exclusion of the relator from the public school which she had a legal right to attend.

There is nothing in the nature of an emergency in the occasional recurrence of the well-known disease of smallpox in a city like Chicago which may not be provided for by general rules and regulations prescribed by the legislative authority of the city. The board of education, which had charge of the public schools, had made no rule or regulation on the subject of such epidemics, and neither had the city council. The board's answer did not make known any ordinance, rule, or regulation for the exclusion from the schools of children not vaccinated in the event that an epidemic of smallpox existed in the vicinity of a school, or was reasonably apprehended, and, in the Supreme Court's opinion the trial court erred in overruling a demurrer to the answer.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Boston Medical and Surgical Journal.

August 20.

- 1 \*Surgical Rights of the Public. J. C. Munro, Boston.
- 2 High-Frequency Electricity in Treatment of Cardiac Disease. H. C. Arnold, Boston.
- 3 Border-Line Cases of Mental Deficiency. C. C. Beckley, Lancaster, Mass.
- 4 High-Grade Mental Defectives. W. N. Bullard, Boston.

1. **Surgical Rights of the Public.**—In this article, the address in surgery before the Canadian Medical Association, Munro emphasizes some points which are usually overlooked in the practice of surgery. He begins by referring to the German system of insuring the laboring classes against sickness and states that the insurance was established because the poor have a right to be protected against the various accidents and illnesses incident to our complex modern life. He then goes on to state that both rich and poor have an equal right to be protected against unnecessary suffering, disease and death. Using this as a text, he calls attention to the question of elective major surgery as attempted in large or small surgical centers by men without surgical skill, by amateurs, and by the nondescript commercial type of man who operates for the fee and not for the benefit of the patient. He condemns the internist who deals with a surgical lesion until forced to advise an operation, not as a preventive or as a curative measure, but as a last resort. Munro believes that all the facts in the case should be laid honestly before the patient early in the disease and that he be allowed to decide whether or not he will accept the operative risk. Munro also deplores the practice of some staff surgeons in allowing internes with only a few months' experience to undertake major operations, and asserts that to place the responsibility for a major operation on an inexperienced man is not only fundamentally wrong but occasionally criminal. He also says that the after-treatment should be supervised by the surgeon himself and not left to assistants. A patient consults a surgeon because of his experience and ability, and it is not right, says Munro, that the surgeon should evade the responsibility. He emphasizes the importance of skilled anesthetists and declares that an unskilled anesthetist can prolong beyond the limits of safety an operation that would be short, and that he increases the danger of postoperative pneumonia. The same criticisms apply to the ever-changing house surgeons and the general practitioners who assist in major operations. He advocates reform in the present system of hospital management. As constituted at present, he asserts, many public hospitals are overweighted by cumbersome surgical staffs which could be reduced to one-third or one-sixth of their present number. A chief of staff should be in charge of from 50 to 100 beds. If he has a larger number his assistants or colleagues should be capable of assuming charge in an emergency. He should be allowed great freedom in choosing his assistants, who should have demonstrated their fitness while in subordinate positions. Promotion should be for ability and not by reason of seniority. The routine inexpert work in the laboratories and wards should be performed by students delegated by the schools and



accepted without competitive examination, because such work should be part of the student's curriculum. In conclusion he states that he would not have it inferred that there is no other side to surgery than fault-finding and criticism. No profession is without flaws. Every profession reaches a higher plane with each decade, and it is mainly by the elimination of the petty obstacles that our profession is destined to attain a level that can never be reached by others.

#### Medical Record, New York.

August 22.

- 5 Appearance of Heteroplastic Tumors in the Transplantations of the New Growths of Animals. Dr. von Leyden and Carl Lewin, Berlin.
- 6 \*Recurrent and Abductor Paralysis of the Larynx: Diagnosis and Treatment. W. E. Casselberry, Chicago.
- 7 Medical Treatment of Appendicitis. G. E. Cruikshank, Windsor, Ont.
- 8 Physiology and Pathology of the Emotions; the Physical Bases of Mental Etiology. H. Wakefield, New York.
- 9 Marriage from a Medical View Point. C. G. Munston, Boston.
- 10 Sterility in Women. R. S. Talmey, New York.\*

6. **Paralysis of the Larynx.**—Casselberry discusses the diagnosis of unilateral recurrent nerve paralysis which when complete results in the fixation of one vocal cord in the cadaveric position. The cracked, raucous voice is suggestive rather than distinctive, but it is usually the one small symptom which first causes the patient to seek relief. The same is true of the partial stridor which may or may not usher in unilateral abductor paralysis in which, the dilator muscle alone being powerless, the vocal cord is retained in a position closing over one-half of the larynx. In 40 cases of the "aneurismal group" the left recurrent nerve was paralyzed by an aneurism in eight and the right recurrent in six, including in both numbers those in whom the opposite cord was likewise but less affected. In the "pleuritis group" all the cases were of tuberculous origin. Means of confirming the diagnosis in this group are as yet sparse. Casselberry believes that the x-ray might be of use in excluding or demonstrating the presence of enlarged mediastinal glands, which in tuberculous individuals constitute a possible cause of pressure on the recurrent nerves on the left side; but on the right side enlarged glands so situated could scarcely be beyond the reach of palpation. In the "tumor group," unlike the "aneurismal group," the vocal disability appeared only as a late and gradual development. Esophagoscopy is useful in diagnosis of these forms of paralysis, although usually by the time a vocal paralysis supervenes in cancer of the esophagus the diagnosis is plain. The so-called lazy cord is a recognized symptom of carcinoma of the larynx, but Casselberry believes that it is not generally known that total immobility of a cord may be the first visible evidence of this condition. He also discusses vocal paralyses due to lesions in the medulla and in the cerebral cortex.

#### New York Medical Journal.

August 22.

- 11 \*Cystitis. R. E. Davison, Pittsburg, Pa.
- 12 Two Unusual Cystoscopic Pictures. J. B. Squier, New York.
- 13 \*Car Sickness. I. S. Wile, New York.
- 14 Important Points in the Anatomy and Surgery of the Peritoneum. A. J. Woolf, Hartford, Conn.
- 15 \*Oxygen in Treatment of Tuberculous Peritonitis. J. A. McGinn, Philadelphia.
- 16 Etiology and Treatment of Eczema. Z. Feldstein, New York.
- 17 Recent Work on Spirillar Fevers. F. P. Mackie, Bombay, India.

11. **Cystitis.**—Davison describes the interior architecture of the normal bladder as seen by cystoscopy. In the etiology of cystitis he regards trauma, congestion and retention of urine as the predisposing causes and micro-organisms, of which the colon bacillus is first in order of frequency, as the direct cause. The gonococcus, strange to say, appears eighth on the list in Casper's classification, which Davison quotes. A few bacteria throw off ferments which decompose urea forming a carbonate of ammonium. The chemical reaction of the urine in cystitis is usually acid. Bacteria may gain entrance to the bladder in many ways, of which the urethra is the most common. The length of the male urethra protects the bladder from invasion to some degree, but the short female urethra offers little protection. Descending infections from the kidneys and ureters

have of late been given an important place in the causation of cystitis. Davison discusses the pathology, symptomatology, diagnosis, prophylaxis and treatment, which includes free use of pure water, light and bland food, prohibition of alcoholic beverages except in the weakened and aged, and the administration of hexamethylenamin. In acute cystitis the patient should be put to bed with hips elevated. Heat and anodynes are recommended, and infusion of buchu seems to possess curative properties. In chronic cystitis the cause must be removed, the bladder cleansed by irrigation, the reaction augmented, and the local blood supply improved. He gives various antiseptic solutions for irrigation. In the female the short urethra allows topical applications to be made, e. g., a 10 per cent. solution of silver nitrate applied through the Kelly cystoscope. The author is not in sympathy with the cystotomies done for the relief of cystitis in women or in men. It is questionable whether they should ever be done, with the possible exception of cystitis caused by a malignant growth in the bladder. The procedure is opposed in every sense to the pathology present.

13. **Car Sickness.**—Wile discusses the various views regarding sea sickness and remarks on the paucity of literature concerning its analogue, car sickness, by which is meant the series of unpleasant symptoms, such as giddiness, staggering, nausea, vomiting, etc., due to riding in various vehicles. He regards car sickness as a functional neurosis. He points out that while sea sickness and car sickness belong to the same category of neuroses, they are not necessarily identical in origin or course; first-class sailors may suffer from car sickness, and very poor sailors may be free from it. It is comparatively common in infancy, usually beginning in fact in childhood. It is more frequent among females than males and appears to have an hereditary tendency, for Wile has frequently noted car sickness occurring in three generations, but in the female members only. He considers its relation to a lack of proper balance. All senses contribute to the sum of sensation essential for a sense of equilibrium. If any part of the sensory impressions is erroneous or departs from the individual normal, a disturbance of the sense of equilibrium results, and certain reflex conditions, nausea, pallor, rapid pulse, clammy skin, vomiting, etc., ensue. He considers in detail the various routes of affection of the different senses, and concludes that car sickness is a motor neurosis due to a disturbance of equilibrium, dependent on irritation of the vestibular nerve, originating in disturbance of the endolymph. He closes with the following practical points: Parents seldom say their children suffer from car sickness unless specifically asked. The vomiting of car sickness at times may suggest an overloaded stomach or the onset of an infectious disease. In adults car sickness has frequently caused a suspicion of drunkenness to fall on its victim; it has also been mistaken for appendicitis. It is most important to distinctively exclude car sickness in all cases of acute illness occurring on trains and other cars, just as one must distinguish sea sickness from other sickness at sea. The condition of a car sick person may appear most serious—in fact, suggest a fatal outcome, but this does not occur. A careful study by otologists and pathologists of intraaural conditions in children known to have car sickness might give some little light on the true proximate cause of what is now merely termed a neurosis.

15. **Oxygen in Tuberculous Peritonitis.**—McGinn points out that three types of tuberculous peritonitis are recognized: the ascitic, the fibrous and the ulcerated. He quotes various authorities to show that by the plans of treatment now in vogue the fibrous and ulcerous forms of tuberculous peritonitis are not amenable to treatment, and that at best only 75 per cent. of the ascitic forms can be cured. Since April, 1904, he has used oxygen in 15 cases, 4 of which were of the fibrous variety, with excellent results, notwithstanding that his reasoning he now considers faulty. He briefly reports the 4 cases, and describes the method as follows: The water bottle of the oxygen apparatus is sterilized and filled with sterile water. The tube leading from the bottle and the rubber tip are sterilized. The tip is covered with several thicknesses of sterile gauze. The oxygen is introduced through the abdom-



inal incision until the abdomen becomes inflated. The incision is then closed with gauze, and the oxygen is allowed to remain for several minutes. The gas is then allowed to escape, and the peritoneal cavity is filled again and again.

#### Lancet-Clinic, Cincinnati.

August 22.

- 18 Internal Rotation and Lacerations of the Perineum. H. B. Twitchell, Cincinnati.
- 19 \*Perineal Section for Obstruction of Prostatic Urethra. C. E. Barnett, Ft. Wayne, Ind.
- 20 Relation of the Physician to the Administration of Justice. G. Bambach, Ripley, Ohio.

19. Abstracted in THE JOURNAL, Nov. 2, 1907, p. 1552.

#### The Medical Fortnightly, St. Louis.

August 10.

- 21 Medical Treatment of Gallstone Disease. R. W. Wilcox, New York.
- 22 Loss of Appetite. J. F. Chandler, Forest City, Mo.
- 23 Problems of Biologic Chemistry. J. Clements, Wichita, Kan.
- 24 Treatment of Tuberculosis in Private Practice. M. H. Fessell, Philadelphia.

#### University of Pennsylvania Medical Bulletin, Philadelphia.

July.

- 25 \*Review of Cases of Various Types of Enteroptosis. J. W. Luther, Philadelphia.
- 26 Postgraduate Study in Berlin. F. E. Keene, Philadelphia.
- 27 Care of Postoperative Patients, with Special Reference to Intestinal and Renal Functions. S. W. Moorehead, Philadelphia.
- 28 Calcified Pancreatic Cyst. G. W. Osterbridge, Philadelphia.
- 29 Acute Lymphopenic Lymphatic Leukemia. R. S. Lavenson, Philadelphia.

25. **Enteroptosis.**—Luther reports thirty-five cases of various types of enteroptosis, and states that the symptoms divide themselves into three groups, viz., neurotic; abdominal pains and unusual sensations; gastrointestinal disturbances. In ptosis of the stomach and transverse colon these three groups are perhaps most severe, the second group of pains being most vague and least frequent. The third group refers particularly to gastric derangements. In redundancy and ptosis of the sigmoid, the first two groups occur most frequently. The pains are more definitely located and severe. The gastrointestinal disturbances are limited, as a rule, to irregularities in the evacuation of the bowels. As a consequence of the uncertainty of symptoms, the diagnosis of these conditions can not be made safely without some mechanical or physical aid. Inflation of the stomach and colon enables one to outline the stomach and transverse colon with considerable accuracy, but the sigmoid can not always be located with the same degree of certainty. Here the x-rays are invaluable. In all cases in which ptosis of the hollow viscera is diagnosed or suspected, a bismuth injection followed by an x-ray exposure should be employed. It not only makes or corroborates the diagnosis, but it aids the surgeon during the operation and enables him to plan a means of relief before the incision is made.

#### American Journal of Medical Sciences, Philadelphia.

August.

- 30 \*Splenic Anemia, Splenectomy, and Recovery. With Studies of the Blood, Covering a Period of Seven Years. M. J. Lewis, Philadelphia.
- 31 \*Laryngeal Tuberculosis. B. Robinson, New York.
- 32 \*Primary Tuberculosis of the Mesenteric Glands. Report of Infections with Bacilli of the Human Type. A. F. Hess, New York.
- 33 \*Blood Cultures in Typhoid. A. A. Epstein, New York.
- 34 Uncertain Results of Suturing Nerves. G. T. Vaughan, Washington, D. C.
- 35 \*Pathogenesis of Tabes Dorsalis. T. A. Williams, Washington, D. C.
- 36 Herpetic Inflammations of the Geniculate Ganglion. A Syndrome Characterized by Herpes Zoster Oticus, Facialis, or Occipitocollaris, with Facial Palsy and Auditory Symptoms. J. R. Hunt, New York.
- 37 Present Status of Experimental Arterial Disease. I. Adler, New York.
- 38 \*Bacteriology of the Puerperal Fever. W. R. Nicholson and Joseph S. Evans, Philadelphia.

30. Abstracted in THE JOURNAL, June 6, 1908, p. 1930.

31. **Laryngeal Tuberculosis.** Robinson says that in every case, and emphatically in young adults, in whom a cold or cough has unduly persisted despite rational treatment, or whenever the causation seems in any way obscure, we should invariably insist on a laryngeal examination. Often he has

seen an ulceration of the vocal cord, or the arytenoid cartilage or commissure, of the arytenoid folds, and even of the epiglottis itself, when the laryngeal symptoms were not unduly pronounced. And these cases again occur, although perhaps infrequently, when the intrapulmonary condition is not perfectly clear and when no tubercle bacilli have yet been discovered in the sputum. The two essential things to be insisted on, in Robinson's opinion, in the way of protective and curative treatment, are: 1. Rest for the larynx; 2. inhalations. He rarely makes use of the galvanic cauterizer, and the later surgical methods of Kränse and Heryng—punching and curetting do not appeal to him. As to posture, the patient lying with head hanging over the bed and sucking fluid through a rubber tube from a pitcher below will afford relief in swallowing. Robinson lays most stress, however, on the constant use of a perforated zinc inhaler covering the mouth and nose, and charged with creosote and alcohol, or, if there is much irritation, with beechwood creosote, alcohol and spirit of chloroform in equal parts. He emphasizes particularly the following facts: 1. There is a certain number of patients affected with laryngeal tuberculosis, just as those with pulmonary tuberculosis, who do not recover, in whom the disease is not even arrested no matter what treatment may be followed. These cases remain stationary, perhaps, for a little while, but even this is doubtful, and, as a rule, despite all our efforts and doings, the disease marches steadily onward and gradually grows worse until the end comes. 2. While we can not predicate absolutely, from the intralaryngeal evidences of tuberculous disease, as to the extent and stage of the tuberculous disease of the lungs, yet usually, if one localization of tuberculous disease is of bad augury, so is the other in the larger proportion of cases.

32. **Primary Tuberculosis of Mesenteric Glands.**—Hess summarizes his paper as follows: A review of cases of primary mesenteric gland tuberculosis in which the type of bacillus has been differentiated shows that over 60 per cent. have been caused by the bovine type of bacillus. Among children the bovine infections greatly prevailed, whereas in adults infections with the human variety were in the majority. No pathologic or clinical differentiation of the two forms of tuberculosis is as yet possible. In children, as well as in adults, bovine or human tuberculosis may become limited and healed and the bacilli may die. The cases reported in this paper, two in children and one in a young adult, were due to the human variety of bacillus, as shown by the morphology, cultural characteristics, and virulence of the isolated strains.

33. **Blood Cultures in Typhoid.**—Epstein sums up his paper with the following conclusions:

1. The bactericidal influence of the blood in typhoid fever in relation to the obtaining of positive results in the blood cultures has been overestimated. Great dilutions of the blood are not essential; a number of media will give good results.
2. The best results were obtained with the use of 2 per cent. glucose bouillon, 2 per cent. glucose agar, and ammonium oxalate solution.
3. On 2 per cent. glucose agar the typhoid bacillus grows in such a characteristic way that the presence of a certain type of colony on it is quite diagnostic, and the absence of such colony points very strongly against the presence of the typhoid bacillus.
4. The bile media were not found to be so reliable as the media mentioned above.
5. The results presented are in agreement with those obtained by others. The total positive results obtained are in agreement with the results obtained by others, notwithstanding the fact that more cases were studied later in the course of the disease.
6. Although the maximum results are obtained in the first and second week, there is not sufficient proof as yet that the bacilli are present in the blood from the very inception of the fever.
7. Protracted cases yield positive results if the continuation of the fever is not due to complications (or starvation).
8. A continued fever lasting several days after the blood has been shown to be free from typhoid bacilli will nearly always prove not to be a case of typhoid fever.
9. The results in relapse are the same as those in the primary attacks. The bacillemia in the relapse is due to a new invasion.
10. We can not draw any definite conclusion as yet concerning the value of the blood cultures in determining the prognosis.

35. **Tabes Dorsalis.**—This is a more elaborate paper than that on the same subject by the same author in the *Virginia Medical Semi-Monthly*, June, 1908, and abstracted in THE JOURNAL, August 1. He draws the following conclusions:

1. Tabes dorsalis is a secondary degeneration in the posterior columns, due to a chronic meningitis, very probably of syphilitic nature.



2. The arrangement of the meninges surrounding the radicular nerve renders it peculiarly susceptible at that spot to mechanical or toxic injury.

3. The unequal incidence of the affection on different fibers of the posterior root is probably due to unascertained peculiarity of structure or arrangement of fasciculi, rather than to any selective toxic influence.

4. The lesions tend toward resolution and arrest, even though the process may continue during the life of the individual.

5. With this arrest, regeneration tends to occur in the radicular nerve, the amount in the anterior root being relatively considerable, while that in the posterior root is less in amount and functionally insignificant, as a rule.

6. The otherwise inexplicable vasomotor and cranial nerve symptoms and postmortem findings in this disease are shown thus to be necessary concomitants of the tabetic process.

7. The question of the pathogenesis of the polynuritic manifestations found in tabetics is not yet answered.

**38. Bacteriology of Puerperal Uterus.**—Nicholson and Evans say that taken in connection with the studies on the bacteriology of the blood which have been made in their clinic, they feel justified in making the following statements: 1, If both blood and intrantrine cultures are negative, the temperature is due to some intercurrent condition; 2, if the intrauterine culture is positive, but the blood culture is negative, they consider the infection to be still local in its manifestations; and 3, if the intrauterine culture is negative but the blood culture is positive—a very unusual condition—they are justified by their general conclusions in considering that the case is one of general infection, the local endometrial condition having been either sterile from the first, or having become so gradually after the general infection developed. They draw the following conclusions:

1. The uterine lochia is sterile in normal cases throughout the puerperium.

2. Streptococci are never present within the uterine cavity without causing symptoms.

3. In a few instances non-pathogenic germs may be found in cultures in afebrile cases, but there is every reason to believe that their presence is really the result either of contamination during the extraction of the lochia or of their introduction during obstetric manipulation.

4. Ascendence of the gonococcus is an event of comparative rarity, though the frequency of this organism would of itself give reason to expect otherwise.

5. Infection of the endometrium is an ever-present danger in culturing within a few days of delivery.

6. A study of the bacterial content of the puerperal uterus is of great importance as a subsidiary means of diagnosing septic infection following delivery.

7. As nearly as may be, a technic should be adopted which will prevent contamination during the removal of the lochia, in order to avoid a vitiated result.

#### Archives of Pediatrics, New York.

July.

39 \*Public School Education. C. G. Kerley, New York.

40 \*A Plan of Dealing with Atrophic Infants and Children. H. D. Chapin, New York.

41 \*An Unusual Type of Acute Nephritis in Childhood. J. L. Morse, Boston.

42 \*The Colored Children of Jamaica, with Especial Reference to Rickets and to Mongolian Spots. A. E. Vipond, Montreal, Canada.

43 \*Need of Postgraduate Instruction in Pediatrics. A. Cailé, New York.

44 Recurring Empyema. F. Huber, New York.

45 Fatal Hemoptysis in Children. W. E. Magruder, Baltimore.

46 Sporadic Cretinism (Type Fruste). C. F. Judson and W. N. Bradley, Philadelphia.

39. Abstracted in THE JOURNAL, July 11, 1908, p. 157.

40. Abstracted in THE JOURNAL, July 18, 1908, p. 246.

41. Abstracted in THE JOURNAL, July 11, 1908, p. 156.

42. **Mongolian Spots.**—Vipond examined 217 children of Jamaica, West Indies, of whom 89 were pure black, 48 three-quarters black, 57 were Sambo (offspring of a negro and a mulatto), and the remaining 23 were light. He found Mongolian spots in 44—8 pure black, 18 three-quarters black, 15 Sambo, and 3 light children. Out of 28 children under one month old 22 had Mongolian spots; out of 40 at six months and under 27 showed the spots, and out of 50 children under one year 33 had spots. Thus there were Mongolian spots in 80 per cent. of colored children under ten days old, which percentage does not change to any degree up to a month. As they advance in age the percentage of spots lessens. If the child is too dark or too light the spots are less likely to be present. As to site, they were most frequent at the lower part of the sacrum, then in the gluteal region. They are also found on the back, shoulder, thigh, hip, lower leg, etc. The color of the spots varies from bluish to greenish.

43. Abstracted in THE JOURNAL, July 18, 1908, p. 246.

#### Bulletin of the Lying-in Hospital, New York.

March.

47 \*Brachial Birth Palsy. P. Bailey, New York.

48 \*Gangrene of the Extremities in the New-Born. G. W. Kosmak, New York.

49 \*Prognostic Value of the Nuclear Count, Associated with Pregnancy and the Puerperium. E. Smith and A. Lansing, New York.

50 Complete Congenital Opacities of Both Cornea. L. W. Callan, New York.

51 Status Lymphaticus. E. L. Coolidge, New York.

52 \*Postpartum Bacteriemia. J. E. Welch, New York.

53 Significance of Albuminuria in Pregnancy. F. E. Sondern, New York.

47. **Brachial Birth Palsy.**—Bailey points out that it is remarkable that brachial birth palsy did not come under systematic consideration earlier than the end of the nineteenth century, although doubtless as old as the human race. It concerns the obstetrician more than any other practitioner. While pressure is the generally accepted cause of the lesion, Bailey is of the opinion, with others, that most cases result, not from pressure on the plexus, but from traction on it. If the axis of the head is drawn away from the long axis of the body by 30 degrees the cords of the plexus are stretched to the danger point. This is liable to happen in vertex presentation to hasten the delivery of the shoulder, and in breech presentation to hasten the delivery of the breech. It may also happen in extraction by forceps, and in spontaneous birth the delivered head, by its own weight, may cause traction on the plexus. The type of palsy depends on the part of the plexus injured. The upper arm type is the common variety. The painful symptoms cause the child to lose much sleep and its nutrition is consequently retarded. The deformities are due to overaction of the non-paralyzed muscles. The electrical reactions in the paralyzed muscles are degenerative. The degree of disability and deformity varies with the extent of the lesion and with the treatment. In the cases in which movements begin within a few weeks of birth, a favorable result may be counted on. The treatment consists in passive motion, to prevent contracture, and in massage of the affected muscles. If this can be skilfully applied, electricity may be dispensed with. This treatment is not feasible until the hypersensitiveness, if it existed, has passed away.

48. **Gangrene of Extremities in the New-Born.**—Kosmak describes a case and adds a report of four cases from the literature. He says that it seems very probable that we have to deal with some form of sepsis, the exact nature of which is yet in doubt, as all other factors which might possibly produce gangrene of this type have been ruled out.

49. **The Nuclear Count in Pregnancy and the Puerperium.**—Smith and Lansing, as the result of observations covering 138 cases in the hospital, in which 315 blood counts were made, find that their results differ widely from those of Arneth in all departments of this work. They state that the uncertainty of the nuclear count in puerperal conditions, inflammatory and otherwise, can not be explained, and the results obtained from the study of gonorrheal pus, which seem to contradict Arneth's basic theory, would indicate that for the present at least little practical aid is to be found in the nuclear count. They record the results of their observations in tabular form.

52. **Postpartum Bacteriemia.**—Welch arrives at the following conclusions:

1. Postpartum bacteriemia warrants the very gravest prognosis.

2. A prognosis can not be given from the number of colonies per cubic centimeter of blood.

3. A prognosis can not be given from the length of chains found in case of streptococcal infection.

4. Virulence in the rabbit does not correspond to virulence in the human.

5. In 46 cases the percentage of recovery was 64 per cent.

#### New Orleans Medical and Surgical Journal.

July.

54 Life and Work of James Carroll. J. McFarland, Philadelphia.

55 Annual Report of Dean of the Medical Department of Tulane University. S. E. Cailé, New Orleans.

56 Pathology of Tuberculosis. O. L. Pothier, New Orleans.

57 \*Tuberculosis of the Female Genitals. S. M. D. Clark, New Orleans.

58 \*Tuberculosis of the Testicle—Diagnosis and Indications for Operation. S. P. Delaup, New Orleans.

59 \*Tuberculosis of the Gastrointestinal Tract. R. Matas, New Orleans.



57. **Tuberculosis of Female Genitalia.** Clark, in ten years' experience at the Charity Hospital gynecologic clinics, has not seen more than twenty cases. Secondary cases are more frequent than primary. There are no pathognomonic symptoms. He describes the clinical picture, differential diagnosis and treatment (which last consists of complete removal followed by plastic work) of tuberculosis of the vulva (the rarest form), of the vagina and cervix, of the uterine ovaries and tubes. The tube is the explanation of the relative frequency of tuberculous peritonitis in the female. He discusses gastric and intestinal tuberculosis separately from a statistical viewpoint, and concludes with a statistical summary of the results of operative treatment by well-known surgeons.

58. **Tuberculosis of Testicle.**—Delaup says that tuberculosis of the testicle calls for operative surgical attention more frequently than does a like infection elsewhere in the genitourinary tract. Still even here tuberculosis should be treated conservatively. He prefers epididymectomy unless the testicle is too far gone to be saved. Slight tuberculosis of the organ may be depended on, he asserts, to heal spontaneously after removal of the epididymis.

59. **Tuberculosis of Gastrointestinal Tract.**—Matas contrasts the past and present conceptions of gastrointestinal tuberculosis. It is a relatively frequent primary disease, independent of pulmonary or laryngeal infection and characterized by well-defined localized lesions which undergo a typical and systematic evolution into various well-recognized clinical types. These lesions are the result of the direct inoculation of the mucosa, submucosa and serosa of the intestine, with or without participation of the peritoneum or of the mesenteric lymphatics. The process, which begins as an ulceration surface, or as a tuberculoma, may terminate either in, 1. resolution and cicatrization; 2. cicatrization with hypertrophic changes simulating tumor formation in the region of the ulcerated patches; 3. perforation either into (a) the free peritoneal cavity, causing fatal peritonitis; (b) agglutinative peritonitis followed by entero-enteric fistula, or by (c) encysted purulent collections in the peritoneum, which either rupture externally or into the neighboring organs (bladder, bowel, pelvis of kidney, uterus, etc.) or, when opened surgically, are followed by fecal fistula; 4. stricture formation, after partial or complete cicatrization. This stricture formation may be single or multiple, according to the number and extent of the ulcerations. The modern concept differs from the old, in the conviction based on clinical, operative and cadaveric experience, that the tuberculous process in the intestines is more amenable to spontaneous cure than was formerly supposed; that the protective reactionary processes shown by the connective tissue in the submucosa and serosa are more effective and more frequently exhibited than was previously taught; that the ulcerative process is more latent, insidious and symptomless in its active stages, and that the greatest evils which result from the intestinal localizations of the tubercle bacillus in the alimentary canal are due to protective, conservative and reactionary tissue changes.

Indiana Medical Journal, Indianapolis.

July.

60. The Necessity of Accurate Vital Statistics. C. A. Carter, Indianapolis.

Journal of the Medical Society of New Jersey, Orange.

July.

61. \*Medical Expert Testimony. E. J. Hill, Newark.

62. \*When Shall the Physician Distrust His Own Judgment in Surgical Matters? M. H. Richardson, Boston.

63. \*Joint Affections Caused by Infectious Diseases. W. K. Newton, Paterson.

64. Progress of Modern Psychiatry. H. A. Cotton, Trenton.

August.

65. Hernia as Understood and Treated at Different Epochs by the Past and Present Masters of Surgery. T. H. Mackenzie, Trenton.

66. Diagnostic Importance of Vomiting in Childhood. A. Stern, Elizabeth.

67. Etiology and General Bacteriology of Typhoid Fever. F. S. Hammond, Trenton.

68. Account of the Sewage Plant Established at the State Tuberculosis Sanatorium. S. B. English, Glen Gardner, N. J.

69. High Frequency Electric Currents as Used in General Practice. W. P. Glendon, Cedarville.

61.—Abstracted in THE JOURNAL, Aug. 15, 1908, p. 620.

62. Abstracted in THE JOURNAL, Aug. 15, 1908, p. 620.

63. Abstracted in THE JOURNAL, Aug. 15, 1908, p. 620.

California State Journal of Medicine, San Francisco.

July.

70. \*Acute Otitis Media in Infancy and Childhood. H. B. Ellis, Los Angeles.

71. \*Indications for the Mastoid Operation. H. Hastings, Los Angeles.

72. \*Prophylaxis and Treatment of Acute Otitis Media. W. B. Stephens, San Francisco.

73. Pathology of Acute Purulent Otitis Media and Indications for Operative Interference in Acute Mastoiditis. C. F. Welby, San Francisco.

70. **Otitis Media in Childhood.**—Ellis discusses the anatomy and pathology of acute otitis media in infancy and childhood, and says that nearly all earaches which occur in the night last for a few hours and recur for a few hours for several days, are due to adenoid congestion. This condition is the cause of febrile attacks in infancy more frequently than any other disease except exanthemata. No age is too young for the recognition of adenoids and their removal prior to infection. Ellis has operated on infants a month old, but tonsils should not be operated on at this early age. The symptomatology of adenoids in infancy differs from that in childhood. The nose of the infant is relatively small and the respiratory space very small. The nasopharynx is low but deep from before backward; almost as deep as in the adult. The height increases rather rapidly for six months and then slowly up to two years. The nasopharynx is extremely vascular in infancy and the lymphoid ring is well developed. Snuffles is almost diagnostic in infancy. Adenoids frequently cause enlargement of the cervical lymph glands. Ellis holds the prejudice against early removal unjustifiable.

71. **Mastoid Operation.**—Hastings says that the factors of a timely operation may be determined by the following steps: (a) a careful otoscopic examination; (b) examination of the mastoid region; (c) the history of the case and the general signs and symptoms. He discusses these heads in detail and, in conclusion, says that a timely and thorough mastoid operation serves two distinct surgical purposes—it cleans out the mastoid, including the antrum, and in so doing efficiently drains the tympanic cavity.

72. **Otitis Media.**—Stephens enters a special plea for the recognition of the importance of acute otitis media in infancy and childhood. Many an infant has died from meningitis caused by unrecognized acute otitis media, and many a child has grown up with a discharging ear or handicapped by impaired hearing from the same cause. He calls attention, under prophylaxis, to the prominent place colds and abnormal conditions of the nasopharynx play in the etiology of acute otitis media, and, under treatment, emphasizes the value of early paracentesis and the necessity of asepsis at the time of the incision and in the subsequent treatment of the ear.

Wisconsin Medical Journal, Milwaukee.

July.

74. \*The Ideal in Medicine. W. E. Ground, Superior.

75. \*Purin Metabolism in Gout. H. C. Bradley, Madison.

76. Diagnosis of Renal Disease and the Determination of Renal Function with the Aid of the Cystoscope. A. G. Jenner, Milwaukee.

74.—Abstracted in THE JOURNAL, August 8, p. 523.

75. **Purin Metabolism in Gout.**—Bradley says that there seems to be no room to doubt the fact that gout can be, and is, transmitted from one generation to another—not, of course, in the acute form, for gouty symptoms are almost unknown before the age of puberty and rarely before maturity is attained—as a well-defined inclination toward the malady after the season of rapid growth and expansion has given place to the period of maturity, quiet and general prosperity. The fact that a man can so derange his own metabolism by an environment of excessive luxury as to acquire goutiness and then transfer it to his offspring seems to be of great significance. Holding stoutly to the theory that acquired characteristics are not transmitted—and this, he says, is true for the great majority of diseases, diabetes, nephritis, bacterial diseases, etc.—Bradley nevertheless says that in gout we see a disease acquired and transmitted to the next genera-



tion as a distinct predisposition toward that same disease. It seems safe, then, to assume that a disease so basic and fundamental in its attack is one which strikes at the very roots of that intricate system of change and interchange, oxidation, reduction, synthesis and cleavage that we are accustomed to lump together under the one broad name of metabolism. And yet there still remain some who consider that the uric acid commonly associated with joint inflammations is the cause of the disease itself; and, indeed, most of the measures for the relief of a patient in an acute attack are directed to the removal of the urate deposit, not to the correction of a condition which made the urate deposit possible.

Bradley then reviews in detail the work of the past few years in the way of cleaning up our understanding of uric acid metabolism in both normal and abnormal individuals, and says that in general we can assume that in the normal individual these various ferments are actively engaged in breaking down the nuclear substances. Certain of the steps go on with tremendous rapidity. In different individuals the sum total of endogenous purin metabolism will be different, because of individual idiosyncrasies, but in the same person under normal conditions it seems reasonable to suppose a rather constant nuclear metabolism, resulting in the excretion of a fairly constant amount of uric acid in the urine. This accords well with what we know of uric acid in normal urines. Granted, then, this definite mechanism for the metabolism of the cell nuclei and their peculiar proteins. It is apparent that any abnormal change in the relative or total amounts of these enzymes, or a change in the permeability of the renal mechanism, as in nephritis, will be indicated by an abnormality in the amounts of uric acid produced, destroyed and excreted in a given time. In gont we have undoubtedly such an abnormality of purin metabolism, such aspects of which have been made clear by the masterly work of Schittenhelm and Brugsch. Bradley points out that the treatment of gont, which is a derangement of metabolism, must necessarily be beyond the reach of specific drugs or rapid remedies. A faulty regimen has produced it, and only an equally persistent normal regimen can abolish it.

#### Montreal Medical Journal.

July.

- 77 Hygiene and Sanitation: Domestic, Municipal, National and International. F. Montizambert, Ottawa, Ont.
- 78 \*Spontaneous Pneumothorax or Pneumothorax in Those Apparently Healthy. W. F. Hamilton, Montreal.
- 79 Opsonic Technique. A. H. MacCordick.
- 80 Classification of Tumors. J. G. Adams, Montreal.
- 81 Later History of Sleeping Sickness. J. E. Todd, Toronto.
- 82 Partial Auditory and Visual Aphasia with Object-Blindness Due to an Abscess of the Brain. C. K. Russel, Montreal.

78. **Spontaneous Pneumothorax.**—Hamilton reports 7 cases and finds the following common characteristics: 1. Spontaneous pneumothorax occurs in healthy individuals—mostly young men; 2, the symptoms often begin in the night or early morning; 3, there is usually no formation of fluid; 4, febrile reaction is rare; 5, the patients usually recover.

#### Dominion Medical Monthly, Toronto.

July.

- 83 \*Hygiene and Sanitation: Domestic, Municipal, National and International. F. Montizambert, Ottawa, Ont.
- 84 President's Address, Ontario Medical Association. I. Olmsted, Hamilton, Ont.
- 85 Thoroughness in Abdominal Surgery. A. L. Smith, Montreal.

83. Published in the *Montreal Medical Journal*, July, 1908.

#### The Cleveland Medical Journal, Cleveland.

July.

- 86 \*Obscure Fever in Infancy and Early Childhood. J. L. Morse, Boston.
- 87 Hypertrophied Faucial Tonsils and Adenoids an Etiologic Factor in Backward Children. H. B. Ormsby, Cleveland.
- 88 \*Types of Paranoia. H. H. Drysdale, Cleveland.
- 89 \*Amyl and Sodium Nitrites in Pulmonary Hemorrhage. J. Placak, Cleveland.
- 90 Unusual Mastoid Operations in Children. T. A. Burke, Cleveland.

86. This article was published in the *Boston Medical and Surgical Journal*, July 9, 1908, and was abstracted in THE JOURNAL, July 25, p. 347.

88. **Paranoia.** Drysdale discusses paranoia and reports examples of paranoia religiosa, paranoia erotica, paranoia querulans, paranoia persecutoria. He adds: Paranoia is also of legal significance, and the question will arise, Should the paranoiac who knows right from wrong be held accountable for his crimes to the full extent of the law? The legal fraternity and, unfortunately, some medical men have on various occasions decided against the poor lunatic. They fail to realize that the patient lives in a world all his own, constructed by delusions which he is utterly powerless to alter. He recognizes no other law than that of heavenly origin. His crimes are the result of his hallucinations. He hears the divine voice commanding him to do his duty irrespective of the consequences, and no human agency can prevent it. In Drysdale's judgment the paranoiac with delusions of persecution and auditory hallucinations is the most dangerous individual in the community, as he is likely to become homicidal at any time. Many of the frightful tragedies that shock the public morals have been committed by persons known to be eccentric, but considered harmless.

89. **Nitrites in Hemoptysis.**—Placak has found the use of amyl and sodium nitrites in controlling hemoptysis most gratifying. They seem contraindicated in cases of erosion of a large vessel or the rupture of a small aneurism. The presence of a heart lesion seems to be no bar. The determination of the blood pressure is a valuable aid in preventing and treating hemoptysis.

#### Journal of Medical Research, Boston.

June.

- 91 Transfusion of Blood in Transplantable Lymphosarcoma of Dogs. G. W. Crile, Cleveland, and S. P. Beebe, New York.
- 92 Mechanism of Serum Anaphylaxis and Intoxication in the Guinea-pig. F. P. Gay and E. E. Southard, Boston.
- 93 Chemical Separation of Sensitizing Fraction (Anaphylactin) from Horse Serum. F. P. Gay and H. M. Adler, Boston.
- 94 Vaccination of Cattle Against Tuberculosis. T. Smith, Boston.
- 95 Cultivation of Parasitic Flagellata and Ciliata of Intestinal Tract. E. L. Walker, Boston.
- 96 Experimental Chronic Nephritis. W. Ophüls, San Francisco.

July.

- 97 Recurrent Anaphylaxis and Repeated Intoxication in Guinea-Pigs by Means of Horse Serum. F. P. Gay and E. E. Southard, Boston.
- 98 Relative Specificity of Anaphylaxis. Id.
- 99 Localization of Cell and Tissue Anaphylaxis in the Guinea-Pig, with Observations on the Cause of Death in Serum Intoxication. Id.
- 100 Further Study on Anaphylaxis. J. F. Anderson and M. J. Rosenau, Washington, D. C.
- 101 Epidermal Fibrils in Classification of Malignant Growths. G. McConnell, St. Louis.
- 102 Apparatus of Service in Experimental Pathology. F. P. Gay, Boston.
- 103 Statistics of Congenital Cardiac Disease. M. E. Abbott, Montreal.
- 104 Study of the Eosinophilic Cell as Occurring in the Hematopoietic Organs in Diphtheria and Tuberculosis. G. B. Foster, Philadelphia.
- 105 The Viability of Proteolytic Enzymes in Tissues. C. Frothingham, Jr., Boston.
- 106 Pseudodiphtheria Bacillus Infections and Their Response to Therapeutic Inoculations. A. P. Ohlmacher, Detroit.
- 107 The Reaction of Hypersusceptibility as Produced by Bacterial Inoculations. Id.
- 108 Papilliferous Cysts of the Kidney. J. McFarland, Philadelphia.
- 109 Results of Chronic Parathyroiditis as Obtained by Ligation of the Parathyroid Glandules in the Dog. R. L. Thompson and W. E. Leighton, St. Louis.
- 110 Pathologic Histology of the Parathyroid Glandules and a Report of a Parathyroid-like Tumor. R. L. Thompson and D. L. Harris, St. Louis.
- 111 Multiple Hernias of the Cerebrum and Cerebellum, Due to Intracranial Pressure. S. B. Wolbach, Boston.
- 112 The Colon-Aërogenes Group of Bacteria. D. H. Bergey and S. J. Deehan, Philadelphia.
- 113 Nature of Opsonins of Normal and of Immune Sera and Opsonic Effects Resulting from the Combined Action of Immune Body and Complement. C. H. Browning, Glasgow, Scotland.
- 114 Clinical and Bacteriologic Study of a Case of Pyelonephritis. D. Riesman and D. H. Bergey, Philadelphia.
- 115 The Forensic Value of the Musculo-Precipitin Test. F. P. Gay, Boston.

#### Northwest Medicine, Seattle, Wash.

July.

- 116 The Value of Vision in Its Relations to Accident Insurance Indemnity. H. V. Würdemann, Milwaukee, Wis.
- 117 Sanitation and the Physician. T. J. Sullivan, Seattle, Wash.
- 118 Surgical Treatment of Gastric Ulcer. F. Hinman, Spokane, Wash.
- 119 \*Head Injuries. S. V. R. Hooker, Seattle, Wash.



119. **Head Injuries.**—Hooker calls attention to the following important facts: 1. Concussion of the brain is not a cause of death. 2. Pressure symptoms after injury to the head should mean operation. 3. Simple unconsciousness lasting more than thirty-six hours after such injury means similar treatment. 4. Such operations call for asepsis and speed more than almost any other class of operations. 5. Careful diagnosis and prognosis are necessary. Guard the latter by stating the possibility of more or less laceration of brain tissue.

#### Journal of the South Carolina Medical Association, Greenville.

July.

- 120 Ocular Tuberculin Reaction. E. W. Carpenter, Greenville.
- 121 Acute Bowel Obstruction. A. B. Knowlton, Columbia.
- 122 Ulcers. J. L. Sanders, Anderson.
- 123 Abortion and Its Treatment. W. H. Lawton, Vance.
- 124 Is Medicolegal Legislation Needed in South Carolina? W. Cheyne, Sumter.

#### The Laryngoscope, St. Louis.

July.

- 125 Essentials of Voice Production. W. Mills, Montreal, Canada.
- 126 Drainage Mechanism of Normal Accessory Sinuses. S. Yankauer, New York.
- 127 Total Deafness Following Infectious Diseases. L. J. Goldbach, Baltimore.
- 128 Intracranial Complications of Suppurative Otitis Media. J. J. Thompson, New York.
- 129 Case of Extradural Abscess. C. P. Jones, Newport News, Va.
- 130 Three Cases of Laryngeal Growth Removed by Direct Laryngoscopy. J. McCoy, New York.
- 131 Congenital Diaphragm of the Larynx. G. Kiaer, Copenhagen, Denmark.
- 132 Congenital Detachment of Falciform Pillars and Isolation of Palato-Glossus Muscle. P. Fridenberg, New York.
- 133 Three Unusual Cases of Nasal Disease. G. C. Hall, Louisville, Ky.

#### Memphis Medical Monthly.

July.

- 134 Medical Evolution. H. Hawkins, Jackson, Tenn.
- 135 Pathogenesis of Pernicious Malaria. W. H. Deaderick, Marianna, Ark.
- 136 Bier's Stasis Hyperemia in Acute Inflammations. J. H. E. Rosamond, Memphis.
- 137 Two Cases of Accidental Antepartum Hemorrhage. O. S. McCown, Memphis.
- 138 Administration of Quinin by Injections. G. E. Petty, Memphis.
- 139 Plastic Surgery of the Face. J. E. Johnson, Memphis.
- 140 Impressions from the Fifty-ninth Meeting of the American Medical Association. O. S. McCown, Memphis.

#### Albany Medical Annals, Albany.

July.

- 141 Character of the State Board Examinations and the Competency of State Medical Examining Boards. W. G. Tucker, Albany.
- 142 The Guest or Personal Experiences of a Patient in a Hospital Told by Herself (Continued).

#### Denver Medical Times, Denver.

July.

- 143 Reminiscences. J. Elsner, Denver.
- 144 Influenza. L. P. Barbour, Rocky Ford, Colo.
- 145 Travel Observations. L. R. Hopkins, Denver.

#### Utah Medical Journal, Provo.

July.

- 146 Relations That Should Exist Between the Medical Profession and the General Public. H. D. Niles, Salt Lake City.
- 147 The Teeth—Deformities: Causes, Prevention and Treatment. O. K. Hansen, Provo.

#### American Practitioner and News, Louisville.

July.

- 148 Life Insurance Medical Examination. W. E. Grant, Louisville.
- 149 Continuous Rectal Irrigation. G. S. Hanes, Louisville.
- 150 Pulmonary Tuberculosis. J. W. Irwin, Louisville.

#### Journal of Experimental Medicine, New York.

July.

- 151 Pathologic Anatomy of Hydrazine Poisoning. H. G. Wells, Chicago.
- 152 Melanoma of Vater's Diverticulum and Lower Portion of Common Bile Duct Causing Complete Obstruction. C. W. Duval, Montreal, Canada.
- 153 Biologic Study of the Cerebrospinal Fluid in Anterior Poliomyelitis. M. Wollstein, New York.
- 154 Pulse Pressure as an Index of the Systolic Output. P. M. Dawson and L. W. Gorham, Baltimore.
- 155 Return of Function in the Central Nervous System After Temporary Cerebral Anemia. F. H. Pike, C. C. Guthrie and G. N. Stewart, Chicago.
- 156 Ratio Between Heart-Weight and Body Weight in Various Animals. D. R. Joseph, New York.

- 157 Production of Agglutinins in the Animal Body by Induction of Substances Other Than Products of Bacterial Origin. K. R. Collins, New York.
- 158 Differential Counts of Cells in the Lymph of the Dog: Their Bearing on Problems in Hematology. F. P. Rous, Ann Arbor.
- 159 Obstructive Hydrocephalus Following Cerebrospinal Meningitis, with Intraventricular Injection of Antimeningitis Serum (Flexner). H. Cushing and F. J. Sladen, Baltimore.
- 160 Glycolithic Acid. P. A. Levene and W. A. Jacobs, New York.
- 161 Human Spleen as a Hematopoietic Organ, as Exemplified in a Case of Splenomegaly with Sclerosis of Bone Marrow. J. L. Donhauser, Philadelphia.

#### FOREIGN.

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

#### Lancet, London.

August 8.

- 1 \*Intrathoracic New Growths. T. R. Glynn.
- 2 Human and Cattle Tuberculosis: Investigations of 97 Norwegian Farms. B. Overland.
- 3 \*Treatment of Appendix Abscess. A. W. Cuff.
- 4 Use of Selected Lactic Acid Bacilli and Sour Milk in Treatment of Some Forms of Chronic Ill Health. G. Herschell.
- 5 Case of Diphtheria and Impetigo Contagiosa in a Child. T. P. Puddicombe.
- 6 Experiments as to the Constancy of the Carbohydrate Reactions of the Streptococci. J. Ritchie.
- 7 \*Organism Discovered in a Case of Epidemic Diarrhea. R. S. Williams, J. Orr, H. L. Murray, C. Rundle and A. E. Williams.

1. **Intrathoracic New Growths.**—Glynn bases his observations on 23 cases of intrathoracic growths, in which post-mortem examinations were held. In sixteen cases the tracheobronchial glands were the seat of the new growth. He describes the arrangement of these glands in groups, and says that it is evident that a malignant infection originating in any gland of the tracheobronchial system is likely to extend from group to group. Malignant growths in the esophagus, vertebrae, breast or sternum may cause secondary disease of the glands or may invade the mediastinum, the pleura or lungs by continuity. Glynn discusses the various forms of new growth that may affect the mediastinum. Pleuritis effusion frequently complicates intrathoracic malignant growths. Little or nothing can be said of the cause of the growth. The symptoms of growth in or hypertrophy of the bronchial glands are due largely to pressure on or invasion of nerves, bronchi, vessels, etc. Glynn can find no record in his cases of the "aching constrictive pain" referred to the upper part of the chest behind the sternum, which Rendu says generally precedes other symptoms. Dyspnea is frequently present and was a prominent symptom in two of his cases of cancer of the lungs. Hoarseness is common, from pressure on the pneumogastric or recurrent laryngeal nerve. Cough is present at some period. The quantity and character of the expectoration may vary exceedingly, being dry, streaked with blood, or purulent. Hemoptysis may be present in malignant disease and more or less pyrexia is to be expected in Hodgkin's disease. Constriction of a main bronchus from pressure is likely to give rise to characteristic signs. These he discusses at length. The diagnosis of mediastinal tumor is often difficult, and the prognosis is necessarily unfavorable, though he has noted two cases, presumably of mediastinal growth, in which the course was not unfavorable. Arsenic in increasing doses is indicated in enlarged mediastinal glands with Hodgkin's disease; and potassium iodid is indicated if syphilis is present. Otherwise, the treatment is palliative. Hypodermic injection of atropin may relieve pain.

3. **Appendix Abscess.**—Cuff suggests that the operative treatment of appendix abscess should conform as much as possible to the following propositions: The abdominal route should be chosen in all cases. The incision should be so placed as to allow of the easiest access to the origin of the mischief, and it should be so large and so capable of extension that any conditions likely to be found may be dealt with easily and thoroughly. Ease of manipulation means quickness of operation, and this quickness is essential in dealing with these half-poisoned patients. A second operation should not be done if it can possibly be avoided, hence the appendix



should always be removed at the same time. There should be as little mutilation as is compatible with thoroughness, two incisions not being made when one properly placed at first will do all that is necessary. Drainage tubes, both in size and in number, should be reduced to a minimum. The abdomen should not present the appearance of a target stuck full of arrows, as in the illustrations of some suggested procedures. It should always be borne in mind that tubes leave very weak places in the scar, as well as being liable to injure the peritoneum, and so predispose to intestinal obstruction from the formation of adhesions with the bowels. Injury to the nerve supply and to muscular fibers should be avoided when possible, and the wound and its resulting scar should be placed in as strong a part of the abdominal wall as is compatible with the foregoing requirements.

7. **Epidemic Diarrhea.**—Williams, Orr and others, after examining the feces in the cases of epidemic diarrhea in Liverpool City Hospital, report the constant finding of an organism closely related to the *B. paratyphoid* group which produces diarrhea in young puppies. Its relation to epidemic diarrhea is the subject of investigation at present.

#### British Medical Journal, London.

August 8.

- 8 \*Treatment of Some of the Severer Forms of Headache. W. Harris.
- 9 \*Value of Diminished Cardiac Dulness in Diagnosis of Cancer. W. Gordon.
- 10 Case of Streptococcal Puerperal Infection Treated with a Vaccine. G. W. Crowe and W. H. Wynn.
- 11 \*Dangers of Calmette's Ocular Reaction. T. H. Butler.
- 12 Training of Teachers in Personal and School Hygiene. C. G. Douglas.
- 13 \*Influence of Alcohol in the Services. A. M. Davies.
- 14 Feeding of Soldiers in Barracks, in Hospitals, and in War. R. J. Blackham.
- 15 Alcohol as a Cause of Inefficiency. G. S. Crawford.
- 16 Importance of Learning a Trade in the Army. W. V. Sinclair.
- 17 Dust and Disease. E. Owen.

8. **Headache.**—Harris, for practical purposes, classifies headaches and discusses them as follows:

- |                 |   |   |
|-----------------|---|---|
| A. Superficial. | { | 1. Diseases of the Brain Coverings:<br>(a) Scalp—e. g., cellulitis; weight of hat or mass of hair.<br>(b) Pericranium—e. g., rheumatic.<br>(c) Bone—e. g., tuberculous or syphilitic caries.  |
|                 |   | 2. Reflex Visceral Neuralgias of Scalp:<br>Ocular, dental, pulmonary, cardiac, gastric, etc.  |
|                 |   | 3. Reflex Cortical Neuralgia:<br>Visual "Academy" headache; thunderstorm; neurasthenic.   |
| B. Deep.        | { | 4. Toxemic:<br>Constipation and sluggish liver; influenza and other fevers; foul air; alcohol; ether.   |
|                 |   | 5. Increased Intracranial Pressure:<br>Cerebral tumor and abscess; acute encephalitis; hydrocephalus; cerebral hemorrhage; cerebral edema in chlorosis and arteriosclerosis; sinus thrombosis; meningitis; tight neck-band; migraine; epilepsy. |

He points out how unsuccessful we are in relieving true migraine by ordinary antineuralgic remedies. He believes this to be because the pain in migraine is produced by an increase of the intracranial pressure brought about in the first instance by arterial dilatation of certain cortical and meningeal areas—a vascular dilatation which succeeds the primary vasomotor constriction which surely occurs in this disease. He believes that the operation of trephining, which has been done several times for neurasthenic headaches, would be justified also in those severe cases of frequently recurrent migraine in which the unfortunate patient is prostrated for one or more days every week or so.

9. **Cardiac Dulness and Cancer.**—Gordon refers to a previous paper in which he described a diminution of the cardiac dulness in the recumbent posture occurring in some cases of cancer, and suggested its probable value in diagnosis. He now states that further experience has justified this view, and tabulates, with brief reports, 103 cases, all of such a nature as to raise

in greater or less degree the suspicion of cancer, while in all of them the reduction of the dulness or the absence of reduction could not be fairly accounted for by ordinary causes. He defines diminished cardiac dulness as follows: With a patient completely recumbent—that is essential—a normal cardiac dulness generally begins at about the third costal cartilage, has its right limit about the mid-sternum, and measures about three inches across at the level of the fifth costal cartilage; but in the condition discussed here the dulness begins above about the fourth costal cartilage, has its right limit a little to the left of the left sternal border, and measures across, at the level of the fifth costal cartilage, less than two inches, or in many cases less than one inch; sometimes there is no cardiac dulness at all. With this diminution of obliteration of dulness are often associated a small feeble low-tension pulse and weak heart sounds. He divides his cases into three classes: Class 1 (38 cases) included cases in which a presumable cancer was naturally accessible to direct examination or was examined at operation or postmortem; diminished cardiac dulness was shown in 34, or 89 per cent. Class 2 (19 cases) consisted of cases which all ended fatally, the downward course according with the diagnosis of cancer; diminished cardiac dulness was present in 17, or almost 90 per cent. Class 3 (46 cases) consisted of cases which for various reasons can not be supposed to have been cancerous; diminished cardiac dulness appeared in only 11, or 24 per cent. An important question is as to the stage in the development of cancer at which diminished dulness appears. Gordon considers the time hardly ripe for explanation of this phenomenon, but suggests tentatively that in cancer the heart, like other muscles, may become more flaccid, or that the lungs, like the abdominal skin, may lose some elasticity, and so give rise to a spurious emphysema; or finally, that in many cases of cancer the heart is known to become much reduced in size.

11. **Ocular Tuberculin Reaction.**—Butler reported in May, 1908, conclusions based on certain cases to the effect that the reaction, though sometimes obtained in the non-tuberculous and sometimes absent in the certain tuberculous cases, was at any rate devoid of danger to the healthy eye. He now reports, however, that three of the patients on whose cases he based this view, have done badly. In one case, a typical tuberculous process was set up in a perfectly normal eye and the central nebula will considerably reduce the visual acuity of the eye. He has therefore abandoned the method, and considering that it is often deceptive and may do great damage he holds its use unjustifiable.

13. This article is commented on editorially.

#### Medical Press and Circular London.

August 5.

- 18 Various Methods Employed in Serodiagnosis of Syphilis. Professor Fornet.
- 19 \*Vermin as Disease Carriers. L. W. Sambon.
- 20 Artificial Respiration. J. P. C. Kirkpatrick.
- 21 Food Inspection at Ports of Entry. W. F. Dearden.
- 22 Baths of Schinznach, Switzerland. H. Sewill.

19. **Vermin as Disease Carriers.**—Sambon, after referring to the fact that both mammalian and avian tuberculosis are transmissible to man, states that he has recently investigated two severe epizootics among birds, and has found the pneumonia diplococci exactly like that in the human being. The facts have convinced him more than ever of the necessity for the study of epizootology, with a view to the elucidation of the epidemiology of our own diseases and scourges. Fatal enteritis may cause deadly epidemics in man. Prophylaxis is futile unless every single factor in the epidemiology of each disease is considered. Pigeons probably play a disseminating rôle in diphtheria, and he has a strong suspicion also of the sparrow, for in it he has found both tuberculosis and diphtheria. He had not time to discuss the part played by the dog and the cat in the spread of disease. He regards the mouse as one of the deadliest of household pests. The majority of diseases known to be insect-borne are tropical, because the diseases of the tropics have been investigated by men unbiased by preconceived ideas. Sambon declares that in the matter of prophylaxis we of the present day are pygmies compared with the ancients. He quotes a number of instances from Roman and Greek his-



tory, showing the measures of precaution adopted and the accuracy with which the onus of the spread of disease was placed on certain animals, in classical times.

#### Clinical Journal, London.

August 6.

- 23 \*Treatment of Tapeworm. F. de H. Hall.
- 24 Injuries to the Head. A. A. Bowlby.
- 25 Constipation. A. F. Hertz.

23. **Tapeworm.**—Hall describes the indications in the treatment of tapeworm and says that they are all met by the following plan, originally described by the late Dr. Leslie Ogilvie, which he has found to answer in every case in which he has tried it: For three days previous to the administration of the male fern the patient should be kept entirely on a liquid diet; a pint and a half of milk and a like quantity of beef tea answer very well. To promote a free action of the bowels and to favor the removal of mucus, twenty grains (gram 1.30) of sodium bicarbonate, a dram of sodium sulphate, and twenty minims (gram 1.12) of spirit of chloroform in an ounce (gram 30.) of peppermint water, should be taken three times a day. The night before the male fern is given the patient should have half an ounce (gram 15.) of magnesium sulphate, with a dram of tincture of jalap, and twenty minims (gram 1.12) of the compound tincture of chloroform in an ounce (gram 30.) of water. This is repeated next morning at 7 o'clock if the previous dose has not operated. At 8 a. m. a dram (gram 4.0) of the liquid extract of male fern, made up in a mixture with a dram (gram 4.0) each of mucilage of tragacanth and syrup of ginger in an ounce of chloroform water. At 9 a. m. this dose should be repeated. At 11 a. m. half an ounce (gram 15.) of castor oil with a dram (gram 4.0) of tincture of jalap should be given, and if the bowels do not act within an hour an enema of a pint and a half or two pints of soapy water should be administered. The motions should be carefully examined to find the head, and if the above treatment has been faithfully carried out it may be sought for with confidence. It is desirable to keep the patient in bed for two or three hours after the bowels have acted, as the male fern may cause faintness.

#### British Journal of Children's Diseases, London.

July.

- 26 \*Pneumonia in Childhood. T. R. Whipple.
- 27 Case of Pneumococcal Peritonitis with an Unusual Complication. H. S. Clogg.
- 28 Edema Persisting since Birth. G. A. Sutherland.

26. **Pneumonia in Childhood.**—Whipple states that pneumonia is one of the common affections of childhood. When a child has pneumonia, it is a common error to imagine that it must of necessity have lobular or bronchopneumonia. Such is by no means always the case. The lobar variety of pneumonia is much more frequent in childhood than is often supposed. The diagnosis between lobar pneumonia and bronchopneumonia is often a matter of some little difficulty. The chief points of distinction to be borne in mind are: 1. Lobar pneumonia is almost always primary, while bronchopneumonia is frequently secondary; 2, its onset is sudden and the symptoms well marked, whereas bronchopneumonia begins insidiously as a rule; 3, the temperature in lobar pneumonia tends to be more uniformly high and to end by crisis, whereas, in the other form the course of the fever is prolonged and irregular, and rarely ends abruptly; 4, lobar pneumonia usually affects a localized area of one lung, at any rate to begin with, the signs being limited to that area and leaving the rest of the lung free, while bronchopneumonia is bilateral and more extensive; 5, bronchopneumonia tends to occur at a slightly earlier age than lobar pneumonia. In lobar pneumonia, the male sex is the one that is chiefly affected in childhood, as in adult life, and the disease may occur at any age. In Whipple's series the right lung was affected in 37 cases, or 56.9 per cent.; the left in 23, or 35.3 per cent., and both lungs in 5 cases, or 7.8 per cent. It is of general knowledge that the right lung is more often affected than the left, but in these cases the incidence on that side was rather more frequent than appears usually to be the case. The onset of lobar pneumonia is almost invariably sudden. In Whipple's

series the disease terminated in a definite crisis in 44 out of the 54 cases, or in 81.4 per cent., in which the termination of the pneumonic process could be accurately determined. In the majority of cases, the crisis took place, between the fifth and tenth days, during which period it occurred in 30 instances, or 68.1 per cent. A few cases terminated by crisis as early as the third or fourth day. The temperature in children often tends to vary considerably between wide extremes, a high temperature alternating with a normal or subnormal one. In the series of 65 cases 11 patients died, giving a total mortality of 16.9 per cent.

Bronchopneumonia in childhood is more particularly a disease of early infancy. In Whipple's 85 cases the sexes were affected equally. His series consisted of 33 primary and 52 secondary cases. The lesions of bronchopneumonia are to be found, as a rule, simultaneously in both lungs. In the greater number of cases the disease begins insidiously, and this is especially the case in the secondary form. Speaking generally, the temperature in bronchopneumonia is not so high as in the lobar form and is less regular, the remittent or intermittent type being more or less characteristic. The duration of the fever was found to vary considerably. The temperature subsides gradually in nearly all cases—in other words, a crisis seldom occurs. Whipple had a total of 39 deaths in his 85 cases, or a mortality of 45.9 per cent. Bronchopneumonia complicating measles has a bad prognosis, and is closely followed by that associated with whooping cough and a previous bronchitis. During the first two years of life the mortality is high. A sudden onset of the disease in primary cases appears to be of unfavorable import. The temperature also affords some indication of the virulence of the infection, hectic temperature with high maxima having an especially bad prognosis. Such cases are generally due either to a streptococcal or a mixed infection.

#### Australasian Medical Gazette, Sydney.

June 20.

- 29 Present Views of the Nature of Tuberculosis and Its Treatment by the Physician. C. Reissmann.
- 30 Impacted Shoulder—Tonic-Contraction of the Uterus—Removal of Uterus and Contents by Panhysterectomy. R. Worrall.
- 31 Uses of Bozzi's Dilator in the Artificial Dilatation of the Os Uteri in Labor. J. L. T. Isbister.
- 32 Ante-partum and Post-partum Hemorrhage. F. Barrington.
- 33 \*Disturbances of Menstruation. W. T. Chenhall.
- 34 \*Extensive Syphilitic Necrosis of the Skull. Illustrating an Easy Way for Removing Such Sequestra. T. Fiasechi.

33. **Menstrual Disturbances.**—Chenhall discusses amenorrhea, vicarious menstruation, imperfect development, menorrhagia and metrorrhagia. He says:

"Since sterility and dysmenorrhea are due to various causes, treatment must necessarily be varied in character. In the absence of painful menstruation, operation is only permissible for sterility when some morbid hyperemia or congestion of the mucosa prevents proper engrafting of the ovum. In absolute or relative amenorrhea with sterility it is justifiable to dilate the uterine canal for the purpose of applying the negative pole of the galvanic current to restore menstruation. Proof of the husband's potentiality should precede operation on the wife. The gynecologist's duty is to establish normal menstruation and potential fertility, hence it is useless and unwarrantable to establish hopes of fertility by cervical dilatation when tubal occlusion renders conception impossible. Medicinal treatment is irrational when alone directed toward relief of pain. Stimulants, anodynes and narcotics damage the constitution, inculcate vicious habit and introspection, and lead, ultimately, to complete moral perversion and degradation." In regard to versions and flexions, he says that unwarranted prejudice against pessaries now exists.

34. **Sequestra in Syphilitic Necrosis.** Fiasechi reports a case of a man, aged 46, with a large piece of necrosed bone in the forehead. He describes its removal, and on the basis of this experience he urges surgeons who may meet with similar cases not to trouble to trephine or chisel through the peripheral thickened and eburnated healthy bone, but to attack boldly, with a common saw, the necrosed bone, following four or five lines which will include the chief area of it, then



to introduce one or two thin steel chisels through the saw lines and prize up the sequestrum. The fringes of the necrosed bone adherent to the sound will be easily detached from inside outward, either with rongeur or with sequestrum forceps.

Intercolonial Medical Journal of Australasia, Melbourne.

June 20.

- 35 Surgical Treatment of Exophthalmic Goiter. T. P. Dunhill.  
36 Urinary Infection in Infants. H. D. Stephens.  
37 Plea of Insanity, Monomania, or Partial Insanity. W. Beattie-Smith.  
38 Hypertrichosis and Port-Wine Marks, Involving Both Sides of the Face, Removed by X-Rays. T. G. Beckett.

Annales de Dermatologie et de Syphiligraphie, Paris.

July, IX, No. 7, pp. 385-464.

- 39 Pulverized Metallic Zinc in Treatment of Ulceration on the Genitals. L. Kopytowski.  
40 Septicemia from the *B. Pyocyaneus*, and True Chronic Bulbous Pemphigus. G. Petges and H. Bichelonne.  
41 Histologic Modifications Engendered in Cutaneous Affections by an Intercurrent Febrile Infection. (Dermatite polymorphe douloureuse et pneumonie.) J. Pellier.

Archives Générales de Chirurgie, Paris.

July 25, II, No. 7, pp. 1-114.

- 42 \*Condition of the Glands in Cancer of Testicle. R. Grégoire.  
43 \*Hydatid Cysts of the Spleen. (Kystes hydatiques de la rate.) A. Martin.  
44 \*Two Cases of Milky Ascites. (Ascite chyloforme.) Maucclair.

42. **The Glands in Cancer of the Testicle.**—Grégoire reports three cases and reviews five others—this material showing that it is impossible to determine the condition of the glands with cancer of the testicle in any way except by an exploratory operation. Neither the duration of the affection, the size of the growth or palpation gives any reliable data in respect to the state of the glands. They are liable to be extensively involved early. Simple castration is not rational treatment in these cases. Three of the patients in the cases mentioned were in good health when last seen some time after the operation.

43. **Hydatid Cysts of the Spleen.**—Martin adds 6 unreported cases to the 83 he had previously collected, and reviews the origin, pathologic anatomy and the symptoms. The latter differ as the cyst develops up or down, and toward the front or rear. Simple puncture is unreliable and exposes to severe immediate or later disturbances. Simple extirpation should be done only in case the cyst is pedunculated and suppurating. Splenectomy should be the rule in case the spleen presents multiple cysts, not suppurating. The only drawback is the seriousness of the operation. If the cyst is suppurating and adherent, the only treatment is by incision, suturing the lips of the cyst to the lips of the wound—marsupialization—and drainage.

44. **Milky Ascites.**—Maucclair reports a case of chyloform ascites with carcinomatosis of the peritoneum, and also a case in which the chyloform ascites accompanied tuberculous peritonitis. He reviews the literature on the subject, tabulating the various causes for this condition.

Bulletin de l'Académie de Médecine, Paris.

July 21, LXXII, No. 29, pp. 78-103.

- 45 Various Routes of Secondary Propagation of the Treponema Pallidum. Their Influence on the Symptoms, and Necessity for Arresting the Treponema en route. (Voies de propagation secondaire du Treponema pallidum et la possibilité d'y mettre obstacle par un traitement local atoxylén.) H. Hallopeau.

July 28, No. 30, pp. 105-162.

- 46 \*Septicemic Phthisis. L. Landouzy and L. Laederich.  
47 Immunization by Revaccinations. (L'immunité et l'immunisation vaccinales dans leurs rapports avec la voie de pénétration du virus.) Kelsch, Camus and Tanon.

46. See No. 48.

Presse Médicale, Paris.

July 29, XVI, No. 61, pp. 481-488.

- 48 \*Subacute Form of Tuberculous Septicemia. L. Landouzy and L. Laederich.  
49 \*Practical Value of Percutaneous Tuberculin Reaction. E. Moro.

August 1, No. 62, pp. 489-496.

- 50 General Principles Regulating the Blood Pressure. (Pression sanguine et ses variations à l'état normal.) G. Weiss.  
51 Internal Secretions and Psychoses. Laignel-Lavastine.

August 15, No. 63, pp. 497-542.

- 52 \*Simple Mitral Stenosis and Dwarf Growth. (Rétrécissement mitral pur et nanisme.) M. Labbé.  
53 \*Viscosity of Blood and Iodin. (Viscosité du sang et iode.) P. Boveri.  
54 \*Measles and Red Light. (Rougeole et la lumière rouge.) F. Simionescu.

48. **Septicemic Form of Acute Miliary Tuberculosis.**—Landouzy and Laederich give an illustrated description of a case of acute miliary tuberculosis assuming the form of a subacute septicemia. The toxic-infection ran its course with a series of exacerbations, each one causing local reactions of variable location and type. Successively and alternately manifestations on the part of the joints, skin, heart, pericardium, endocardium, lungs and pleura predominated in the clinical picture; but the general symptoms, the continuous fever, emaciation and wasting testified to the toxic impregnation of the organism. The patient was a groom of 16, and he died in less than three months of the toxic infection, although scarcely "tuberculous" in the sense of pathologic anatomy. Except for one small miliary tubercle in the lung, none of the tissues had reacted to the bacillary toxic-infection except with the manifestations of ordinary non-specific inflammation. The authors think that this and similar cases which they have observed should be regarded as a new type of acute miliary tuberculosis distinct from the meningeal, the pulmonary and the typhoid forms. They emphasize the way in which the field of tuberculous infection is being enlarged to include many affections involving the pleura, the heart, joints, skin, etc. In the case described, the joint affection, the polymorphous erythema and the endopericarditis were accompanied by tender, recurring lumps on the elbows and skull, vanishing completely in less than a month.

49. **Percutaneous Tuberculin Reaction.**—Moro here recapitulates his work in this line. He uses a salve containing six parts of Koch's old tuberculin to five parts of lanolin. A piece about the size of a pea is lightly rubbed for half a minute on the skin of the abdomen or chest, with care not to injure the skin. The reaction, if positive, occurs on the surface of the skin, as a folliculitis—the "percutaneous reaction;" in 24 or 48 hours from one to ten pale papules appear on the surface. In case of a negative reaction the skin shows no change.

52. **Mitral Stenosis and Dwarf Growth.**—Labbé reports a case in a young man of this combination. He discusses the question from various points of view, and is inclined to believe that inherited syphilis and tuberculosis were the primary cause of both the valvular lesion and the defective growth.

53. **Viscosity of the Blood and Iodin.**—Boveri has been studying the subject on twelve patients with hypertension from various causes, and his findings show that the blood becomes more viscous with arteriosclerosis and advancing years. Treatment with iodids renders the blood more fluid in inverse proportion to the severity of the case. This explains one of the causes of the favorable action of iodin in cardiovascular affections. When one reflects how the urine passes through the long and tortuous renal tubules, and other secretions through capillary systems, while the lymph and the blood have to circulate through extremely delicate capillaries, it is easy to see what an important factor for the proper nourishment of the tissues, etc., is the more or less viscous condition of the blood. It may be a determining element in the complex mechanisms of circulation and excretion.

54. **Measles and Red Light.**—This communication from Bucharest extols the advantages of keeping patients with measles under the influence of red light. It relates two cases showing the different course of the disease in two brothers, one of whom had a room with red walls and curtains. The influence of the red light seems to abort the infection, the measles germ and its toxin apparently losing their pathogenic properties under the action of the red light.

Archiv für Kinderheilkunde, Stuttgart.

XLVIII, Nos. 3-4, pp. 161-320. Last indexed July 4, p. 82.

- 55 \*Increase of Proportion of Fat in Breast Milk During Ingestion of Fat. (Fettvermehrung der Frauenmilch durch Fettzufuhr.) L. Moll.



- 56 Importance of Different Proportions of Fat in Breast Milk in Respect to the Thriving of the Infant. (Bedeutung der quantitativen Fettunterschiede für das Gedeihen des Brustkindes.) Id.
- 57 \*Tendency to Spasm in Children and Lime Metabolism. (Spasmophilie und Calcium.) H. Risel.
- 58 Emphysema in Skin as Accident from Intubation. (Hautemphysem als Intubationstrauma.) F. Hammes.
- 59 \*Scarlatinal Joint Affections. (Scharlachrheumatismus.) G. E. Wladimiroff.
- 60 \*Bronchial Asthma in Children. J. S. Arkawin.

55. **Influence of Ingestion of Fat on Breast Milk.**—Moll found that the amount of fat in the milk of a thin wet-nurse could be increased to twice its former proportions by having her eat bacon freely twice a day. The child she was nursing thrived notably on the fatter milk, the former dyspeptic stools becoming normal. Experiments with other wet-nurses confirmed the benefit from allowing plenty of bacon when a child is not thriving on a fat-poor breast milk. Certain facts observed seem to suggest that the milk fat of different wet-nurses is not identical, which compels caution in changing. It may be advisable to use a milk sometimes containing still less fat for a time.

57. **Calcium and Spasmophilia.**—Risel has examined twenty-two children with more or less signs of spasmophilia from nutritional disturbances or rachitis. He added to their milk or gruel a 3 or 5 per cent. solution of calcium acetate. The results showed very little influence from the calcium on the tendency to convulsions. The electric excitability of the peripheral nerves was not increased, but rather diminished, as also the spasmophilic tendency.

59. **Scarlatinal Joint Affections.**—Wladimiroff's experience has shown that neuritis occurs after many acute infectious diseases, and he describes some cases in which this seems to be the explanation of the scarlatinal rheumatism observed. The complication may assume the form of a serous synovitis or of a neuritis. In the latter the joint does not usually swell, although there may be edema, but the pain may extend through the entire limb and be variable in character and intensity. If the vagus and phrenic nerves are affected in the same way, and if anatomic changes are found in scarlet fever such as he has encountered in diphtheria, this will throw light on the early fatal cases of scarlet fever. He adds that the anatomic changes in the nerves in scarlet fever and the nervous complications should be more carefully studied. The salicylates proved useful in his experience with this scarlatinal polyneuritis. In one case ataxia followed scarlet fever.

60. **Bronchial Asthma in Children.**—Arkawin reports 10 cases in children from 17 months to 12 years old, and reviews the literature. He believes that asthma may occur as an independent, essential affection and as a symptomatic affection from reflex action. Catarrhal manifestations were pronounced in all his cases, only two of which seemed to be of the symptomatic form.

#### Beiträge zur Klinik der Tuberkulose, Würzburg.

X, No. 1, pp. 1-130. Last indexed June 20, p. 2114.

- 61 Opsonic Index and Tuberculosis. K. Turban and G. Baer.
- 62 \*New Points of View in Tuberculin Therapy. (Neue Gesichtspunkte in der Tuberkulintherapie.) D. Rothschild.
- 63 Concrements in the Lungs and Treatment with Silicic Acid. (Lungensteine und Kieselsäurebehandlung.) H. Gerhartz and A. Strigel.
- 64 \*Tuberculin Treatment of Pulmonary Tuberculosis from Clinical Standpoint. (Tuberkulinanwendung in der Lungentuberkulose vom klinischen Standpunkte.) K. Dluski.
- 65 \*Roentgen-Ray Inspection of Thorax in Dyspneic Patients. (Zur Röntgenographie des Thorax dyspnoischer Patienten bei Atemstillstand.) A. Rzewuski.

62. **Autotuberculin and Opsonic Index.**—Rothschild lays down various rules for improving the technic of tuberculin treatment of pulmonary tuberculosis. The correct dose of tuberculin seems to be, he says, the smallest dose which causes a pronounced rise in the opsonin content of the blood. The opsonic index is an exact guide for tuberculin treatment, but it gives contradictory findings sometimes. It is possible, he declares, to eliminate the causes for these discrepancies by using as the tuberculin an emulsion of tubercle bacilli derived from the patient's own sputum, urine or any disease product of the patient himself. The phagocytosis must be tested with the patient's own bacilli to insure absolutely reli-

able findings. The logical consequence is that each patient should have his own individual tuberculin—a bacilli emulsion made with his own bacilli. This autotuberculin is specific, he asserts, in the truest sense of the term, and the opsonic index conforms to it constantly. He has applied this autotuberculin in three cases and was impressed with the superior curative results obtained with this "ideal form of tuberculin treatment." He never surpassed the dose of 1/500 mg., but each inoculation was followed by a brief negative phase of the opsonic index, succeeded by a pronounced and prolonged positive phase. When the opsonin content of the serum begins to decline, another inoculation is made—the intervals ranging from two to four days. These small doses always displayed a distinct influence on the opsonic index, and induced marked improvement in the subjective and objective condition. He adds that in cases of mixed infection vaccines should be used against the other infectious germs, to supplement the tuberculin treatment. For this also he recommends inoculation of killed cultures of germs cultivated from the sputum or pus of the patient in question. Autotuberculin treatment under the control of the opsonic index promises to solve the question as to the dosage and intervals of the injections. Of course, artificial inoculation of an emulsion of tubercle bacilli is necessary only when the opsonic index is too low. In certain cases of tuberculosis the opsonic index is very high, and he agrees with Wright that in these cases there is a continuous or constantly repeated autoinoculation of the blood with bacilli and bacillary products from the vicinity of the focus. This keeps the opsonic index high. In all such cases artificial tuberculinization is purposeless. On the contrary, every effort should be made to prevent too energetic autotuberculinization, protecting the patient by complete bed rest or restriction of unnecessary movements. If the bacillary toxins overwhelm the organism too much, the changes in the opsonic index are accompanied by severe subjective disturbances. The fever curve has no direct relation to the opsonin content of the blood, yet the maximal temperature after too large doses of tuberculin seems to correspond always with the lowest point of the negative phase of the opsonin curve following the inoculation. In cases in which it is impossible to obtain any bacilli from the patients, he uses an emulsion of mixed bacilli—a universal tuberculin—which contains as many different kinds of acid-proof bacilli as possible, both the bovine and human types. This does not supply an absolutely specific autotuberculin, but comes nearer to it than any of the ordinary preparations now in use. The simultaneous inoculation of a number of varieties enhances the probability that one of them is of the patient's own type. The endogenous autotuberculin accumulated in the periphery of the disease focus can be forced into the blood by systematic graduated movements, and thus, by artificial means, the opsonin content of the blood can be increased. In this way it is possible to utilize therapeutically the endogenous autotuberculinization by a rational succession of periods of rest and work. He applies the term exogenous autotuberculin to that produced outside of the body by an emulsion of the patient's own bacilli.

64. **Tuberculin Treatment of Pulmonary Tuberculosis from the Clinical Standpoint.**—Nearly a hundred pages are devoted by Dluski to a review of the clinical results of tuberculin treatment of tuberculosis in two dozen different sanatoria. This gives an oversight over more than 1,743 cases of tuberculosis under tuberculin treatment, and nearly 8,000 cases in which tuberculin was injected for diagnostic purposes. Fully 229 articles on the subject have been consulted, and he tries to reconcile the conflicting views of those who are warm advocates of tuberculin treatment and those prejudiced against it. He considers individually the results with the different varieties of tuberculin—eight in all. The article is a comprehensive summary of what has been done in this line of specific treatment of tuberculosis during the last seventeen years. Several tables give an oversight of the details of the technic followed in each sanatorium. His final conclusions are that the combination of hygienic and dietetic measures with tuberculin gives no better results, on the whole, than the hygienic-



dietetic measures alone. Science has not yet formulated laws for specific treatment with tuberculin. Instead of this, we have merely the personal impressions of single physicians either for or against tuberculin treatment. The clinic teaches that the tuberculin may have a very favorable action in very severe cases, but, on the other hand, they may develop injurious and even dangerous action in mild cases. Specific treatment should be applied only with extreme caution, he warns. The safest technic, he is convinced, is that of Hammer and Sahli, as this seems to avoid all possible complications. At present, however, he declares that chaos still reigns in regard to the application of tuberculin in therapeutics.

**65. Roentgen Ray Inspection of Thorax of Dyspneic Patients.**—Rzewuski has found it possible to obtain very fine skiagrams while the patient is holding his breath, by having the patient breathe pure oxygen just before the exposure. This enables him to hold his breath much longer than usual.

#### Berliner klinische Wochenschrift.

August 3, XLV, No. 31, pp. 1433-1476.

- 66 \*Plastic Restoration of Traumatic Defects of Ear. (Plastische Ersatz von traumatischen Defekten der Ohrmuschel.) V. Schmieden.
- 67 \*Relations between Adrenal System and the Kidneys. (Beziehungen zwischen Adrenal-System und Niere.) K. Reicher.
- 68 \*"Sphincteric Proctitis." II. Strauss.
- 69 Experimental Study of Keating-Hart "Evacuation" of Vital Organs. G. Arndt and A. Laqueur.
- 70 Importance of Ultramicroscopy for Clinical Study. (Verwendbarkeit der Dunkelfeldbeleuchtung in der klinischen Mikroskopie.) C. Posner. Id. (Bedeutung der Dunkel-feldbeleuchtung für Blutuntersuchungen.) A. Dietrich.
- 71 Action of Hydrochloric Acid on Secretion of Ferments in the Stomach and Pancreas. (Wirkung der Salzsäure auf die Fermentsekretion des Magens und der Bauchspeicheldrüse.) R. Ehrmann and R. Lederer.
- 72 Determination of "Neutral" Sulphur in Urine. (Bestimmung des "neutralen" Schwefels im Harn.) L. Hess.
- 73 Present Status of Whooping Cough. (Gegenwärtiger Stand der Keuchhustenfrage.) G. Arnheim.
- 74 Relations between Immunity and Ferment Action. (Beziehungen zwischen Immunität und Fermentwirkung.) M. Krause and Klug.
- 75 Experiments with Various Derivatives of Tubercle Bacilli. Specificity of Tuberculin Reactions. A. Wolff-Eisner. Continued in No. 30.

**66. Plastic Restoration of Outer Ear.**—Schmieden reports two cases, calling special attention to the technic followed in one case. The boy's ear had been torn off, and he cut a corresponding piece of cartilage from the costal arch and implanted it in a large skin flap with the attached base above just below the clavicle. Later this flap containing the cartilage with the skin on each side was twisted around and sutured to the stump of the ear. The pedunculated flap was held in place by immobilizing the boy's arm over his head. The technic and results are shown in four illustrations.

**67. Connection Between Adrenal System and the Kidneys.**—Reicher has been conducting experimental research which he thinks has demonstrated that the internal secretion of the adrenals and the intimate mutual relations between the adrenal system and the kidneys have an important share in the pathogenesis of many forms of nephritis.

**68. Sphincteric Proctitis.**—Strauss applies this term to a condition in which the mucosa of the sphincter passage is congested, with excoriations or ulcerations, or a tendency to bleed, and a deposit of mucus in some cases. Occasionally the neck of the ampulla is also involved. All the patients with this affection complained of itching at the anus, tenesmus, and boring or stabbing pains, sometimes preventing sleep. In one case the pain was so severe that there was reflex contraction in the gluteal muscles. Anal eczema was also frequently observed, and hemorrhoids. In many cases a cancer in the rectum had been surmised from the severity of the disturbances. There was invariably spasmodic contraction of the rectum when the finger or an instrument was introduced. He has encountered several dozen cases of this sphincteric proctitis. Treatment includes measures to keep the stools soft and to reduce the local pain with tepid sitz baths, sedative suppositories or astringents. In local treatment he prefers a 2 or 5 per cent. solution of silver nitrate, applied on a cotton swab, under control of the eye. He has also devised a special cap for the syringe which prevents the injected silver nitrate from entering beyond the sphincter canal. He precedes this cau-

terization with some local anesthetic. In case of eroded hemorrhoid nodules he applies the caustic in the form of a silver salve for which he has devised a salve pessary; the neck of the pessary is provided with lengthwise grooves to hold the salve. Sometimes he prefers local insufflation of a powder. He gives an illustration of the pessary, etc., and urges careful differentiating treatment of this condition. The main thing is careful procto-sigmoidoscopy in every case in which the patient complains of disturbances in the rectum. The results of rational treatment are excellent.

#### Correspondenz-Blatt für Schweizer Aerzte, Basle.

August 1, XXXVIII, No. 15, pp. 481-512.

- 76 Scopolamin-Morphin Anesthesia in Obstetrics. (Scopolamin Morphin-Dämmerschlaf.) R. Dietschy.

#### Deutsche medizinische Wochenschrift, Berlin.

July 30, XXXIV, No. 31, pp. 1337-1376.

- 77 \*Tuberculosis of Kidney: Cases Illustrating Important Points in Diagnosis. (Nierentuberkulose.) Casper.
- 78 Serum Diagnosis of Leprosy. (Wassermannsche Reaktion in einem Falle von Lepra.) Wechselmann and G. Meier.
- 79 Treatment of Septic Affections with Rectal Injection of Silver Salts. (Kollargolklysmen.) C. Seidel.
- 80 \*Pneumococcus Stomach Affection. (Pneumococcenaffectio des Magens.) Münter.
- 81 \*Pyelitis and Its Relation to Menstruation. E. Scheldemandel.
- 82 Advantages of Pfannenstiel's Transverse Incision of Fascia. (Bedeutung des Pfannenstielschen Faszienschnittes.) V. Zimmermann.

**77. Diagnosis of Tuberculosis of the Kidneys.**—Casper has operated in 52 out of 100 cases of tuberculosis of the kidney, with a mortality of 5 patients. In the last series of 25 he has had only one death. In 140 operations on the kidneys the only death from renal insufficiency was in a case in which he was unable to apply beforehand the usual functional tests and catheterization of the ureters. When the elimination of sugar after the phloridzin test and elimination of the indigo carmine are notably delayed, it is dubious whether the other kidney alone would prove equal to the task. He would not venture to perform nephrectomy in such a case. In a typical example described, the various tests demonstrated tuberculosis of the left kidney which he consequently removed, although others had claimed to have found tubercle bacilli in the right ureter urine. The course of the case confirmed the correctness of his diagnosis based on cystoscopy, catheterization of the ureters and the functional test. The changes noted in the urine were evidently due to a mild toxic nephritis which subsided promptly after the operation. THE JOURNAL has mentioned Völeker's indigo-carmin test or chromocystoscopy, which Casper has improved by combining it with catheterization of the ureters, thus obtaining the "chromo-ureter test," which is very instructive. He remarks, however, that the elimination of indigo-carmin is no index of the work of the kidneys, like the transformation of phloridzin into sugar, but the dye is eliminated like any other foreign substance in the blood fine enough to pass through the kidneys. It only shows how one kidney can eliminate it better than the other. The more rapidly and intensively the dye is eliminated, the better the kidney is working. In case catheterization of the ureters is impossible he tests the kidney functioning by injecting 0.01 gm. phloridzin into the muscles just before the operation. When the kidney is ready for enucleation he makes a further intramuscular injection of 0.08 gm. indigo-carmin. The kidney is then excluded from the circulation with a clamp applied to the pedicle, and the wound is covered. The bladder is then rinsed until the water runs out clear, and the urine then collecting in the bladder, coming from the other, the intact kidney, is examined for albumin, and the delay before the sugar and dye are eliminated is recorded, as well as the intensity of the elimination of the dye. This whole procedure does not require more than five minutes, as the elimination of sugar begins in sixteen minutes and of the dye in eight minutes. He has never witnessed any untoward effects from this method—these small doses of the phloridzin and indigo-carmin being absolutely harmless. This technic obviates the necessity for operating at two sittings. If the sugar appears in from sixteen to twenty minutes and the blue urine in from eight to twelve minutes, if the urine is quite blue, and if there are no more than traces of albumin, the kidney is working



promptly, and the removal of its mate is justified. He warns that palpation is liable to be misleading, as neither ureter nor kidney is necessarily enlarged in case of a tuberculous process.

**80. Pneumococcus Affection of the Stomach.**—Münter relates the particulars of a case of fatal phlegmonous gastritis produced by pneumococci in a man of 33, rather addicted to alcohol. Dieulafoy and Foulerton have reported three somewhat similar cases. The pneumococcus affection of the stomach may be primary or secondary to pneumonia or ulcerative angina. The mucosa may be mainly involved, with parenchymatous inflammation of the glands and hemorrhages, erosions in the mucosa and formation of a pseudomembrane, with necrosis of the glandular layer. In another form the submucosa may be mainly involved, with phlegmons, while the mucosa shows only moderate inflammation and is free from hemorrhages and erosions. These two forms correspond to the location of the pneumococci. In the case reported the stomach region was very protuberant and the patient was extremely restless. All the four cases terminated fatally, although the findings in one case indicated a tendency to spontaneous healing.

**81. Pyelitis in Women and Menstruation.**—Scheidemandel rejects internal measures in treatment of pyelitis. The main reliance should be on rest in bed, copious ingestion of some light diuretic tea, such as linden flower tea, thermo-compression, light diet and sedatives as needed. It has been his experience that pyelitis is much more frequent in women than in men. The temperature suddenly rises and pain develops, generally on the right side, while the finding of pus and bacteria in the urine confirms the diagnosis. After five or six days of continuous fever defervescence occurs, as in pneumonia. After a few days free from fever there is usually another milder attack on the hitherto sound side. He ascribes the pyelitis to ascending infection from the anus, generally the work of the colon bacillus. After two or three attacks the trouble is at an end; transition into the chronic form of pyelitis is rare. He calls attention to the frequent regularity of the first appearance of the pyelitis three days before the onset of the menses. The characteristic pain is not connected with the menstrual hemorrhage necessarily, but may correspond with ovulation. Even at the beginning of the first attack, catheterization of the ureter may show a latent affection of the other kidney pelvis. In sixteen cases of simple pyelitis referred to him in the last few years the diagnosis had not been correctly made in a single instance, and he believes that many cases of supposed appendicitis are in reality right pyelitis. His patients were between 25 and 45 years old, and transient complications on the part of the bladder were noted in three cases, herpes labialis in two and severe sciatica in one. The urine was free from colon bacilli on dismissal in only about half the cases. The affected kidney is sometimes more painful on pressure from the rear than from the front. If the urine is examined with the microscope more regularly, and the kidneys are palpated in all dubious affections, simple pyelitis will be found to be more frequent than is realized at present. The prognosis is favorable; surgical measures are not required except in the severest cases.

#### Medizinische Klinik, Berlin.

August 2, IV, No. 31, pp. 1179-1218.

- 83 \*Practical Importance of Serum Diagnosis of Syphilis. A. Blaschko.
- 84 \*Serum Diagnosis in Mothers of Infants with Inherited Syphilis. (Komplementfixation bei Müttern hereditärsyphilitischer Säuglinge.) W. Knoepfelmacher and H. Lehndorff.
- 85 \*Diagnosis of Liver Affections. (Moderne Leberdiagnostik.) A. Posselt. Commenced in No. 30.
- 86 \*Suture of Tendons. (Neue Methode der Sehnennaht.) C. Ritter.
- 87 Resection of Anterior Half of Eyeball after Injury. (Resektion der Vorderhälfte des Augapfels nach Verletzungen.) C. Ziem.
- 88 \*Chorioepithelioma in a Man. M. Chuvin.
- 89 Percussion Hammer and Plessimeter for Threshold Percussion of the Heart. (Schwellenwertperkussion des Herzens.) R. Lenzmann.
- 90 New Light on Phenomena of Mendel's Law and Atavism. (Neue Untersuchungen über Atavismus bei Bastarden.) E. Baur.
- 91 Etiology of Digestive Gastroenterorrhea. (Ätiologie des digestiven Magensaftflusses.) P. Huppert.

**83. Practical Importance of Serum Diagnosis of Syphilis.**—Blaschko discusses the indications for treatment on the basis

of the serum diagnosis and the prognosis. His conclusions are that to date serum diagnosis has very little practical importance. One must be very cautious in basing conclusions on it. The main thing at present is to accumulate further experiences with it.

**84. Serum Diagnosis in Mothers of Infants with Inherited Syphilis.**—Knoepfelmacher has continued his research in this line and states that positive findings were obtained in about 56.2 per cent. of 45 women, 32 of whom denied having had syphilis. The findings were positive also in 61.5 per cent. of 13 women known to have had syphilis. These findings are about in the same proportions as in known syphilitics in a latent stage. They seem to demonstrate that the mothers of children with inherited syphilis have had syphilis themselves in the past.

**85. Diagnosis of Liver Affections.**—Posselt discusses in detail the modern methods of testing the functioning of the liver and throwing light on the origin of liver affections. It is evident that a large proportion of cases of gallstones are traceable to typhoid infection in the past. He mentions that Basle and Strasburg, which are noted for the prevalence of typhoid, have nearly twice as many cases of gallstones as certain other European cities, according to the official autopsy reports. Paratyphoid processes, meat poisoning and dysentery are also possible sources for the infection in the bile region responsible for cholelithiasis later, as also residence in a typhoid district. He insists on the necessity for making greater use of the biologic reactions, especially agglutination, as an aid in the diagnosis of liver affections, particularly in those due to the colon bacillus.

**86. Tendon Suture.**—Ritter reports from Payr's clinic at Greifswald some new methods of suturing tendons with the aid of a segment of a vein taken from some animal. Even when there is a quite a gap between the stumps of the tendon, good results are obtained as the new growth is confined to its proper place by the enclosing wall of the vessel cylinder. When the stumps are of uneven size he adapts the encircling cylinder to this condition by cutting it with a spiral incision, making several turns. The cylinder is then fitted to enclose the two stumps and the spiral incision is then sutured its entire length, as he shows in an illustration, reporting a clinical case in which the tendons in the thumb had been severed, leaving a large gap bridged in this way.

**88. Chorioepithelioma in a Man.**—The case reported by Chuvin from Odessa was distinguished by the predominance of the general symptoms. The existence of the primary malignant tumor in the testicle was masked by the secondary metastases simulating miliary tuberculosis. The principal symptoms were extreme dyspnea, cough and rapid and small pulse, while the heart findings were negative. The patient was a college student of a healthy family who had been ailing for six months, complaining of pains in the right side, occasional fever and cough. The primary tumor in the testicle was an autopsy surprise.

#### Münchener medizinische Wochenschrift.

July 28, LV, No. 30, pp. 1569-1624.

- 92 \*Treatment of Obesity by Exclusive Milk Diet. (Entfettung durch reine Milchkuren.) F. Moritz.
- 93 Induration of Apex from Obstructed Nose Breathing and Its Differentiation. (Kollapsinduration der rechten Lungenspitze bei chronisch behinderter Nasenatmung.) K. Blümel.
- 94 Possibility and Importance of Retrograde Lymph Current from Thoracic Duct. (Retrograden Lymphtransport im Bereich des Angulus venosus sinister.) C. Hart.
- 95 \*Beef Serum Treatment of Gonorrheal Ophthalmia in the Newly Born. (Behandlung der Blennorrhoea neonatorum mit Rinderserum.) W. Gilbert.
- 96 Artificially Carbonated Baths. (Sarasonsche Ozetbäder.) E. Müller.
- 97 Artificial Sulphur Baths. (Künstliche Schwefelbäder.) F. Klopstock.
- 98 Operation and Aftertreatment of Mammary Cancer. (Brustkrebs.) Heile.
- 99 \*Karell's Milk Diet and Underfeeding in Failing Heart Compensation. (Karellsche Milchkur und die Unterernährung bei Kompensationsstörungen.) F. Hirschfeld.
- 100 Physiology of Acclimatization. O. Loew.
- 101 Growth of Lactic Acid Bacilli in Stomach Content. (Wachstumsfähigkeit von Boas-Kaufmannschen Bazillen im Mageninhalt.) R. Latzel.
- 102 Prophylaxis of Myopia. (Kurzichtigkeit und ihre Verhütung.) Best. Commenced in No. 29.



**92. Exclusive Milk Diet in Treatment of Obesity.**—Moritz has been delighted with his experience with this means of influencing obesity. It is the simplest and most convenient technic, he says, as well as the cheapest, while it permits individualization and makes the least demands on the patient's attention. He has found it extremely effective, as he shows by eight typical examples. The patients lost from 16 to 46 pounds in from 15 to 81 days on the exclusive milk diet, while it had a favorable influence on complications on the part of the heart and kidneys. The heart disturbances subsided and the pulse tension and rate declined. He allows from 3 to 5 pints of milk a day, in five portions: approximately a pint at breakfast time, a glass at 10 a. m., a pint at noon, another glass at 4 p. m., and a pint at 7 p. m. The milk is taken cold or warm, as desired, and up to a pint of water may be added. This technic obviates thirst and hunger, while the weight rapidly declines. Another advantage is the absence of salt from the diet. The only by-effect observed is a tendency to constipation which must be combated; occasionally there is a little headache or backache with depression if the weight declines too rapidly. He gives the tabulated findings of the metabolism for three months in one case, remarking that the conditions on the milk diet are remarkably simple and instructive. (See also abstract 116 in *THE JOURNAL*, June 6, page 1951.)

**95. Treatment of Ophthalmia Neonatorum with Beef Serum.**—Gilbert refers to the experiences with beef serum for local applications to suppurative processes recently reported by Müller and Moro. He states that he has applied this technic in eight cases of gonorrheal ophthalmia in newly-born children, alone or in combination with silver nitrate. The results were favorable, and he advocates its general adoption. He rinses out the eyes every two hours with the beef serum, kept on ice, fresh every twenty-four hours. It much shortens the duration of treatment according to his experience.

**99. Underfeeding in Failing Compensation.**—Hirschfeld is convinced that underfeeding is an efficient means of controlling failing compensation. This is the explanation of the efficacy of the Karell milk enre in heart disease. It is a method of underfeeding, and the same result can be accomplished with a restricted mixed diet. (See Abstract 92.)

#### Wiener klinische Wochenschrift.

July 30, XXI, No. 31, pp. 1109-1144.

- 103 \*Removal of Hypophysis for Adipose-Genital Degeneration. A. v. Elselsberg and L. v. Frank-Hochwart.  
104 \*Affections of Optic Nerve in Course of Pregnancy. (Sehnervenleiden in Folge von Gravidität.) A. v. Reuss.  
105 Hyperplasia of Thymus in Addison's Disease. K. Hart.  
106 Colon Bacilli Infection of Respiratory Organs. (Kolibazillöse der Respirationsorgane.) H. v. Schrötter and M. Weinberger. Commenced in No. 30.

August 6, No. 32, pp. 1145-1174.

- 107 Ocular Tuberculin Reaction. (Konjunktivale Tuberkulinreaktion.) A. Krokiewicz.  
108 Diagnostic Importance of Ocular Tuberculin Reaction in General Practice. (Konjunktival-, genannt Ophthalmoreaktion.) L. Hans.  
109 \*Diagnostic Importance of Composition of Urine in Pneumonia. (Zusammensetzung des Harnes bei der Lungenentzündung.) E. Zak. Commenced in No. 31.  
110 Impressions of a Surgeon Visiting North America. (Chirurgische Eindrücke aus Nordamerika.) P. Clairmont. Commenced in No. 31.

**103. Operations on the Hypophysis.**—This article reports two more cases of removal of a tumor in the hypophysis through the nose to improve conditions of the type called by Fröhlich "adipose-genital degeneration." The first patient, male, was operated on in June, the second in October, 1907. The symptoms in the first case were headache, amaurosis and atrophy of the optic nerve on the left side, with right hemianopsia and atrophy of the temporal half of the papilla, arrested growth, obesity and infantile genitals. The extirpated tumor was suspiciously like carcinoma. The patient has been constantly improving in every way since; he is free from headache and vertigo, while vision improved at once and permanently, and the sexual functions have become apparently normal. The latest case was that of a man of 27, very short and corpulent, no erections or trace of hair on chin and pubes, with headache for two years with brief re-

missions, occasional vertigo and disturbance in vision. For a time he could only count fingers at a few feet, but later was able to read with one eye. His hair was gray, but his appearance was otherwise very childlike. The tumor in the hypophysis proved to be an angiosarcoma and marked improvement followed its removal. Hoehenegg has reported the successful removal of a tumor in the hypophysis in a case of acromegaly. The technic and differentiation are described in detail.

**104. Optic Disturbances from Pregnancy.**—Reuss describes a case in which the patient had visual disturbances during her latest pregnancies, amounting almost to blindness and then retrogressing after delivery. In nearly all such cases on record the trouble was a chronic retrobulbar neuritis, with central scotoma, and optic neuritis with atrophy, always with visible signs of inflammation. He reviews the literature on the subject, and suggests the possibility of abnormal size and shape of the hypophysis and sella tureica, swollen from the changes of pregnancy, as the cause of the visual disturbances, although he was unable to examine the patient with the Roentgen rays in his case.

**109. Composition of the Urine in Pneumonia.**—For years Zak has been studying the composition of the urine in pneumonia—a total of 190 cases with 449 examinations; 65 examinations of 50 febrile tuberculous patients, and 90 examinations of 43 others. The results show an almost typical composition of the urine in pneumonia. About the fifth day the findings in the urine are characteristic of croupous pneumonia: the gradual increase of albumin, of acetic acid bodies, of primary albumoses and other albumoses and of urobilin, while lime and the chlorids are much reduced. Still more characteristic is the occurrence of large numbers of coarsely granular "incrusted" tube casts. These casts are short, grayish brown, with irregular surface, and one glance in the microscope will suggest the diagnosis of pneumonia. They are still with incrustation with urates, and generally appear in large numbers, but only for a short time, then suddenly giving place to hyaline or other ordinary casts. This characteristic output of the incrusted casts occurs at the height of the disease. They are also observed, although less frequently and with less of this overwhelming suddenness, in sepsis, cancer, diabetes, peritonitis and articular rheumatism. The pneumonia urine findings can confirm the diagnosis of pneumonia in dubious cases, although scarcely conclusive alone.

#### Zeitschrift für Geburtshilfe und Gynäkologie, Stuttgart.

LXII, No. 2, pp. 177-392. Last indexed July 25, page 359.

- 111 Practical Advantages of Leucocyte Count for Diagnosis of Inflammatory Gynecologic Affections. (Praktische Verwertbarkeit der Leukozytenbestimmung für die Diagnose entzündlicher Erkrankungen des weiblichen Genitals.) H. Albrecht.  
112 \*Behavior of Ureters After the More Comprehensive Abdominal Operations for Uterus Carcinoma. (Verhalten der Ureteren nach der erweiterten abdominalen Operation des Uteruskarzinoms.) W. Weibel.  
113 \*Experimental and Clinical Study of Pregnancy Tetany. (Graviditätstetanie.) L. Adler and H. Thaler.  
114 Influence of Breast Nursing on Infants in the First Few Days after Birth. (Einfluss des Selbststillens der Mütter auf die Neugeborenen in den ersten Lebenstagen.) F. Dürig.  
115 Genesis of Hematosalpinx with Unilateral Hematometra. G. Schubert.  
116 \*What Can Be Learned from Cystoscopy in Regard to Indications and Prognosis for Abdominal Cancer Operations? (Was leistet die Zystoskopie hinsichtlich der Indikations- und Prognosenstellung der abdominalen Krebsoperation?) W. Hannes.  
117 Apparent Anaplasia of Cancer Cells. (Verbrennungsercheinungen am Epithel.) K. Holzapfel.  
118 Case of Gravid Rudimentary Pseudodouble Uterus. (Uterus pseudodidelphys.) R. Oeri.

**112. Behavior of Ureters After Abdominal Operation for Uterine Cancer.**—This communication issues from Wertheim's clinic and reviews the experiences in regard to the ureters with his technic for removal of cancer of the uterus. In 400 operations of the kind the ureter was injured in 24 cases, that is, in 6 per cent.; in 3 cases both ureters were injured. The injury caused necrosis with a fistula; the most critical period was the second week. Most of these fistulas healed spontaneously between the third and twelfth week, but even after the third month spontaneous healing was sometimes observed. No disturbances were evident later in the injured ureter, even after years, except that the intervals between



the contractions were somewhat longer. Conservative treatment should be the rule; if ascending infection of the kidney is observed he would advise nephrectomy, if possible. Spontaneous healing occurred in two cases of bilateral injury; the other patient was treated by implantation of both ureters in the bladder.

113. **Pregnancy Tetany.**—Adler and Thaler report a case of tetany developing during parturition and another in which it developed as the patient began to nurse her infant. They review the literature and report extensive experimental research which confirms the connection between the parathyroids and pregnancy tetany.

116. **Cystoscopy and Abdominal Cancer Operations.**—Hannes has examined 200 women with carcinoma of the cervix, using the cystoscope in a large number. He describes the important indications in respect to operation and prognosis that can be learned by this means. Especially important is his assertion that no complications on the part of the bladder during the operation need be feared when cystoscopy gives entirely negative findings. The cystoscope shows whether the vesico-cervical septum is still free from involvement and the bladder can be readily detached. Even when the cystoscope shows severe bladder changes the lesion is not necessarily inoperable.

#### **Gazzetta degli Ospedali e delle Cliniche, Milan.**

July 26, XXIX, No. 89, pp. 937-952.

119 Hygienic Care of Grain in Prophylaxis of Pellagra. (Profilassi della pellagra.) E. Ronzani.

120 \*Serum Diagnosis of Syphilis with Antigens from Rabbits. (Cornea sifilitica del coniglio nella reazione del Wassermann.) F. Simonelli.

121 Individualization in Treatment of Inguinal Hernia. (Costituzione anatomica e cura radicale dell'ernia inguinale.) D'Elia Nicola.

120. **Syphilitic Cornea of the Rabbit Aid to Serum Diagnosis.**—Simonelli's research has confirmed the specific character of the lesions in the rabbit cornea produced by inoculation with human syphilitic material. He has also found that an extract of the cornea can be utilized for the serum diagnosis of syphilis. The lesion contains the pale spirochete and the antigen necessary to induce the specific reaction by fixation of the complement. The rabbit cornea may prove a convenient means of obtaining the necessary antigen, instead of the extract of syphilitic organs hitherto deemed indispensable.

#### **Policlinico, Rome.**

August 2, XV, Practical Section, No. 31, pp. 955-996.

122 The abdominal Reflex. (Riflesso addominale.) A. Baldi.

#### **Norsk Magazin for Lægevidenskaben, Christiania.**

August, LXIX, No. 8, pp. 737-832.

123 Acetonuria and Acidosis. H. C. Gelmuyden.

124 \*Tumors in Hypophysis and Acromegaly. (Svulster i hypofysen og akromegali.) F. Harbitz.

125 Dislocation of the Os Magnum. (Luxatio dorsalis ossis magni carpi. P. Bull.

126 Fracture of Radius in Children. (Fractura radii hos børn.) J. Nicolaysen.

124. **Tumors in the Hypophysis and Acromegaly.**—Harbitz reports 6 cases of tumor in the hypophysis; 2 were in men 33 and 51 years old, and 4 in women between 22 and 60. The tumor was accompanied by acromegaly in only one case, but there was a history of syphilis in one woman, and the man of 51 had diabetes insipidus. The reports are all postmortem findings, although the clinical course is also given. Josefson of Stockholm has reported 4 cases of hypophysis tumor, none accompanied by acromegaly, and Berner has reported a case accompanied by diabetes insipidus but no acromegaly, and about 40 or 50 cases of hypophysis tumor without acromegaly are on record. Impotence and amenorrhea were occasionally noted. There is still enough evidence, however, Harbitz declares, to show a certain causal connection between acromegaly and abnormal conditions in the hypophysis and possibly also in other organs, especially the thyroid. Acromegaly should not be regarded as a direct consequence of a tumor in the hypophysis. Its real cause should be sought deeper than this, probably in some constitutional weakness, with abnormal conditions in a whole series of organs with an internal secretion which may manifest itself in some individuals in a pathologic outgrowth.

## **Books Received**

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

**PATHOLOGIC TECHNIC.** By Frank Burr Mallory, A.M., M.D., Associate Professor of Pathology, Harvard University Medical School, and James Homer Wright, A.M., M.D., S.D., Director of the Pathologic Laboratory of the Massachusetts General Hospital. Fourth Edition. Cloth. Pp. 480, with illustrations. Price, \$3.00. Philadelphia: W. B. Saunders Co., 1908.

**PULSATING EXOPHTHALMOS.** By George E. de Schweinitz, M.D., Professor of Ophthalmology in the University of Pennsylvania, and Thomas B. Holloway, M.D., Instructor in Ophthalmology in the University of Pennsylvania. Cloth. Pp. 124. Price, \$2.00. Philadelphia: W. B. Saunders Co., 1908.

**ESTIMATION OF THE RENAL FUNCTION IN URINARY SURGERY.** By J. W. Thomson Walker, M.B., C.M. (Edin.), F.R.C.S., Hunterian Professor of Surgery and Pathology, Royal College of Surgeons of England. Cloth. Pp. 273, with illustrations. London: Cassell & Co., 1908.

**PRINCIPLES AND PRACTICE OF GYNECOLOGY.** By E. C. Dudley, A.M., M.D., Professor of Gynecology, Northwestern University Medical School. Fifth Edition. Cloth. Pp. 806, with illustrations. Price, \$5.00. Philadelphia: Lea & Febiger, 1908.

**DISEASES OF THE SKIN.** By George Thomas Jackson, M.D., Professor of Dermatology, College of Physicians and Surgeons, New York. Cloth. Pp. 737, with illustrations. Sixth Edition. Price, \$3.00. Philadelphia: Lea & Febiger.

**SIXTEENTH AND SEVENTEENTH ANNUAL REPORTS OF THE ST. JOSEPH'S HOSPITAL, Youkers, N. Y.** Under the Charge of the Sisters of Charity. Oct. 1, 1905, to Sept. 30, 1907. Paper. Pp. 81.

**ARSENIC GAS POISONING.** By John Glaister, Doctor of Medicine of the University of Glasgow. Cloth. Pp. 279, with illustrations. Price, \$1.25. Edinburgh: E. & S. Livingstone, 1908.

**CHOLÉCYSTO-PANCRÉATITE.** Essai de Pathogénie, by Le Docteur Reine Maugeret, Ancien Interne des Hôpitaux de Paris. Paper. Pp. 149, with illustrations. Paris: G. Steinhell, 1908.

**TRANSACTIONS OF THE INTERNATIONAL MEDICAL ASSOCIATION OF MEXICO.** Third Annual Session, held at Monterey, N. M. Paper. Pp. 66. Monterey: American Printing Co., 1908.

**TRANSACTIONS OF THE NEW HAMPSHIRE MEDICAL SOCIETY.** 117th Anniversary, held at Concord, May, 1908. Cloth. Pp. 328. Concord: Ira C. Evans Co., 1908.

**NINETEENTH ANNUAL REPORT OF THE NEW AMSTERDAM EYE AND EAR HOSPITAL.** For the Year 1907. Paper. Pp. 30. New York: Press of W. N. Jennings, 1907.

**REPORT OF THE COLLIS P. HUNTINGTON FUND FOR CANCER RESEARCH OF THE GENERAL MEMORIAL HOSPITAL.** Vol. ii. Paper. New York City, 1908.

**TWENTY-SECOND ANNUAL REPORTS OF THE DANBURY HOSPITAL.** Danbury, Conn. 1907. Paper. Pp. 33. Danbury: News, Book and Job Print., 1907.

**AKUT APPENDICIT OG DENS KIRURGISKE BEHANDLING.** By Dr. P. Bull. Paper. Pp. 145. Christiania: Steen'ske Bogtrykkeri, 1908.

**STUDIES FROM THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH.** Reprints. Vol. viii. Paper. Pp. 453, with illustrations.

**ANNUAL REPORT OF THE Hospital Association of the City of Schenectady, 1907.** Paper. Pp. 44.

## **NEW PATENTS.**

Recent patents of interest to physicians:

- 894337. Spirometer. J. A. Morris, Atlanta, Ga.
- 894758. Inspirator. C. F. Starre, Portland, Ore.
- 894764. Preparing arsenic trioxid. U. Wedge, Ardmore, Pa.
- 895141. Apparatus for applying medicinal washes to the nasal cavity. E. S. Antisdale, Chicago.
- 895145. Corn and bunion plaster. P. S. Bauer, Chicago.
- 894818. Electrode for the evolution of ozone from oxygen or atmospheric air. J. R. Craig, Jr., London, Eng.
- 895295. Wrinkle-eradicator. F. A. Paris, New York.
- 894917. Powder-dividing and capsule-filling apparatus. L. G. Taylor, Kansas City.
- 895316. Preparing nitrils of aromatic alpha-oxyacids. J. L. Turner, Philadelphia, and C. E. Vanderkleed, Collingswood, N. J.
- 895221. Disinfecting apparatus. V. A. Williams, Sedalia, Mo.
- 894929. Surgical appliance. W. C. Yates, Lemoore, Cal.
- 895339. Arch and ankle support. L. J. Courteau, Brockton, Mass.
- 895852. Urinary apparatus. D. Girouard, Leominster, Mass.
- 895478. Radium preparation. H. Lieber, New York.
- 895505. Vibratory massage apparatus. V. Sence, New York.
- 895510. Hospital nightgown. E. Snellenburg, Philadelphia.
- 895812. Bottle or receptacle for liquids for medical and other uses. F. Strauss, Milwaukee, Wis.
- 895919. Medical cabinet. J. S. Walles, Mystic, Iowa.
- 895606. Respirometer. A. G. Warde, Minneapolis.
- 896505. Apparatus for massaging the vaginal walls, etc. J. E. Ament, Indiana, Pa.
- 896432. Tray for instruments. C. F. Booth, Canandaigua, N. Y.
- 896538. Head and face steamer. R. M. Henry and W. Hester, Indianapolis.
- 896114. Orthopedic apparatus. J. Jacobson, Brooklyn.
- 896647. Hair tonic. S. R. Mackay, Cape Breton, N. S., Canada.
- 896409. Antiseptic cone. G. C. McMurtry, Los Angeles, Cal.
- 896583. Abdominal supporter. L. Ross, Watertown, Mass.
- 896338. Combined tweezers and blackhead remover. A. L. Tolman, Orange, Mass.
- 896179. Invalid bed. U. G. Vance and R. Critser, Lapel, Ind.
- 896674. Surgical splint. C. A. Walker, Louisville, Ohio.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOLUME LI

CHICAGO, ILLINOIS, SEPTEMBER 12, 1908.

NUMBER 11

## Original Articles

### THE CEREBRAL CENTERS FOR TASTE AND SMELL AND THE UNCINATE GROUP OF FITS,

BASED ON THE STUDY OF A CASE OF TUMOR OF THE  
TEMPORAL LOBE WITH NECROPSY.\*

CHARLES K. MILLS, M.D.

Professor of Neurology in the University of Pennsylvania; Neurologist to the Philadelphia General Hospital.  
PHILADELPHIA.

The case which forms the text of this article was first studied by me in April, 1904, although I had received communications regarding the patient from her husband, a journalist, and had seen her once or twice before this date.

The patient was a married woman, aged 34 at the time of my first examination. She was the daughter of first cousins. No history of epilepsy in the family was known. One sister had chorea when a child, but entirely recovered and grew to womanhood without any further evidence of nervousness. Another sister has had some sort of spasm at intervals. The patient had had fair health up to the age of 30 years, although she had suffered considerably from headache at irregular, but somewhat frequent intervals from early childhood. Between one and two years before coming under observation her headaches had become rather severe, the pain being referred chiefly to the forehead, but sometimes affecting the back of the head. The patient stated that she remembered when a child of having had a spell or period of dizziness, which lasted perhaps a week and was of uncertain origin. In 1899, about a year after the birth of her first child, she began to have slight seizures of a peculiar character. In these spells she was said to have nausea, to be somewhat confused, and to articulate indistinctly or incoherently. They usually lasted about half a minute. She did not at first become unconscious in them. In October, 1903, she became unconscious in one of her seizures. The spells without unconsciousness or spasm which she had continued to have at intervals from 1899 until 1903 gradually became more frequent. She sometimes had several daily, and then a week might elapse without any. In these seizures her face would turn of an ashen hue and her expression become drawn. The convulsion which occurred in October was preceded or ushered in by the phenomena of one of her usual seizures. In this attack some spasm on the right side of the face was noted. She slobbered and smiled as she recovered from this attack, and for a few minutes after recovery could not recollect anything. She did not pass into a sleep after this and other attacks, nor did she bite her tongue in any of them. A week or two after this convulsion she began again to have her original form of seizure.

Shortly after the patient first came under my observation in April, 1904, I made several careful examinations of her. Later I saw her at intervals of several weeks or months, occasionally examining her as regards her special senses, sensation, motility,

reflexes and mental state. Her husband, who was a good observer, from time to time until her death, reported on her condition to me, furnishing special data with regard to her seizures. I did not see her, however, for about six months before her death. The patient, in describing her attacks in the spring of 1904, said that she had a sensation of some kind in the region of the stomach. This was soon followed by a sensation of taste and then of smell. These were of a definite character in that they recurred in the same way. She could not tell what the taste or smell was, that is she was not able to refer it to any particular variety of taste or smell, although she sometimes thought that she was just about to be able to do this. She thought that the smell was somewhat like that of a flower, but she could not name the flower. These sensations were in some instances accompanied by smacking of the lips, or as her husband expressed it, clapping of the lips and champing or chewing movements. Immediately after these gustatory and olfactory aura, she became more or less dazed, this confusion being worse at times; in some instances she would keep right on talking through the spell.

Examination for taste showed that on the back of the tongue she was able to taste correctly. In the chorda tympani area of the tongue the patient said in response to the test that she tasted something, but could not distinguish the quality or flavor of what she tasted. Salt was appreciated as sour or acid on both sides; sweet was not recognized as such, and bitter substances gave the same taste as sweet. The tests were made with care, with washings of the mouth and with intervals between them, so as not to cause confusion by the mingling of different substances.

Smell was retained. At one of her visits, May 6, 1904, she gave an interesting statement with regard to her ability to smell. She said that a day or two before she had been out in the woods and had tried to smell some little green bunches of leaves, which she did not know by sight; by smelling them she thought they were sassafras but was not sure of it. She picked several flowers and could smell their fragrance. In cooking she could smell very well, distinguishing the different substances which were being cooked. Examination of her nostrils for motor power by having her sniff with them, with or without the examiner's finger on them, showed undoubtedly that more force was exerted by the right nostril than by the left. She spontaneously spoke of this difference. She said that she could sniff much better with the right than with the left side of the nose. The left nostril seemed smaller and thinner than the right. The tongue was protruded in the median line, was not atrophied, and had no fibrillary tremor. All its voluntary movements could be performed. The left half of the tongue seemed to be a little smaller and flatter than the right. The left pupil was slightly larger than the right; both pupils responded to light and in accommodation. No nystagmus was present and no external ocular palsies.

Before coming under my care this patient had been seen by Dr. C. A. Oliver of Philadelphia, who has kindly furnished me with the following report: "At 14 years of age the patient accidentally discovered that the vision of her left eye was not so good as its fellow. At that time, glasses, which were worn comfortably for six years, were ordered by a well known ophthalmologist. In 1900 she saw another ophthalmologist who operated on the left externus, and two years later on the right externus. The exterior eye muscles were exercised and iodid of potassium was given. When first seen by me, on Dec. 2, 1903, the patient had normal

\*From the Department of Neurology of the University of Pennsylvania.

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



vision for both form and color in each eye, the right eye being far-sighted and astigmatic and the left eye near-sighted and astigmatic. The left pupil was the larger ( $4\frac{1}{2}$  mm.), while that of the right was 3 mm. in size. The irides were equally and freely mobile to light stimuli, accommodation and convergence. The actions of the exterior ocular muscles were good in every direction with proper muscle equilibrium. The visual fields were normal. The patient's husband informed me that the patient had had epileptic seizures with olfactory aura, and that odors tended to give rise to the 'spells.' A diagnosis of focal epilepsy and antimetropia (the ophthalmic signs and symptoms being negative), with a suspicion of a focal cerebral lesion, which was either a tumor or a localized meningitis, was made. It was also noted that the patient apparently improved after her tenotomies."

In May, 1904, careful examinations were made for sensation, motility and reflexes in all parts of the body, the results being almost entirely negative. Movements of the muscles supplied by the motor division of the trigeminus and by the seventh nerve, with the exception of one nostril, as above indicated, were not impaired. No ataxia of station or gait was present and no paralysis and no paresis or ataxia

she looked a certain way to one side she felt as though a spell were coming on.

Under the influence of a combination of sodium iodid, sodium bromid, Fowler's solution and fluid extract of conium, the number of the patient's attacks considerably decreased. She continued, however, to have them at varying intervals of days, weeks or months as long as she remained under my direct observation, which was during 1904 and 1905. Intelligent reports of her attacks and of her condition during the intervals were made by her husband during this time, and for the record of her condition for a year before her death I am entirely dependent on these reports.

Her husband reported that in August, 1906, she began to run down and that her speech was incoherent, with decided aphasia. Whether this was in a technical sense aphasia is doubtful. The patient evidently had some difficulty in remembering words and some slowness and hesitation of speech. Her general health declined so that her weight dropped from 140 to 119 pounds. She came home from her vacation in the summer a physical and almost a mental wreck. She would get out of bed at night unable to tell which way to go to the door. In September, 1906, all medicine was stopped and her old spells began to be more severe and frequent, but she recovered

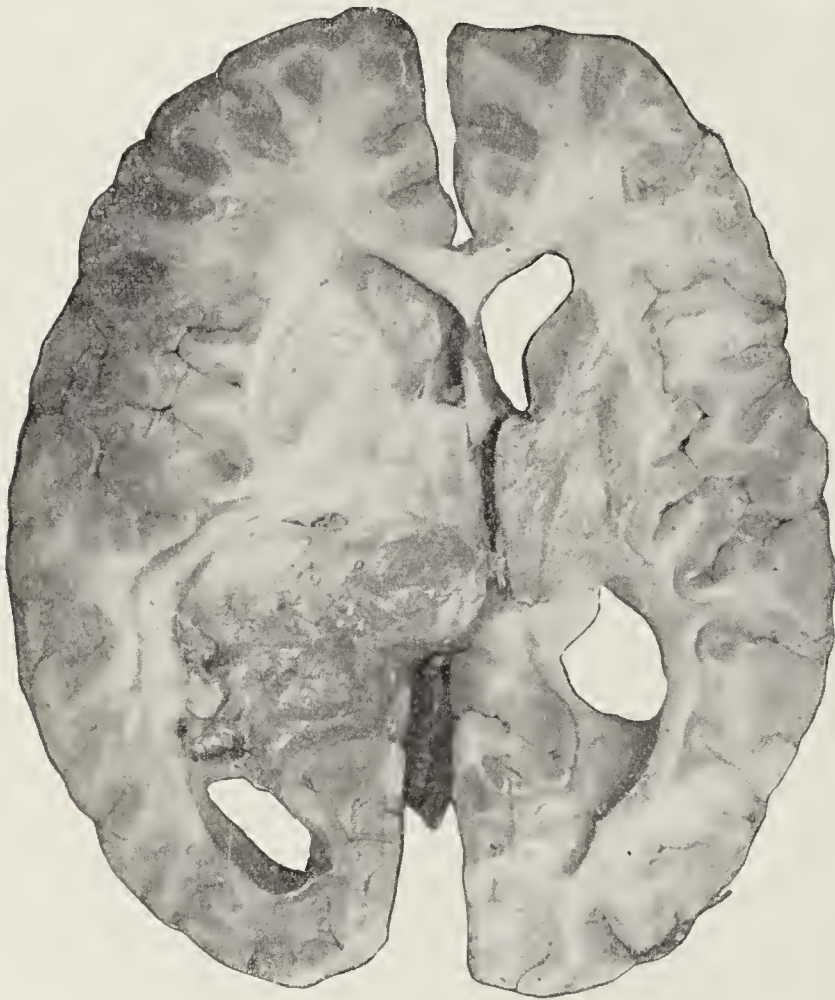


Fig. 1.—Photograph of a section at the upper part of the basal ganglia, showing the tumor invading the left thalamus, filling the front part of the posterior horn of the lateral ventricle and implicating the extreme anterior part of the median aspect of the occipital lobe.

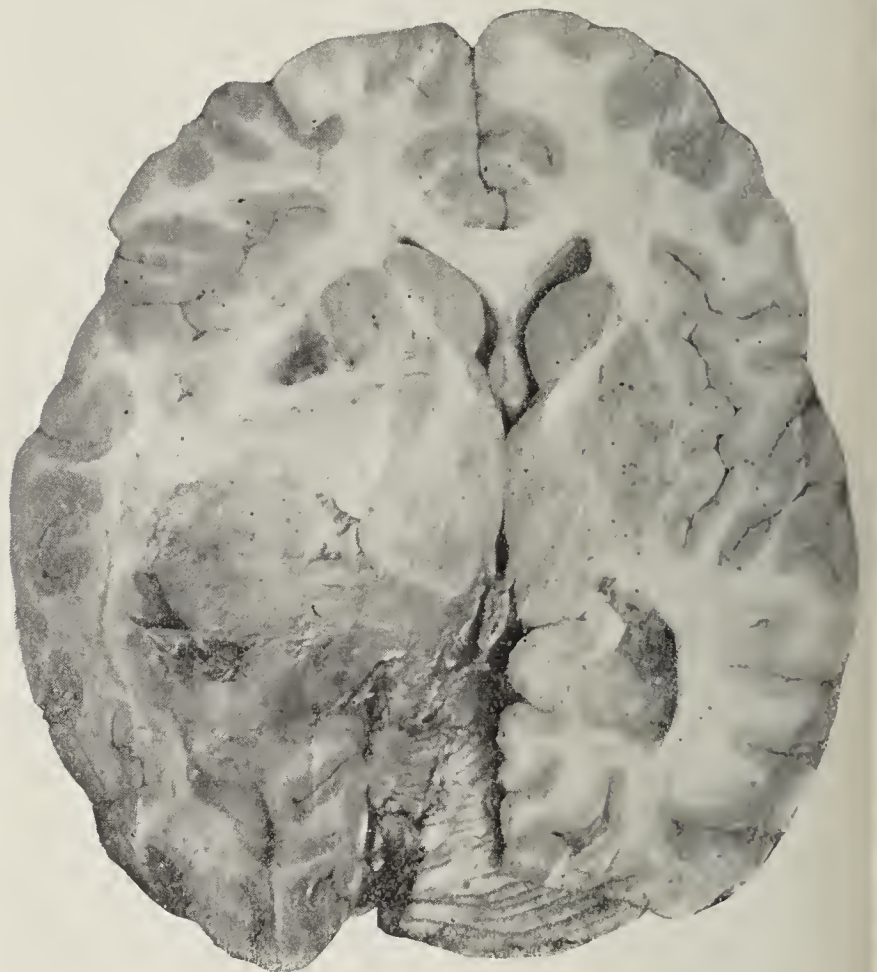


Fig. 2.—Photograph of a section at a level of about  $\frac{1}{4}$  of an inch below that represented in Figure 1, showing the tumor extending to the anterior and median surfaces of the occipital lobe and involving almost all of the lenticula.

of the extremities. Sensation was everywhere preserved. The reflexes also were preserved; the knee jerks, however, were depressed, more markedly on the left. This may have been due to the use of bromids, which had been administered for several months. The bowels and bladder were unaffected. The general condition of the patient was good. Her mentality was fully retained and no aphasia was present. The patient was perhaps at times a little apathetic, but on the whole was in good spirits. She seemed at times in a state of dreaminess.

My last examination, which was made in August, 1907, never showed any paralysis, disorder of sensation nor hemianopsia. Her husband stated that she was never paralysed in her face, arm, leg or in any part of her body. Inquiring with regard to hemianopsia, he said that she never appeared to be blind or partially so, either to the right or to the left. She did not run up against things to either side. The only visual phenomenon which he observed was that she said if

her general tone and her speech. When she was what was termed "aphasic" she would forget words. She would come into a room, for instance, saying "Where are the——" and after some hesitation she would say, "Oh, I mean the scissors." At other times she would substitute wrong words. The patient recovered sufficiently from this so that one would hardly notice any difference between her speech and that of a person who was slightly forgetful of words. She went along about the same until March, 1907. The spells usually occurred in the early morning and her husband would be awakened by a clapping of her lips. One morning on hearing this noise he spoke to and touched the patient, who then went into a general convulsion.

She was last seen by me in August, 1907. She was at this time very sleepy and drowsy. At the time of her visit to my office she lay down on the sofa and went to sleep. She had at times been taking two or three doses of bromid daily. Little change occurred in her condition until about December



26 or 27, about two months before her death. She was taken at this time with what was said to be influenza and she was treated for such principally with remedies like phenacetin, quinin, strychnin, etc. All bromids were stopped at this time. Between January 22 and the date of her death, February 22, she had perhaps six of the following peculiar spells: She would throw up her hands as if in great pain or distress, but could not tell where, except that at the same time she would say that the left side of her body felt numb or asleep or dead. She was not unconscious, but the feelings and condition would last two or three minutes. The morning before her death she had a severe spell. The morning she died she lapsed into unconsciousness and never recovered.

Neeropsy having been permitted, Dr. Samuel Leopold of the clinical and pathologic staffs of the neurologic service of the University of Pennsylvania made a postmortem examination and obtained the brain. The specimen was placed in the hands of Dr. William G. Spiller for investigation in the laboratory of neuropathology of the University of Pennsylvania. The following report was made by Dr. Spiller: "The tumor is on the left side of the brain. The left cerebral hemisphere is much larger than the right. In a transverse section at the level of the upper part of the callosum the tumor fills the lateral ventricle above the thalamus, extending to the roof

feet of the cerebral peduncle, which just below this level is beginning to form (Fig. 2).

At a level about one-fourth of an inch still lower, where the cerebral peduncle is well formed, the tumor fills all of the anterior and median portions of the temporal lobe (uncinate and hippocampal convolutions) and the middle part of the lobe, but leaves the occipital lobe intact except in its extreme anterior part, and does not invade the lateral aspect of the temporal lobe or its subcortical white matter (Fig. 3). The tumor extends as a pointed process of brain tissue over the left cerebral peduncle (Fig. 4) this being the only portion of the tumor appearing on the surface."

It will be noted in the description of the position and extent of the lesion in this case, that it involved the uncinate, hippocampal, and the fourth temporal convolutions and their subcortical white matter, but did not extend further into the temporal lobe. It is probable that the gustatory and olfactory discharges were due to the implication of the cortex in these regions. Of course, it cannot be overlooked that the tumor extended

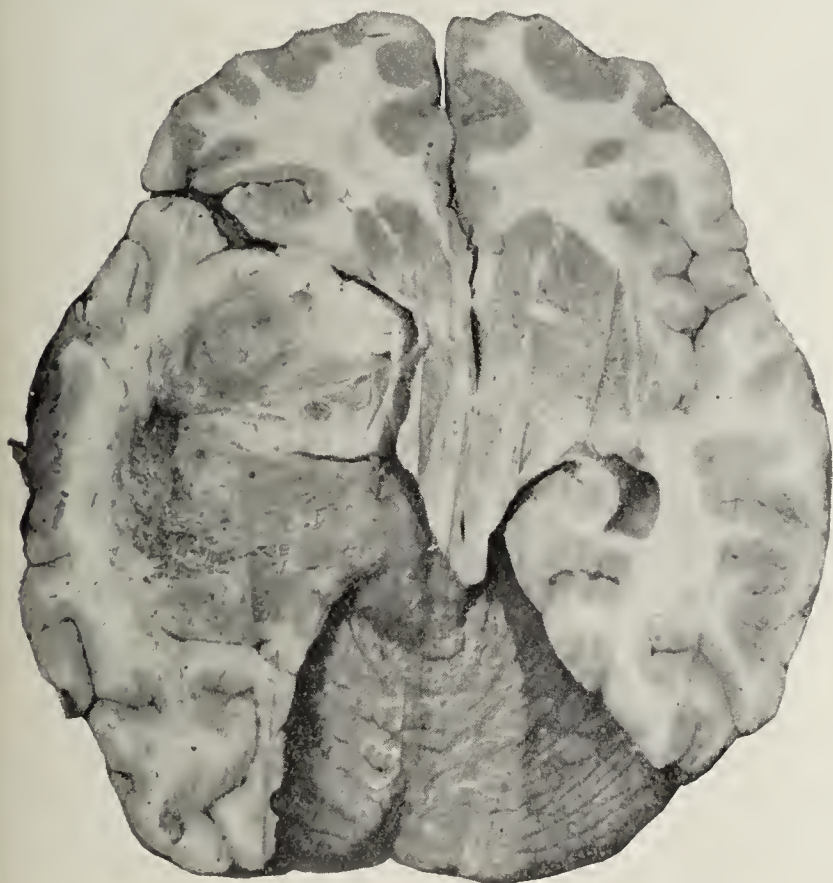


Fig. 3.—Photograph of a section at a level of about  $\frac{1}{4}$  of an inch below that shown in Figure 2. The tumor fills all the anterior and median portions of the temporal lobe (uncinate and hippocampal convolutions) extending into the middle part of the lobe, including the subcortex of the fourth temporal; it also slightly invades the extreme anterior part of the occipital lobe.

of the ventricle and cutting off the anterior part of the ventricle above the head of the caudate nucleus from the posterior part of the ventricle. The tumor has the appearance of a glioma, is infiltrating and gelatinous in places. The upper part of the thalamus is entirely replaced by it. At a little lower level, where the anterior and posterior limbs of the internal capsule are well formed, the tumor invades the thalamus, fills the front part of the posterior horn of the lateral ventricle, implicates the extreme anterior part of the median aspect of the occipital lobe, distorts the outer wall of the posterior horn of the lateral ventricle without extending into the temporal lobe, and involves the posterior part of the posterior limb of the internal capsule (Fig. 1) and a large part of the lenticula.

At a level about one-fourth of an inch lower than the one above described the tumor extends to the anterior median surface of the occipital lobe, involves almost all of the lenticula, but does not extend into the white matter of the temporal lobe nor into the head of the caudatum, nor into the

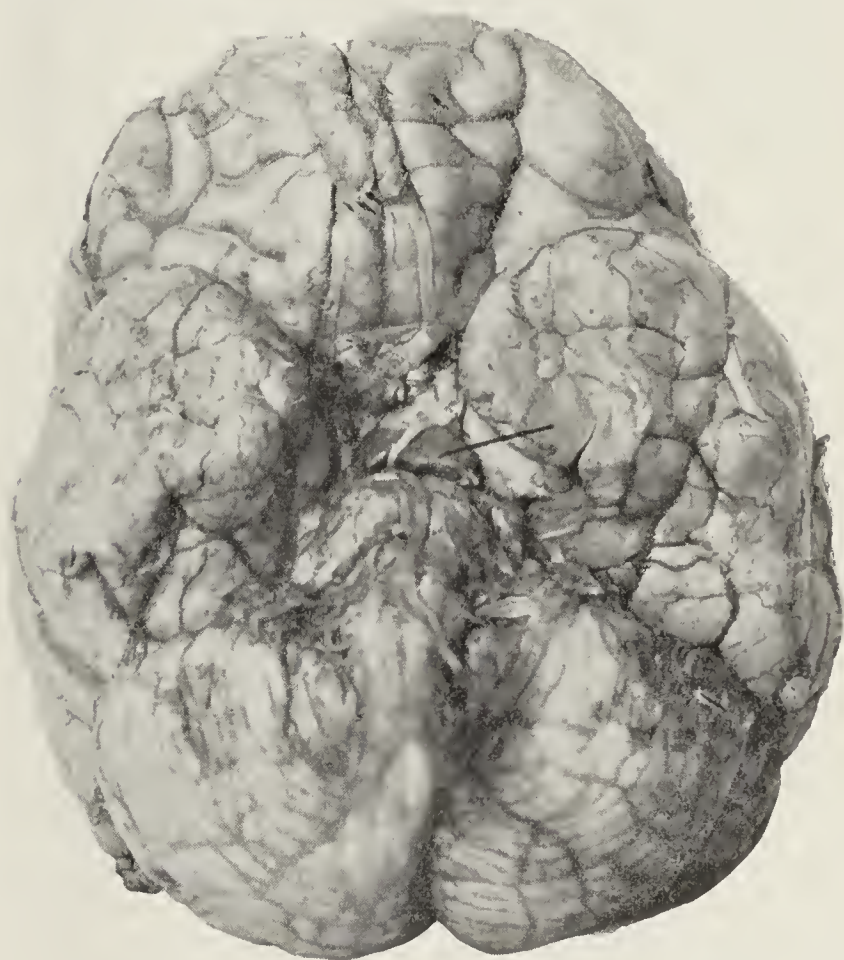


Fig. 4.—Photograph of the base of the brain, showing the tumor extending as a pointed process over the left cerebral peduncle. The line shows the position of the tumor.

considerably beyond the lower temporal region, invading the anterior part of the occipital lobe and destroying large portions of the lenticula and the thalamus. But with our knowledge of previous cases, and with the experimental evidence regarding the cortical localizations of taste and smell, the findings in this case may be regarded as confirmative of the view that the olfactory and gustatory centers are located in the inferior portion of the temporal lobe. In fact, little doubt exists as to olfactory cortical localization, but the case is not the same with regard to the centers for taste. It may, I think, eventually be demonstrated that the hippocampal convolution is the chief cortical area for taste.

So far as the recorded notes show, this patient had no visual phenomena, with the exception that when she looked in a certain direction she felt as if an attack were coming on. No sensations of light, and no hemianopsia appear to have been present. The sensory



phenomena may have been due to the involvement of the thalamus and the extreme posterior portion of the internal capsule.

When this case was first seen by me, I regarded it as probably one of tumor in the early stage of development, situated in the uncinate region and especially involving the gustatory area. The further history of the case and the necropsy show that this diagnosis was probably correct, for although the glioma involved at the time of death, as has just been detailed, a much larger area of the brain, both cortical and subcortical, than is presumably connected with the representation of taste and smell, it is probable that it developed from the inferior anterior aspect of the temporal lobe, later implicating the occipital lobe, the cornua of the ventricles, and the basal ganglia, as shown by the sections made at different levels. A glioma so situated could not have been reached by the surgeon.

To J. Hughlings Jackson<sup>1</sup> we owe the idea that visceral, and especially digestive sensations have their cortical representation in the inner convolutions of the temporal lobe, that is, in the uncinate and hippocampal gyri, and probably in the adjoining anterior portions of the fourth temporal convolution. It would appear from the view which this neurologist has expounded and which he has illustrated by well studied cases, that discharging lesions of this portion of the brain give rise to crude sensations of smell and of taste, to gastric and gastrointestinal sensations, to movements of the lips and nostrils, such as smacking or clapping or sniffing, and movements connected with mastication, deglutition and digestion, such as champing, swallowing, and stomachic and intestinal twisting. In addition he found associated with these sensations and movements, apparent alterations in the size and distance of external objects, and above all a peculiar intellectual aura which he designates as the "dreamy state."

Herpin<sup>2</sup> in his writings on epilepsy, to which Jackson refers at length in one of his articles, drew attention to these sensations of odors and to the peculiar intellectual aura sometimes presented by such patients. How frequently gastric sensations and chewing movements are spoken of by patients, every experienced neurologist must recall. He will remember also to his regret, when he seriously takes up the subject in describing a case of peculiar interest, like the one here presented, how often he has neglected to give the consideration which they deserve to these phenomena.

So few have been the recorded cases with necropsy, in which phenomena of taste and smell have been present as the aura of the motor-epileptic seizure, or with the addition of a dreamy or other peculiar mental state as the sole or chief phenomenon of the epileptic attack, that the case given in this paper may be regarded as of considerable value.

A discussion of this case brings before us Hughlings Jackson's uncinate group of fits. He has described these fits as occurring as the result of a cortical discharge of the uncinate gyrus or its neighborhood, the patients having seizures with evidences of gustatory and olfactory sensations and other phenomena such as those above described. The cases with necropsy are so few

that Purves Stewart<sup>3</sup> was able in 1899 to collect only six. In his enumeration he omitted the case of Worcester,<sup>4</sup> which was given by me in my paper on "Cerebral Localization in Its Practical Relations," published in 1888, and also in my book on "The Nervous System and Its Diseases."

This case was that of a farmer aged 30, who had had epilepsy for two years before he came under Worcester's notice. The case presented no special features until Jan. 26, 1878, when after a severe convulsion the man remained in a state of alarming collapse. He remained for three days in a stupid condition. Shortly after the attack slight interference with innervation of the right side of the face was observed when the patient was talking or smiling. On February 11 he regained his ordinary mental condition. No paralysis was discovered except as above mentioned, and no impairment of sensibility except a transient numbness of the hand at times. For several days hallucinations of smell—at first constant, afterwards transitory—were present. Once he imagined the room was full of smoke. He fancied at times there was an odor like the vapor of alcohol passing quickly. He thought this took the place of a convulsion. No test was made of his taste or smell. No marked changes occurred until his death on February 28, after a series of tonic convulsions, with opisthotonos.

At the necropsy inspection revealed a small red spot of softening at the most prominent point of the left gyrus uncinate. After the brain had been hardened in alcohol a focus of softening existing in the white matter of the anterior part of the left temporal lobe was revealed. This extended to the surface externally, and internally involved the pes hippocampi in the floor of the descending cornu of the lateral ventricle. The portion of the hippocampus major not discolored was swollen and softened. A very small focus of softening, without discoloration, about the size of a large pea, was found in the white matter of the frontal lobe on the same side. No other gross lesions were discovered.

Two of the cases collected by Purves Stewart and recorded by Jackson and Stewart, those of Anderson<sup>5</sup> and Hamilton<sup>6</sup>, were referred to in the contributions already cited. These six cases, given mainly in the language of Jackson and Stewart, were as follows:

CASE 1.—Drs. Hughlings Jackson and Beevor<sup>7</sup> recorded a case of a sarcoma, the size of a tangerine orange, situated at the most anterior extremity of the right temporo-sphenoidal lobe. During life the patient had left hemiplegia without hemianopia, hemianesthesia or affection of smell, taste or hearing. She also had numerous fits with an "intellectual aura" and a "horrid smell of dirty burning stuff."

CASE 2.—Drs. Hughlings Jackson and Colman<sup>8</sup> also recorded a case of a small subcortical patch of softening in the left uncinate gyrus. The patient had been subject to epileptic attacks accompanied by a "dreamy" state, with smacking movements of tongue, lips and jaw, but without crude sensations of taste or smell.

CASE 3.—Dr. James Anderson<sup>5</sup> published a case of a large basal cystic sarcoma arising from the pituitary body and spreading into the left temporo-sphenoidal lobe. It had given rise to attacks of peculiar sensation in the right hand, preceded by a sensation of a bitter taste in the mouth, with occasionally also a peculiar smell, and accompanied by the

3. Brain, 1899, xxii, 534.

4. Amer. Jour. Insanity, July, 1887.

5. Brain, 1886, viii.

6. New York Med. Jour., 1882, xxxv, 575.

7. Brain, 1889, xii, 346-357.

8. Brain, 1898, xxi, 580.

1. Medical Times and Gazette, 1879, i; Brain, July, 1880, and July, 1888; Lancet, Jan. 14, 1899, 79.

2. On Epilepsy, 1852, p. 275.



"dreamy state." There were never any chewing or smacking movements of the lips. Smell was impaired on the left side, and there was slight defect of taste on both sides, especially the left. From affection of the left optic nerve, optic chiasma and optic tract, the patient had blindness of the left eye with temporal hemianopia in the right.

CASE 4.—Mr. Nettles<sup>9</sup> also recorded a case of tumor of the pituitary body impinging the left optic nerve, chiasma and tract, as well as the left temporo-sphenoidal lobe. In that case there had been paroxysmal sensations of suffocation in the nose and mouth.

CASE 5.—Sanders<sup>10</sup> recorded a case of a large glioma on the under surface of the brain, involving the anterior part of the left temporo-sphenoidal lobe and the lower convolutions of the left frontal lobe and destroying the left olfactory tract. The patient had fits, preceded by a warning of a "dreadful disagreeable smell," also chewing movements of the jaw and spitting of saliva. Later he had convulsions affecting the face, but not the limbs. No dreamy state was recorded in that case.

CASE 6.—Dr. McLane Hamilton<sup>11</sup> also published a case of localized chronic pachymeningitis affecting the right uncinate gyrus and part of the adjacent convolutions, but without involvement of the olfactory bulbs. The patient had been subject to attacks, preceded by a peculiar disagreeable odor, either of smoke or of fetid character.

Linde<sup>12</sup> has recorded a case of tumor of the left hippocampal gyrus and uncus in which hallucinations of smell were present; also loss of the right half of the visual field in the right eye and loss of the pupillary reflex to light in the same eye. In a paper by Southard,<sup>13</sup> his second case had among other manifestations, chewing movements. The history of the case was a not unusual one of an epileptic becoming insane, and the autopsy showed as the major lesions pachymeningitis, especially of the vertex, but spreading in many directions.

The left temporal convolutions were distorted opposite the chiasm. This latter process was merely incidental to the distortion of structures consequent on an aneurism imbedded in tissue below the left uncus, the substance of which appeared to have been largely destroyed by the aneurism, but remains of it, together with a portion of the superior temporal gyrus, could be made out in that portion of the brain substance which had been displaced outward and downward by the lesion. The lenticula had been displaced outward and upward, but appeared to have undergone no diminution in size.

A considerable number of clinical cases which bear out the supposition that the dreamy state with movements of the lips, tongue, jaws and associated parts, are evidences of a cortical discharge, peculiarly localized, have been put on record. Spiller<sup>13</sup> has recorded three such cases. In the first of his cases the patient was a woman 27 years old, who had had epileptic attacks since the age of 3 years; and the aura of the paroxysms were a bright light in front of her, objects appearing strange and out of place, sometimes large and sometimes small, and having the taste of raw, unsalted beef in her mouth. At this point consciousness was lost.

In the second case, in the attack vision was blurred and the patient had a "gassy taste." The attack was ushered in with a creeping sensation in her left upper limb, which seemed to ascend the limb gradually and

to involve the left side of the tongue, so that the tongue felt thick.

In the third case, the patient, a man 40 years old, for two years had had at intervals what his wife called "swallowing spells" in which he became unconscious, made the noise and movements of swallowing, and rubbed his fingers together. These attacks lasted a minute or two. In this case the patient after a very severe convulsion was paralyzed in his right upper extremity, which was the seat of great pain. Power was gradually regained. As the paralysis disappeared in the right limb, he became weak in the left, in which pain was felt on movement. Interesting phenomena in this case were appearances of subcutaneous hemorrhages in the conjunctiva, in the face and about the right shoulder, and in a subsequent attack much like the first the patient had severe hemorrhages in the right side of the neck, right shoulder, and right upper limb. In a third severe attack other hemorrhages occurred. Between his attacks or as a part of them he had swallowing spells. Although this patient had the swallowing spells, he had never had any phenomena indicating sensations of taste or smell. Spiller regarded the case as belonging to the uncinate group of fits.

Gowers,<sup>14</sup> out of 119 cases of epilepsy in which special sense auras were present, found 7 olfactory and 1 gustatory. In regard to cases of epilepsy with a gustatory aura, Spratling<sup>15</sup> cites a case in which the patient stated that he almost always had light attacks following severe ones at night, and following the light attacks he had a peculiar taste and sensation in the mouth which he described as follows:

The first is a "sour taste"; the second similar to that of "wheat bran in the mouth"; the third, a feeling of "stringiness," combined with "numbness in the upper part of the mouth"; the fourth, a "sickish, sweet taste" sufficient to produce extreme nausea; the fifth a "filthy, nasty taste," which is extremely disagreeable; the sixth and last being a feeling of "sliminess" in the mouth. The morning following the patient feels "unusually well," much more so than during any time more distant from his seizures. These disorders of taste may continue for a day and gradually shade out from the sixth condition to that of normal sensation. They have persisted for years and can not be ascribed to stomacic indigestion.

Spratling in his record of cases which he regards as illustrations of the psychic epileptic equivalent, gives the record of the case of a man 40 years old, a commercial traveller, who kept a diary of his movements for several months, this being interesting in various particulars, as for example, in the fact that he wrote down accounts of the seizures which he had suffered, and also of other occurrences, for which for one period of several weeks of the time in which he kept this diary, he had no recollection or only for some of the events a dim recollection. Two of the attacks which were noted during this time were accompanied by chewing movements, in one of which he chewed a thermometer and spat out the pieces of glass, of this seemingly having had some faint recollection. In another, the record is made of an "epileptic attack between 4 and 5 p. m. Chewing severe."

Spratling does not discuss in detail the views of Hughlings Jackson as to the "dreamy state," although

9. Ophth. Soc. Trans., iv, 285.

10. Archiv f. Psychiat., 1874, iv, 234.

11. Monatschr. f. Psychiat. u. Neurol., vii, No. 1, p. 44; cited in Progressive Medicine, September, 1900, 205.

12. Amer. Jour. Insanity, April, 1908, lxiiv.

13. American Medicine, March 19, 1904, 474.

14. Epilepsy and Other Chronic Convulsive Diseases, William Wood & Co., 1885.

15. Epilepsy and Its Treatment, W. B. Saunders & Co., 1904.



he speaks of its occurrence and records two or three instances taken from L. Pierce Clark.

William Aldren Turner<sup>16</sup> in his monograph on epilepsy, discusses certain dream states as distinct from the dreamy state described by Hughlings Jackson as frequently showing itself as an aura in connection with crude sensations of smell and taste. While these dream states may occur more or less paroxysmally, they are especially interval phenomena. They are to be regarded, as Janet has regarded them, as psychasthenic phenomena. In them the patient suffers from a sense of unreality of the things around him, and from a distressing disturbance of his usual mental equilibrium. They are subjectively so painful at times that the patients express a feeling of dissatisfaction or worse, because they have replaced the paroxysms which, although transiently more severe, leave a clearer and firmer mental atmosphere. Such cases have been described by Crichton-Browne, Pick, Janet, Turner, and others, and must not be confounded with cases showing the dreamy state as described by Hughlings Jackson as one of the aura in the uncinate group of fits. It is probable, however, that the dream state just described, and the dreamy state of Hughlings Jackson, have something pathogenetically in common, although the psychasthenic dream state may be more dependent on the deteriorative cerebral condition of the patient, than on the discharge of a more or less localized lesion.

Turner in discussing the special sense auræ, refers to sensations of taste and smell, and epigastric sensations, with or without the dreamy state, following Hughlings Jackson in his description of the uncinate group of fits. He gives one case in which "there was described a 'smell of spring' which occurred both as the representative of the minor attacks and as the aura of the complete seizure. In the subsequent course of the case the aura was no longer present."

Spratling seems to take the ground that the epigastric auræ which he enumerates and describes in fifty cases were in some way dependent on conditions of indigestion or special disturbance in the gastrointestinal tract, in this regard differing from Sir William R. Gowers, and also from Hughlings Jackson. This way of looking at the subject has practical enticements. It helps to support the view that the epileptic attacks can be prevented by close attention to the gastric or gastrointestinal state. It is probably true that the condition of the alimentary canal, especially the presence of fermentative disorders in connection with constipation and imperfect or halted digestion, should be corrected as far as possible with the hope of doing something toward the relief of the epilepsy and especially toward decreasing the number of the seizures.

My own observation, however, inclines me to the view that the epigastric aura is only a part or at least a manifestation of the localized cerebral discharge, that it is due, in other words, to a discharge lesion which affects the cortical centers concerned with the representation or control of the sensory or motor or both sensory and motor side of the epileptic syndrome. Many facts would tend to indicate the truth of this view, among these being those which show the frequency of epigastric with gustatory and olfactory phenomena in reported cases. It is true that these gustatory and

olfactory phenomena are often absent. It is nevertheless probable that sensory and motor centers concerned in some way with gastrointestinal interpretation have a more or less separate existence, and are situated in the same region of the brain as are the cortical centers for taste and smell.

In the study of cases illustrating the uncinate group of fits, especial attention should always be given to the respiratory phenomena. In the case of the patient whose history is recorded in this paper, some peculiarities of respiration in the attacks were noted. At least the patient's appearance was such as to indicate the occurrence of light asphyxia or interference with respiration and cardiac action. Her face would almost invariably turn of an ashen hue. In the severe attacks her face not only became pale as in the light ones, but also became congested.

Hughlings Jackson has especially called attention to states of slight asphyxia which are sometimes observed in the uncinate seizure. In one of the cases recorded by him the patient's face turned blue, or as he quotes the paradoxical expression of some one who observed the attack, "dark pale." He advanced the suggestion that this partial asphyxia and change of color is due to spreading of the discharge lesion in the uncinate gyrus to Spencer's respiratory arrest center, and from this center to the respiratory centers in the oblongata. He speaks of the probable occurrence of writhing movements of the arm in these uncinate respiratory attacks, saying that they are "the consequence of (the physical condition for) suffocation."

He cites from Herpin the account of a patient who had attacks with epigastric sensations, champing movements, and slow irregular movements of the arms.

He also illustrates his opinion by another case of his own. This patient, a man of 52 years, had a "funny feeling" which was not true vertigo; of this feeling he said "I can't tell what it is." This feeling might or might not have been the dreamy state. His wife knew when his attacks were coming on by a noise he made, smacking his lips as if tasting to indicate what this noise was. When the noise stopped the patient's lips turned blue; his eyes were half closed. His arms dropped limp, not stiff. He came round by drawing a long breath, then breathed easily and seemed dazed and muddled. He had a nasty taste in the mouth after the attacks. Says Jackson:

Smacking movements of the lips, nasty taste, dreamy state, if there was one, and "turning blue" may seem at first glance to have no sort of relation to one another. I submit that they have an association in the sense that there is one discharge-lesion of some cells of the uncinate gyrus and that there is spreading of the discharge from this focus. I believe, too, that the dreamy state (which I have said often occurs in this group of fits, although perhaps not in the case just narrated) is a consequence, a very indirect consequence, of a discharge-lesion so situated.

The observations made by W. G. Spencer,<sup>17</sup> to which Jackson refers, were "on the effect produced on respiration by faradic excitation of the cerebrum in the monkey, dog, cat, and rabbit." This excitation which produced arrest of respiration, was of a particular spot which Spencer describes as "situated in all the animals examined to the outer side of the olfactory tract, just in front of the junction of the tract with the uncinate. And this arrest can be constantly obtained and the experiment repeated again and again under certain condi-

16. *Epilepsy, Study of the Idiopathic Disease*, Macmillan & Co., 1907.

17. *Trans. of the Royal Society*, vol. clxxxv, 1894, pp. 609 to 657.



tions. . . . This arrest in the monkey was nearly always in expiration, but only rarely was any active respiration seen."

Some work remains to be done regarding the localization of functions in the inferior portion of the temporal lobe and the orbital surface of the frontal lobe. Cases like the one here first recorded, and the others to which reference has been made, are of value in the solution of the physiologic problems concerned with these portions of the brain. The indications are all in favor not only of the location in the uncinate region of the centers for smell and taste, but also for the representation in this region and its vicinity of the sensations produced by the activities of the abdominal and thoracic viscera.

It will be seen that an epigastric sensation was a portion of the aura in the case here reported. Similar sensations have been present not only in a few recorded cases in which gross lesions have been found at necropsy in the inferior temporal region, but also in many cases of so-called idiopathic epilepsy. Other sensations, processes, or phenomena, connected in some way with the functions of the great abdominal and thoracic viscera have been recorded as occurring in patients with lesions in the part of the brain under discussion. Voracious hunger and thirst, for example, have been noted in cases of abscess and other lesions of the temporal lobe (Hughlings Jackson, Purves Stewart, and Stephen Paget).

#### THE RENAL ORIGIN OF VESICAL CALCULI, WITH OBSERVATIONS ON CALCAREOUS TUMORS OF THE BLADDER.\*

CARL BECK, M.D.

Professor of Surgery in the New York Postgraduate Medical School  
and Hospital, Visiting Surgeon to the St. Mark's  
Hospital and the German Poliklinik,  
NEW YORK CITY.

The *raison d'être* of this paper is given by two observations which are apt to modify some of our diagnostic views in regard to calculus formation in the urinary tract. Both are, as it seems to me, of academic interest, as well as of more than ordinary practical importance.

The first of my conclusions was reached by my experience that during a space of four years I found among eleven cases of stone in the bladder nine in which the Roentgen method showed renal calculus at the same time. In those two, in which the renal skiagraphs proved to be negative, technical defects occurred, which made the result doubtful, the patients at the same time not giving me a chance to clear up a possible error. In none of the patients were clinical symptoms present which pointed to the presence of nephrolithiasis. In five of the cases skiagraphy was verified by the surgical operation. A preliminary report was made<sup>1</sup> on this coincidence, which contradicts the generally adopted axiom that concretions originate either in the kidney or in the bladder.

Now, while most authors believe that the majority of vesical calculi are originated in the kidneys, they still hold that a considerable percentage is primarily formed in the bladder. Before the Roentgen era this opinion, based on a limited amount of experience which was gained rarely on the operating table and little more

frequently during autopsies, had to be accepted because there was no proof to the contrary. The repeated recurrence of vesical calculus after thorough suprapubic lithotomy in some of my patients often suggested the possibility to me that with few exceptions the kidneys were the originators of the stone at preskiagraphic times, but the only proof of this assumption would have been exploratory nephrotomy on both sides, a procedure which could not be fully justified. Now, a simple photograph can give us more precise information on this point than a surgical maneuver, which, in spite of our greatly developed technic is not an indifferent undertaking.

In investigating the nascent state of calculus I am satisfied that such solid ingredients, which under normal conditions remain dissolved in the urine, for some reasons are precipitated. Such substances are the urates of soda and ammonia, uric acid, phosphates, oxalates and carbonates of lime, cystin and xanthin of uric acid. *A priori* it appears to be obvious that these ingredients are more inclined to be arrested in the convolutions of the renal structures than in the regular surfaces of a normal bladder. If microscopic examination of the urine were made more frequently, the number of cases in which newly formed precipitates, i. e. gravel, are carried off by the natural passages, would be much greater than we, as a rule, assume. And it is by no means essential that an excess of the ingredients mentioned should be present in order to cause precipitation, because calculus-formation is often observed when the proportions of these solid contents are perfectly normal. Of course there must be an exciting moment for precipitation. In some instances such moments can be well recognized, as, for instance, in cases of local irritation, caused by the introduction of foreign bodies which serve as a nucleus for incrustation. Such alluvial provokers may be broken fragments of a straw, of catheters, pins, thermometers, pencils or sealing wax, etc., as they are frequently found by cystotomy. Their provoking influence may be enormous, as can be proven by introducing a soft rubber catheter into the normal bladder in my operation for hypospadias. A catheter left *in situ* for not more than four days is apt to show such massive incrustations that their intravesical presence can be recognized on a skiagraphic plate.

Necrotic tissue, mucus and even blood-clots may also form a kind of magnetic attraction for the salts. In this connection I refer to my observations on tuberculous kidneys, in which calcareous foci were deposited which would be recognized on a Roentgen plate as such." Here, as in the lungs, glands, etc., tubercle bacilli act as an exciting element for concrementation.

But where no such conspicuous element exists, the nature of the impetus for precipitation is to be regarded an unknown quantity, just as in the question of the formation of biliary calculi. While we know that they are originated through bacterial influence, we neither know wherein the essential element consists which makes bacteria enter the gall bladder nor what gives them the peculiar attractive influence.

The fact that bacteria are detected in vesical calculi does not prove that they are the cause of the formation. They may just as well be the consequence, at least we can say that calculi offer a most favorable soil for bacterial development. The only instances in which bacteria can be proven to be etiologic factors are repre-

\* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. *Annals of Surgery*, December, 1905.

2. Renal Skiagraphy, *Arch. Roentgen Ray*, London February, 1905.



sented by those cases which are due to the entering of parasites into the bladder. For instance, the *Distomum hamatoibium* of Bilharz is found endemically in some parts of Africa, and its eggs form a kind of an alluvial provocation for concrementation. The same applies to *Filaria sanguinis*, which is endemic in some tropical countries. How far the *Bacillus coli communis*, which is so much suspected of playing an etiologic part in the formation of biliary calculi, is to be considered in regard to the formation of urinary calculi can not be determined at the present time.

Thus it becomes evident that nothing definite about the exciting element in calculus-formation is known except in the comparatively small number of cases in which either a solid foreign body or a parasite of a distinct character succeeded in entering the bladder.



Skiagram of the vesical and renal regions of a boy of 10 years, showing the presence of a large mulberry calculus in the bladder and a still larger triangular concretion tightly imbedded in the parenchyma of the left kidney. Note the small calculus near the lower surface of the large renal concretion.

But in the overwhelming majority of cases the question of whether the calculi were of renal or vesical origin could not be answered. Now, if a Roentgen examination of both renal regions were made in every case of vesical calculus, the regular recognition of renal calculus would answer this most important question satisfactorily. I have no doubt that with the exception of extraordinary conditions, like those mentioned above, the embryonic stage of the vesical calculus is in the kidney, in other words miniature calculi or gravel form in the kidney and either all or some of them descend through the ureters

into the bladder, where they become the nuclei for further stone-development. Or small fragments of renal stones separate themselves and descend into the bladder to be arrested there and grow. The cases of so-called ascending infection in vesical calculus should be taken *cum grano salis*, because the pyelonephritis found may just as well be due to renal concretions which were not recognized.

Microscopic examination of the calculi does not give us any more information as to their origin, because the tender organic miniature structure which permeates the calculous mass does not show any texture characteristic for one or the other organ.

It is true that the number of my cases is small, but if to some of you my observations should not prove the renal origin of vesical calculi in a general sense, the undeniable facts brought out by them at least offer an entire new perspective of an etiologic, as well as of a therapeutic nature. In other words, after being extracted, the vesical calculus nephrolithiasis must also be treated. The experience that vesical calculus is but seldom found in women (5 per cent.) is also in favor of the renal origin of vesical calculi, since the short and wide female urethra permits of the easy escape of the small renal calculi which had descended into the bladder.

One of my most convincing cases is that of a boy of 10 years, from whom a large vesical calculus was removed by suprapubic cystotomy six years ago. The relief was complete for about a year, when the patient again began to suffer from the symptoms of vesical calculus. Three years ago I skiagraphed the vesical, as well as the renal regions, the result of which was the Roentgen plate shown in the illustration. It shows the presence of a large mulberry calculus in the bladder and a still larger triangular concretion tightly embedded in the parenchyma of the left kidney. The right kidney showed normal relations. It is of interest to note the small calculus near the lower surface of the large renal concretion, as it illustrates the manner in which smaller concretions may primarily form in the kidney to escape into the bladder, where they act as nuclei for future vesical stones. The examination of the calculi after their removal from this patient proved them to consist of oxalate of lime, the outer layers of the renal, as well as the vesical calculus, showing a smaller degree of density than the inner. As to further details I refer to my article in the *Annals of Surgery*, mentioned above, and to my experimental studies on the density of calculi.<sup>3</sup> My second conclusion is based on the observation that incrustations in vesical tumors are sometimes so abundant that calculus is diagnosticated. We know that before the introduction of cystoscopy, vesical calculi were often overlooked and a positive diagnosis of vesical tumor was generally made at the autopsy table only. In fact, our whole diagnostic armamentarium consisted in the steel sound, which often missed the calculus. Now we can not only feel the stone, but we can also see it. This possibility seemed to have settled all diagnostic questions at once. But important as the method is, sometimes it fails, as more thorough observation has shown us. It is true, in the great majority of cases, the cystoscope furnishes the most precise information as to the size and shape of a calculus. Besides the question of whether it be movable, free or encysted, whether there is more than one calculus and how many, and, as a rule, whether the functional disturbance, the pain and the

3. Arch. Physiol. Therapy, March, 1906.



occasional hemorrhage was not due to the presence of a tumor, can be proved. Still, as I have emphasized repeatedly in previous publications, this most useful instrument may fail when a calculus is encysted. In fact, the stone may be so deeply imbedded in a diverticulum, from which it fails to project, that its area does not present any essential changes to the cystoscopic view.

Therefore cystoscopy, valuable as it is in itself, should always be aided by the Roentgen method, thus rendering the overlooking of a buried calculus a simple impossibility. On the other hand, the most positive Roentgen picture should not be the only guide for the operative strategy, a cystoscopic examination being necessary besides. Never before did the association of these two methods appear so important to me as in a recent case, in which the Roentgen method seemed to contradict the findings of the cystoscope.

The patient, a man of 63 years, was first examined by me March 30, 1907. Six months before that date he began to suffer from frequent and sometimes painful micturition. The urine was bloody at times. During the last two months the painful micturition had increased, especially after bodily exertion, and the signs of decomposition of urine were marked, the general condition also becoming more and more impaired. The presence of a vesical calculus was thought of, but the introduction of a metal catheter by the family physician did not produce a click. The patient was referred to a surgeon, well trained in cystoscopy then, whose diagnosis was tumor of the bladder.

When I introduced my stone searcher I perceived a feeling of resistance similar to that sometimes noticed in hypertrophy of the prostate. Rectal palpation revealed marked hardness in the continuation of the prostate, slightly toward the left. Cystoscopic examination showed the presence of an oval tumor, with a nodular surface, and of the size of a hen's egg. Microscopic examination of the urine revealed the signs of purulent cystitis besides epithelial cells with an excess of cystin.

The Roentgen picture presented a regular elliptic shadow in proportion to the size of tumor seen by the cystoscope. (The skiagram, not being easily reproducible on paper, is omitted). Especially the regularity of the outlines were identical with the shape found in calculi of fairly large size. The polymorphous epithelial cells not giving any special diagnostic information, I was tempted to assume that I had to deal with an encysted calculus. But suprapubic cystotomy performed April 2, 1907, showed the presence of a hard carcinomatous tumor, the broad base of which began at the left side of the trigonum. The whole mass was interspersed with crumbs of calcareous masses, which appeared like a skeleton surrounded by shreds of fibrous tissue. The microscopic examination, for which I am indebted to Professor Buxton, showed the calcareous matter to consist of phosphates, while the tumor tissue was fibro-carcinomatous. The renal regions gave a negative skiagram. The patient made a good recovery, but two months later the signs of recurrence became apparent and shortly thereafter the patient died from pyelonephritis. In this case the Roentgen method, otherwise so ready to enlighten us, was apt to obscure the nature of the case, which the cystoscope had recognized in its true character at the very beginning. While it undoubtedly occurs not too rarely that calculus gives the impetus to carcinoma-formation, in this instance carcinoma was the primary lesion, the incrustations being deposited

while the carcinoma was growing. The large amount of the calcareous matter was remarkable. I believe it to be worth while for physicians to give these points their attention in order to clear them up further. So far the literature does not mention them.

## A NEW AND RAPID METHOD OF PERINEAL DRAINAGE IN SUPRAPUBIC PROSTATECTOMY.\*

JOSEPH RANSOHOFF, M.D., F.R.C.S.

CINCINNATI.

The question of choice of route in operations on the bladder is not a new one. Since bladder stones were first removed by operation, the question between the *sectio alta* and *sectio perinealis* has been the subject for heated discussion among surgeons. The radical treatment of prostatic enlargement by operation has given it a new interest. Since the perfecting of suprapubic prostatectomy by Fuller, Freyer, Fenwick and others, its adoption by surgeons in general has been very large. On the other hand, the advocates of the perineal route by the methods of Parker Syme, Proust and Young are no less staunch, though perhaps fewer in number.

Each method has its advantages and disadvantages. To my mind, and from an experience not inconsiderable with both methods, the advantages of the suprapubic method largely outnumber those of the perineal operation. When it is indicated, it can, save in exceptional cases, be completed in less than fifteen minutes. When we consider the advanced age and the debilitated condition of most prostatic sufferers, this of itself is of prime importance. The suprapubic operation does not disturb the normal relations of the perineal pockets, and what hemorrhage there is before reaching the prostate comes from the bladder wall, where it is easily controlled. The hemorrhage incident to the enucleation of the prostate is always easily checked, if the incision in the bladder is of adequate length. Here I have found the use of formaldehyd-gelatin (glutol) of inestimable service.

Through the suprapubic incision the prostate can easily be enucleated as a whole, the finger of the left hand (properly protected with gloves) forcing the gland from the rectum toward the enucleating finger. If a conservative operation is to be performed, which I regard in the average cases as a mistake, the removal of the middle lobe or bar and parts of the lateral lobes with the retention of the seminal bridge is thoroughly feasible. Wounding of the rectum in capable hands is an accident almost impossible; while in the perineal route I believe it to be a not infrequent complication, even in master hands. Postoperative sloughing of the rectum can only occur after a perineal operation.

### WHEN THE PERINEAL ROUTE IS PREFERABLE.

There is, of course, one class of cases in which the perineal operation is always indicated. I refer to the small, dense fibrous prostate, adherent to the capsule, and in which a cystoscopic examination shows little or no intravesical projection. Here the careful dissection necessary to removal must be made with cutting instruments, and should, therefore, be controlled by the eye of the operator. In that very rare class of cases of prostatic hypertrophy in which there is concentric hyper-

\* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session held at Chicago, June, 1908.



trophy and contraction of the bladder, the perineal route is also to be preferred.

A comparison of the mortality statistics of the two methods of prostatectomy militates somewhat against the high operation. For this a number of factors are responsible. First, it doubtless is true that the high operation is reserved by many for the more advanced cases and those complicated, as for example, with stone. The second and more important cause for the greater mortality of high prostatectomy lies in the inadequacy of drainage as it is commonly sought to be established in violation of a fundamental principle of wound treatment. Uphill drainage is the one generally practiced after high cystotomy.

#### INFECTION OF THE PREVESICAL SPACE.

Since an overwhelming majority of patients requiring an operation on the prostate present an infected bladder, the results of the suprapubic operations are vitiated by the not infrequent infection of the prevesical space, and sloughing of its loose connective tissue. At best the wound is kept clean with difficulty, all mechanical devices to the contrary notwithstanding. Frequent changes of dressing are imperative and become disturb-



Fig. 1.—Trocar for opening the perineum after shelling out the prostate.

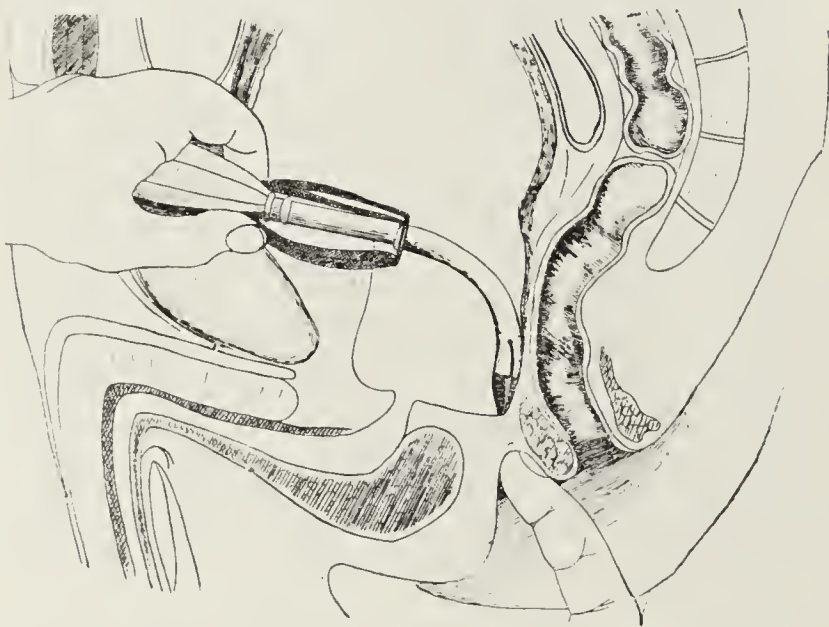


Fig. 2. Trocar pushed through the most dependent part of the emptied prostatic pouch against a finger of the left hand placed a little in front of the anus. Bulb avoided and membranous urethra undisturbed.

ing to the patient. Not infrequently convalescence is protracted by an annoying eczema around the wound. It is not unusual for a vesical fistula to persist for months, and in some cases it is permanent. Added to these disadvantages is the necessity of long confinement in bed with all its attendant menaces.

The danger of a ventral hernia I believe to be largely overrated. I have seen it in only one case. In this the incision was a transverse one. To gain sufficient room the rectus was partly divided on each side.

To obviate the difficulty of draining the prevesical

space, drainage may be secured by a catheter retained within the entire length of the urethra, or by a second perineal, median section (boutonnière operation). Drainage through the entire length of the urethra by a retained catheter has, in my hands, proved unsatisfactory. The caliber of the largest tube the anterior urethra will tolerate is, in my experience, not large enough for adequate drainage. The ordinary catheter easily becomes clogged by small blood clots and thereby defeats its own purpose. Furthermore, the discomfort of a prolonged retention of a catheter within the urethra is not to be disregarded.

The alternative is perineal section and drainage. While it is true that the ordinary boutonnière opera-



Fig. 3. Trocar withdrawn and a large self-retaining catheter or drainage tube pushed through the cannula from within. Cannula is then removed through the suprapubic opening by the affixed tape.



Fig. 4. Cannula withdrawn and drainage tube placed with its upper end in the prostatic pouch and held in place by a perineal stitch.

tion may be quickly done, it necessitates placing the patient in the lithotomy position after the prostatectomy has been completed. In this operation, as in perineal prostatectomy, there is danger of wounding the bulb and of opening the superficial perineal pocket. Post-operative hemorrhage into the scrotum and sloughing with all its attendant dangers, and protracted confinement in bed, can not be uniformly avoided. The division of the cut-off muscle incident to the median section for drainage can not but seriously retard the patient's control of urine.



## AUTHOR'S METHOD OF DRAINAGE.

For these reasons, within the past eight months, after shelling out the prostate through an adequate suprapubic section, and after controlling hemorrhage, I have, so far as possible, opened the perineum from above by a large trocar and cannula (Fig. 1). The trocar is pushed through the most dependent part of the emptied prostatic pouch against a finger of the left hand placed a little over half an inch in front of the anus. By backward pressure the finger of the right hand protects the rectum. This is easily done without changing the position of the patient. The bulb is avoided and the membranous urethra undisturbed (Fig. 2).

The trocar being then withdrawn, the cannula projecting through the perineum, the largest self-retaining catheter or a drainage tube is pushed through the cannula from within. The cannula is then removed through the suprapubic opening by an affixed tape (Fig. 3). The caliber of the cannula is that of a thirty-six (French) sound. After the cannula has been withdrawn, the drainage tube is placed with its upper end in the prostatic pouch, where it may be fixed by a perineal stitch (Fig. 4).

This method of establishing perineal drainage takes less time than does its description. The harmlessness of the procedure is a further advantage. There is practically no danger of hemorrhage from the stab made from within, and the pressure of the rubber tube when placed in position is sufficient to arrest what little bleeding might take place. I have never seen infiltration of the scrotum by reason of opening the superficial perineal pocket, nor bleeding in any of the twelve cases in which I have resorted to this method of drainage.

I complete my operation by layer suture of the bladder wound. The abdominal wound is also closed by layer sutures, save for a very small cigarette drain placed against the sutured bladder as a matter of security. The after-treatment is precisely like that of perineal prostatectomy and the patient is enabled to be out of bed at the end of a week.

As compared with other methods of securing drainage after suprapubic cystotomy, where drainage is indicated, I believe this method to be possessed of such advantages that I confidently submit it to my colleagues for trial.

## DISCUSSION

ON PAPERS BY DRs. BECK AND RANSOHOFF.

DR. HUGH H. YORK, Baltimore: Retention of urine is one of the greatest causes of vesical calculi and chronic retention should not be allowed to persist unattended. Infection of the bladder, however, is more often a cause of calculus formation, except in young men in whom the calculus is of the oxalic type. It is possible that in some instances the agglutinating action of bacteria may be responsible for the formation of the nucleus of the calculus.

Every one knows that I am more or less opposed to suprapubic prostatectomy. The perineal operation can be done just as quickly as the suprapubic. I have frequently been able to complete the operation in from twelve to thirteen minutes, and I hold that time is not such a great factor that it is necessary to do a destructive operation in order to get the patient off the table very quickly. As a matter of fact, the operation can be done just as quickly one way as another. The checking of hemorrhage is one of the greatest objections to the suprapubic route. Dr. Ransohoff speaks of the use of gelatin and other things that take a great deal of time. The use of packing in the suprapubic wound, that is in the cavity left after enucleation of the prostate is greatly condemned by Freyer of London, who holds that hot water run through a tube in the perineum is best, and is really the only styptic to be used. His statistics

show that there should be left as little place as possible for the collection of fluid or the deposition of pus, and that no packing in the suprapubic wound should be used. If the perineal operation is done carefully injury of the rectum should never occur. In 200 cases I have not, so far as I know, a single case of rectal fistula to answer for. I am glad to see this acknowledgment of the disadvantage of uphill drainage. A suppurating bladder can not be thoroughly drained in that operation. From the anatomic standpoint there are certain things that would keep me from using this very ingenious instrument. I believe that the method of supplying good drainage is good, but the question is whether he has chosen a method that is free from danger. Suppose that after a suprapubic prostatectomy the urethra has been opened and there is a large cavity beneath the urethra from which the prostate has been removed. If the urethra has been removed with the prostate there is another cavity connecting with the bladder. The bulb surrounds the urethra; the perineum comes down and opens into the rectum, and then the rectum takes an acute bend forward and lies very close to the prostate and membranous urethra. This portion of the rectum has been called by the French the bladder of the rectum; it evidently has the function of holding the feces so that it will not press against the anus. In dissections I have frequently found the rectum drawn out so that it was in absolute contact with the bulb, and in some cases anterior to the bulb, especially in patients who had had a previous perineal section. It is held forward by the rectourethralis muscle, whose object is to preserve this curve of the rectum. Dr. Ransohoff's instrument, as I understand it, is introduced through the inferior part of the incision, and he tried to go posterior to the bulb. I hold that in such cases it would be distinctly dangerous to go from this point to the perineum with the danger of injuring the bulb of the membranous urethra and the sphincter, and in certain cases there would be a great danger of going through the rectum. I feel that the instrument ought never to be used except by Dr. Ransohoff, who understands its uses, its dangers and can avoid them. I think that the mortality is the one thing we bear in mind in choosing a method of prostatectomy. Unquestionably the suprapubic method is excellent in its results and it cures in desperate cases, but it is only by studying a long series of cases that we can determine which operation should be done. My experience in at least 500 cases of enlarged prostate shows conclusively that the perineal method is the simpler and is unquestionably less dangerous. In a period of almost three years I had 128 consecutive cases without a death, and every one of my patients left the hospital alive and well. Among these were 4 over 80 years of age; 23 over 75 and 46 over 70, and during that period of three years I do not think that more than 3 or 4 patients came to the hospital who were not operated on. That may be more or less good luck because since then, in a period of three months, there were three deaths. One of these patients was a severe case of pyonephrosis and one died in the ninth week after operation.

DR. BRANSFORD LEWIS, St. Louis: The question of diagnosis is the most interesting one we can take up. One certainly can not make a correct diagnosis based on the symptoms, because these will mislead as often as they prove reliable. Five minutes of a physical examination will tell one more than a week's analysis of the symptoms. Which method of physical examination is the most serviceable, the most accurate? We must not exclude any method. Cystoscopy and radiography are both valuable and both should be used. I agree with Dr. Beck in much that he said. First, as to the feature of the searcher. It is a searcher, but it is often not a finder. In many cases of vesical calculus not only did I fail to find the calculus by means of the searcher, but those who preceded me in these cases likewise failed. An old doctor in the West carried three stones in his bladder for ten years. He was troubled with frequent miction during all this time, but no stones were found until the cystoscope was used. In another case a stone the size of a hen's egg was in the bladder without being detected until the cystoscope was used. The prostate may hide the stone from the searcher and yet it may be as



plain to the cystoscope. In relation to ureteral calculus, the same thing holds good. We must use the cystoscope and the ureteral catheter, as well as the *x*-ray in order to exclude certain failures; one or the other method may be useful, but certainly we ought not to limit ourselves to either one or the other; otherwise we may go astray. Dr. Ransohoff's description of the method made a better impression on me than I arrived at *a priori*, and I am favorably impressed with his plan. If that method does succeed, it removes one of the greatest objections to suprapubic prostatectomy, because if we take the two operations, the suprapubic versus the perineal, the execution is probably easier in the former than in the latter; but if we take into consideration the convalescence the perineal is the preferable operation because of the better drainage and the recuperation. If Dr. Ransohoff succeeds in doing away with this slower and more unfavorable convalescence from the suprapubic prostatectomy this will lessen the discomfort from the operation and make it more popular. I have favored perineal prostatectomy because of the better convalescence.

DR. J. E. CANNADAY, Hansford, W. Va.: We must admit that the surgery of the bladder is less perfect than the surgery of other parts of the body, especially of the abdomen. What Dr. Lewis said with regard to the advantage of the suprapubic prostatectomy is true. That operation is easier for the average man to perform; and, again, the results are far better because the surgeon is not so apt to have the troubles of urinary incontinence and perineal fistula, which sometimes give a great deal of trouble to the men who are not very familiar with this class of work. Of course, in the hands of some experts better results follow from the perineal operation than from the suprapubic. When one drains the bladder one gets a fluid that is not only toxic but is also often infected, and unless this fluid is all drained away infection of a large raw area and absorption from it will result. If after a suprapubic operation one drains from below, he gets the advantages of both operations.

DR. J. RANSOHOFF, Cincinnati: I have tried this method in twelve cases; in none did I hurt the rectum. I know that one can not take out a prostate entirely without damaging the urethra to a considerable extent, and, therefore, the objection made to this method of drainage, namely, that the pocket is left with an intact channel running through it, is, I think, entirely theoretical. The other objection to the method is on the anatomic grounds that there is only a slight interval between the rectum, on the one hand, and the floor of the urethra on the other. In the ordinary buttonhole operation, the old median operation for stone, this interval was utilized. The older surgeons who were fully familiar with the surgical anatomy of this part favored it, and it has been done for at least 2,000 years. It was always done, if possible, behind the bulb. The bulb was guarded, the rectum was pushed back with the finger, the membranous urethra was opened and through it the finger was introduced into the bladder. A wounding of the rectum in this operation was considered almost a disgrace. In the operation I have described and practiced a little judgment is necessary. It is the easiest thing in the world with the finger in pocket emptied of the prostate to push the rectum out of the way and the trocar to the perineum and pierce the intervening soft parts. The rectum is not endangered because it is kept out of the way. I know that Dr. Young prefers the perineal operation. I do perineal prostatectomies often and I prefer that method almost always when the upper end of the prostate can be reached through the rectum. I have only advised my method as a slight improvement in the technic of suprapubic cystotomy. The great difficulty of preventing infection of the proovesical spaces and that of infiltration of blood in the superficial perineal pocket with its attendant dangers by my method I try to abort. This method of stab puncture endangers neither the bulb nor the rectum. I may be permitted to add that in one case at least the patient after the operation enjoyed the pleasures of paternity, and I think I can state, as did Gil Blas at the end of his many adventures, that "this man has a son of whom he conscientiously believes that he is the father."

DR. CARL BECK, New York: It is remarkable how skillful some men may be in most respects and yet how unskillful in handling an *x*-ray machine. There is not a vesical or renal calculus which can not be shown on a skiagraphic plate. If it is in the kidney or bladder and it is not demonstrated by the skiagrapher, it is the fault of the man and not of the method.

I wish to modify my views somewhat by adding that there is no reason why every man who handles an *x*-ray machine should always be successful. He may be successful to-day and not to-morrow. I have had large experience with this special work, and yet I make many poor pictures. There are sometimes little details which we do not have in mind at the time, and these might not be observed, and that is the reason why we get a poor picture. In that case, however, one must recognize that it is a poor picture and not try to tax all the powers of the imagination to find what is not shown. We must not guess. We must see and have the undeniable presence of the stone.

## THE ETIOLOGY OF CHRONIC NON-TUBERCULOUS ARTHRITIS.

A PRELIMINARY REPORT.

H. W. MARSHALL, M.D.

Research Assistant in the Carnegie Institution of Washington.  
BOSTON.

During the past year investigations have been started on the subject of chronic non-tuberculous arthritis which must necessarily continue for a considerable period of time before sufficient data can be accumulated to make any authoritative statements possible; but enough has been accomplished to indicate definitely the line of investigation in the future and it seems appropriate at this time to gather together the observations already made into a preliminary report.

The class of cases about which the work has centered up to the present time have been those obscure chronic types called rheumatoid arthritis, leaving out of consideration undoubted cases of infectious origin like gonorrheal arthritis, also traumatic varieties or those due to mechanical irritation simply, and the neuropathic kinds represented by Charcot's joints. Clinical material has been obtained from the Massachusetts General Hospital and also from Dr. Joel Goldthwait's private practice, so that many persons have been seen in an incomplete way and observations made so scatteringly as to render presentation in a paper difficult.

Bacteriologic examinations have been carried out on the stools of a dozen patients to determine the predominant type of organisms present in the intestines and blood cultures made from as many more cases, while agglutinative tests have been tried a few times with negative results on bacteria isolated from the feces. The effect of fermented milk on intestinal putrefaction was tried on eight or ten private patients during the summer of 1907 but with rather inconclusive findings; so it seems that the state of advancement of the investigation may best be indicated by a detailed account of two of the later cases, each of which represents a type of the disease and exhibits most of the points that are desired to be brought out.

These two cases represent acute exacerbations of the chronic trouble, for it has been found that the slow processes of the very chronic cases are hard to identify, and advantage has been taken of the acute stages in which abnormal conditions are most noticeable.

The first case is that of an unmarried woman of 35 years who has had a history of recurring attacks of



arthritis since 3 years of age and who exhibits a very interesting reaction to ether anesthesia. Ether administered in the usual manner on a cone for fifteen minutes, when the symptoms were very excruciating, while the patient lay helpless in bed from involvement of all joints, produced nearly complete subsidence of the pain and restored motion in all joints to a noticeable degree, besides causing partial disappearance of periarticular swellings. Improvement took place within eighteen hours and transformed the swollen painful condition of several weeks' duration into a much less acute one with wrists, elbows, shoulders, hips and knee joints showing decidedly more motion and the hands losing much of their puffy edematous appearance. The amelioration of symptoms lasted two weeks and then the joints partially relapsed again into their previous state of stiffness.

Enough observations have been made on six patients to establish the fact that ether does influence the arthritic process temporarily; and it is interesting to note that patients themselves first called attention to the matter by inquiring what had been done at the time of etherization for correction of deformities; they called attention to joints which had not been manipulated or touched in any manner, saying that these were entirely painless and could be moved much more freely than previously.

Stiffness slowly returns after a short period of time: in one instance only twenty-four hours elapsed between anesthesia and return of pain, but usually two to four days of freedom are observed and the longest period has been about two weeks. Very acute cases exhibit most pronounced changes, while chronic ones improve so slightly that the difference will ordinarily not be detected unless especial attention is paid to the matter. Another class of patients are made distinctly worse by anesthesia and these probably represent an infectious type.

The therapeutic value and effects of repeated anesthetics will be reported on at a later date when more data have been obtained. At the present time only the record is made that ether does have this unusual action.

Dr. Otto Folin of the Harvard Medical School has been sufficiently interested in the subject to agree to direct analyses of urines from these patients, and he may report on this part of the problem independently later.

The well-known property of ether utilized by gardeners in forcing plants may be identical with the stimulating property which ether exerts on arthritic patients. Johannsen, in Denmark, first showed that lilac shrubs developed blossoms much more quickly and of better quality if they were first exposed for forty-eight hours to ether vapor in a closed dark box and then set out and grown in the usual manner. Probably the action of the ether on the plants is similar to the effect it produces on arthritic patients and is a direct one on the protoplasm of the cells, which it stimulates and modifies in its metabolism. Experimental work done recently on ether anesthesia in animals tends to support this view, for Dr. P. B. Hawk<sup>1</sup> has shown there is an appreciable increase of nitrogen excretion in dogs after anesthesia with ether.

Starting with a conception of the arthritic process in these patients as due to unstable protoplasm which carries on its metabolism in a disordered manner, the

variations in the joints are not surprising when the exceedingly complicated nature of the anabolic and katabolic processes are considered, and changes of weather, overwork, mental worry or unusual events of many kinds may easily be sufficient to upset the exceptionally delicate balance of the metabolic processes of these persons, so that idiosyncrasies exhibited by them may have more significance than ordinarily thought, and may have to be understood before treatment can be carried out effectively and with confidence.

Apparently the ether circulating in the blood temporarily stimulates the protoplasm into normal activity and increases the nitrogen metabolism for a short time.

The second patient is a doctor of 47 years, suffering with arthritis of nine months' duration and psoriasis of very pronounced degree. His history has the following significant points: Ether anesthesia did not diminish stiffness, pain or swelling in acutely swollen joints, but aggravated abdominal pain and caused a rise in temperature from 98.6 to 102° for several hours after etherization; while daily enemata of normal salt solution cleared the large intestine of unsuspected scybalous fecal masses. This treatment, combined with the use of fermented milk, allowed the arthritic and abdominal symptoms to subside slowly. The observations on this patient apparently seem to fix the location of the trouble in the intestines because other foci of infection were not found, the genitourinary tract being negative, tonsils having been removed and found normal, teeth in good condition, no defects in ears or lungs and acute infectious disease limited to a slight attack of grippe two years ago (1906) and typhoid fever when a boy. The relation of psoriasis to the arthritis is undetermined.

From the foregoing facts it can be seen that the large intestine was sufficiently deranged to account for all the joint symptoms; and irritations to the intestinal mucosa, which may be supposed to exist, judging from the dull uncomfortable abdominal feelings and the demonstration of unusual retention of feces, was sufficient to allow some of the multitudinous intestinal bacteria, their toxins, or their decomposition products to set up the arthritic process, as chronic gonorrheal inflammation of the urethra produces joint symptoms. Such a case as this must always be considered as lacking definite proof, however, for all sources of infection can not be eliminated. The small intestine, for illustration, which is so inaccessible for observation, may reasonably be expected to have chronic inflammations and derangements of its important function of absorption that influence arthritic processes to as important a degree as trouble with the large intestine or the throat. This case is suggestive on account of the definite findings in the large intestine which have responded to treatment. The improvement has not been a quick, clearly defined change or a complete one, but agrees with what might be expected from a slow chronic inflammation. It is evident that any work done on the intestinal bacteria will prove to be of value, and Dr. Theobald Smith has kindly agreed to have stools of arthritic patients examined under his direction at Harvard Medical School.

With regard to the effect of fermented milk on arthritic processes it seems that certain cases are benefited by it to an unusual degree, for Drs. Hoke and Andrews<sup>2</sup> have found that it influenced their patients

1. Hawk, P. P.: The Influence of Ether Anesthesia on the Excretion of Nitrogen, *Jour. Biol. Chem.*, April, 1908, iv, Nos. 4 and 5.

2. Andrews, C. R., and Hoke, Michael: A Preliminary Report on the Relation of Albuminous Putrefaction in the Intestines to Arthritis Deformans, *Am. Jour. Orthop. Surg.*, July, 1907, v, 61.



in Atlanta and one or two of Dr. Goldthwait's patients have shown a favorable tendency during its use; but the explanation that it acts by preventing intestinal putrefaction does not seem wholly adequate, as there may be other conceivable properties which it possesses in addition. For example, the milk may be unusually well absorbed by the small intestines of these patients or it may influence their digestive processes through its lactic acid. No proof of such action exists, yet it seems too much to attribute the entire action to inhibition of the growth of anaërobic organisms in so complex an organ as the intestines, because the facts do not agree completely enough with this theory.

The cases are given in detail as follows:

*Case 1.—Patient.*—Schoolteacher, aged 35, single, a small, slightly built woman, nervous and ambitious, who had overworked and had recurring attacks of arthritis that involved nearly all joints, especially those in all the extremities.

*Family History.*—The patient's father had five attacks of acute rheumatism after he was 45 years old, which left the joints entirely free in the intervals between attacks except for a slight restriction of the knee motions; insomnia was thought to be an etiologic factor by the patient. The mother is living and has had no rheumatism except some stiffness in the hands. Two sisters are well. One sister has tuberculous kidney and lungs. One maternal aunt, two first cousins and the paternal grandmother died of pulmonary tuberculosis. There were no other joint troubles in the family beyond the father's rheumatism.

*Personal History.*—The patient's arthritis began at 3 years of age. She had scarlatina and measles when a child, pleurisy in 1900, influenza in 1897, carbuncle in 1903 and sore throat three times. Tonsillectomy was performed in 1906. She had acute neurasthenia in 1900, which lasted two years. She had curettage of the uterus done in 1906 to relieve dysmenorrhea and with hope of improving the articular symptoms. The patient worked her way through college and while there was under severe mental strain which she tried to overcome and forget by continuous application to the courses of study. She generally slept well but occasionally had insomnia. Her appetite was capricious and always poor. Her regular diet was supplemented by raw eggs, two to four a day. The total quantity eaten was always below the average. She used no stimulants. The patient had occasionally attacks of indigestion associated with nervous upsets. Her bowels were rather constipated, and menstruation was normal except for considerable pain.

*Arthritic Symptoms.*—These followed an injury which the patient sustained at 3 years of age; they began with an acute attack in the shoulders, knees and elbows that lasted the entire winter; at 7 years she had a second attack of arthritis which lasted about a year and affected the spine, legs and arms. Up to 18 years of age she had five acute attacks; in 1898 she had an attack involving all joints more or less; in 1900, when broken down nervously from overwork, she had also acute exacerbations of arthritis and since then she has spent most of her time in a wheel-chair and at hospitals. The patient returned home from Boston in the autumn of 1907, improved sufficiently to be able to walk and feeling the best that she had felt in ten years, yet still somewhat troubled with a stiff ankle and elbow. The last exacerbation came on gradually during the winter months of 1907-08, with pain gradually developing, which the patient purposely disregarded until suddenly all her joints became involved in an acute inflammation which came on within a few days and spread rapidly from the left ankle and right wrist throughout the entire body. For four or five weeks previous to admission to Corey Hill Hospital (April, 1908) the patient was prostrated with pain, fever and acutely swollen joints.

*General Examination.*—This was made in April, 1908, during the period of acute exacerbation. The patient was a pale, sick-looking, poorly nourished woman of small stature. She had sustained a marked loss in flesh since the autumn of 1907. Practically all her joints, including the sternoclavicular and

sternocostal articulations, were involved in an acute inflammatory process which was subsiding and most noticeable in both elbows, wrists, hands, knees and feet. Redness was visible only around the right elbow; swelling was present in the hands, wrists, elbows and feet, slight in degree except in the periarticular swellings of the fingers which still were badly swollen, edematous and hot. There was considerably atrophy of the interossei muscles of hands, and moderate sweating of the hands. Tenderness was exquisite in the finger-tips and toes so that bed-clothing could hardly be borne. Pain on movement was excruciating in the elbows, wrists, knees, ankles, left shoulder and right hip, while the right shoulder and left hip were considerably less painful; the spine was slightly affected and a sitting posture was assumed voluntarily as a relief from lying down. The sternocostal and sternoclavicular joints had been swollen and painful, making respiration difficult. There was no free fluid in the knee joints. The left elbow was in a plaster cast. The patient lay in bed, unable to sit up without assistance and not able to feed herself. Her temperature on admission to the hospital was 99; it had been 99 to 101 for several weeks.

*Blood Examination.*—This was made in April, 1908. Hemoglobin was 90 per cent., leucocytes, 5,000. Five cubic centimeters of blood, withdrawn from a vein and inserted into 200 c.c. neutral broth, showed no growth in five days when grown under aerobic conditions at a temperature of 37 C.

*Teeth.*—Dr. Edward Briggs examined the patient's teeth in November, 1906. They were in good condition. He reported that "there was nothing in her mouth that would cause any general infection."

The ears and mastoids were normal.

*Throat.*—Dr. Goodale made an examination in 1906, and reported: "There are several points of granulation of the throat in the region of the old operation but nothing that suggests an accumulation of pus or a source of infection."

*Pelvic Examination.*—This was made by Dr. Wolcott in November, 1906. She reported "ulceration of cervix with some discharge." Smears from the discharge examined by Dr. Rogers showed no diplococci and very few pus cells.

*Urine.*—This was normal during the summer of 1907; in April, 1908, it was clear; contained no sediment; was acid; sp. gr. was 1.025; contained no sugar or albumin, a few epithelial cells, no casts or pus cells. Indican was present in moderate degree.

*Stools.*—Examined repeatedly during the summer of 1907; these showed normal color, dry scybalous consistence and a foul odor. They were of small amount and passed regularly with cathartics daily; the bowels moved eighty times during a period of seventy days at the hospital. Microscopic examination showed approximately the usual percentage of meat fibers, fats and fatty acids, with considerable vegetable debris, the most marked characteristics being the small amount, foul odor and lumpy nature, with no evidences of inflammation.

*Bacteriologic Examination.*—This was made in April, 1908, and showed a moderate number of Gram positive bacilli in smears from the stool; cultures made under anaërobic conditions with pyrogallie acid and soda yielded a predominant growth of colon type of bacteria developing on neutral hydrocele agar in the thermostat. Streptococci and strict anaërobics could not be distinguished on the plate cultures. Twenty subcultures taken from suspicious looking colonies proved to belong to the colon type.

*Fermented Milk Treatment.*—For three weeks during the summer of 1907 "Kifilac" milk was tried without any result. The milk was prepared by fermenting it, after pasteurization, with a special lactic acid ferment called "Kifilac" and feeding it to the patient in quantities of two or three pints each day. The patient's condition at that time had been much improved by out-of-door treatment and general hygienic measures so that no great change could be anticipated and no apparent effect on the joints was noticed; the milk was so unpalatable as to take away the appetite and cause nausea.

*Reaction to Drugs.*—Acetylsalicylic acid (aspirin) has generally controlled moderate joint pain very well. Morphine administered freely during acute stages was said to have relieved the difficulty with respiration and to have influenced



the joints in an unusual degree; but when given during less acute stages caused nausea and upset the digestion without benefiting the joints especially. Quinin was said by the patient to be borne very poorly and caused acute swelling of the hands at the single time it was given. Ether taken at the time of the pelvic examination in 1906 caused improvement in the symptoms for one week after, and when taken again for removal of nasal spir in April, 1908, produced improvement for two weeks, as already described.

*X-ray Examination of Hands.*—Characteristic atrophic changes of moderate degree, especially in the carpal bones of the right hand, which were considerably thinned. There was very little destruction of cartilage and no displacements of bones.

*CASE 2.—Patient.*—A physician, 47 years of age, married.

*Family History.*—The patient belongs to a long-lived family. His father is 82 years old, healthy and robust. His mother died at 69 years of age with meningitis. Two sisters are living and well, and no others in family. There is some nodular rheumatism in the paternal uncles, but no rheumatic trouble in the mother's family.

*Personal History.*—The patient had typhoid fever of moderate severity at 14 years of age, and influenza of slight degree in 1906. A psoriasis began eight years ago, came on gradually and has persisted to the present time (1908) attaining unusually extensive distribution on trunk, scalp and extremities. There has been some chronic inflammation of throat for the past eight or nine years which has been relieved since tonsillectomy in March, 1908. For eighteen years he worked very hard at general practice with no vacation until two years ago (1906), but was able to get his regular amount of sleep until the past year, in spite of a great deal of night work. He had no sickness that incapacitated him; lately, however, he gave evidence of fatigue chiefly in the way of an unnatural irritability and the sensation of a constricting band about the head, also the feeling of the necessity for a rest after a long case of confinement occurring on top of a hard day's work. He is temperamentally neurotic but is under excellent control. His digestion has generally been good and his meals reasonably regular; the bowels were all right up to the time of arthritic symptoms. Three or four years ago a disagreeable uneasy feeling began to be noticed in the abdomen which did not annoy the patient much during the day but at night became a constant dull ache around the navel that could be relieved by lying prone in bed. The pain never became severe nor associated with nausea; considerable distention was constantly present. Dizziness of severe degree frequently came over the patient while lying in bed until finally he consulted a doctor who gave him Epsom salts daily and ultimately relieved the abdominal symptoms and dizziness. He had no trouble with his ears or genito-urinary system; occasional colds in the winter; he has had some vasomotor disturbance in the hands on the beginning of cold weather.

*Arthritic Symptoms.*—Two or three years ago (1905-1906), the patient noticed a gradually developing stiffness of the back and legs for a few minutes on getting out of his carriage after a long drive. In September, 1907, there came very suddenly a red painful swelling in the second left toe but no fever at that time; in two weeks the right knee swelled and was painful and tender to touch. There was no fluid or redness about the joint. In this state the patient kept on for two months until early in December, 1907, when the jaw, left shoulder and slightly later, the little finger and wrist of the right hand became involved. The onset was sudden and very painful, and was attended with a degree or so of fever for two or three days. Since then the toes of the left foot and both ankles and left hand have been included among the affected joints.

The patient entered Corey Hill Hospital in March, 1908.

*General Examination.*—The patient was a fairly well developed and poorly nourished man, with hair quite gray. He walked with considerable limp in right leg; got up from his chair stiffly and moved guardedly.

*Joints.*—Jaw motion was so restricted that the tongue could with difficulty be protruded between the teeth. The shoulders,

elbows and wrists seemed normal, both in motion and appearance. The three outer fingers on the right hand showed considerable spindle-shaped swelling without heat or redness. There was some restriction in motion and a slight swelling over the ulnar styloid of the right wrist. Both ankles were slightly swollen. The toes at the juncture of the phalanges and metatarsals were considerably swollen on the right foot and to a less degree on the left foot. The ankle joint motions were not particularly restricted. There was considerable villous thickening around the tendon sheaths below both internal and external malleoli. The right knee was two centimeters larger than the left one in circumference, with moderate degree of capsular infiltration; there was no fluid or heat, or restriction of motion. There was considerable atrophy of the thigh; the spinal motions were free.

*Tonsils.*—Tonsillectomy was performed March 14, 1908, by Dr. Mosher. The report on the microscopic condition of the tonsils is as follows: "1. Unbroken capsules which appear in the sections as continuous bands of fibrous tissue. 2. A marked decrease in the lymphoid elements, with a corresponding increase of fibrous tissue. 3. A very thick epithelium lining the crypts, backed by an unusually thick propria. 4. Bacteriologic examination of the contents of the crypts and of sections of tonsils showed nothing unusual. Cultures from the crypts contained *Staphylococcus albus* and *aureus* and a few streptococci. Sections show staphylococci and fusiform bacilli in the crypts. The histologic structure of these tonsils warrants a belief that they were not a source of infection."

The teeth were in good condition. The ears and mastoid were negative.

*Blood.*—Hemoglobin was 90 per cent., leucocytes 4,500. Two cubic centimeters of blood taken from a vein of the arm and introduced into 200 c.c. of neutral bouillon showed no growth in thermostat in eighteen hours or after five days (April 17, 1908). Five cubic centimeters of blood taken from a vein of the arm and introduced into 50 c.c. of neutral hydrocele bouillon (one part hydrocele fluid and two parts neutral broth), and grown under partial anaërobic conditions (pyro and soda), showed no growth in eighteen hours or after five days (April 29, 1908).

*Urine.*—This was examined by Dr. Oscar Richardson. There were 47 ounces in twenty-four hours. It was clear, pale and acid. Sp. gr. was 1.007. There was no sugar or albumin and little if any sediment. There were 5.6 gm. of urea. Indican was present in small amounts in a second examination made April 14, 1908.

*Abdomen.*—This was symmetrical, soft and tympanitic. There was no visible peristalsis or distention and no muscle spasm. There was a slight tenderness on deep pressure in the neighborhood of the navel, and a palpable mass in the cecum before the bowels were thoroughly evacuated, which then disappeared. The skin of the abdomen was extensively covered with continuous blotch of psoriasis girdling the waist.

The heart and lungs were negative.

The temperature was normal.

The urethra was normal.

There was no stricture of the rectum. The prostate was negative; the prostatic secretion was not examined.

*Bowels.*—After the patient's admission to the hospital, bowels moved daily with considerable irregularity, and, although hard fecal masses were retained in the cecum, there were two or three loose evacuations each day. Two movements per day were the average frequency. The stools were of solid consistency generally, and of normal quantity and color and with usual fecal odor. Microscopically, no appreciable evidences of inflammation were made out; no pus cells or excessive amounts of desquamated epithelium; no blood or large amounts of mucus; there was the usual percentage of meat fibers and fats.

*Bacteriologic Examination.*—April 14, 1908. The predominant bacteria, developing anaërobically on hydrocele agar at 37 C., belonged to the colon type of organisms; no coccal forms were found in twelve tubes from which subcultures were made. Each agar plate showed four or five large white opaque, roughly spherical colonies developing in the depths



of the medium, which, when transplanted to lactose agar and grown under aerobic conditions, soon died out before their cultural characteristics were determined. Six subcultures were examined microscopically, and all exhibited an interesting variation in morphology, to which Dr. C. A. Herter of New York City has already called attention, namely, a variation from bacillary to coccoid form. Surface growth on lactose agar in the air showed large, long bacilli, while in the depths of the same medium long chains resembling streptococci predominated, and twenty-four hours after the subculture had been made from the original colony grown under anaerobic conditions on hydrocele agar, all stages from typical coccoid to long bacillary forms could be made out. This was not a mixed culture, because all the other tubes showed the same condition, and it is interesting because it shows that dependence can not be placed to a great extent on the appearances of fecal smears as indicating the relative proportion of coccoid forms.

A second examination, made April 29, showed that the predominant bacteria belonged to the colon type, with no streptococci or anaerobes when grown under conditions as described before. The bacillus found in the previous examination disappeared for some reason, possible on account of the fermented milk treatment.

*X-Ray Examination.*—The process was shown to be an infectious arthritis. There were no changes in cartilages; the periosteum of the shafts of the metacarpal and the basal row of the phalangeal bones was thickened; there was no atrophy of the bones. The bony trabeculae in the carpal bones and in the cancellous ends of metacarpal and phalangeal bones were obscured and blurred by the infectious process.

*Sequence of Events in Hospital.*—On the patient's admission the arthritis involved his right acutely, which presented a swollen, edematous appearance, while the left hand was normal. Pain in the lumbar and cervical regions of the back interfered with the patient's sleep and prevented him from lying on his side. His jaw was tightly closed, necessitating special food. His right shoulder, knees and ankles were stiff, his knees painful when walking, and his ankles slightly swollen. His condition varied considerably from day to day. From April 23 to 30, milk fermented with a culture of lactic-acid bacteria was given in quantities of three glasses a day, and apparently made the edema of the hand disappear appreciably, although the pain was not influenced. The treatment was then stopped. From May 2 to 10, daily enemata of warm normal salt solution were allowed to run into the large intestine slowly until expelled. During the first day or so abdominal discomfort from increased peristalsis proved annoying, and for the next few days small hard fecal masses were passed, and finally, on the eighth day, the large intestine cleared itself of an enormous quantity of fecal matter after great effort, accompanied by such severe pain that the patient cried out in agony and imagined that he had an intussusception of the bowel. Enemata were temporarily discontinued to allow the bowel to quiet down. During this period of increased peristalsis a new crop of psoriasis blotches appeared and the swelling of the hands became noticeable. Dizziness, which had been complained of in a previous intestinal upset, also returned to slight degree. From May 10 to 20 there was slow subsidence of abdominal discomfort and continuance of swelling in hands. On May 20, ether anesthesia was tried for twenty minutes until muscles were completely relaxed. This treatment was followed by a rise of temperature to 102, lasting a few hours and subsiding on the next day. Pain returned in the abdomen, which required morphin to control it for the first night. During the next few days following anesthesia the swelling in the left hand became more apparent and abdominal pain slowly disappeared. From May 23 to July 1, daily enemata and fermented milk, resumed in combination, caused a slow partial subsidence of arthritic and abdominal symptoms.

The effect of ether on this patient was strikingly different from the other case cited; in this instance the symptoms were made distinctly worse instead of being markedly improved, as with the other person.

Two other observations, which seem to be extremely significant and which strengthen the arguments for a metabolic type of arthritis, should be mentioned before concluding this report. Both cases occurred in Dr. Goldthwait's private practice, the first being a woman showing atrophic changes in the joints, whose arthritis entirely cleared up during a pregnancy and returned again two or three weeks after childbirth. The second person was a middle-aged man who was entirely relieved temporarily of his atrophic arthritis during his convalescence from lobar pneumonia. Additional evidence is furnished by Dr. T. S. P. Strangeways,<sup>3</sup> who reports similar cases showing improvement in arthritic symptoms during pregnancy that returned after childbirth. These facts are reasonably explained by the changes in metabolism which occur in pneumonia and also during pregnancy; for it is well recognized that marked variations in nitrogen excretion are demonstrable in such cases, and suggest a similarity to the improvement observed by ether anesthesia with its accompanying increase of nitrogen excretion. Although no conclusions can be reached at the present time, yet observations already made tend to differentiate a class arising from deranged metabolic processes rather than from chronic infections. These cases exhibit atrophic bone changes and are improved by various agents, as ether, infections and pregnancy, which stimulate the cell protoplasm to increased normal activity.

This report is a very incomplete one, but enough has been shown, it is hoped, to indicate the nature of the work and the organization which permits cooperation between clinical and purely scientific men. Dr. Charles G. Weld, of Boston, has started the research on a very satisfactory financial basis by furnishing sufficient money to pay for salaries of bacteriological and chemical laboratory assistants, special nurses, diets, x-rays, photographs and other incidental expenses.

## EARLY TREATMENT OF SOME SUPERFICIAL CANCERS, ESPECIALLY EPITHELIOMAS.

BY PURE RADIUM BROMID RATHER THAN OPERATION OR X-RAYS.\*

FRANCIS H. WILLIAMS, M.D.,  
BOSTON.

In 1900 Dr. William Rollins of Boston suggested the use of the radiations from radium salts as a therapeutic agent and put capsules containing radium into my hands. The salts then obtainable were not powerful enough to be efficient. To Dr. Rollins, nevertheless, so far as I am aware, is due the credit of being the first to realize the probable value of these radiations as a therapeutic agent.

Nearly five years ago I obtained about two grains (120 mg.) of pure radium bromid and about one hundred grains of the impure salts, and soon after published some tests made with them and clinical results.<sup>1</sup> The pure salts I have used in tubes or capsules containing 50 mg. and 10 mg., respectively, but the cases I shall describe have been treated ordinarily with capsules con-

3. Bulletin of the Committee for the Study of Special Diseases, August, 1907, p. 76.

\*Presented with a demonstration of more than twenty patients, at the Surgical Section of the Massachusetts Medical Society, June 9, 1908.

1. A Comparison Between the Medical Uses of the X-Rays and the Rays from the Salts of Radium, Boston Med. and Surg. Jour., 1904, cl. 206-209; Notes on Radium; Production of the Gamma Rays from the Beta Rays from Radium; Use of Radium in Some Diseases of the Eye, *ibid.*, 559-561.



taining 50 mg. These have been used both by Dr. S. W. Ellsworth and myself at the Boston City Hospital, as well as for my own patients.

Sometimes in the so-called treatment by radium the preparations used have been weak and inefficient.

Before using radium it seemed to me important to make a study of the beta and gamma rays. My experiments showed that, determined by the fluorescence produced, there was fourteen times as much of the beta as of the gamma rays given off, and that the beta rays could be excluded by an aluminum plate of suitable thickness, which, however, allowed all or nearly all of the gamma rays to pass. Clinical tests indicated that the beta rays had the chief therapeutic value. They do not penetrate deeply, but may eventually reach the deeper portions of a new growth by first destroying the outer portions layer by layer, and then attacking the parts that in the beginning were more than half an inch from the surface.

Before dismissing the gamma rays from consideration, it should be said that they have a value in some painful affections, for example, in certain forms of facial neuralgia. Care must be taken when using them to exclude the beta rays or the patient is liable to be burned by the latter while subjected to the action of the gamma rays. Burns have been reported from France when patients were treated for neuralgia without excluding the beta rays.

Such a small quantity of radium as 50 mg., or less than a grain, can not conveniently be used to treat a disease that extends over a very large area as well as can the *x*-rays. In a general way, it may be said that radium is better adapted to somewhat limited areas rather than to the larger ones, which may be easily covered by the *x*-rays at one exposure.

The rays from radium issue spontaneously and continuously, and as far as we know are uniform as to quantity and quality, so that it is easily possible to give an exact dosage. This is in marked contrast to the conditions which prevail in regard to the *x*-rays.

It is not my intention to suggest that treatment by radiations from radium—or more accurately by the beta rays—makes other forms of treatment obsolete, but only to indicate that certain of the patients hitherto treated by such remedies as caustics, operation or *x*-rays may advantageously be treated by radium instead.

In applying radium the capsule, containing 50 mg. of the pure salt, at the end of a handle a foot or more long, should be held over each area to be exposed for a period varying from one-half to three and sometimes four minutes. With this amount the exposures should be made from one to three times a week, less often after healing has begun, according to the disease to be treated. For the sake of cleanliness the capsule should be covered with a new rubber cot for each patient. No pain accompanies the treatment and there is no sensation except that produced by the contact of the rubber. Improvement in suitable cases follows usually within two or three weeks and sometimes within a shorter period.

I shall now present some of the results obtained in a series of cases<sup>2</sup> which have been subjected to the action of pure radium bromid. Certain of them were exposed

to both radium and *x*-rays, but I have omitted those in which the *x*-rays probably played an important part. The cases have included lupus erythematosus, lupus vulgaris, trachoma, psoriasis, acne, eczema, keloid, tuberculous dactylitis, vernal catarrh, chronic ulcer of the leg, warts, rodent ulcer and epithelioma.

Before considering the results obtained in these two latter diseases, a few words in regard to certain of the others may be of interest.

In *lupus erythematosus*, radium was not of any service in two cases, but a third patient seems to be improving.

All the ten cases of *lupus vulgaris* have done well. In two of them a comparison was made between the value of radium and the *x*-rays by treating one-half of a considerable area with the *x*-rays and the other half with radium. The radium proved to be more efficient than the *x*-rays.

In two cases of *trachoma* the results were somewhat encouraging.

In cases of *acne*, *eczema*, *psoriasis*, *warts* and other skin diseases in which the diseased area was limited, radium has shown itself a useful agent.

In two cases of *keloid* of small area, one-half of the diseased tract disappeared when treated by radium more quickly than the other half treated by the *x*-rays.

There is, I believe, another opportunity for the use of radium to which I shall only refer in this paper, and that is the treatment of certain glandular structures. It seems to me that the attempt might well be made to treat adenoids by means of radium.

In seventeen cases of *rodent ulcer* treated by radium in this series, the lesions in eleven cases healed; in one it healed, but recurred later; in four it did not heal; and one is still under treatment. The average duration of the disease in these cases, before treatment was begun, was ten years. I believe that better results might have been obtained if patients had come earlier and if the radium had been used more vigorously.

Of the cases of *epithelioma* in this series there were sixty-nine, and the success that followed the use of radium in this largest and most important group has been the chief reason for the presentation of this paper. The average duration of the disease before treatment was begun was four and one-half years. In fifty-six cases the lesion healed; in one it did not heal; four are under treatment, and eight patients discontinued treatment; but these last, with one exception, were all doing well at that time.

These sixty-nine epitheliomas do not include pre-epitheliomatous growths. They are divided as to sites of the disease as follows:

	Total	Healed	Not healed	Under treatment	Discontinued treatment
Lower lip.....	14	11*	..	1	2
Lid .....	9	6	..	1	2
Face .....	24	20	1	1	2
Auditory canal.....	1	1	0	0	0
Ear .....	1	..	..	0	1
Hand .....	1	1	0	0	0
Nose .....	19	17	..	1	1½
	69	56	1	4	8

\*In one of these eleven lip cases a gland, just under the angle of the jaw, became somewhat enlarged four months after the lip had healed and has been removed since this paper was read. Prof. F. B. Mallory reported it to be cancerous. There has been no recurrence on the lip. This case shows that the action of radium was local and indicates the importance of its early use. When desirable, radium may be supplemented by suitable treatment of the neighboring glands.

†A feeble man, 76 years old, who died suddenly while under treatment after being out on a very cold day. All the others, except one, were doing well when they discontinued treatment.

2. Since this series of cases was tabulated I have been using radium on the tonsil of a patient with results which are thus far satisfactory; also for a woman with a new growth one and a half inches long and more than a half inch in diameter, surrounding the urethra; an operation in her case would mean life-long disability.



As the length of time that has elapsed after healing is a very important consideration in estimating the value of a remedy, I should state that of the fifty-six healed patients, twenty-three have been well for two years or more, nine of these twenty-three for more than three years, and two for more than four years. Recurrence took place in two of the twenty-three cases, in one a year and in the other two and one-half years after healing, but yielded to further treatment.

Let me describe one case:

This patient had a typical epithelioma of the lip about one-half inch in diameter in the mucous membrane of the lower lip not far from the median line. It had begun slowly with a little roughening and irritation of the mucous membrane; this spread and later the disease progressed more rapidly. Various powders and other simple forms of treatment had been used for more than a year after the first symptoms appeared. At the end of this time the patient came to me and was treated with radium and all other treatment was omitted. The exposures were given twice a week for six weeks. Three days after the first exposure the crust came away, leaving a rough surface containing holes as if roots had been drawn out. A week later these openings had filled up and the induration had diminished. After ten days the ulceration was less indolent in appearance. After fourteen days there was a clean, oval ulceration with a narrow, contracting circle of scar tissue around the edge. After seventeen days the appearance seen was that of a healing ulceration and the induration had nearly if not quite disappeared. All this improvement took place after only five exposures of three to four minutes each, and was so rapid that some improvement was noticeable at every visit. When healing was complete, at the end of six weeks, the mucous membrane of the lip where the epithelioma had been did not differ in appearance from that of other parts, but there was a slight depression as a result of the loss of substance.

On the other hand, the rays from radium may at first make the diseased area look worse. For example, one of my patients had a wart on the side of the nose which had been torn off and irritation and ulceration followed. The application of radium caused an increase in the redness, swelling and discharge. The treatment, however, was continued, and after a few exposures the discharge and swelling subsided, the induration disappeared and the ulcer healed rapidly. It seemed as if the indurated base had to be got rid of before healing could take place.

In one case, an epithelioma of the face yielded to six exposures of one to two minutes each. This case was of a year's duration when treatment with radium was begun.

In epitheliomas of short duration the improvement seems to be prompt. By this I mean that the sensation and soreness diminish or disappear, the diseased area becomes less congested and less aggressive, and the disease appears to be arrested in its progress in two or three weeks or sometimes less. Considering, first, that epitheliomas may begin to improve promptly, second, that they have healed well when properly treated with a suitable amount of pure radium bromid, and, third, that, speaking generally, epitheliomas that have not been operated on seem to do better when treated with radium than those on which an operation has been performed, and then radium treatment begun, I believe that radium should be employed in early epitheliomas before any other treatment is used.

Anything which might give rise to an epithelioma, such as a wart which has been irritated or torn off, or a small intractable spot of apparent eczema, or other starting points of epithelioma which do not heal in a few weeks or months, should be submitted to treatment by radium.

It is interesting to note that surgeons and their relatives have come for this painless treatment rather than submit to operation, and thus far they have done well. It is probable that when patients realize that there is a painless remedy, they will submit themselves for treatment earlier than did those in the series which I have briefly outlined (average duration in the cases of rodent ulcer ten years, epitheliomas four and one-half years); and we may hope, too, that they will come for treatment for such things as do not heal readily and might lead to some serious growth. Under such circumstances the results should be even better than those which I have thus far had. But even now unless one has watched such a series of epitheliomas as I have described, and seen so many of them heal and in many cases leave so slight a scar that the site of the disease is not easily recognized, it would be difficult to believe that such benign results could follow the use of a remedy that can not be seen or felt.

Treatment by radium should be begun early and Nature must do her share. Healing under the most favorable circumstances may take place after less than a dozen exposures; in other cases a much greater number will be necessary, as in treating old and feeble patients or patients with a poor circulation the remedy must be used cautiously in order to do good only. In such patients healing goes on slowly, or they may have so little vitality that they do not respond, so that after the radium has done its work of destroying the diseased tissues healing does not take place.

Experience and judgment will guide the physician in giving the amount necessary to cause healing without overexposure which would result in irritation and a burn, and with care no harm will be done. At the same time, if radium is timorously used good results will not follow or will come only after unnecessarily prolonged treatment.

#### CONCLUSIONS.

1. The radiations from radium are uniform in quality and quantity and thus this remedy has a great advantage over the *x*-rays in efficiency and safety.

2. The gamma rays from radium are useful in some cases for relieving pain. They have great penetrating power. When they are used as an analgesic the beta rays should be excluded or the patient may be burned, because the proportion of gamma rays is so much smaller than that of the beta rays that the exposure must be much longer when the gamma rays are used, to make them effective.

3. The beta rays from radium are the useful rays in the treatment of rodent ulcers, epitheliomas, and other superficial diseases. They can be applied in the mouth and other cavities.

4. Radium should be used early, and in suitable amount and strength. The treatment is painless and leaves the least scar.

5. Radium does not produce as good results in cases in which an operation has first been done or scraping, caustic, or other irritating treatment has been used, or the *x*-rays have been applied.

6. Improvement follows the use of radium more promptly in many cases than the use of the *x*-rays and the total duration of treatment by radium, though sometimes long, is much shorter than with the *x*-rays. In some cases success has followed the use of radium where treatment by the *x*-rays has failed.

7. A surprisingly large proportion of external cancers, especially epitheliomas, have healed and remained



healed for some years under treatment by radium and my experience thus far indicates that for certain cases of external new growths it is a better remedy than those previously at our command.

8. Recurrences follow all methods of treatment, and radium is no exception, but so far as present experience goes this is unusual and they have yielded to further treatment by radium.

9. The disadvantage of radium is its cost to the physician.

505 Beacon Street

## CLINICAL ASPECTS OF TUMORS OF THE MEDIASTINUM.

WITH CONSIDERATION OF THE FINDINGS IN FOUR CASES.\*

FRANK SMITHIES, M.D.

ANN ARBOR, MICH.

The records of hospitals and postmortem rooms show that mediastinal neoplasms, whether primary or secondary, are uncommon. Of more than 7,500 autopsies on patients dying from all causes at the Marine Hospital, Cronstadt, one in fifty exhibited mediastinal growths. It has been estimated that one medical patient in 10,000 shows mediastinal tumor of some form. Of more than 25,000 general hospital patients at the University of Michigan Hospital, there have been, perhaps, a dozen cases of tumor of the mediastinal structures. It is extremely interesting, therefore, that within the past year and one-half there have come under observation four cases in the Medical Clinic presenting strong presumptive evidence of mediastinal growth and, in addition, two in which the diagnosis was suspected. Perhaps this increased ratio is largely due to the increasing perfection of clinical aids in the examination of patients generally.

The four cases furnishing the material for this communication are interesting from many standpoints. One of them, a case of chronic cyanosis with erythremia, is unique. The diagnosis in all instances was presumptive, so far as absence of postmortem material is concerned, but sufficient evidence is at hand to make the conditions reasonably certain. All the patients were adults. There were three males and one female. The youngest patient was 43, the oldest 67. They came to the hospital for such ailments as heart disease, asthma, chronic bronchitis, Bright's disease and laryngeal obstruction. Three of the patients appeared to have affections primary in the thorax. In the female the process was evidently secondary. Two patients had rapidly-spreading, malignant growths, and death supervened within less than a year after they came under observation. In the remaining cases the neoplasms are apparently of slow growth and the patients have been affected for some years.

### REPORTS OF CASES.

CASE 1.—This presents the clinical picture of chronic cyanosis, with variable erythremia, but without evident splenic en-

largement; attacks of asthmatic dyspnea; albuminuria; involvement of the mediastinal tissue as shown by symptomatic, physical and radiographic examination.

*Patient.*—There was sent to the medical clinic in January, 1907, an American laborer, aged 43, with complaints of difficulty in breathing, palpitation, frontal and occipital headaches, chronic cyanosis, dropsy and general weakness.

*History.*—The family history of the patient was negative, with the exception that his mother recently had an amputation for a thyroid tumor in the right tibia. Up to the age of 30 the patient was in good health. At this time he began to have asthmatic attacks, coming on at irregular intervals, usually at night. The patient's habits were good, and there was no history of specific disease. About six years before entering the hospital, he had what he termed a severe attack of "asthma," at which time his "wind was shut off sudden" by a "pressure just at the top of the breast-bone," and he became unconscious. He remained so for a few minutes. He had palpitation of the heart for some time afterward. About four years since he noticed blueness of his face, hands and feet, with variable swelling. He took medicine and believed that the blueness almost disappeared. It did not again become marked until September, 1906. At this time palpitation and cardiac distress, together with blueness, were so marked that he consulted a physician, who informed him that he had heart disease. He was put on treatment, but relief was only temporary. His blueness increased, becoming especially marked when he worked or when he was excited; palpitation and dyspnea became more troublesome. He began to have severe frontal headaches, was frequently dizzy and his eyes became prominent. A feeling of thoracic constriction was almost constant, particularly when he lay down. This feeling was most apparent in the region of the nipples. A blow on the chest or pressure downward from above the sternum produced a sensation of "smothering." There was no difficulty in swallowing, and no marked gastrointestinal disturbance.

*Examination.*—This revealed a man of medium build, with thin panniculus. There were no pronounced evidences of emaciation. Over the face and neck, particularly the nose, chin, lips and ears, there was a startling degree of cyanosis. The hands and feet were moderately blue, particularly so when the patient stood or allowed his arms to hang down. Then the cyanosis came on almost instantly and the peripheral veins were markedly prominent. When the patient lay down the face and neck were slaty blue. The cyanosis was less marked after he had lain for a few minutes. Exercise and psychic disturbances deepened the color perceptibly. The palate and tongue were deep purple. The eyes were very prominent, especially the right eye, that eyeball protruding 6 mm. further forward than the left. The conjunctivae were suffused, the right more than the left. The pupils were of moderate size, equal and active. The external jugular veins were injected and prominent. They filled from above. There was moderate pulsation of both carotids, rather more on the right. The thyroid was negative. There was no tracheal tug. Over the trunk the skin had a bluish cast. There was a fine punctate eruption over the chest (medication?). The thorax moved *en cuirasse*. The inspirations were shallow and not accompanied by much abdominal movement. There were no visible Litten's shadows, but there was slight inspiratory retraction in the lower axillary spaces. The respiration rate was not increased when the patient lay quiet. It was rapidly increased on even slight exertion. The heart beat was faintly visible in the fifth interspace, well inside the nipple. It was not increased in rate. Palpation of the lungs was negative.

Percussion is indicated in Figure 1. The liver dulness was low, the spleen barely made out. There was an abnormal sub-sternal dulness, with an atypically situated precordial outline. The areas of dulness did not change with change in position of the patient. Outside the areas of actual dulness there was a poorly defined zone of diminished resonance. Traube's space was tympanitic in a small area in front. The liver dulness began at the tenth rib in the mid-scapular line, posteriorly.

Auscultation of lungs: There was diminished vesicular breathing throughout the entire right side to the fifth rib. Below, the inspirations were sharp and blowing, the expira-

\* From the Clinic of Internal Medicine of Prof. George Dock.

\* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908. Because of lack of space the article is here abbreviated by the omission of a review of the anatomy and the symptom-complex, but the complete article appears in the Transactions of the Section and in the author's reprints.



tions soft and prolonged. Over wide areas there were few piping râles. On the left there was bronchovesicular breathing to the second rib, with increased vesicular breathing below. The râles were more numerous and more pronounced on the left than the right. The voice, both spoken and whispered, was negative. The examination of the back added nothing to the picture.

**Auscultation of the heart:** All sounds were heard with difficulty. The first sound at the apex was heard best two fingers' breadths inside the mid-clavicular line in the sixth intercostal space. The sounds over the base were best heard in the fourth left space and beneath the adjacent sternum. The first sound at the apex was soft and somewhat impure; the pulmonic second sound was moderately accentuated. The radial pulse was slow, of moderate size, and fuller on the left than on the right. There was moderate sclerosis of the radials. The blood pressure varied with the side tested. On the left, the pressure was, systolic 156 mm. Hg, and the diastolic 109 mm. On the right the systolic pressure 146, the diastolic 98, with the Erlanger apparatus 12 cm. enfl.

**Abdomen** was somewhat distended in the region of the navel. The liver was felt with difficulty at the end of inspiration. The spleen was not palpable in whatever position the patient lay. There was no palpable mass in the abdomen. The glands were negative.

**Eyes:** There was moderate conjunctival injection; the retina and head of nerve were edematous; there was marked venous engorgement; no hemorrhages (Professor Parker).

**Nose:** There was partial occlusion of the left nasal fossa. The larynx was negative.

**Blood examination:** Erythremia was noted from the first. At entry, as seen in Chart 1, the red-cell count was 6,450,000. The hemoglobin was 100 per cent. plus. The white cells were about 6,500. The blood was very deep red, flowed slowly and was extremely viscous. It was spread on a slide with great difficulty. There was nothing peculiar about the shape or the size of the red cells. No nucleated reds were seen. The differential white count was as follows: Small lymphocytes, 14.8 per cent.; large lymphocytes, 3.8 per cent.; polynuclears, 67.6 per cent.; eosinophile polynuclears, 3.8 per cent.; mast cells, 1.6 per cent., and degenerates, 8.4 per cent. Further consideration of the blood appears below.

**Urine:** This contained a moderate amount of albumin, with many small, finely and coarsely granular casts and numerous cylindroids.

**Fluoroscopic examination:** A diffuse, non-pulsating shadow lay above the heart. It was especially dense about the root of the lung and the great vessels. It could be followed up into the neck. The heart was downward and inward. The diaphragm was low down on both sides, especially on the right.

**Radiogram:** The fluoroscopic findings were confirmed. The mass evidently filled the mediastinum and was almost as dense as the heart. No definite lines of pulsation could be seen. The tumor appeared to occupy both mediastinal spaces, lying in close approximation to the heart, lungs and their adnexa. Here and there points of greater or less opacity might be seen in the lungs and pleura. There appeared to be more infiltration to the left than the right.

**Subsequent History.**—The patient was kept quiet for a few days, and in view of the high blood pressure and cyanosis, put on purges and nitroglycerin. He improved and was soon up and about. His remaining history to date is particularly interesting. It may be roughly divided into two periods. The first was a stage of moderate cyanosis, with erythremia, in which the patient was generally comfortable and able to do light work. There were days when the cyanosis was rather marked, and when feelings of fulness, with difficult breathing, were complained of. This was especially the case when the patient worked hard or became excited. There was little nocturnal dyspnea. The blood pressure was generally lower than at entry, either because of the rest or potassium iodid, or both. It gradually fell to an average of systolic 96 and diastolic 75 mm. Hg.

The second phase of the history comprised periods of extreme cyanosis with more or less pronounced erythremia;

marked dyspnea, bearing usually some relation to exertion or excitement, associated with unconsciousness, stupor or apathy; disturbances in vision; paroxysmal headaches; albuminuria and gastrointestinal symptoms.

**Marked Clinical Manifestations.**—1. Cyanosis. As stated, the patient was always cyanotic. There have been, however, since he came under observation, seventeen "attacks" of extremely pronounced cyanosis, general in character, but especially involving the head, neck, upper part of the thorax, and the extremities. At these times the color of the face and the extremities was a dusky, slaty purple, while over the trunk the skin had a bluish cast. On several occasions there was slight nose bleed. There was never bleeding from the mucous surfaces. Hematuria was not observed. With the occurrence of the cyanosis, the patient suffered extreme dyspnea. The respirations were greatly accelerated and the inspirations audible and slightly crowing. The expirations were prolonged, and sometimes accompanied by an expiratory grunt. In these attacks the voice was hoarse, or merely a low-pitched whisper. Sensations of pressure in the substernal region, with feeling of suffocation, palpitation with or without precordial distress were complained of. The dyspnea sometimes lasted for but a few minutes, then again persisted for half an hour or as long as the greater part of a day. The attacks were frequently followed by days of added cyanosis and prostration. During the attacks the heart rate was accelerated, going as high as 130 when it had previously been in the neighborhood of 60. There were never evidences of actual cardiac incompetency. The peripheral vessels were greatly injected, but positive venous pulsations were not observed. Auscultation of the lungs in the acute attack revealed an almost entire absence of breath sounds, with few high-pitched musical râles. The eye-grounds generally showed extreme engorgement of the retinal vessels with marked edema of the fundus. The right eye was sometimes very prominent, and there was a noticeable increase in intraocular tension. The conjunctivæ were markedly suffused, particularly the right one.

2. Erythremia: Coincident with the attacks of added cyanosis and dyspnea, there were generally noted changes in the red-cell count and the hemoglobin. The white-cell count was sometimes altered, in proportion. These blood changes were usually in proportion to the severity of the "attacks," but not always so. As will be seen from Chart 1, there were periods of intense cyanosis with red-cell count not greater than 6,500,000. On several occasions there were days of pronounced cyanosis, without acute dyspnea, when the red-cell counts ranged from 7,000,000 per c. mm. to as high as 9,000,000. Differences in count were noted, varying with the part of the body from which the blood was taken. For example, the blood taken from the toe in one attack gave red cells 7,780,000; that from finger, 7,200,000; while that from the ear was 8,020,000 cells per c. mm. The hemoglobin was not estimated at this occasion. On another test, when the cyanosis was not very marked, the finger gave 6,260,000 red cells per c. mm., with hemoglobin 136 per cent. (Miescher); that from the toe 6,860,000, with hemoglobin 156 per cent., while the blood from the ear was 7,010,000, with hemoglobin 144 per cent. It will be seen that the hemoglobin appeared to vary with the vascular distance from the heart, rather than with the actual increase in the red-cell count. The highest blood counts were recorded during the attacks of most acute dyspnea and cyanosis. There were six occasions on which the red-cell count ranged from 7,250,000 per c. mm. to as high as 9,260,000 per c. mm. On one occasion there was a period of ten days when the count was above 8,000,000 per c. mm. The white-cell count was not always proportionately increased. (Chart 1.) The counts were never much higher than 10,000. The hemoglobin estimations could not be made with the ordinary Tallquist scale. With the Miescher apparatus, and with dilution to twice the usual extent, the estimations always ran considerably above 100 per cent. (Chart 1.) The variations were from 105 per cent. to 156 per cent. The relation of the increases to the erythremia and the attacks of cyanosis and dyspnea is well shown in the chart. During the period of prolonged cyanosis already mentioned with counts above 8,000,000 per c. mm., the average hemoglobin reading was 132 per cent. (Miescher).



The differential white-cell counts showed very little variation from that already cited. More recently, there was a slight increase in the eosinophiles, and small lymphocytes, with the appearance of a rather large proportion of myelocytes following one of the acute attacks. Nucleated red cells were noted. During none of the attacks was the spleen palpated. Recently, an estimation of the specific gravity of the blood by Hammerschlag's method was 1.062, when the red-cell count was 7,400,000. The coagulation time was difficult to estimate with the pipette method, because of the extreme viscosity of the blood. By the slide method, coagulation was frequently complete at the end of a minute in an ordinarily warm room. It was often less than this. Unfortunately, no estimations of relations between corpuscles and plasma nor the amount of alveolar carbon dioxide are at hand.

3. Unconsciousness: In one of the attacks unconsciousness lasted for several minutes. There was partial consciousness with urgent dyspnea for nearly half an hour following, and the patient was apathetic for several hours.

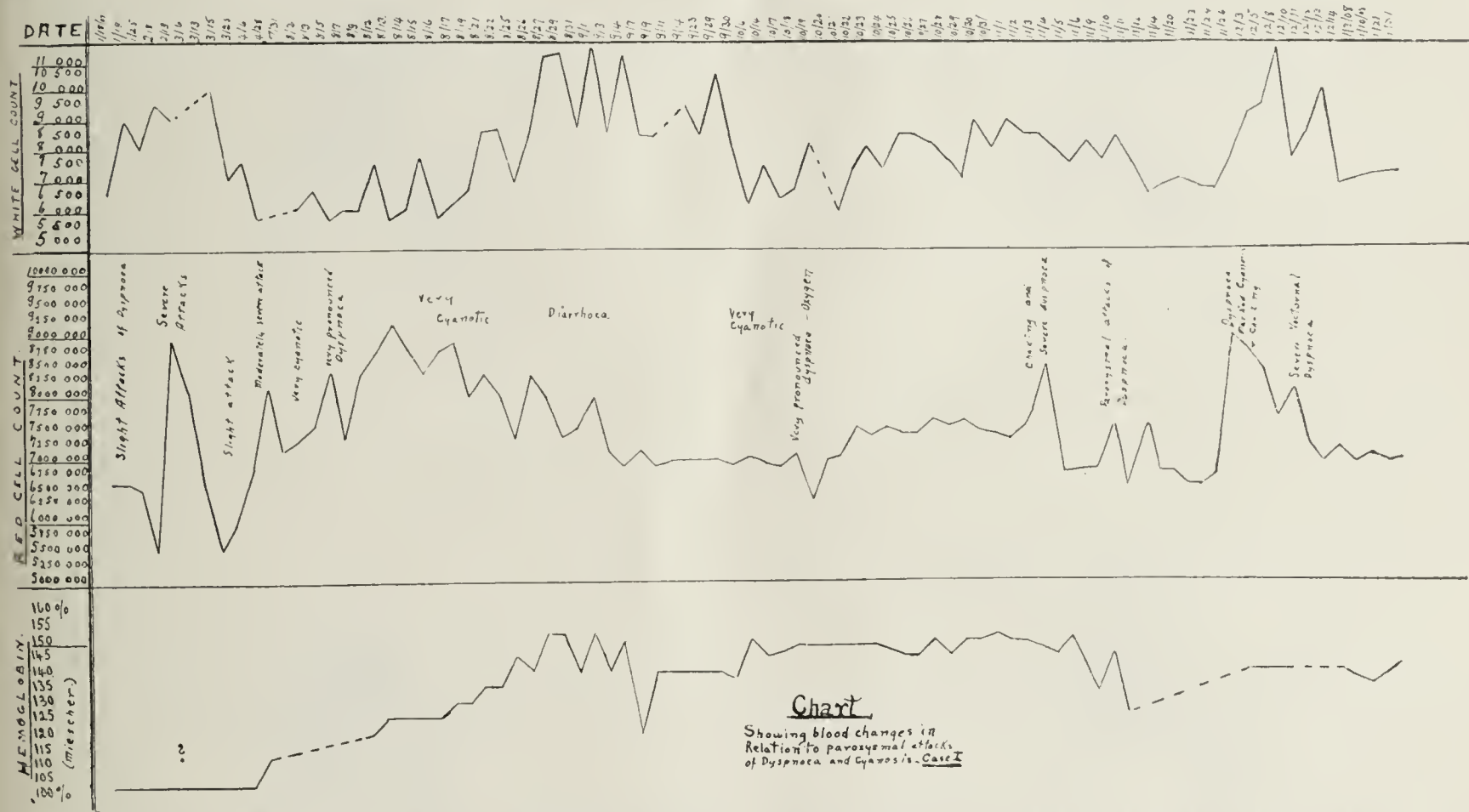
4. Disturbance in vision: These were frequent. At times there were merely spots before the eyes with blurring of images. On one occasion, there was diplopia. During the most severe attack of dyspnea, "everything turned black" before

and often persisted for several days after the patient was otherwise comfortable. They were generally accompanied by visual disturbances.

7. Gastrointestinal disturbances: These were of more recent onset. Loss of appetite was early noted. There has never been dysphagia or vomiting. Test meals have not been deemed advisable. Paroxysmal pains beginning in the epigastrium and radiating to the lower abdomen were noted about ten months ago. The pain was extremely prostrating, and came on at one of the most severe attacks of dyspnea. The abdominal wall was rigid and the patient was bent double at each sharp stabbing pain. The bowels were constipated. Recently, there have been attacks of diarrhea. This was pronounced for about two weeks on one occasion and was associated with moderately high blood count. There was no elevation of temperature, and nothing characteristic about the stools.

Growth of the tumor: The more recent radiograms appear to show that the mass is gradually extending and that, in keeping with the added physical signs, is involving the greater part of both mediastinal spaces.

Summary.—The case presents many of the findings of the condition of chronic cyanosis with erythremia described by Vaquez, Osler, Cabot and others. The spleen is not, however,



unconsciousness supervened. The pupil on the right was generally dilated during the dyspneic periods. Strabismus was not noted. The eyeballs were both prominent, particularly the right.

5. Albuminuria: This was present at the time that the patient came under observation. At first it appeared to be aggravated by the attacks. It was not, however, always present at or following the attacks. The amount has recently increased greatly. There has been as large a quantity as one-third volume. Casts, mainly of the granular variety, have been almost constant. Generally, there has been an increase following the acute dyspnea and erythremia. The attacks do not appear to have much effect on the blood pressure. Under rest and medication (?) the pressure has fallen from an average above 150 mm. Hg systolic and 100 mm. Hg diastolic at entry, to average systolic of 108 mm. Hg and diastolic between 75 mm. Hg and 80 mm. Hg with the Erlanger apparatus. In one of the very severe dyspneic periods, the systolic pressure was 100 mm. Hg and the diastolic 60 mm. Hg. At this time the heart action was very weak.

6. Paroxysmal headaches: These usually bore some relations to the dyspnea and the added cyanosis. They frequently manifested themselves for some days previous to the actual attack,

enlarged and there appears to be a discoverable cause for many of the symptoms noted, namely, the mediastinal growth. This is unusual or not yet reported at all in cases of true cyanotic polycythemia (Vaquez Osler's malady). It is not quite determined that the two conditions do not exist, but in view of the rather marked variations in the cyanosis and the red cell count, it is probable that much of the erythremia is due to extensive pressure in the thorax on the great vessels. The changes in spleen and bone marrow may come on later and the patient take on more characteristically the classic picture of the erythremia vera.

CASE 2. Patient.—A German, boilermaker by trade, aged 43, entered the clinic on account of sense of constriction across the chest, with occasional choking sensation in the throat; insomnia; constant morning nausea without vomiting; shortness of breath with gasping inspirations, weakness, dizziness and headaches.

History.—This negative except for chronic alcoholism and the use of much tobacco. About a year ago he began to note that after eating he had a heavy sensation in the upper epigastrium and that his head felt full. He was unable to sleep at nights on account of a sense of pressure beneath the sternum. He was constantly nauseated in the mornings, but never



vomited, although he tried hard enough. He began to get "winded" with little exertion and people noted that his face was becoming abnormally red. His voice became rather husky, and his breathing was often difficult with "a whooping when he drew in his breath." He became so uncomfortable that he had to give up work. His feet were sometimes swollen; he had headaches and often noticed spots floating before his eyes.

**Examination.** This revealed a thick-set, florid-faced man with anxious expression. The respiration rate was 30, and the patient was unable to lie comfortably even when propped up by three pillows. Occasionally there was prolonged, crowing inspiration. There was frequently a short superficial cough without sputum. The skin of the forehead, face, ears, neck and upper part of the thorax, back and front, as well as the feet and hands was rosy red, with purple cast. The cyanosis was slightly increased in the dependent portions and on exertion. There was no peripheral edema. The eyes were prominent and the conjunctiva slightly injected. The tongue was bright red. The supraclavicular fossæ were full and retracted moderately during inspiration. There was no tracheal tug and no enlargement of the cervical glands. The chest was

below the tip of the scapula. The heart was not displaced, but appeared enlarged to the left. The sounds at the apex were rather short and sharp. There was moderate accentuation of the pulmonic second sound. The radial pulse was small, rather quick, regular. The right radial seemed somewhat fuller than the left. The blood pressure read with Erlanger, 12 cm. cuff: systolic, 188 mm. Hg; diastolic, 140 mm. Hg. The abdomen was distended, full in the flanks. The liver descended just below the edge of the ribs in the nipple line at the end of deep inspiration. There was no ascites. The superficial glands were negative.

**Otolaryngological examination:** Both cords abducted to the cadaveric position and were slightly retracted. They showed moderate injection. On phonation, the right cord was negative; the left showed imperfect approximation to the vocal process posteriorly (Dr. M. L. Cushman).

**Eyes:** The retina was markedly edematous. The perivascular lymph sheaths of all the veins were prominent; there was disseminated chorioiditis in and about the macular region. Vision O. D. 15/30; O. S. 15/200. (Dr. G. Sloenn.)

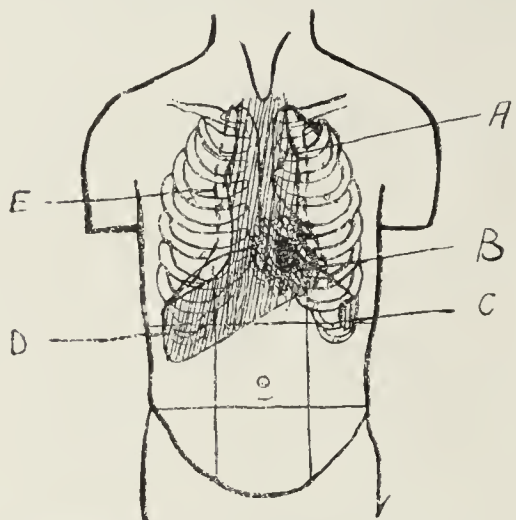


Fig. 1.—A, atypical thoracic dulness; B, cardiac dulness; C, spleen; D, liver; E, area of diminished resonance.

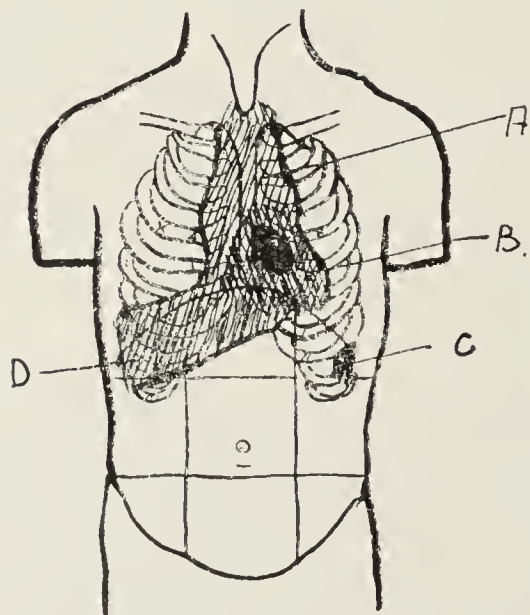


Fig. 2.—A, atypical thoracic dulness; B, cardiac dulness; C, spleen; D, liver.

of the pronounced "barrel" type. It moved *en cuirasse* with slight lateral expansion. Litten's shadow was not seen on either side. There was retraction in the lower axillary interspaces during inspiration, especially at the time of the crowing inspirations. In the region of the nipple, the right thorax was rather fuller than the left. Tactile fremitus was increased below both clavicles. The percussion outlines were as in Figure 2. It will be seen that there was distinct atypical thoracic dulness in the mediastinal region. Apart from the dulness, the percussion revealed nothing beyond rather high degree of resonance over the lung. Traube's space was tympanic. The breath sounds were increased on both sides, especially on the left as far down as the fourth rib. The voice sounds were increased in the left upper and in the back,

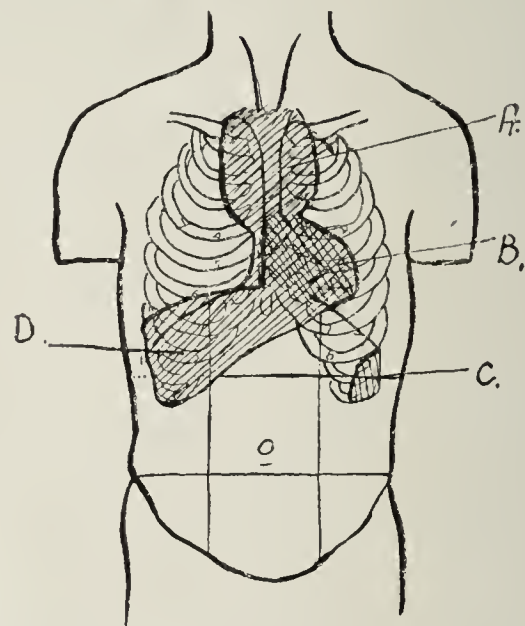


Fig. 3.—A, atypical thoracic dulness; B, cardiac dulness; C, spleen; D, liver.

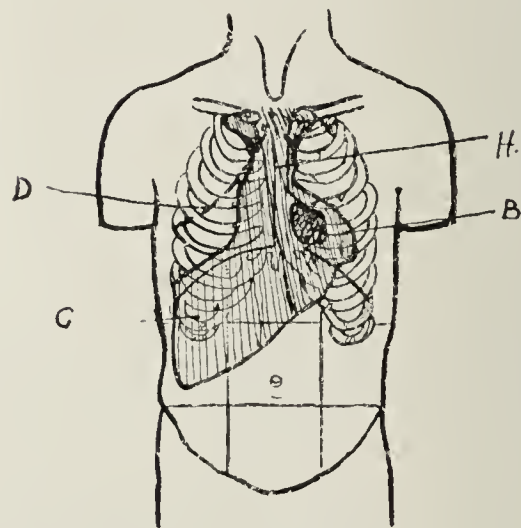


Fig. 4.—A, atypical thoracic dulness; B, cardiac dulness; C, liver; D, upper limit of pleuritic effusion.

**Reflexes:** These were negative; there was marked tenderness along the posterior tibial nerve.

**Blood:** The red-cell count was 4,750,000; the white-cell count, 5,200; the hemoglobin, 100 per cent. (Tallquist).

**Urine:** This was negative.

**Stomach:** There was mucous gastritis with diminished acidity, but good motility.

**Fluoroscope:** The heart appeared hypertrophied. Occupying the mediastinum was a mass of about the same degree of opacity as the heart. It was continuous with the heart outline, and extended upward to the neck. In its upper part, it extended more to the left than to the right. Low down it filled in the cardiohepatic angle.

**Radiogram:** This confirmed the fluoroscopic findings. The



mass was especially thick about the great vessels and the root of the lung. There were no evidences of pulsation.

*Subsequent History.*—The patient was put on purges and potassium iodid. He has shown improvement in blood pressure, which has dropped as low as 160 systolic, and in his subjective symptoms. The crowing breathing, the nocturnal dyspnea, and the morning nausea have become less marked. He is still cyanotic and complains of the sensation of tightness in his chest. It is aggravated by excitement or hard work. The tumor appears to be enlarging into the posterior mediastinum and to the left. A distinct area of dullness may be percussed in the left back along the spine from the level of the inner end of the scapular spine to the eighth dorsal vertebra. In this region there is marked increase in the vocal resonance and suggestion of tubular breathing. The crowing inspiration is still marked, but not so evident as when the case first came under observation. There is no dysphagia, and no obstruction or pain when the stomach tube is passed. The patient says that he has coughed up or vomited up some "stuff" streaked with blood, but we have never been able to get any of it for examination in the clinic.

*CASE 3.—Patient.*—A woman, aged 64, likewise showed chronic cyanosis as a pronounced clinical manifestation. At first, there was some polycythemia, the red-cell count reaching 6,640,000, but this was transitory.

*History.*—The patient had had a carcinoma of the left breast removed three years before entering the hospital. She came to us on account of pain in the left side of the chest, swelling of the neck, with "rushing of blood" to the head, weakness, nervousness and edema of the extremities. She presented a negative family and personal history with the exception of a peculiar, eczematous skin affection in early adult life. The breast tumor was noted fifteen years ago. She had it removed by a popular "cancer-plaster cure." It recurred with increased rapidity of growth, and three years since she had a radical operation on the breast and the left cervical glands. Shortly after the operation, the patient noted burning sensations in the wrists and the hands. Six months ago, she observed that the veins of the upper part of her chest and her left arm were growing more prominent; there were also soreness and a sensation of fullness in the upper part of the thorax in the median line. The head began to feel full and the neck to enlarge. She thought that it was now two inches larger than it had been six months ago. The left arm began to swell slightly. She had lost twelve pounds in weight in two years.

*Examination.*—The patient was a rather heavy-set woman, nervously inclined. She was very restless and loquacious. Her face and neck were scarlet, with a bluish tinge over the ears and the lips. Over the upper thorax and the left arm the superficial veins were prominent and enlarged. The superficial venules were dilated so that the entire region has a distinctly bluish cast. Both forearms were puffly-looking, especially the left, where there was slight pitting on pressure. The left forearm was also cyanotic, especially when dependent. The glands in the left axilla and the lower cervical group on both sides, particularly on the left, were enlarged. The eyes were moist, the lids swollen, the palpebral aperture small. The pupils were negative. The voice was rather hoarse. There was no tracheal tug.

*Thorax:* This was short and broad. The bony prominences were hidden by fat. There was no Litten's shadow on the right; it was fairly well seen on the left. There was slight increase in tactile fremitus below the right clavicle. The left infraclavicular space filled better than did the right. The percussion (Fig. 3.) revealed an easily made-out mass occupying the upper sternal region, and extending rather more to the right than the left. The remainder of the thorax was negative to percussion. On auscultation the breathing was diminished on the left to the second rib and increased over a corresponding area to the right. Below it became quiet on both sides. Over both infraclavicular spaces the spoken voice had a distinctly nasal twang, which was more marked on the right.

*Heart:* This was negative, except weakness and the rather startling increase in the pulmonic second sound, without diastolic shock. The radial pulse was moderately full on both

sides, the systolic pressure being 130 mm. Hg. (Erlanger, 12 cm. enfl.) There was no capillary pulsation.

*Abdomen:* The liver and the spleen were barely felt. The inguinal glands were negative. A mass or indefinite shape was made out in the lower left iliac region (secondary?).

*Fluoroscope:* A mass of rather globular shape filled the superior and anterior mediastinal regions. It could not be said to pulsate.

*Radiogram:* This confirmed the fluoroscopic findings. The mass was distinctly more to the right than the left. It was in close connection with the great vessels and the root of the lung. The heart appeared somewhat enlarged.

*Subsequent History.*—On account of the heart weakness, the patient was put on digitalis. She became rather more comfortable, but her subjective and objective symptoms and signs did not improve. She was at length lost sight of, but recently word reached us of her death. The autopsy was not secured.

*CASE 4.*—This presented evidences of primary, malignant mediastinal tumor, in contrast to the secondary malignant tumor of Case 3. The disease appeared to run a rapid course, as the death of the patient has already been reported.

*Patient.*—He was brought to the hospital for "heart trouble." The man had been ill for about a year. The disturbance followed a severe attack of diarrhea, from which he never appeared to recover. His main complaints were loss of weight and strength, hacking cough with abundant frothy or watery sputum, shortness of breath and palpitation.

*Examination.*—The patient was tall, spare, emaciated. There was a trace of cyanosis over his lips and his finger tips. The face was dusky pale, with enlarged venules over the cheeks and the nose. There was an old conjunctivitis with eversion of the lower lid. The thorax was long and deep. The lower interspaces retracted on the left in the sixth and seventh axillary spaces, and slightly in the sixth on the right. The heart impulse was diffusely seen below the left nipple. There was poor thoracic movement on the right side, generally fuller than the left. The vocal fremitus was absent on the right below the third rib. The percussion is indicated in Figure 4. There was abnormal substernal dullness extending upward below both clavicles more on the right than the left. The heart was displaced or enlarged to the left. Absolute dullness began at the third space on the right and was movable. There was moderate Grocco's sign in the left back. Auscultation revealed quiet breathing on the right below the clavicle, and absent breathing below the third space. There was rather marked nasal bronchophony, without egophony. On the left both breath and voice sounds were exaggerated. The heart sounds were weak and impure.

*Fluoroscope:* After tapping, the heart was to the left. On the right there was diffuse opacity low down. The left diaphragm moved freely. There was no movement on the right.

*Blood examination:* Red blood cells 5,680,000; white cells, 7,550; hemoglobin, 85 per cent. (Fallquist). The blood pressure at time of entering was, systolic, 210; diastolic, 160 mm. Hg. The radials were very sclerotic.

The urine was negative.

The patient was tapped in the right pleural sac and 1500 c.c. fluid removed. The fluid contained numerous large, atypically built alveolar cells, with several nuclei and division figures, rendering a diagnosis of carcinoma highly probable.

*Subsequent History.*—The patient grew gradually worse. The fluid accumulated rapidly. He was again tapped and again the fluid returned. His cardiac weakness and his cough returned with increasing vigor after theappings, and he barely reached his home before he died.

#### SUMMARY.

*Diagnosis.*—It will be seen that the four cases detailed present a varied range of symptomatology. There were certain constant features. In each of the cases there was more or less marked cyanosis, dyspnea and cough. The physical examination, carefully made, with the patients stripped, revealed in each instance atypical, thoracic dullness. In Case 1 the heart was displaced by the growth; in Case 4 the cardiac displacement was due largely to the accumulation of fluid in the right pleural



sae. In all the cases mediastinal infiltration was clearly shown by both fluoroscope and radiogram. In Case 4 the opacity was masked by the effusion, but became evident after tapping. The pressure signs are exceptionally interesting. In the first three cases cited the cyanosis and flushing were marked. Frequently there were in all cases paroxysmal exacerbations, brought on usually by exertion or psychic disturbances. In Case 1 these paroxysmal manifestations were striking. Distention of the veins of the neck and the arms was evident in Cases 1 and 3, especially in the latter. In Case 3 the distention of the veins was largely in the left arm and was associated with almost constant edema. There was also at times a brawny desquamation of the skin of the left arm and chest. In the first three cases there was more or less constant involvement of the vocal cords. In Case 1 this resulted occasionally in aphonia. In Case 2 permanent, partial paralysis of the left cord was noted. In all the cases there was pressure, more or less constant, on the pneumogastric, with tachycardia, precordial distress or abdominal pain as a consequence. Pressure on the bronchi was especially evident in Cases 1 and 2. The variation in the degree of pressure should be noted. In all the cases except that last described the evidences of constant, long-continued pressure were to be seen in the eye-grounds. This was particularly so in Cases 1 and 2. In these patients the eyes were also prominent, but not equally so. The right eyeball protruded rather noticeably in Case 1. The evidences of stagnation in the veins of the fundus was generally proportionate to the prominence of the eyes. In but one of the patients (Case 1) was peripheral edema at all constant. In all of the cases it was small in amount. Case 1 showed an increasing amount as the albumin in his urine increased. The subjective evidences of intrathoracic pressure are interesting and important. Sensations of "smothering," "fulness beneath the breast bone" and a "weight in the chest" were complained of. The cerebral congestion was associated with feelings of fullness in the head (frequently mistaken for fever by the patient), headaches, dizziness and disturbances in vision. Cough was present in all the cases. There was a suggestion of "brassiness" in Case 2, in which patient laryngoscopic examination revealed partial paralysis of the vocal cords. Tracheal tug was not observed in any case. No evidence of pulsation could be made out in the tumor area in any of the four patients. With the exception of myocardial weakness (Cases 3 and 4) the hearts were negative, so far as could be determined. Diastolic shock was not to be made out in any instance.

Without postmortem material the nature of the tumor masses in these cases can only be surmised. There is abundant proof that in Cases 3 and 4 the growths were carcinomatous. In Case 1 the process seems to be either a slowly growing sarcoma or a luetic involvement of the mediastinal tissues. No evidences of syphilis are discoverable, however. Case 2 is perhaps more clearly luetic than Case 1. There is no distinct history of syphilis, but the patient has reacted fairly well to specific medication.

A few words might be said as to the probable position of the growths. In Case 1 the symptomatology and the radiograms point to a rather general involvement of the entire mediastinum. The second case presents more evidences of involvement of the middle space of the inferior mediastinum than of a general involvement. In Case 3 the anterior and superior spaces were doubtless the seats of the greater degree of infiltration. In the

last case the inferior space appeared to be the seat of the larger portion of the growth, with secondary involvement of the right pleura. The so-called "cancer cells" in the pleuritic effusion were a valuable diagnostic aid as to the primary cause of the fluid.

*Treatment.*—When the nature of the growth is evidently malignant, as in Cases 3 and 4, only palliative measures are indicated. These are governed by the symptoms. Care should be exercised in the tappings when effusion exists. Too rapid evacuation of fluid, or the withdrawal of too much of it, may be followed by severe and exhausting cough, albuminous expectoration and collapse. Small, localized tumor masses may in picked cases be treated with x-rays with benefit. None of our patients appeared to improve under the exposures. The treatment should be given only by skilled operators, inasmuch as the long-continued exposures, which are evidently necessary, may give rise to severe burns and serious blood and kidney alterations. In our series Patients 1 and 2 appeared to improve somewhat under anti-syphilitic medication. If there is even a possibility of lues iodids may be tried in full doses. The high blood pressures are relieved by bleeding or, where this is impossible, by nitroglycerin or the nitrites. Daily purging is also of service, although this should be done with care, as frequently patients become exhausted from the free evacuations. The periods of extreme dyspnea (as in Case 1) are relieved by morphin and atropin hypodermically and the administration of oxygen. In a few instances it seemed that the oxygen exerted a favorable effect on the erythremia. When the dyspnea is continued through several days, absolute rest, with tincture of belladonna internally, make the patient more comfortable.

Operative interference might be advised in cases in which the tumor mass is well localized, in which proper arrangements can be made for maintaining intrathoracic pressure and where an operator of the highest skill is at hand. Doubtless, with the improvement in diagnostic methods and more extended operative procedures on the thorax, surgical measures will become more general. The situation of the mediastinal tissues will, however, place certain barriers in the way of promiscuous attempts at enucleation or dissection of mediastinal neoplasms.

In conclusion I wish to express my thanks to Drs. M. L. Cushman, George Slocum and Sobei Ide for aid in collecting data herewith presented, and to Dr. B. D. Niles of Grand Ledge, Mich., and Dr. G. A. Seaboldt of Jackson, Mich., for permission to examine two of the cases.

#### DISCUSSION.

DR. THOMAS D. COLEMAN, Augusta, Ga.: I have been impressed with the fact that the disease in question is very rare among negroes. These people are subjects of syphilis, tuberculosis and adventitious growths in general; but I have never seen a case of mediastinal tumor occurring in a full blooded negro. I have seen two cases in mulattos. The other cases that I have seen occurred in whites and all the patients were males, aged somewhere between 30 and 60. One was a distinct case of carcinoma. The patient had had the pectoral muscles removed and finally succumbed to the disease, and the autopsy confirmed the diagnosis, cancer of the mediastinum. The chief point of interest in my cases, outside of the pressure and other symptoms, is that but one of my patients died. I had one case, the diagnosis of which was not verified, in which there was a distinct paralysis of the left vocal cord, which was supposed to be due to a gumma. The patient was placed on specific treatment with the result that



recovery followed. The diagnosis in this case was fairly well established but could not be confirmed by the *x*-ray, as its use had not been discovered at that time, about eighteen years ago.

DR. ALEXANDER LAMBERT, New York: Some years ago I had a case that puzzled me very much. The lesion turned out to be a sarcoma which grew at the junction of the vena azygos major and the superior vena cava. The pressure symptoms were peculiar. When the patient was lying down he became blue from the clavicle up, the color of the rest of the body remaining normal; but when the patient sat up his face was white and he became blue from the clavicle to the hips. Whether lying down or sitting up the legs remained normal all the time. This tumor acted no doubt as a sort of ball valve. The diagnosis was made by working out the circulation of the chest wall. A primary sarcoma of the right ventricle of the heart was the original lesion. I have seen a number of mediastinal tumors at Bellevue Hospital, and what struck me as most interesting was that the symptoms came on paroxysmally, with a cough sometimes like that of whooping cough and without any apparent reason or cause of excitation. The pain and dyspnea came on paroxysmally. One symptom on which some stress was laid by the old English writers is occlusion of the right innominate vein—pathognomonic of mediastinal tumors. This does not occur in aneurism.

DR. ROBERT H. BABCOCK, Chicago: It was my fortune last summer to see a case of mediastinal tumor, the antemortem diagnosis of which was substantiated post mortem. The patient had been treated for pulmonary tuberculosis. This illustrates the fact that a physician may mistake for pulmonary tuberculosis a disease which produces a definite tumefaction of the front of the chest. It had been suggested to me, even before I saw the patient, that consumption might be present; but when I laid my hands on the front of the chest it was clear to me that this was not a case of pulmonary tuberculosis. Instead of a depression of the chest, a characteristic of the phthisical habitus, the upper portion of the chest was distinctly bulging, showing intrathoracic pressure.

Another interesting phase of the case was that the patient had been given mercury for syphilis for a long time. Certain sores in the month were thought to be mucous patches. The antisyphilitic treatment was pushed to the limit, but without benefit to the patient. A careful investigation of the history of this case revealed the fact that these sores were due to the mercury. This case was very instructive to me, because it showed conclusively the necessity of the physician entering carefully into the history of the case, and also the necessity of a clear discrimination between the symptoms of the various intrathoracic diseases, since if a diagnosis of intrathoracic disease is to be made, one should bear in mind the fact that it can not always be made by the physical signs alone.

DR. JOHN FRANCIS HERRICK, Ottumwa, Iowa: The diagnosis in these cases is very important. I have seen a case of aneurism of the posterior wall of the aorta in which the entire cavity of the aneurism was filled with a solid mass of fibrin before the patient was first seen. There was only a small opening through which the blood got to the aorta and left subclavian. The case appeared much like a tumor of the mediastinum, with pressure on the aorta. There was an absence of bruit. No information could be obtained from the history of the case. The diagnosis of a solid tumor was made, but an old aneurism, with its cavity filled with a solid mass of fibrin, was found at the postmortem.

DR. FRANK SMITHIES, Ann Arbor, Mich.: I am not quite certain whether my first case did not present quite as many symptoms of the Vaquez-Osler malady as it did of intrathoracic pressure. It becomes very interesting to consider the possibility of the blood changes being secondary to the long-continued intrathoracic pressure, with consequent hyperplasia of the bone marrow. Dr. Lambert's remarks about the paroxysmal character of the symptoms of mediastinal growths are interesting. With regard to the first case reported, the pupils were equal and active under ordinary conditions. During the paroxysmal attacks of dyspnea the right pupil became distinctly dilated, showing a certain involvement of the sympathetic. Mediastinal tumors probably might be differentiated ante mortem by radiograms.

## NON-SURGICAL TREATMENT OF UTERINE DISPLACEMENTS.\*

H. J. BOLDT, M.D.  
NEW YORK.

Operative gynecologic surgery has made such strides during the past few years that the practice of minor gynecology has been almost lost sight of. This fact becomes evident when one notes the number of surgical contributions to the relief of uterine displacements and the scarcity of contributions that deal with non-surgical treatment. And it is made still more evident when one converses with recent graduates in medicine, who know practically nothing about mechanical methods of correcting displacements, and who speak as if such therapeutic measures had passed into oblivion.

This condition is undoubtedly due to the advance that has been made in gynecologic surgery, which cures the displacements of the uterus much more rapidly and far more certainly; but we should remember that there are some patients who object to being operated on, and others whose physical condition makes operation unsafe (as, for instance, patients with exophthalmic goiter, with diabetes mellitus, etc.), in many of whom properly adjusted mechanical support will entirely relieve the symptoms caused by a displaced uterus. Moreover, we should remember that no operation is entirely free from risk. If we can in a given case achieve the desired symptomatic result by an entirely safe method, then it should be for the patient to decide whether she prefers the palliative measure, with a possibility of permanent cure and without any of the risk entailed by surgical intervention, or the operation with its attendant risk, resulting almost certainly in cure without the necessity of wearing a pessary.

I do not think it can be disputed that in some instances it requires more skill to adjust a pessary properly than it does to do a simple abdominal operation, since the former requires good judgment and more experience than can be gained in the one or two lectures that students get on this subject in colleges.

The normal position of the uterus varies with the condition of the bladder and the rectum; both being empty, the uterus is in anteversion with flexion. It is freely movable and changes its position according to the degree of distention of the bladder and rectum. We thus see that the uterus may become retrodisplaced or retroverted under certain physiologic conditions; but this is not a pathologic displacement, and it does not become such unless the uterus permanently remains in retrodisplacement. Before B. S. Schultze's classical publication on the pathology and therapeutics of uterine displacements, the perfectly physiologic anteversion of the uterus was considered by most gynecologists to be a pathologic condition, and hence women were unnecessarily subjected to treatment with a pessary, the kinds of which in those days were very numerous.

The displacements which are most frequently amenable to treatment by mechanical supports are of two kinds—posterior displacements, and descensus of the uterus, either with or without more or less descensus of the vagina.

In posterior displacements the rectouterine ligaments have lost their tone and are longer than normal; if a pessary be adjusted properly, they are made so tense that they bring the cervix backward toward the posterior

\* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



pelvic wall, and thus the body of the uterus is placed in ante-position; provided no pathologic process has caused a thinning out (an atrophy) at the juncture of the cervix with the body of the uterus, as in some instances of extreme retroflexion of long standing. The round ligaments, which are elongated in such cases, are relieved of the weight and get an opportunity to regain their normal condition. Thus, I believe, these patients are sometimes entirely cured of the displacement.

The posterior displacements may be divided into (1) retro-position, (2) retroversion, and (3) retroflexion, in each of which varying degrees of displacement exist. Retroversion usually coexists with retroflexion. It is also commonly found that a retroversion-flexion is associated with more or less descensus of the uterus.

Retropositions of the uterus are not likely to cause any symptoms. In these the ante-flexed form of the body of the uterus is retained. The organ as a whole is simply situated farther back toward the sacrum than usual.

With retroversions there is associated more or less induration of the uterine walls, which is most marked at the junction of the body with the cervix. When the induration passes off, the body of the uterus will by its gravity become flexed to a greater or less degree, thus changing into a retroversion with flexion. In some cases of retroflexion, the flexion angle becomes very acute, so that the uterine body may be below the level of the external os. Again, in some instances of long-standing retroflexion, the junction between the body and the cervix may become so atrophied that no pessary can hold the uterus ante-posed, the body invariably tipping over the upper bar of the supporter.

The majority of retroversions and retroflexions are acquired; in these cases treatment is more productive of good results than in those of congenital origin. Furthermore, it is the cases of acquired displacement that give rise to symptoms. Congenital cases do not often cause symptoms, and when they do, the displacement is seldom found amenable to treatment with pessaries. In a patient with a congenital retroflexion, the uterus is somewhat smaller than normal, and is not fully developed. Frequently the vagina is too short and too small in caliber to admit the adjustment of a pessary; and on the anterior vaginal wall, in the median line, is found a very fine band-like condition, associated with extreme tensility and density of the exterior cervical connective tissue, so that even should we succeed in ante-posing such a uterus, the ante-position will be only temporary, and the uterus will soon again assume its pathologic position. This condition may be considered as one of the causes of sterility.

Retrodisplacements which are fixed by inflammatory adhesions are not suitable for treatment by pessaries, nor is such treatment indicated in any case complicated by an acute inflammation of any part of the pelvic structures or of the pelvic contents. In all such cases the inflammation must first be cured.

A pessary should never under any circumstances be adjusted before the uterus has been placed into physiologic ante-flexion. If this can not be done, the treatment is not suitable to the condition. The replacement should be effected by bimanual manipulation. Only in exceptional instances, and then with the utmost antiseptic precautions, may a sound be used as an aid—as in treating very corpulent women and those with very rigid abdominal parietes, but then only if we have ascertained that no inflammatory process is present in the uterine annexa or the pelvic peritoneum. The object of

a pessary is to hold the displaced uterus in position after the displacement has been corrected, by making tense the folds of Douglas and thus bringing the cervix backward toward the posterior pelvic wall. The tension on the round ligaments is then relieved, and they have an opportunity to regain their normal tone and to exercise again their functions as the anterior supporting ligaments of the uterus.

Some instances of retroversion with flexion are relieved by the adjustment of a pessary, even if the pessary does not hold the uterus in ante-position, but simply brings it on a higher plane in the pelvis. It has seemed to me that this relief is brought about by correcting faulty circulation in the pelvic organs, which again was caused by the backward displacement with more or less descensus of the uterus.

In instances of pregnancy with retroflexed uterus, I usually make use of the knee-chest position for the purpose of reducing the displaced organ, unless I readily succeed in replacing it in Sims' position. One gets much aid in the air-pressure in the knee-chest position, and is more easily enabled to sweep the gravid uterus past the sacroiliac synchondrosis. When the organ has been reduced, a proper sized pessary should at once be adjusted.

If the physician is specially trained in the method devised by the late Thure Brandt, and has the time and the patience, and if the patient is willing to undergo such a course of treatment, very much may be accomplished with it. It is particularly to be recommended when the uterus is fixed by adhesions, more especially old puerperal adhesions. It should be avoided in all cases of salpingitis, especially of gonorrheal origin. Although I have studied the method and have used it extensively, I consider it too time-consuming for a busy physician to practice it. Furthermore, in simple displacements the results of this method are no more satisfactory, in some cases than other therapeutic measures at our command. I have seen the late Thure Brandt and his former pupil, Oscar Nissen, accomplish astonishing results in instances of fixed retroflexions, if the fixation was the result of puerperal inflammatory conditions and if the uterus was held in faulty position by old cicatrices; but I confess that, while I was able to achieve similar results, thanks to the instruction that was given me by these gentlemen twenty years ago, I found that the method required too much time.

The retroflexions most amenable to permanent cure by pessaries are those of recent postpuerperal origin. Hence the importance of an accoucheur's regularly examining his patients about a month after confinement. Such a displacement can be most easily reduced (provided there are no adhesions) by pushing up the fundus in the posterior cul-de-sac with the index and middle finger, while with the thumb the cervix is sharply depressed at the vaginal junction toward the hollow of the sacrum, and the fingers of the external hand are being brought with a firm rotatory motion behind the fundus, which is being pushed toward the anterior parietes with the vaginal fingers. When the fingers of the external hand are behind the fundus, this can readily be ante-posed. By making pressure with the thigh against the elbow of the intravaginal fingers, the foot having been placed on a stool, the replacement is accomplished with less exertion. If the vagina is too narrow to admit the two fingers and thumb, the forefinger should depress the cervix, while the middle finger pushes the fundus upward in the retrouterine space.

Another method which may sometimes be used with



advantage is that devised by Kuestner. In this method either the anterior or posterior lip of the vaginal portion of the cervix is grasped with a pair of tenaculum forceps, and pulled in the axis of the vagina toward the vaginal outlet, which action stretches the cervix and brings the fundus nearer to the external hand so that it can be grasped by it and anteposed.

As soon as the displaced uterus has been properly reduced, a pessary should be adjusted. Care must be exercised in the selection of the pessary, that it be not too small or too large, and that it does not cause pressure on the soft parts. The patient should not be aware that a foreign body is in the genital tract, but the pessary must be of such size and shape as to hold the uterus in place. The pessaries best adapted to this are the Albert Smith and Thomas' pessaries. If the pessary has not the proper shape for the individual case, this can readily be given to it by proper molding, which is done by anointing the pessary with vaseline and moving it rapidly to and fro over the flame of an alcohol lamp until the rubber is heated so that it may be molded to the desired shape, when it is immediately set in shape by immersion in cold water.

After the adjustment, the patient should be allowed to walk about for a while and then be re-examined to determine if the pessary retains the uterus in position. The examination should be repeated a day or two later, to ascertain whether the uterus is held in position and the pessary is of the proper size and shape. A physician who is experienced will generally be able to make the proper selection of the pessary on the first attempt. While wearing a pessary the patient should use a vaginal douche daily, either of plain water or of a saline solution, even during menstruation. A pessary that has been properly fitted need not be looked after more than once in five or six months. It is advisable, when the patient asks how long the supporter must be worn, to tell her at least from two to five years; this being about the time that is necessary for a permanent cure of a displacement by a pessary, when such cure is possible. It will be found that from 20 to 25 per cent. of uncomplicated mobile backward displacements of the uterus can be permanently cured by such therapeutic measures.

I have so far considered only mobile backward displacements. There are some instances of backward displacements with light adhesions that are also amenable to treatment without the use of the knife. Allusion has been made to the Thure Brandt massage method, but because of the patience required to obtain good results with it, it was not further considered. Schultze devised a more rapid method of breaking up such light adhesions in one sitting under anesthesia. If no marked tubal complication is present, it may be tried, and occasionally I have been successful with it. The method employed is somewhat similar to that already described for replacing the mobile uterus bimannually, with this difference, that the middle finger is introduced per rectum, the fore finger and thumb per vaginam, and the adhesions are then forcibly broken up. If this method is successful, and the uterus has been anteposed, a pessary should be adjusted immediately, with an observance of the rules mentioned for mobile displacements. But, to repeat, serious tubal complications must be excluded before attempting this method.

Pessary treatment for the relief of acquired pathologic anteversions and antelexions is practically useless, except for the relief of the vesical tenesmus, which sometimes accompanies these conditions. Of all forms of

pessary which have been designed for anterior displacements, there is only one which in my opinion meets the requirements, that devised by Dr. Eugene Gehring and known as the "Gehring pessary." This pessary may also be used advantageously in mild degrees of descensus of the uterus and of the vagina. While I have never seen any case actually cured by it, most patients can be relieved more or less of the bearing down feeling of which they so frequently complain. The lower bar of this horseshoe-shaped pessary rests near the posterior border of the symphysis and elevates the protruding anterior vaginal wall and to some extent also the uterus. In Gehring's hands it has proved satisfactory, even in marked degrees of prolapsus of the uterus and vagina. I have used it only as a palliative measure until the patient would consent to an operation, because I have not been successful in giving such patients permanent relief.

Congenital antelexions, in which the cervix is nearly always retroverted, are dependent to a great extent on a marked shortening of the recto-uterine ligaments. Frequently a posterior perimetritis is associated with these cases. Pessary treatment is useless for such patients, so far as my observation goes.

My object in selecting this subject for discussion was to emphasize the fact that there are other therapeutic measures in gynecology than the use of the knife and scissors; and to recall from apparent abandonment a measure that in some cases secures important beneficial results.

39 East Sixty-first Street.

#### DISCUSSION.

DR. C. LESTER HALL, Kansas City, Mo.: The pessary has its place in cases of uterine displacement. I have used it for many years with a fair degree of success, but I find that in a great many cases it is harmful. I do not agree with Dr. Boldt, that it should be used in cases of suspected adhesions and of pathologic conditions in the adnexa. I believe that the method of tearing up adhesions is a dangerous one. But in a case in which there are no adhesions, and the woman desires to become a mother, I believe that the pessary can be used with marked advantage and possibly with permanent cure. In reference to putting the uterus in position before the insertion of the pessary, I do not believe that in many cases of fleshy abdomen it is possible for any man to tell positively whether the uterus is in proper position without the use of the intrantrine sound. By placing the patient in the knee-chest position, using the sound as a fulcrum, and with the Sims speculum retracting the perineum, I believe that it is possible to tell when one does or does not get the uterus in proper position. I do not believe that an ordinary sound should be used, but an instrument much like the Miller dilator or the male urethral sound properly shaped. Many of these cases of young women are too early consigned to operative procedure. I have under my care a young married woman who had in her girlhood a retrodisplacement of the uterus and who continues to have it after each confinement unless I treat her by the postural method and as involution takes place see that the uterus is in proper position. I believe that the best cure for retrodisplacement outside of surgical procedure is pregnancy.

DR. GEORGE GELLHORN, St. Louis: It is difficult to realize that gynecology at the present day consists of anything else but surgery. There are two points in Dr. Boldt's paper which should be emphasized because of their extreme importance. The first is that there are some men, both here and abroad, who assert that movable retroflexions do not cause any symptoms and consequently need no treatment. I am aware that such symptomless cases do exist, but they are comparatively rare and usually congenital. The overwhelming majority of acquired retroflexions, however, produce symptoms, sometimes only in remote parts of the body, and I am more than ever



convinced that these cases require treatment. Movable retroflexion very often acts as an *agent provocateur* of neurasthenia; if you only correct the uterine displacement and dismiss the patient without further attention, her neurasthenia which may have become independent will not receive permanent relief. It is necessary to treat also the neurasthenic symptoms of your patient, but you can not cure her neurasthenia unless you first relieve the exciting cause, viz: the retroflexion. As to the second point I heartily agree with Dr. Boldt that the proper treatment for uncomplicated movable retroflexion is the pessary. There appear in literature every now and then severe criticisms of the efficacy of the pessary, but to my mind such statements are acknowledgments of one's unfamiliarity with the possibilities of the pessary and the correct mode of its adjustment. With growing experience the number of irreducible uteri is markedly diminished. Should other means of replacing fail, the pressure weight method of Funke and Halban should be tried. The patient being in the Trendelenburg position, an empty rubber bag is placed in the vagina behind the cervix and then filled up with metallic mercury. If the uterus be movable at all, it will almost invariably glide past the promontory into its proper place and can now be held in position by means of a pessary. The intrauterine sound, on the other hand, which was advocated by the last speaker, carries with it the danger of perforation.

DR. ALBERT GOLDSPOHN, Chicago: The great evils which did occur in conjunction with pessaries, and therefore led the profession to exclude them from use, were not due to the pessary, but to the ignorant use, the abuse of the pessary in introducing it as if it were a lever or a jack-screw to raise something. Dr. Boldt properly called attention to the fact that the pessary must not be used unless the uterus is in normal position, and that that normal position must be secured by bimanual palpation, not by intrauterine instrumentation. This implies that the man who is able to restore a uterus by bimanual palpation will probably also recognize complications that would contraindicate its use. But I should like to call attention to one error that I think Dr. Boldt makes in declaring that if the uterus is held in normal position, in two to five years the round ligaments will in 20 per cent. of patients recover their normal shortness and then continue to hold that uterus. That is entirely the contrary of my own observation, and I have for at least fifteen or twenty years never had less than thirty patients with pessaries to look after. I can cite case on case of women who, on account of their aversion to surgery and because they had nothing but simple displacements, were treated by me with pessaries. The round ligaments of the uterus stretch and we might think that by the relief of tension they would retract, but that conclusion is not warranted. There is a period of grace, however, for the round ligaments, and that is shortly after labor when the element of involution is yet on the uterus and its appendages. If three or four weeks after labor the physician will examine his patient, and, finding a retroversion, will bring the uterus into anteversion by having the patient assume the knee-chest posture and by intelligent bimanual manipulation, and will then fit a pessary to hold that heavy uterus there assisted by the knee-chest posture assumed two or three times in the twenty-four hours, he will meet with success. He will find it difficult at first and will have to examine and make readjustments frequently until the uterus becomes lighter; but if it be kept in anteversion successfully all the time, by such care on the part of both the doctor and the patient for about a year and the pessary be then removed, the displacement will be cured in the majority of the cases.

DR. BERTHA VAN HOOSEN, Chicago: I have treated cases of downward displacement of the uterus successfully by the employment of a series of glass globe pessaries. This method is not especially useful in cases in which there is almost no muscular tissue in the perineum. The only time when the patient will have any difficulty is when she goes to stool. Any pessary that will remain in while the patient is standing or walking will be large enough. After the pessary is worn for a couple of months there will be difficulty in removing it, and the fingers will have to be placed in the rectum, probably causing an abrasion of the vaginal mucosa. When this pessary is re-

moved a smaller size should be inserted to be worn for two or three months. After wearing this there will again be difficulty in its removal, and a still smaller size is then inserted. In two to eight years you will be able to let that patient go without any pessary at all. By this method you are simply taking advantage of the natural atrophy that is going on. Any patient who is over 50 who has some muscular tissue in the perineum and has patience can be treated in this way very successfully. Sometimes there is atrophy in the cul-de-sac of Douglas which will make it almost impossible to retain the glass pessary, and it is contraindicated here. I have applied the glass globe in cases in which the vagina had a large ulcerated surface and when the pessary was removed the surfaces had completely healed and the pessary had caused no irritation.

DR. A. ERNEST GALLANT, New York: In some cases I have been surprised, when the patient returned, to find that the pessary had turned "end for end." A careful study of the pessary and these cases convinced me that the usual plan of introduction was wrong. The smaller end of the pessary is like a wedge, and it is so rounded that when that end is placed downward it slips from under the symphysis and out through the vulva whenever any pressure from above forces it down. On the other hand, with the small end uppermost, the cervix rests in perfect adjustment and does not wobble, the broad end under the symphysis lifts the floor of the bladder, and no amount of force can dislodge it, unless the perineum is torn or the pessary is not of a proper size. I have introduced the pessary in this way many thousands of times and it certainly fits better and holds the uterus in good position.

DR. FRANK HINCHEY, St. Louis: I think that Dr. Goldspohn is right in taking issue with Dr. Boldt in regard to the function of the round ligaments, but he gives no explanation of this theory. I think that we are wrong in placing any reliance on the round ligaments for acting as a support to the uterus in any way, either in holding it forward or having any effect on it when it is backward. I believe that the round ligaments are relics of the quadrupedal stage, when their purpose was to prevent the heavy, pregnant uterus from pitching forward when the animal was leaping. In the human being, however, there is no use for them. This is well shown by the fact that all operations for replacement of the uterus by shortening of the round ligaments are useless unless the pelvic floor is perfectly repaired.

DR. W. O. HENRY, Omaha: I believe that the general practitioner will find it better to put the patient in the knee-chest position, get the uterus back in its place and then insert the pessary. It can be done much better in this way than by lifting the uterus up, with the patient in the dorsal position. I do not believe it wise to use injections of any kind during menstruation. I believe that Schultz's method of treating a misplaced uterus bound down by adhesions is always wrong, and I object to that procedure entirely. I think that we are working in the dark and should never subject a patient to the tearing up of these adhesions under an anesthetic unless the work is done under the eye.

DR. H. J. BOLDT, New York: I have never seen cases of forward displacement with descent of the uterus cured by mechanical support. The percentage of patients cured in the cases I have mentioned was taken at random. I know that a certain proportion are cured and I take it that from 20 to 25 per cent. of those patients wear a support from two to five years. No one should think of introducing a pessary as Dr. Hall suggests, with the uterus fixed by adhesions. In regard to Dr. Henry's remarks I have seen good results in a few instances, but personally I am not in favor of the method.

**Study of Pediatrics.**—Caille, in the *Archives of Pediatrics*, states that the broadening influence of pediatric study has not been sufficiently emphasized and is probably underrated, but must be conceded as we realize how thoroughly the practice in diseases of children brings us into close touch with almost every other special line of medical work, including general surgery, the eye, ear, nose and throat specialties, orthopedics, skin diseases, etc.



NITROUS OXID AND OXYGEN IN DENTAL  
AND MAJOR SURGERY.\*F. K. REAM, M.D., D.D.S.  
CHICAGO.

Since the discovery of chloroform and ether post-operative pneumonia, renal complications and other deleterious results, as well as the danger of death from their use, have baffled the medical fraternity, and the only apparent escape from this condition seems to be through the widespread use of nitrous oxid and oxygen.

The dentist has been so prominent in the discovery of anesthesia and has made his work so well known that this paper shall deal mostly with the surgical field. It is well to state, however, that the nasal administration of nitrous oxid combined with pure oxygen is surpassing all previous results in dental anesthesia.

Recent clinical experiments prove, beyond doubt, that this anesthetic is of great value to the surgeon and a boon to suffering humanity. The premonitory signs of danger produced by nitrous oxid and oxygen are so marked that the patient is much safer in the hands of an inexperienced operator than if chloroform or ether is used, to the extent that the respiration and not the heart is mainly involved, the latter continuing in its normal rhythm some minutes after muscles of respiration are completely paralyzed.

Contraindications for the use of this anesthetic are atheromatous and arteriosclerotic conditions, although I firmly believe that by double diligence with pure oxygen even patients with these conditions may be safely anesthetized. Experiments are under way at the present time by one of our leading surgeons for the purpose of testing the blood pressure with this anesthetic and the safety of its use. Inasmuch as he is substituting common air for pure oxygen, his report will not be conclusive.

Asphyxial symptoms always warn the anesthetist, however, giving abundance of time for the application of simple means for resuscitation, namely, rhythmic traction on the tongue, douching the face with cold water, pulling the chin upward, uniform pressure on the chest, and, in cases of complete suspension of respiration, weak ammonia held to nostrils, etc. Hypodermic injections of strychnin and brandy or ether do no good; the same is true of amyl nitrite, and time should not be wasted trying these restoratives.

Let it be understood that death may follow nitrous oxid anesthesia when the gas is too freely administered, especially when not combined with pure oxygen. It seems to be the consensus of opinion of the medical profession that the time has arrived for the employment of the professional anesthetist, with whom the legal responsibility of death must rest instead of with the surgeon. Hospital staffs and operators are complaining of the loss of their anesthetists whom they have carefully trained. These men remain but a short time in our hospitals, on account of lack of remuneration, and engage in more lucrative practice.

It is generally conceded that there is no medical subject more grossly misrepresented than the concomitant effects of anesthesia. These effects are usually attributed to a thousand and one ills, and while they have been regretted by the surgeon, he has hitherto seen no avenue of escape.

Both primary and remote mortality of chloroform and ether admonish the surgeon to look for a substitute, which seems to have been found in nitrous oxid and oxygen, though the value of this substitute is not fully comprehended by the profession.

Experience shows that the much dreaded cyanosis is due to the lack of oxygen and not to any specific poisonous effects of the gas.

Regarding the danger of death, it is an established fact that the only cases on record of death from the administration of nitrous oxid were occasioned by the administration of this gas alone, and that death has never occurred when nitrous oxid combined with pure oxygen has been administered. Kolischer also quotes the statistics of Bellamy, who reports 1,000,000 administrations in England in four years. It is further stated that seventy-five thousand patients undergo this anesthesia in America annually.

Dr. Gustav Kolischer, a recent and ardent advocate of the use of nitrous oxid and oxygen in major surgery, quotes Israel, who says that 75 per cent of all the deaths occurring in his kidney work are heart deaths. "A perusal of the statistics of trustworthy surgeons shows that the great majority of their deaths in prostatectomies occur in the first forty-eight hours. Nothing is more feared by laparotomists than the paralysis of the bowels due to general anesthesia and the suspension of the activity of the kidneys."

Complex apparatus and trained anesthetists have failed to lessen the deleterious influences of anesthetics on the heart, excretory organs and general vitality, or to alter the total results.

Yet literature, up to the present time, attributes none of these results to nitrous oxid and oxygen; and this statement coincides with reports of such American surgeons as Kolischer, Beck, Bevan, Baccus, Andrews and Lobdell. Our own specialists, like Teter, Thomas and Schamberg, concur in this report. I have during eighteen years performed approximately thirty thousand administrations without a single accident, and at least one hundred of these administrations were for major operations. One office in Philadelphia reports nearly three hundred thousand administrations without an accident.

The anesthetic power of nitrous oxid and oxygen has never been doubted, but the cyanotic conditions arising from its use prevented its adoption to any great extent until, of late, pure oxygen has been the necessary adjunct to place it foremost in anesthetics.

The most noteworthy advance in the use of nitrous oxid and oxygen, as an anesthetic in major surgery, is due to the admixture of pure oxygen, which has thoroughly changed the plan of administration.

Many experiments like the one which M. Martin reports have been tried. He kept a dog in a chamber for three consecutive days, giving it nitrous oxid and 15 per cent. oxygen, after which it regained its normal faculties.

Sprouting seeds fail to grow when placed in nitrous oxid, but resume their growth when pure oxygen is added. Let it be understood that atmospheric air is not a satisfactory substitute for oxygen, especially vitiated air of the crowded surgery room, and that cyanotic conditions may be overcome eight times quicker with pure oxygen.

It is impossible to state definitely the percentage of pure oxygen that may be administered to a patient,

\* Read in the Section on Stomatology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



since there are no fixed rules and every patient requires treatment according to that patient's susceptibility to anesthesia. To one patient, 92 years of age, I administered 25 per cent. oxygen at the close of one hour's anesthesia, while other patients are awakened on a 5 to 10 per cent. An experienced anesthetist will quickly supply the needed proportions required by each patient.

It should be remembered that other anesthetics depress, while nitrous oxid and oxygen stimulate, and the heart is the last organ to give up its function. One of the chief barriers to the universal adoption of this, the safest of all anesthetics, and the one chiefly considered by the surgeon, is the expense, which, however, is not prohibitive, as it might seem. The actual expense per hour is approximately \$6 in consumption of gases.

It should be known that the surgeon in many cases is not free from the censure of selfishness when he will not share his fee with the anesthetist in order to permit his patient to escape the primary and secondary effects of general anesthesia. The anesthetist should be well paid and thus encouraged to devote himself to his specialty.

It is important to mention at this time a new apparatus, invented by Dr. Charles K. Teter, of Cleveland, Ohio, which makes it possible to administer definite proportions of nitrous oxid, chloroform or ether, with pure oxygen. I use the apparatus exclusively in my anesthetics, as does the inventor, Dr. Teter. Important among his recent additions is a warming attachment eliminating the refrigeration of cylinders, also permitting the patient to breath warm air.

In obstetric practice this anesthetic is excellent, because we may obtain analgesia and even anesthesia without muscular relaxation or disturbance of the normal course of labor. Uterine contraction is not in the least interrupted by the use of this anesthetic according to the following method: On the approach of labor pains the patient is permitted to inhale three or four breaths, placing her in a state of analgesia; the inhaler is then removed; and the process is repeated as often as necessary. Should it be desired to retard labor, a small percentage of chloroform may be added. Owing to the rapidity of the action of the gas and its rapid elimination it stands foremost as an obstetric adjuvant. I report two cases of directly opposite type:

CASE 1.—Patient was a multipara, aged 40. Her first child had been delivered with instruments, after thirty-six hours' dry labor. The patient had the left ovary and tube removed and extensive adhesions, due to localized peritonitis, broken up. Her general condition was one of muscular atonicity, malnutrition, etc., due to previous years of suffering preceding laparotomy. The patient became pregnant fifteen years after the operation, gained thirty-six pounds during gestation and was restored to normal health.

*Anesthesia.*—At full term and approach of delivery, preparation was made to use gas and oxygen. The patient was instructed to refrain from calling for the gas during the early stages of labor. When the pains became severe and more frequent, she was permitted to inhale about four breaths and, as numbness was felt, the mask was removed. This was repeated during four hours with gratifying results to the patient. To quote her statement: "Childbirth has no more terrors."

CASE 2.—The patient was a multipara, aged 30, robust, muscular and athletic. The onset of labor indicated rapid birth. The pains came thick and fast with increasing severity.

*Anesthesia.*—The patient demanded gas from the beginning. A rigid and undilated os required retardation of labor, which could not be obtained with nitrous oxid and oxygen alone, so 6 per cent of chloroform was combined with the gas until dil-

tion was obtained and then the former methods pursued. The patient was delighted, and extolled the method. Labor was normal and the placenta was naturally expelled.

Final deductions from these cases are: 1. There is no danger of postpartum hemorrhage superinduced by the anesthetic. 2. Patients may have abundance of anesthetic to relieve suffering. 3. A safe and reliable anesthetic may be constantly at hand in case of instrumental or abnormal delivery.

I herewith briefly present a few average abstracted cases and reports of surgeons for whom I have administered this anesthetic:

CASE 3.—Patient, male, aged 48. Operation by Drs. L. L. McArthur and L. E. Frankenthal for carcinoma of pancreas with secondary obstruction to common duct and subsequent enlargement of gall bladder. Patient extremely jaundiced. Nitrous oxid and oxygen anesthetic, one hour and thirty minutes. Results ideal. Patient awakened perfectly rational, and conversed five minutes after operation.

CASE 4.—Patient, male, 30 years of age, tanner. Double inguinal hernia, complicated on one side by omental prolapse, which was adherent to sac, due to old injection of phenol into sac for purpose of cure. Anesthetic, nitrous oxid and oxygen, for one hour and twenty minutes; in every respect satisfactory; patient did not resist in the least and came out of anesthetic with hardly any after-effects. He had a slow pulse and vomited once three hours after anesthetic. (March 20, 1908, Dr. Carl Beck.)

CASE 5.—Patient, female, wife of physician. Large internal and external hemorrhoids, cyst of vagina and perineorrhaphy. Nitrous oxid and oxygen anesthetic for about one hour, excellent anesthetic, no after effects except a slight nausea. (March 24, 1908, Dr. Carl Beck.)

CASE 6.—Patient, female, 48 years of age, "came to hospital March 10, 1908, in an extremely anemic condition due to uterine hemorrhages which had continued for six weeks previously. The vaginal hysterectomy, which was performed on March 12, required an anesthetic for nearly two hours, owing to the complications in the case. The patient was awake ten minutes after the operation, with no ill effects from the anesthetic, no vomiting having followed, and kidneys kept on secreting three to eight ounces of urine every three hours without catheterization. The patient has made a splendid recovery. (Dr. Emil Beck.)

CASE 7.—Patient, male, weighing about two hundred pounds, very powerful, alcoholic, on whom an operation for perivesical abscess with plastic work on the urethra had to be performed. Operation very extensive, for perineal and suprapubic cystotomy. Patient took over four hundred gallons of gas and 1 to 5 per cent of oxygen during the operation. Patient awoke in the operating-room five minutes after the anesthetic was stopped, talked rationally, had no bad effects from the anesthetic, and could be fed with a light diet the same day.

"For difficult cases, or those in which kidney complications are feared I believe this anesthetic is preferable to ether, as the patients are always in better condition as soon as they wake up." (Dr. Emil Beck.)

CASE 8.—Patient, male, aged 5. "At age of two years had severe endocarditis without rheumatism or other apparent cause; life despaired of. Mouth breather, with occasional running ears and intermittent deafness. Examination of heart showed evidence of slight left heart enlargement and systolic murmur at apex and another loud one with seat at aortic area. Pulse-average 85, of fair quality with an occasional intermission. Owing to above condition chloroform or ether was contraindicated. Removal of adenoids by means of Löwenberg's forceps introduced by the mouth and straight forceps by the nose. General anesthesia by nitrous oxid and oxygen. Was most satisfactory in every way. May 6, 1908." (Dr. A. M. Corwin.)

CASE 9.—Patient, female, aged 38. "Ovariectomy, appendectomy and Coffey's operation for shortening round ligaments. Patient was anesthetized with nitrous oxid and oxygen, taking 7 to 10 per cent of the latter, with not a particle of cyanosis present. No nausea or disagreeable after-effects. A delay



of one-half minute was occasioned to obtain relaxation when adhesions were broken up from the inflamed uterine. A greater test could not have been made of this anesthetic than in this case, which proved highly satisfactory in the presence of one hundred visiting physicians. The only possible criticism of this anesthetic is the expense." (May 29, 1908, Dr. A. J. Ochsner.)

CASE 10.<sup>2</sup>—Patient, male, aged 35. "An incision was made from the external canthus of one eye, through the eyebrow, across the bridge of the nose, through the opposite eyebrow, to the external canthus. A Gigli saw was passed into the incision, through bone and periosteum, sawing through the septum between the two frontal sinuses. This exposed the cavities of the frontal sinuses, which were thoroughly cleansed of their pathologic condition (granulations); the natural opening into the nose was thoroughly established by enlarging, and through the floor of this frontal sinus the interior ethmoid cells were thoroughly broken down and curetted. Nitrous oxid and oxygen was administered by Dr. Ream during the whole time of the operation, which lasted two hours and which was a perfect success as far as anesthesia was concerned, without the least bad after-effects. In fact, the patient was awake before he reached his bed. This patient had two radical operations on his mastoid previously and during each of these two previous operations a great deal of trouble was encountered from the anesthesia, which was both ether and chloroform, the patient having bad after-effects especially." (May 9, 1908, Dr. Joseph C. Beck.)

I report three major operations in which I administered nitrous oxid and oxygen for Dr. Gustav Kolischer during May, 1908:

CASE 11.—Patient, male, aged 30. Tumor of the bladder. Suprapubic operation. Total suture of bladder and skin incision. Duration of operation, fifty-four minutes. Patient returned conscious to bed. Urinated naturally three hours after operation.

CASE 12.—Patient, male, aged 40. Papilloma of the bladder. Suprapubic total suture of the bladder and skin incision. Duration of operation, forty minutes. Urinated naturally three hours after operation. Slight nausea for about five hours.

CASE 13.—Patient, female, 63 years old. Cyst of the left ovary, and cancer of the cervix. Abdominal celiotomy, removal of the cyst and Wertheim's operation for cancer of the uterus. Duration of the operation, sixty-five minutes. Pulse, 88. Patient regained consciousness after twenty-five minutes. No nausea. Took fluid without any discomfort.

CASE 14.—Patient, female, aged 58. Exploratory laparotomy. Suspected uterine sarcoma. Case pronounced inoperable on account of severe growth and extensive adhesions. Patient had severe myocarditis. Was anesthetized with nitrous oxid and oxygen for forty-five minutes without disagreeable symptoms. Marked absence of cyanosis and nausea. Recovery within five minutes. (June, 1908, Dr. E. C. Dudley.)

CASE 15.—Patient, female, aged 60. Vaginal and abdominal hysterectomy. Same anesthetic, lasting one hour and ten minutes. Results ideal. To quote Dr. E. C. Dudley: "This is the best anesthetic I ever saw in such grave cases." This opinion was also concurred in by Dr. C. P. Caldwell.

52 State Street.

#### DISCUSSION.

DR. C. K. TETER, Cleveland: I have for the last five years devoted my time exclusively to investigations along this line. I have administered this anesthetic over 12,000 times, and over 1,000 of these administrations were for extensive cases of major surgery lasting from a half hour to three hours. So far as my experience goes, the time does not make any difference; you can anesthetize a patient for a half hour or for three hours, if consistent with modern surgery to keep the patient under the influence of an anesthetic that long. How long a patient could breathe nitrous oxid without bad results would depend a great deal on the condition of the patient and the way it was administered. Nitrous oxid and oxygen form undoubtedly the safest anesthetic now known, and it is more free from after-effects than any other. Following its use, no

degenerative changes take place in the system so far as we have yet discovered. I have given it in all stages of degenerative conditions in the system—sugar in the urine and other kidney diseases, and have never yet had complaint that the patient was rendered any worse. It is quickly eliminated from the system.

The administration of nitrous oxid and oxygen for a major operation requires considerable skill. Almost any one can render the patient unconscious so that he will not be cognizant of the pain of minor operations; but to obtain complete relaxation for extensive laparotomies requires an expert. As a rule, when we begin work with surgeons in laparotomy or other extensive work, they require relaxation; but after they get used to this anesthetic and accustomed to a little rigidity and necessarily more or less cyanosis, they put up with these factors on account of the patient being in a better condition, without mixing chloroform or ether with the nitrous oxid. At first surgeons said that the rigidity hampered them, but now they find that rigidity throughout the whole operation helps more than it hinders; when they close the incision they can do it more rapidly than if the muscles were flabby.

The nature of nitrous oxid is such that to derive its anesthetic effect it has to be given practically pure. That is its drawback. If we could use 50 per cent. pure and get the desired anesthetic effect, it would be an easy matter to administer it, but we have to use it about 90 per cent. pure, and with 10 per cent. only of air, respiration is rendered difficult. For this reason the combination of oxygen with nitrous oxid gives better results than dependence on air. In the average case, eight parts of oxygen will overcome the asphyxial effect of the nitrous oxid. If you are depending on the atmosphere to get the eight parts oxygen, it will be necessary to admit about forty parts air and unless your patient is extremely susceptible to the effects of nitrous oxid you will not get surgical anesthesia. By means of the nasal inhaler, the anesthetic being taken through the nose, the mouth is not obstructed, and oral operations can be performed without the addition of chloroform or ether. With a nasal inhaler you can keep your patient under the influence of the anesthetic indefinitely. It is more difficult to use than the face inhaler, but it can be done very nicely so that all oral operations, as extraction of teeth, etc., can be done as a surgeon should do his work. The idea of the dentist giving nitrous oxid and then accomplishing his work in a few seconds, is not a good one, for he can not do it skillfully and can not leave the mouth in the condition in which it should be left. If by means of the nasal inhaler he keeps his patient anesthetized sufficiently long for him to do the work properly, the gums will be left in a good condition, he has time to clean up the whole mouth at one operation, and when the patient comes out from under the influence of the anesthetic he has no recollection of the work. In doing extracting for dentists I seldom use a face-piece, but invariably the nasal inhaler. I want to know that I can take all the time necessary to do the work as it should be done.

DR. FREDERICK B. MOOREHEAD, Chicago: Nitrous oxid is an established means of anesthesia. Prominent surgeons are using it, and gradually are coming to use it more and more. The question as to the safety of nitrous oxid anesthesia has not been decided. Chloroform has been used as a general anesthetic for a great many years, and only within the last three or four years was its real danger discovered—that of the production of diacetic acid and acetone and subsequent fatty changes in the liver and other vital organs, causing death as a secondary result. We do not know what the permanent effect of the two-hour administration of nitrous oxid is going to be on the hemoglobin after a long period of time. The work of greatest importance in this is yet to be done, and that is to determine the relation between nitrous oxid and hemoglobin. For two years I have with two or three others been trying to do that work, but we have found it exceedingly difficult, inasmuch as it requires a great deal of physiologic chemistry, because hemoglobin is a very intricate compound to study; but that is where the work must be done. The administration of nitrous oxid anesthesia, whether we shall use air or oxygen, depends a great deal on the personal equation, a factor we must



always keep in mind in discussing every subject. I can not take the position that a man can not give nitrous oxid perfectly unless he uses oxygen; no other man can take the position that it can not be administered without air; the administration of this anesthetic depends more on the personal equation than does any other. Our trouble in giving nitrous oxid over a long period of time has been in the fact that we have asphyxiated our patients and not anesthetized them. Its absorption is necessarily slow, and where that critical contact between hemoglobin and nitrous oxid takes place we have not yet discovered. There is undoubtedly an absorption of nitrous oxid into the hemoglobin, this producing the anesthesia. By administering the drug over a long period of time we get anesthesia, and the production of a large amount of carbon dioxid, which is deleterious. We not only get asphyxia, but delirium and toxic conditions following the absorption of a large amount of carbon dioxid. The relation between nitrous oxid and hemoglobin, the nature of the combination and the possible effect on the patient constitute, I believe, the vital question in the whole matter.

The patient will not become cyanotic if gas and air are given in the right proportion. There may be difficulty in producing the anesthesia, however. We can with nitrous oxid and air get anesthesia in the majority of cases without asphyxia, but we have patients with apparently an idiosyncrasy, who, therefore, require more gas to produce anesthesia than is safe to give.

DR. ORVAL J. CUNNINGHAM, Kansas City, Mo.: It appears that nitrous oxid and oxygen anesthesia is as yet in its infancy. We do not know the theory of its dangers, neither do we know the theory of the dangers of chloroform and ether. We know that deaths from nitrous oxid are rare, and that deaths from chloroform and ether, especially chloroform, are comparatively common. In the millions of times that nitrous oxid has been administered there have been reported only about thirty deaths.

The chemical union of nitrous oxid with the hemoglobin—and it seems that such does occur—must be very loose because its action is transitory and when the gas is withdrawn a quick cessation of the symptoms follows. We know that the nitrous oxid is a true anesthetic agent aside from its asphyxial properties. Pure nitrous oxid, nitrous oxid and air, or nitrous oxid with a deficient amount of oxygen, anesthetizes by the combined action of asphyxiation and the anesthetic properties of the nitrous oxid. We can get complete anesthesia in from four to six minutes by simple rebreathing without the use of any anesthetic agent. This asphyxial element of nitrous oxid anesthesia is easily overcome by the proper use of oxygen, but not with air. The cyanosis produced by nitrous oxid with deficient oxygenation, however, is very different from the cyanosis produced by the action of chloroform and ether, except when the cyanosis of chloroform and ether is from obstructed respiration. The cyanosis of nitrous oxid is from a lack of opportunity for the blood to take up the normal amount of oxygen, is not from an abnormal condition of the nervous or circulatory systems, and is no more dangerous than the cyanosis caused by a paroxysm of pertussis. The cyanosis of chloroform and ether is caused by capillary stasis, which is brought about by atony of the capillary vessels or by impaired heart action. The cyanosis of nitrous oxid comes quickly and disappears quickly when oxygen is added; the cyanosis of chloroform and ether comes on slowly, is preceded by an interval of ashy pallor, and disappears slowly, even though pure oxygen is given. Nitrous oxid and oxygen anesthesia is hardly practical for laparotomies in severe cases, because of abdominal rigidity. For other surgical work it is eminently practical if properly administered.

I believe that attention has not been called heretofore to the action of nitrous oxid and oxygen followed by ether, as in the use of Clover, Bennett and other apparatus. With them it is necessary to discontinue the gas at the end of a minute and a half to two minutes because of the asphyxiation which would otherwise follow. This necessitates pushing the ether, and also the use of rebreathing to prevent the patient from coming out. But even then the patient will almost invariably come out enough to swallow about as much as if ether had been

given alone. But if oxygen be added to the nitrous oxid, complete nitrous oxid anesthesia can then be continued until ether narcosis is thoroughly established. By this means we prevent a return of the reflexes between the gas and ether which eliminates the greatest factor in the production of post-operative nausea and vomiting, viz., the swallowing of the ether-laden secretions of the mouth.

## THE NON-RELATIONSHIP OF ACTIVE CELLULAR DIVISION TO THE PROGNOSIS IN MALIGNANT DISEASE.\*

GUTHRIE McCONNELL, M.D.

ST. LOUIS.

There appears to be a wide-spread opinion that the progress of a given case of malignant disease can be foretold by means of a microscopic examination of a portion of the tumor. In other words, it is believed that the number of actively dividing cells found in the tissue bears a definite relation to the rapidity of the growth of the neoplasm. The greater the number of actively dividing cells, according to this opinion, the more rapid the formation of new tissue and consequently the graver prognosis.

In various text-books, in monographs, in pathologic reports, and by direct word of mouth is the above thought passed on from one to another.

Attention was first drawn to this subject by the fact that the majority of squamous epitheliomata contain many mitotic cells. As is well known, this form of carcinoma is not as a rule as malignant in its course as are the other varieties. It was found that in a large percentage of these cases there were many mitotic figures, although the clinical history was that of a slowly growing neoplasm. This being the case, it was thought well to investigate, as thoroughly as possible, the question of the relationship, if any, between the presence of actively dividing cells and the seriousness of the lesion.

In the estimation of the activity of the cells no very accurate method could be devised. Those cells whose nuclei were not broken down and which stained intensely were taken into consideration as well as those in which actual mitotic figures could be observed. The fact that the nuclei remained unbroken and stained very deeply was considered as an indication of the presence of a large amount of chromatin such as is found in actively dividing cells.

The question as to the number present was also a difficult one to answer and had to be done in a purely personal and arbitrary way. It was not difficult to separate the "very many" from the "very few" but it was at times hard to decide when the "many" point had been reached. If several fields of the microscope had to be examined before active cells could be found that specimen would be considered as having few. If every field had several it was then said to belong to the type having many dividing cells.

After taking up the percentage of specimens containing many and few mitotic cells their relation to the duration and to the rapidity of the growth was considered. These figures are open to criticism on certain grounds, particularly when the rapidity is examined into. In many of the cases there is a history of the growth having been present for a number of years, during the greater part of which time it has

\*From the Laboratory of the St. Louis Skin and Cancer Hospital.



progressed but slowly. In a number of such instances the patient, when seen by the physician, will say that for the past few months the tumor has been increasing rapidly in size. This is most common in cases of squamous epitheliomata of the skin surfaces. Out of thirty-six instances of squamous epitheliomata there were twenty-five (69.4 per cent.) in which actively dividing cells were numerous, while in the remaining eleven (30.6 per cent.) there were few such cells.

Of the above twenty-five cases with actively dividing cells there were fifteen (60.0 per cent.) in which the patient said that the epithelioma had been growing rapidly and ten (40.0 per cent.) in which there was a history of a slow course.

When the carcinomata are examined it is found that out of twenty-eight cases nineteen (67.8 per cent.) contained many active cells, while in nine (32.2 per cent.) there were few. These figures are practically similar to those found in the squamous epitheliomata.

Of the nineteen above cases thirteen (68.9 per cent.) were of rapid growth, while the remaining six grew slowly.

From a consideration of the foregoing it is evident that very little conclusion could be drawn concerning the significance of the number of the cell divisions. This point, it seemed, could be determined only by following the clinical course of the disease after the examination of the tissue. These specimens were obtained at the time of operation, fixed in Zenker's solution and stained in various ways.

In all there have been twenty-two cases followed, after leaving the hospital, for periods ranging from one of four months to one of two and a half years. From a study of these there does not appear to be any relationship between the abundance of dividing cells and the period elapsing before death takes place. In all these instances the number of active cells varied from many to extremely numerous; in none were there found but a few.

Of these above cases there were eight in which the patient said that the growth had been rapid. Three of these patients died eight, sixteen and seven months after the operations, the first two of senility, being eighty and seventy years old respectively; the third

TABLE OF CASES OF MALIGNANT DISEASE.

Name.	Sex.	Age.	Laboratory Number.	Nature and Location of Growth.	Duration.	Rate of Growth.	Number of Multiplying Cells.	Subsequent History.
J. N. . . . .	M.	71	603	Epi., lip . . . . .	7 mo. . .	Rapid. . .	Many. . . . .	Died from interference with eating 7 months after first examination.
M. R. . . . .	F.	80	292	Car., breast . . . . .	3 yr. . .	Rapid. . .	Many. . . . .	Died 8 months after first examination; senility.
E. S. . . . .	F.	70	287	Car., breast . . . . .	2 yr. . .	Rapid. . .	Many. . . . .	Died 16 months later.
W. J. . . . .	M.	77	33	Epi., ear . . . . .	5 yr. . .	Rapid. . .	Very many. . .	Alive 5 months later.
B. K. . . . .	F.	53	708	Car., uterus . . . . .	1 yr. . .	Rapid. . .	Many. . . . .	Alive 6 months later.
Mrs. K. . . . .	F.	. . .	. . .	Car., nares . . . . .	3 mo. . .	Rapid. . .	Many. . . . .	Alive 10 months later.
R. W. . . . .	F.	73	415	Car., cervix . . . . .	1 yr. . .	Rapid. . .	Very many. . .	Alive 18 months later.
G. S. . . . .	M.	73	32	Epi., lip . . . . .	11 mo. .	Rapid. . .	Very many. . .	Alive 27 months later.
J. L. T. . . .	M.	73	358	Rodent ulcer, chin.	14 yr. .	Slow. . . .	Many. . . . .	Died 6 months later from interference with eating.
Mr. S. . . . .	M.	62	888	Epi., palate . . . . .	5 mo. . .	Slow. . . .	Many. . . . .	Died 7 months later from interference with eating.
Mrs. C. . . . .	F.	52	687	Car., breast . . . . .	2 yr. . .	Slow. . . .	Many. . . . .	Died 6 months later from hip joint amputation. No recurrence in breast.
E. Q. . . . .	F.	71	36	2d epi. of axilla . . . .	2 mo. . .	Slow. . . .	Very many. . .	Died 7 months later.
S. O'M. . . .	F.	74	. . .	Rodent ulcer, orbit . .	5 yr. . .	Slow. . . .	Many. . . . .	Died 11 months later.
I. M. W. . . .	F.	51	341	Car., breast . . . . .	2½ yr. .	Slow. . . .	Many. . . . .	Died 17 months later.
Mrs. B. . . . .	F.	64	619	Car., breast . . . . .	1½ yr. .	Slow. . . .	Many. . . . .	Alive 30 months later. No recurrence.
G. K. . . . .	F.	50	. . .	Car., uterus . . . . .	6 mo. . .	Slow. . . .	Many. . . . .	Alive 11 months later.
J. E. . . . .	F.	54	110	Rodent ulcer, ear . . .	24 yr. .	Slow. . . .	Many. . . . .	Alive 4 months later.
M. M. . . . .	F.	70	152	Rodent ulcer, eye lid.	6 yr. . .	Slow. . . .	Many. . . . .	Alive 22 months later.
C. B. . . . .	F.	55	211	Car., breast . . . . .	2 wk. . .	Slow. . . .	Many. . . . .	Alive 21 months later.
M. L. . . . .	M.	45	647	Epi., lip . . . . .	7 mo. . .	Slow. . . .	Many. . . . .	Alive 12 months later.
Mrs. F. . . . .	F.	74	894	Epi., orbit . . . . .	13 yr. .	Slow. . . .	Many. . . . .	Alive 7 months later.
C. Y. . . . .	M.	54	962	Epi., hand . . . . .	3 yr. . .	Slow. . . .	Very many. . .	Alive 6 months later. "Am practically well."

With rodent ulcers a somewhat different condition is found. As might be expected from their chronic course, there were in twenty cases only nine (45.0 per cent.) in which many active cells were present while in eleven (55.0 per cent.) such cells were very few. In all the twenty the growth of the tumor had been slow.

The duration of the growth also does not appear to have any bearing upon the number of active cells, the majority of the tumors containing many such. Of twenty-eight epithelial growths of two years' duration or longer, twenty-one (75.0 per cent.) contained many active cells. When thirty-six of less than two years' existence were examined, twenty-five (69.4 per cent.) showed active division. From these figures it would seem evident that the duration has no direct bearing. There is, however, one point that might be brought forward that would tend to vitiate this conclusion. The patients usually come to the physician as a result of an increase in the rapidity of the growth of the neoplasm. At such a time the cells may be in a more active state of multiplication and in the tissues obtained the active cells would be more numerous.

died mainly as the result of interference with swallowing, the floor of the mouth being involved. The other five were still living when last seen, five, six, ten, eighteen and twenty-seven months later.

The remaining fourteen tumors had been of slow growth. In six of these cases the patients died in from six to seventeen months, but in several of them death was not the direct result of the malignant disease. One of them was a case of an epithelioma of the roof of the mouth. Another patient had a rodent ulcer of the chin. These patients died at the end of seven and six months from inanition. One died six months after the first operation as a result of a hip-joint amputation done on account of a fracture of the femur due to a secondary deposit of carcinoma from the breast. At the time of death there was no recurrence in the mammary gland.

The deaths of the other three patients occurred seven, eleven and seventeen months later. As the patients were seventy-one, seventy-three and seventy-four years old, senility was an important factor.

The remaining eight were still alive and apparently



well four months to two and a half years after the operation.

From the above results it would seem quite evident that the clinical course of the disease has very little relation if any to the number of actively multiplying cells in a given specimen of neoplasm.

It is clear then that it is not wise for the pathologist to attempt to make any prognosis concerning the duration of the life of the patient by drawing conclusions from his microscopic examination. It also would seem advisable not even to suggest that the tumor is apparently taking on a rapid growth, as that could easily give the clinician an incorrect idea.

The accompanying table gives a summary of the cases from which the conclusions are drawn.

410 North Jefferson Avenue.

### THE VAGINAL, THE VERTICAL-ABDOMINAL, AND THE PFANNENSTIEL INCISIONS.

THREE PROCEDURES FOR ENTERING THE PELVIC AND AB-  
DOMINAL CAVITIES.\*

E. L. MONTGOMERY, M.D.

Professor of Gynecology in Jefferson Medical College,  
PHILADELPHIA.

Many and spirited have been the discussions over the relative merits and demerits of the vaginal and abdominal routes in the practice of pelvic surgery. In discussing them and the additional procedures, I shall endeavor to do so, not as a partisan, but with the sole purpose of making evident the conditions under which they may become useful, where one may be preferable, and thus enrich the resources of the conscientious investigator in this realm.

#### VAGINAL ROUTE.

Subsequent to, in many cases prior to infection, the tubes and ovaries not unfrequently drop into the retro-uterine pouch. The infection drains into this most dependent portion and forms a large collection varying between dirty serum and foul acrid pus, according to the character and virulence of the infection. Such a collection is walled off from the general peritoneal cavity by a mass of exudate,—Nature's barrier against the spread of infection. Incision through the posterior vaginal fornix, in such conditions, ensures the evacuation of the accumulation without danger of soiling the peritoneum. Independent tubal or ovarian abscesses can be opened into and drained without the spread of the infection. Under such circumstances, does it not seem the height of folly to attack such a collection from above?

Certain considerations are of importance in determining the selection of the vaginal route. The vagina must be dilated, or readily dilatable, hence the procedure should not be advised in a virgin or nulliparous woman with a small vagina. The collection, whether serum, pus or blood, must be situated in the retro-uterine pouch or be readily accessible through it. Collections in a single tube or a suppurating ovary situated above the superior strait are preferably treated by abdominal section. In the large majority of cases, the vaginal section should be made through the posterior fornix, for the reason that this is the most dependent

portion of the peritoneum and drainage is most effectually accomplished. Access is here most readily afforded, as the tissue through which the incision is made is but a quarter of an inch in thickness.

Large collections of pus, however, will frequently necessitate an anterior colpotomy as well, in order to afford vent to accumulations in front of the uterus and the broad ligaments. The anterior incision facilitates the investigation and treatment of perisalpingitis and perioophoritis, when the affected structures are fixed in or near their normal situation. I would, then, advise vaginal incision for retro-uterine collections as a procedure which will render an abdominal incision at the same, or a subsequent date, less grave and may frequently make it unnecessary.

The vaginal route is of especial value in exploring and treating diseases of the tubes and ovaries, and particularly in obscure cases in determining the existence of ruptured ectopic gestation. Some forms of malignant disease of the uterus, some uteri containing small fibroids and occasionally inflammatory conditions of the appendages which justify hysterectomy are best treated through the vagina, particularly when the patient has a large quantity of adipose tissue in the abdominal wall.

#### ADVANTAGES OF VAGINAL ROUTE.

The vaginal route has the following advantages:

1. Drainage is from the most dependent portion of the peritoneal cavity.
2. In a fair proportion of cases, it permits the cure of the patient by a less radical procedure.
3. In a fair proportion of cases, it permits the cure of the patient by a less radical procedure.
3. The convalescence of the patient, even after a hysterectomy, is more rapid and attended with less discomfort than is associated with the same procedure through the abdomen.
4. The restoration to health is expedited, and the patient is spared such sequelae as ventral hernia and ventral adhesions.
5. In many cases, it permits the peritoneum to be closed over the vagina, the stumps of the broad ligaments being brought out so that all ligatures and raw surfaces are excluded from the peritoneal cavity, leaving opportunity for the formation of adhesions. The latter statement can not, of course, apply where extensive inflammatory collections and adhesions have existed previous to operation. In such cases, dependence must be placed on walling off the intestines with gauze to prevent contact with the raw surfaces.

#### DISADVANTAGES OF VAGINAL ROUTE.

The vaginal route has, as its opponents indicate, the following disadvantages:

1. The procedure necessarily must be, in many cases, a blind one, as extensive adhesions must be separated by touch.
2. Injuries to the intestines or previously existing intestinal sinuses are likely to be overlooked, fecal fistula may form and imperil life, or destroy the health and comfort of the patient.
3. Extensive adhesions of the intestines are unrecognized, or form subsequent to the operation, and lead to obstruction and consequent disaster. The initial adhesion need only be a small one on the outer margin of the coil of gut to become a serious menace. With this adhesion as a fixed point, peristalsis may lead to twisting of the loop and result in obstruction. An ob-

\* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



struction may exist which other peristaltic movements may undo, producing symptoms of intermittent obstruction, or the torsion may become aggravated.

#### ABDOMINAL ROUTE.

The abdominal incision in the median line is without doubt the procedure capable of the widest application. It affords ready access to the pelvis, and when required may be so extended as to permit the inspection and manipulation of the contents of the entire abdominal cavity.

Through this incision every stage of an intricate and prolonged operation is continually under observation, ready access is afforded for manipulation, hemorrhage can easily be controlled, and injuries to important viscera recognized and repaired. Operation through this incision is by no means a blind procedure. It is not surprising that its advocates should feel that it fulfills all the requirements and leaves nothing to be desired.

Observation discloses, however, that the victim of an operative procedure suffers greater discomfort during convalescence than is experienced by the patient who has suffered a similar or greater deprivation of organs by the vaginal route. Nature's barriers are necessarily broken down, and both peritoneum and incision are exposed to infection. The situation of the wound is not the most favorable for drainage, as a portion of the cavity, generally that which has been subjected to the greatest injury, is below the most dependent portion of the incision. Drainage, consequently, must be against gravity. In acute infections, this defective drainage frequently compels the operator, in order to be safe, to do more than he would feel obliged to do had the vaginal route been substituted.

#### THE PFANNENSTIEL INCISION.

The Pfannenstiel incision, our third procedure for entrance of the abdominal cavity, is a curved incision, the convexity directed downward, just above the symphysis, passing through skin, superficial fascia and aponeurosis, exposing the pyramidalis and recti muscles. These muscles are separated from each other in the median line and the peritoneum is opened vertically. I have employed this procedure in over 200 abdominal sections and have found it especially acceptable in operations on the intrapelvic viscera. The muscle fibers being much more elastic than those of the aponeurosis permit a much more free exposure of the pelvis through a relatively small incision. In round ligament operations for retro-displacement it brings the operator directly over the ligaments he seeks.

In operations on the bladder, and in extirpation of the uterus for small growths, it is especially valuable. It is to be preferred in operations done on fleshy women, as the superficial incision can be made where there is the least deposit of adipose tissue. In closing the wound it has been my custom to close the peritoneum and muscle margins with a continuous chromic cat-gut suture drawn sufficiently tight to hold the surfaces in apposition and not constrict the muscle tissue. A second continuous suture unites the curved margins of the aponeurosis, and the third the edges of the skin. Particular care must be exercised to prevent any bleeding between the successive layers as a hemothecoe may form, which, if it becomes infected, will imperil the stability of the subsequent support.

#### ADVANTAGES OF PROCEDURE.

The procedure, in addition to the advantages named, has the following:

1. It permits a larger exposure of the field for a comparatively small incision.
2. As the interior and middle lines of suture closing the wound are at right angles to each other, the probabilities of subsequent hernia are lessened.
3. As the incision through the skin is, under ordinary circumstances, within the portion covered by the pubic hair, with its regrowth the site of the scar is completely obscured.

#### DISADVANTAGES OF PROCEDURE.

Its disadvantages are as follows:

1. It is of limited application and consequently unsuitable for the removal of fibroid tumors of any size.
2. The necessarily large opening of the cellular tissue makes it undesirable for the treatment of pus collections within the pelvis, as it is difficult to preserve the wound tissues from infection.

#### DISCUSSION.

Dr. H. J. BOLDT, New York: I take decided exception to a statement by Dr. Montgomery as to the advantage of the vaginal over the abdominal operation. Dr. Montgomery said that convalescence was more rapid by the vaginal route than by the abdominal. The only advantage that I can see in the vaginal compared with the abdominal operation is the fact that there is some risk of subsequent ventral hernia and, furthermore, that there is considerable risk of intestinal adhesions to the parietal peritoneum. These are the chief dangers of the abdominal operation. I believe that those who have followed for many years the transactions of the New York Medical Society will perhaps remember that I was one of the first advocates of the vaginal operation. In fact, I was very enthusiastic about the vaginal operation twenty years ago, and up to fifteen years ago, but gradually I have limited the field of utility of that kind of work. There is no question that vaginal operations have their place in gynecologic surgery, but the field is more limited, I believe, in the hands of experienced operators than it was formerly. I have seen the work of the best gynecologists, exponents of vaginal operations, and it has confirmed my opinion that the operation has a more limited field than formerly was thought and taught. So far as my observation goes, in pelvic inflammation when there are many adhesions, its use is more limited than the abdominal operation, the advantages of which Dr. Montgomery has held before us. When, however, there is a full roomy vagina, and when the pathologic condition which we want to attack is in the cul-de-sac, the operation may be satisfactorily done by the vaginal route in most instances.

Dr. RUFUS B. HALL, Cincinnati: I believe that the operation of vaginal section has a field, and likewise the abdominal operation. The real reason for doing a vaginal section on one patient and the abdominal section on another patient is not in order to get the patient up more quickly. Vaginal section should be done if a woman has an infection which, with operation by the abdominal route, will not be followed by the best results. Vaginal section is for temporary relief in one sense of the word. I would not carry the vaginal operation to the extent indicated in the paper. I would not limit my work by the vaginal section. In the septic cases, one does not want to give additional risk by having the pus reach the peritoneum. It is better to open the cul-de-sac and get rid of the acute infection. If the patient does not recover satisfactorily, one can do another operation later. I would not exclude the vaginal operation simply because of a narrow vagina. For the same reason, if there was infection and a large accumulation of pus, I would drain through the vagina for the temporary relief, and then when the acute infection was over I would do the other operation if necessary.



DR. GEORGE GELLHORN, St. Louis: I used to be an enthusiastic advocate of the vaginal operation. For the last three years, however, I have practiced extensively the Pfannenstiel incision, with the result that I nowadays limit the vaginal route almost entirely to those suppurating cases that require either drainage or hysterectomy. In all other cases in which the conditions are not too complicated, or in which not too much room is required, I make use of the Pfannenstiel incision, because its advantages are to me very obvious. The intestines are, in this incision, never seen during the operation. The patient is in the Trendelenburg position. The introduction of gauze pads, etc., is unnecessary and, the intestines not being interfered with, not even touched, post-operative shock is greatly diminished. The late effect of the operation is very satisfactory. The scars are strong. I know of no case of hernia after this operation. I have had two cases of hematoma due to insufficient ligation of arteries in sewing up the incision. In spite of this, infection did not occur and the scars remained solid. Two years after the operation the scars were still very strong.

A minor advantage, yet one that is to be considered, is that of the cosmetic effect. These scars are almost entirely hidden beneath the pubic hair. The Pfannenstiel incision should do away with the original Alexander operation for retroflexion. Not even the best diagnostician with the finest of touch can absolutely exclude the presence of delicate adhesions and other lesions that may cause the patient a great deal of trouble even after the retroflexion has been operated on. I can not see how one can do a shortening of the round ligament through the inguinal canal, while an absolutely safe access to the round ligaments can be had by this suprapubic incision. We must not be dogmatic and try to fit our cases to the method, instead of the method to the case, but, all things being equal, I favor the Pfannenstiel incision to enter the abdominal cavity.

DR. C. O. THIESSHAUS, Milwaukee: Five years ago, before this Session of the American Medical Association, I defended the vaginal route as the best method of procedure in all cases where it is feasible. To-day I have given up much of this work and favor the abdominal route. It is beyond dispute that in cases of abscess of the cul-de-sac of Douglas or parametric abscess, furthermore in cases of infected retrouterine hematocoele, the vaginal incision and vaginal drainage is the method and the only method of procedure. In cases of fibroid in the uterus up to the size of a child's head I was, up to five years ago, a strong advocate of the so-called *morcellement vaginal*. To-day I prefer abdominal hysteromyectomy with retroperitoneal treatment of the stump or abdominal hysteromyectomy according to Doyen's method. Two peculiar accidents, which I have not often found mentioned in gynecologic literature, have induced me to make this change. I operated in two cases of fibroid which had been subjected to treatment by electricity previous to the operation. During the *morcellement* of these fibroids by the vaginal route two small pus cavities lying intramurally in the wall of the uterus were opened and both patients died from a virulent septic infection, the source of which undoubtedly must be attributed to these intramural pus accumulations. It is my firm conviction that abdominal hysteromyectomy would have avoided this accident and would have saved the lives of these patients. In cases of chronic adnexitis I was five years ago a great friend and strong defender of the so-called *castration vaginale générale* according to the method of Schauta (Vienna). To-day I prefer by far the abdominal hysteromyectomy. The reasons for this change are twofold: First, it is a well-established fact that in many cases of chronic adnexitis the appendix is adherent to the female pelvic organs, or even involved in the inflammatory process, and, as under such circumstances the appendix ought absolutely to be removed at the same time, abdominal section is by far preferable. Second, in cases of adnexitis on the left side oftentimes the sigmoid flexure is involved or even the primary seat of disease and needs surgical attention, and this can be given properly only by the abdominal route.

DR. CHARLES BETTS, Toledo: My choice of the abdominal

or vaginal route would depend on whether the patient seriously objected to the scar or not. So far as the dangers to hernia are concerned, it makes little difference whether the incision is made according to the Pfannenstiel method or in the median line. The whole thing in a nutshell is how the structures are put together. So far as the peritoneum is concerned, I do not think that it cuts any figure. The principal structures are the fascia, the sheaths of the recti muscles, and if they are properly brought together, so that the edges are properly coapted, and if union takes place by first intention, there is no danger whatever of hernia. Whether or not the vaginal route is selected for evacuation of pus would depend entirely on the nature of this pus, how long it had been in the pelvic cavity, its true location, whether rupture had taken place in the tube, and whether there was mobility of the tube. If the tube was adherent, if there was present a large quantity of pus, and if the patient showed an elevated temperature, it would be an easy matter to puncture temporarily and drain, with the idea of doing the operation at a later date through the abdomen. On a number of different occasions I have had to operate by the abdominal route on patients who had been operated on per vaginam by reason of adhesions and pain and other annoying symptoms. How many times do we open the abdomen and find the omentum fast to the anterior abdominal wall, to the bladder, to the fundus of the uterus, to the tubes, to the head of the coccyx, to the appendix, etc.? How can any man deal with that kind of trouble by going through the vagina? I have never felt favorably toward the vaginal route except when the operation was done only for temporary relief. We all know that the length of time that the pus remains in the pelvis has to do largely with its becoming sterile. If pus is confined in the pelvis for a number of months and the patient does not show an elevated temperature, that pus is almost invariably sterile. In such cases, one may open the abdomen and not even wipe out the pus. Of course, if there is a quantity of pus which would gravitate to the pelvic cavity, it would be a duty to wipe it out, but one can absolutely close up the incision in such cases without drainage and have satisfactory results. This is being done to-day by some of the most able men in the country. In an operation which I performed a few days ago, on making the incision, a large quantity of pus which had been confined for a considerable length of time ran all over everything. I heard from the patient yesterday and she is doing well without drainage. I do not believe that it is possible for a man to cope successfully with the inflammatory conditions mentioned, by the vaginal route.

DR. O. BEVERLY CAMPBELL, St. Joseph, Mo.: It does not seem to me that we should now discuss the possibilities of work done through the vaginal route. Ten or fifteen years ago it was settled that we could operate successfully through the vaginal route in inflammatory conditions of the pelvic organs, and when drainage can be established through an incision in the posterior cul-de-sac it is often a life-saving measure. The tendency is toward the abdominal route because of its superior advantages for complete work.

DR. O. S. McCOWN, Memphis: Some one just now mentioned the fact that the longer pus remained in the cavity the more sterile it became. If there is a collection of pus in the posterior cul-de-sac, that should be incised and drained. If that does not cure the patient a suprapubic operation should be done after some time has elapsed, when it can be done with greater safety than when the infection is fresh. We gain more information sometimes by long observation of a few cases than by hospital observation of a great many cases. I have some cases under observation now in which I drained, posteriorly, cul-de-sac accumulations six or seven or eight years ago. I have observed those cases from that time until now. The suprapubic operation carries with it the idea of removal, not of drainage. All surgical procedures should have associated with them the idea of preservation of organs. If we can relieve a patient by vaginal incision and drainage, leaving the organs intact, if they are not giving the patient trouble, that patient is better off than one having those tubes and ovaries removed. One patient has expressed her extreme



satisfaction at the return of her menstruation after having had an infected extrauterine pregnancy discharged through a posterior vaginal incision. That patient is well up to the present time, six years after the operation. There were excessive adhesions. Recent examinations show that the uterus has become movable and, in fact, is practically normally movable, showing that the adhesions are not giving the trouble now that they did at the time of operation. So, from this standpoint, with reference to the safety of the patient and the preservation of organs, I wish to commend the practice of posterior incision where that is especially indicated, as set forth by Dr. Montgomery.

Dr. E. E. MONTGOMERY, Philadelphia: When it comes to actual conditions and the analysis of relative positions, I stand very closely in relation to those who have been so severe in their condemnation of the vaginal route. The vaginal route, however, has a place in the treatment of patients who can be relieved with much less discomfort, with much less danger, and with much less sacrifice than by the use of the abdominal route.

While I have made the Pfannenstiel incision in over two hundred cases, I have not been so fortunate as Dr. Gellhorn. I have had three cases in which hernia occurred. All, however, were cases in which infection had existed. I would not choose this method of incision in cases in which I had reason to believe there was infectious pus within the peritoneal cavity, for the reason that we open up the cellular tissue to much more extensive degree than in vertical incision and it makes it difficult to protect the surfaces from infection.

### *Clinical Notes*

#### A CYTOLYTIC FACTOR OCCURRING IN THE BLOOD SERUM IN MALIGNANT DISEASE.\*

CHARLES E. SIMON, M.D.

AND

WALTER S. THOMAS, M.D.

BALTIMORE.

The following experiments were undertaken in order to ascertain the effect of prolonged exposure of cancer cells to the action of normal as well as to the patient's blood serum, the idea in mind being, on the one hand, that as the result of autoinoculation with degenerative products of the malignant growth autoantibodies of the nature of cytolytic might be formed, or on the other, that the defensive reaction of the body might find its expression in the absence or a diminution of anti-autolytic ferments in the blood serum. That such ferments normally exist has been shown by Opie,<sup>1</sup> among others, in the case of the leucocytes of the blood, and the same principle probably holds good for many other body cells. In the case of cancer tissue also, we could demonstrate that the mineral constituents of the blood serum play no essential rôle in the prevention of autolysis, since emulsions of cancer cells undergo rapid destruction, both when suspended in saline and in Ringer's solution.

The experiments were arranged as follows: The tumor material, removed at operation, was brought to the laboratory as soon as possible and an emulsion was made of the most cellular portions in saline and Ringer's solution, as also in the patients' and normal blood serum. Breast cancer was utilized almost exclusively, as tumors from other sources were usually so extensively infected with bacteria that they were entirely unfit for our purposes. The emulsions were drawn up into

Wright capillaries, sealed and incubated for twenty-four, forty-eight and seventy-two hours at 37° C. Smears were then made on cover-glasses, hardened in alcohol, and stained over night in Giemsa's solution.

The saline and Ringer specimens invariably showed complete destruction of the cells; and it is noteworthy that this will also take place after a much shorter incubation. In several instances marked destruction was observed after several minutes' contact. In normal blood serum, on the other hand, the cells remain well preserved for the full period of seventy-two hours. Incubation for a longer period was not tried, but to judge from the appearance of the cells after seventy-two hours, there would seem to be good reason for supposing that they would stand a still longer exposure.

The behavior of the cells in the patient's serum, on the other hand, was variable. In most cases they remained in good condition here also, but in a few instances, marked destruction was noted after twenty-four hours. In one case this was extreme and occurred after serum and cells had been in contact for a few minutes only; very little difference indeed existed between this and the saline and Ringer specimens. The destruction in this case was so striking and so extensive that we feared there had been some error in technique; but a careful review of every step precludes this possibility, and while we have not seen the same degree of degeneration since, we feel confident that the cause of the destruction was inherent in the patient's serum and not accidental.

The rapidity with which the destruction occurs naturally suggests a definite cytolytic action in the sense of a toxic factor but as we see the very same thing in the saline and Ringer specimens the possibility must be at least admitted that it may be referable to a pure autolytic process, dependent on the absence of an anti-autolytic enzyme. This view finds a further support in the fact that normal sera, which ordinarily preserve the cells so perfectly, lose this power after being heated for thirty minutes at a temperature of 56° C.

Before concluding, an incidental finding, which is both interesting and suggestive, may be mentioned at this place.

On several occasions, while experiments such as those outlined above were being performed, accidental infection occurred in the laboratory, and we were struck with the fact that while streptococcus infection was repeatedly noted in the emulsions made with the patient's serum, and that complete destruction of the cells was then invariably observed, we never met with streptococci in the emulsions made with normal serum. Whenever organisms were here found, staphylococci were seen practically exclusively and it is noteworthy that their presence did not in the least interfere with the integrity of the cancer cell. In some of the seventy-two-hour normal serum specimens staphylococci were at times encountered in large numbers and had actively multiplied, without causing any destruction of the cells, as evidenced by comparison with corresponding specimens which had not become infected.

1302 Madison Street.

**Infrequency of Hemoptysis in Tuberculous Children.** Magruder, in the *Archives of Pediatrics*, states that the infrequency of hemoptysis in tuberculous children is probably due in great measure to the fact that they are overwhelmed by the effects of the disease in other organs and glands before the process in the lungs has become distinctly localized and the pulmonary tissue destroyed.

\*From the laboratory of Dr. Charles E. Simon.

1. Opie, E.: Enzymes and Anti-Enzymes of Inflammatory Exudates, Jour. Exper. Med., 1905, vii, 316.



## TRICHLORACETIC ACID.

W. H. FITZGERALD, M.D.  
HARTFORD, CONN.

Numerous cases in my hospital and private practice treated with strongly concentrated solutions of trichloroacetic acid prove to my satisfaction that we have in this preparation almost a specific for the great majority of diseases of the mouth, throat and cervical lymphatics.

In postoperative treatment of mouth and throat conditions trichloroacetic acid prevents infections and secondary hemorrhage and enables the patient to swallow solid food without the slightest difficulty almost immediately following a painstaking application over comparatively dry raw areas. This is likewise true regarding cauterized surfaces and practically all diseases of mouth and throat and often one treatment will suffice.

Acute pain and swelling of cervical lymphatics disappears speedily (frequently within a few minutes) through applications within the faucial tonsil and about its base on the affected side. The entire tonsil may be covered if necessary and several applications may be made during one treatment. It is well to use the solution sparingly, however, although the only unpleasant symptoms likely to arise will be a slight dryness, preceded by a trivial stinging over the area treated. Preliminary cocaineization, except perhaps in the nostrils, is seldom necessary. A strongly concentrated solution, as is well-known, alone or in conjunction with the actual cautery (inflammatory extensions are thus prevented), is most useful in the treatment of various infections of the nose and nasopharynx.

Dentists will find trichloroacetic acid indispensable in diseases and postoperative treatment of the gums. As a disinfectant and deodorant in dentistry it will be found most efficacious. Trichloroacetic acid will be found equally useful in the treatment of diseases of the mucous membrane and lymphatics elsewhere throughout the body. Chemists tell us it has no anodyne properties, but my experience, I believe, proves it to be one of the most remarkable of anodynes.

[COMMENT.—Our correspondent is rather enthusiastic in praise of trichloroacetic acid. We agree that it is a valuable drug in certain conditions. It is now official, having been included in the last edition of the U. S. Pharmacopeia. The following appears in the "Physicians' Manual of the U. S. Pharmacopeia and National Formulary":

"Uses: Chiefly as a chemical reagent; astringent, escharotic, hemostatic; to remove warts and other skin blemishes, in 10 per cent. water solution; astringent or hemostatic, 1 to 3 per cent. solution; must be used with care."

The British Pharmaceutical Codex says:

"Trichloroacetic acid is applied as a caustic to the skin, and is less painful than nitric acid; it has also been employed in strong solutions as a caustic in chronic pharyngitis. Weak solutions, containing 1 per cent. or less, have a powerful disinfectant action, and such solutions may be applied to wounds and ulcers, or used in erysipelas and gonorrhea, without causing irritation. It is rarely taken internally, but from 2 to 2.5 decigrams (3 or 4 grains) well diluted have been recommended in gastritis. Liquefied trichloroacetic acid is a liquid prepared by the addition of 10 per cent. of water to the crystalline acid."—EDITOR.]

## A STUDY OF MALARIA IN CHILDREN.

B. B. SIMMS, M.D.

AND

B. B. WARWICK, M.D.

TALLADEGA, ALA.

The subject of malaria is generations old; the disease has ever been with us, and probably will ever be; yet, notwithstanding that there has been research after research and study on study of it, there seem to be many facts in regard to its clinical history, its etiology and the life and habits of its causative parasite that are yet to be investigated.

Our investigations of the subject have had in view the establishment of two facts: first, the percentage of apparently well people who have the malarial parasite in their blood; second, the length of time that the parasite may live and propagate in the blood and cause no malarial paroxysm. Therefore our observations were made on the well instead of the sick; and, furthermore, these investigations have not been confined to children entirely; the majority of the subjects, however, were children. Because Talladega is a city of many schools, observations on school children are more easily made than on adults, and the children are more easily kept under constant observation.

These observations were begun in September, 1907, after the schools for the deaf mutes and blind had opened for the session of 1907-1908. Smears of blood were obtained from a total of 610 children and adults.

These blood specimens were obtained on slides in the ordinary manner, and were stained with Jenner's, Wright's or Goldhorn's stains. Two hundred and ten of these specimens were obtained from deaf-mutes of both sexes and 85 from the blind, also of both sexes. The subjects ranged in ages from 7 to 20 years and came from different parts of the state. The remaining 215 were natives of Talladega, of whom 38 were children and 21 were negroes. The remaining 156 were men who were about their regular business. Among the deaf-mutes the plasmodia were found in 10.5 per cent. of the males and 6 per cent. of the females; among the blind, in 6 per cent. of the males and 3 per cent. of the females. This brings out quite a difference between the males and females; also between the deaf-mutes and the blind. We accounted for this decided difference by the fact that the females, as well as the blind, are in the house more at night and are better cared for, thereby lessening their liability to infection.

It was also noticeable that the majority of the mutes and blind in which the parasite was found were from the southern part of the state.

Of the 38 native children, the plasmodia were found in 8 per cent., and in 5 per cent. of the negroes. Of the 156 men the parasite was found in 14 per cent. We also found the plasmodia in 3 babies between three and seven days old, but in these the mother had previously had a paroxysm. Summing up the total, we found the plasmodia in 8 per cent. to 9 per cent. of the 610 cases examined.

Most of the patients whose blood contained the malarial parasite were kept under observation during the fall and winter. No quinin or tonics were given unless chills and fever developed, and then only sufficient quinin was given to control the paroxysm. Of those whose blood contained plasmodia only 3.5 per cent. developed malarial symptoms, and a majority of these had an attack of chills and fever in October, December and



February. In February there was an epidemic of influenza, and some of those infected with malaria had chills and fever during the attack of gripe. Of those infected with malaria 60 per cent. were brought down with this disease, and it was much more severe than in those who were not infected.

It seems, from these observations that many people carry in their blood the malarial parasite for many months without active symptoms of malaria: for we have observed the plasmodia from time to time for a period of from five to six months during which no paroxysms occurred.

The probable reason for the absence of malarial symptoms is that the number of parasites in the body is too small, since it is estimated that there must be from 200,000,000 to 300,000,000 in the human system to produce the paroxysm. It also seems that the intervention of some other disease causes the parasite to increase, thereby giving rise to malarial symptoms.

### OBSTETRICS IN A NORTHERN MINING COMMUNITY.

FREDERICK BARRETT, M.D.  
EVELETH, MINN.

A mining hospital practice on the northern range affords not only a variety of surgical, medical and obstetric experience, but also work in a veritable international congress. The birth-rate statistics are notably high in mining communities, so that obstetrics forms an important branch of the service. Being for the most part among the laboring classes, where the "higher civilization" with its concomitant constricted waist lines and atrophied abdominal muscles, has not left its stamp, there are fewer abnormal cases than in more metropolitan sections.

Some of the phases encountered among the conditions to be contended with would undoubtedly greatly shock a practitioner who had been accustomed to engagement beforehand, and the opportunity to outline instructions for his patient—or to the interne accustomed to ideal preparations and conditions in the maternity wards.

Among the classes mentioned, one is rarely engaged or summoned, until labor is actively established, and the conduct of the case under the circumstances sometimes presented is a severe test of one's resources. These unusual situations are not without their humorous sides at times. For instance, a family of five occupied one sleeping room (the rest of a fairly large house being devoted to boarders), and the three children in a sort of a trundle bed at the foot of the mother's bed, stood up, ranging their little heads in a row over the blanket which had been thrown over the foot of the bed for a screen, and curiously watched the advent of a new brother. Their Polish mother did not seem at all perturbed over their marked interest in her progress.

On another occasion, an Austrian mother, in her hour of deep pain, was supported at her elbow by a bright little brown-eyed babe of thirteen months, who never wavered in his night-long vigil, and when she could not contain her outcries, the little chap would cling about her neck in tearful sympathy.

A Finnish husband, about to become a father, was so pessimistic about the chances of his firstborn emerging alive that he wanted to wager \$5 on a stillbirth. It was explained to him that he was practically a sure loser, but he pressed the matter till the bet was accepted—

though, be it added, the amount was allowed to apply on his fee. I have seen a Russian woman in a filthy bed within a few moments of my arrival, give birth to a child on a dirty gunny sack taken from the floor to protect the mattress. She was as thoroughly cleansed and provided for as possible under the circumstances, and her parturient period was without fever and uneventful. On the other hand, it is not surprising to learn that, although this was her ninth labor at full term, she had no living offspring.

The English women, principally from the mining regions in Cornwall, have large families and mother them well. I have seen more postpartum hemorrhages among French-Canadian mothers than among any other nationality. Jewish women make most solicitous and tender mothers. They require (and are tendered, as a rule) an immense amount of sympathy. Italian women make quite a function of the arrival of an heir or heiress, and it is difficult to interdict entirely the use of wines and fancy alcoholic preparations. Scandinavian women, as a rule, are well built for motherhood, but are not, in my opinion, so hardy at such periods as the Latin races.

A little diversion from routine was afforded in one case by an over-zealous and shaggy Fido, who ensconced himself under the bed of his Swedish mistress and resented my presence with a furry onslaught whenever the woman in her extremity of pain lamented with exceptional fervor. I have seen a little newcomer born in weather 44 degrees below zero, with no fire or heat in the apartment, whose first breath was a visible one.

The usual statistics obtain as to twin pregnancies. I have had but five cases of eclampsia in about 750 births, and in none of these had there been an opportunity for mine or other examination beforehand. I may add that all but one of them survived. This death, one from infection, complicated by puerperal mania, and one from placenta previa, comprise the mortality list for the above mentioned series of cases.

About two-thirds of these cases occurred in the night, and almost one-third of the patients were primipare. The oldest mother was 44 (this was her fourteenth confinement) and the youngest 16 years old.

### LIGATION OF THE UMBILICAL CORD.

C. P. COOK, M.D.  
WARROUS, NEW MEXICO.

In a series of 400 cases I employed the various textbook methods of tying and dressing the umbilical cord and found none of them to my liking. In attempting to eliminate the objectionable features of the various methods I evolved the following which may not be altogether new, but is in my opinion far superior in results to those in use by the majority of practitioners.

The tying of the umbilical cord is the first great crisis in the life of the new-born babe. His inheritance to a life of passive nutrition being cut off, his food and oxygen must be acquired from a new source, and assimilated in a new way.

The usual method of tying the cord two centimeters from the body of the child is most objectionable from a standpoint of drainage. Two grams of decomposing tissue drain their toxins into the circulation of the infant at the most critical period of its existence. This produces a toxemia and often causes a pyrexia which lowers the child's resistance to infection and disturbs its diges-



tion and excretions, thus creating a condition which I believe has much to do with second and third day cross babies. In addition, the cord is frequently inspected once daily by the nurse, thus increasing the chances of infection of the stump; and it must be remembered that the granulating surface left after separation of the cord is not immune to infection.

The ideal surgical procedure would be to amputate the cord at its union with the integument and close the wound with sutures, but the use of this method in private practice would not be practical.

In a series of seventy-five cases I have tied the cord at its union with the cutaneous surface and cut it two centimeters distal to the ligature, thus draining the stump from instead of to the child. I use heavy braided silk for ligature and dress with aseptic gauze and adhesive straps to prevent movement of the dressing. The adhesive straps are necessary, as without them the dressing is liable to be moved in handling the child, thus causing premature separation of the cord and hemorrhage, an accident which happened in two of my cases before I began the use of the adhesive straps. The hemorrhage, however, was of little significance in either case.

Under this method the cord separated on the third day in 10 of the 15 cases, leaving a healed, not a granulating surface, and many of the first week disturbances of infancy were avoided. There was disturbance in micturition in but 3 of 15 cases so treated, and 50 per cent. less cross babies than under other methods.

I found pyrexia in 20 per cent. of 50 cases in which the cord was tied two centimeters from the integument and in less than 3 per cent. of 15 cases in which the cord was tied at its union with the skin.

The principal advantages of this method are the avoidance of sapremia and the fact that the period of possible infection is greatly lessened if not eliminated.

## LARGE DOSES OF ANTITOXIN IN DIPHTHERIA.

### REPORT OF A CASE.

A. C. McCLANAHAN, M.D.  
VICTOR, COLO.

Although the use of antitoxin in the treatment of diphtheria is now practically universal, there is still more or less doubt as to the expediency of administering large doses after ordinary doses have failed to produce any effect. In fact, the question of dosage is the only question that remains to be answered, so far as the therapeutic use of antitoxin is concerned. The determination of the requisite dose in a given case will probably soon be reduced to some trustworthy and generally practicable method; but until that has been done our only guidance will be the experience of those who have used large doses. Toward the enrichment of the literature of that experience I wish to contribute the following mite:

*History.*—On July 11, 1908, I was called to see a child, 8 years of age, who complained only of sore throat. Examination disclosed an exudate limited to the tonsils and resembling the exudate of follicular tonsillitis; the tonsils, however, were not much swelled. The pulse rate was 135 a minute, and the temperature was 103. Tonsillitis of the most innocent type may raise the temperature much higher than this, but in that case there will be considerable swelling and other distinct

signs of an intense local inflammation. Such signs were absent here.

*Course of Disease.*—As I was in doubt regarding the diagnosis I used no antitoxin and even neglected to send a smear from the throat to the state bacteriologist. On the following day (July 12), the patient was worse. Both nasal passages were completely clogged, and although the exudate in the throat, where it could be seen, was more cheesy than membranous and was still limited to the tonsils, I was convinced that the disease was diphtheria, and I accordingly administered 12,000 units of antitoxin in two doses separated by an interval of six hours.

July 13: Temperature was 104.5 and the pulse 150. The patient lay in a deep stupor from which it was difficult to rouse her. A white exudate now extended across the posterior wall of the pharynx, but still avoided the uvula and the pillars of the fauces. A thin, serous fluid trickled from the nostrils. Nasal breathing had been entirely suspended, and the mouth was wide open. I now took a smear to transmit to the state bacteriologist, although there was no doubt in my mind as to the nature of the disease or as to the inadequacy of the doses of antitoxin that had been administered on the previous day. I accordingly administered 23,000 units in the space of six hours.

July 14: As there had been no improvement, I gave all the antitoxin that was left in town, which was only 12,000 units. The patient's nose was now considerably swelled; the lids of the left eye were thickened and reddened by an intense inflammation, and the eye itself appeared to protrude distinctly as if there were a unilateral exophthalmos.

July 15: The patient's condition was unchanged, and I was now confronted by the angry opposition of the frightened neighbors, who shouted across their back fences that I was killing the child by injecting a mysterious poison into her veins. I quickly quelled the mutiny in the patient's household, and, as fresh supplies of antitoxin had arrived, I injected 19,000 units at a single sitting. The state bacteriologist's report was received, and it confirmed my diagnosis.

July 16: There was some improvement. The pulse was about 140 all day; the temperature ranged close to 105. The nose was still completely clogged, and the protrusion of the left eye was still present, but the exudate was disappearing from the tonsils, and the pulse was of a better quality. On this day I gave no antitoxin.

July 17: There were slight indications of improvement everywhere except in the temperature, which was 104.8. Accordingly, after waiting till evening, I injected 9,000 units more.

July 18: The pulse had fallen to 100 a minute, and in every way the patient was better.

July 19: The protrusion of the left eye had disappeared, the inflammation of the lids had been replaced by a paralysis of the upper lid, the temperature was normal, the pulse rate was 86, and the patient was breathing through her nose and clamoring for more food.

Cathartics, antiseptic sprays and gargles, strychnin and whisky were used as indicated, and were administered by a trained nurse; but the point of interest is that in the space of five days 75,000 units of antitoxin were injected without any evidence that any of it had done any good until the last 9,000 units were used. All the antitoxin used in this case was fresh and was the product of the two principal laboratories in America.

*Generosity of Surgeons.*—John C. Munro, Boston, in the address in surgery before the Canadian Medical Association, said that a significant quality that belongs to our profession is the generosity of the surgeons of one locality toward those of another in freely giving and receiving the good things that spring up in our art. It is a refreshing sign of broad culture and does much to destroy the petty jealousies that are a heritage of past generations.



## A SIMPLE RESTRAINT.

CHARLES S. WHITE, M.D.

Associate In Surgery, Emergency Hospital,  
WASHINGTON, D. C.

It often becomes necessary to restrain, for a brief period, some patients admitted to the accident ward of a hospital. In the semi-conscious state following the grand mal of epilepsy, in hysterical males particularly, alcoholic delirium, concussion of the brain, cocaineism and similar conditions of cerebrospinal excitability or incoordination, temporary measures are demanded until therapeutics or hydrotherapeutics can be rationally employed. The majority of such patients will not remain in bed; moral suasion is useless; and sometimes the patients are perverse, combative, pugnacious, and even homicidal.

In the emergency hospital, at my suggestion, we have had made a hammock of one-fourth inch cotton rope, seven feet six inches long, six feet wide at its center, tapering to three feet at each end. From the ends guy-ropes extend two feet six inches and terminate about an iron ring three inches in diameter. To use the hammock as a restraint, it is spread on a bed, the patient placed on it, and the sides folded over to meet in the middle line above him. The ends and free edges are then laced up by a piece of rope about twelve feet long, passing through the meshes, and securely tied. The patient becomes enclosed in a torpedo-like rope lattice, fitting him snugly and preventing excessive movements or his escape. The hammock is then suspended from hooks fastened in the wall. The bed can be removed or left under him.

The constant use of this simple apparatus for nearly a year has proved its merit. It is comfortable, minimizes the possibility of injury, and it is clean, in that any dejecta escape at once, and the patient is not compelled to lie in them. The patient is rarely kept in the hammock for more than three or four hours, and not uncommonly he is aroused from a peaceful sleep to be discharged. The material for the entire outfit costs less than four dollars, and any one with a nautical turn can knit the hammock. It can be scrubbed and sterilized without injury.

The Farragut.

A SIMPLE DEVICE FOR FACILITATING  
SPHYGMOMANOMETRY.

WILLIAM L. BANER, M.D.

Visiting Physician, St. Vincent's Hospital,  
NEW YORK.

The double-bulb sphygmomanometers, such as the Riva Rocci and the Cook, are comparatively easy to use. Unfortunately these instruments are not available for recording diastolic pressure, and the large netted bulb is not at all durable. In fact, it is apt to blow out at the most inopportune moment. In using Janeway's or other single-bulb sphygmomanometer considerable skill is required. The novice, in particular, is apt to give a very jerky performance. It is certainly not at all rare to see two hospital internes taking a blood pressure where one ought to be sufficient, the assistant in each case manipulating the needle-valve while the operator controls the pulse and bulb.

That this difficulty is a real one is shown by the various suggestions which from time to time have ap-

peared in the medical press. The tension indicator of Dr. Louis F. Bishop, of New York, using water pressure, is a sort of crude protest against the difficulties encountered in using the fairly accurate mercury manometer. Dr. W. A. Ruble,<sup>1</sup> of Washington, suggests that the nebulizer compressed air tank be utilized in place of the bulb. Of course we are not all provided with nebulizer tanks, and such an apparatus is not portable. In addition to this, unless the regulator is very carefully adjusted there is apt to be a shower of mercury.

Since last November I have been using on my Janeway sphygmomanometer a little device which enables the operator to keep one hand on the pulse and one on the bulb from start to finish, and has much simplified the technic and shortened the procedure. This consists in substituting an ordinary atomizer bulb for the Politzer bag, and placing a check-valve between this bulb and the needle-valve. This check-valve is of the type used in pneumatic tires, the spring being somewhat weaker. It can be regulated to a nicety without trouble, and once properly adjusted need not be touched for months. The proper adjustment allows the mercury to sink back very slowly when the bulb is released. If it does not fall at all the valve is too tight. If it falls too rapidly the valve is not tight enough. With the correct adjustment the mercury can be brought with ease to any desired point on the scale and held there indefinitely by slight pressure on the bulb.

The use of this little valve permits the determination of the diastolic pressure. It is much easier to handle than the double bulb, and much more durable. It has been in continuous use for several months now on my service at St. Vincent's Hospital and has given much satisfaction to the internes.

They can be made by any one, the only difficult point being the proper adjustment of the spring and plunger, each individual valve being tested on the sphygmomanometer and brought to the proper tension.

40 West Sixty-eighth Street.

THE RELATION BETWEEN WEIGHT AND AGE  
IN THE FETUS.

LUCIUS TUTTLE, M.D.

PHILADELPHIA.

The relationship between the length of the fetus and its age is easily kept in mind with the aid of Haase's rule, viz., during the first five months of gestation the age in months is multiplied by itself, and during the latter half of gestation the age is multiplied by five, the resulting figure being the length of the fetus in centimeters. I have endeavored to formulate a rule which shall furnish an equally easy method for recalling the weight of the fetus at any given age.

According to Roberts,<sup>2</sup> the slower growth of the fetal head during the later months of pregnancy is compensated for by the more rapid growth of the limbs; and the formation of dense bony tissue is counterbalanced by the formation of light fatty tissue, the result being that the specific gravity of the fetus is not materially altered, and its volume, and therefore its mass also, are proportional to the cube of any linear dimension, or to the cube of its age. Accordingly, he takes the cube of

1. THE JOURNAL A. M. A., June 6, 1908.  
2. Lancet, Feb. 3, 1906, p. 295.

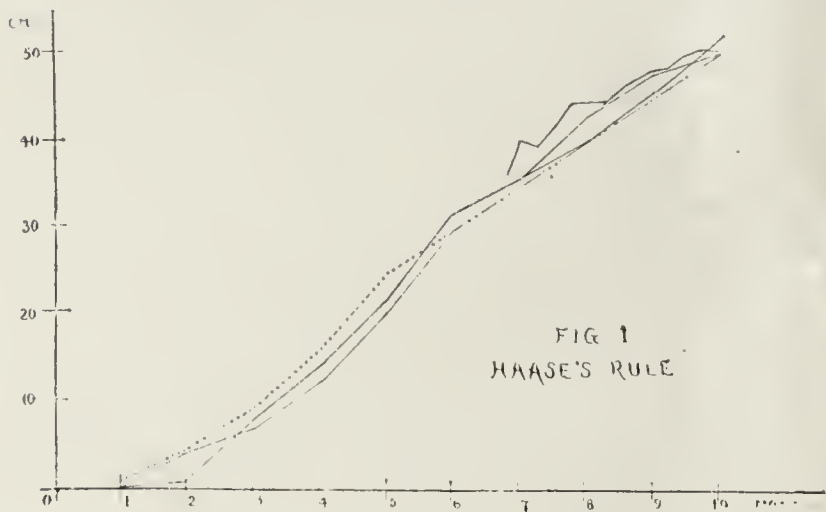


the age in calendar months and divides this by 104, thus obtaining a figure for the weight in avoirdupois pounds which agrees closely with the actual weight as determined by different observers.

My rule gives a good approximation to the actual weight without necessitating any arithmetical operations except such as are easily performed mentally. It is as follows:

From the age in months subtract two, square the difference and divide by two. The result gives the weight in hundreds of grams.

That is, at the seventh month,  $7 - 2 = 5$ ,  $5^2 = 25$ .



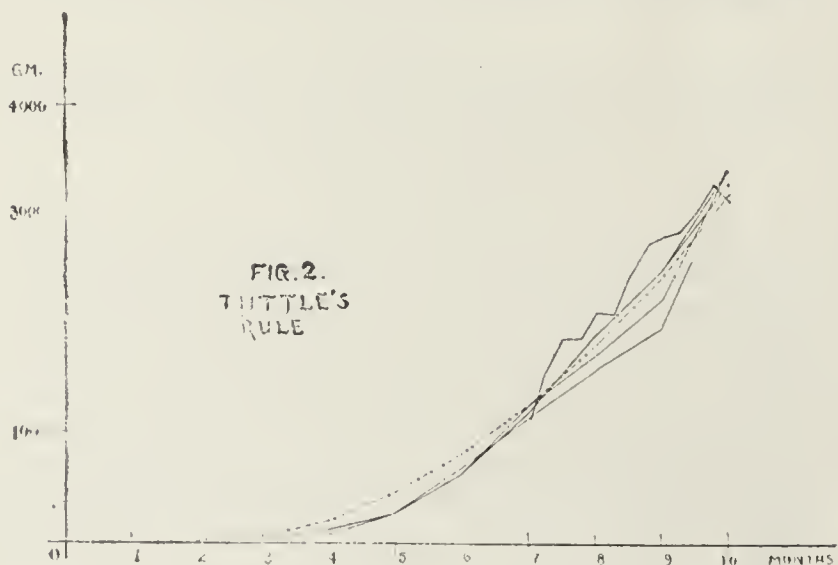
$25 \div 2 = 12\frac{1}{2}$ , the weight accordingly being 1,250 grams. At the tenth month (i. e., at term, the word month being used throughout this article in the sense of a lunar month of four weeks),  $10 - 2 = 8$ ,  $8^2 = 64$ ,  $64 \div 2 = 32$ , weight 3,200 gm.

The relationship will probably be more easily remembered in the form in which I have stated it than as the equivalent algebraic formula

$$w = 100 (m-2)^2 \div 2$$

which of course can be used instead if preferred.

I have diagrammatically indicated the relationship of



length and weight to age by the usual graphical representation. Any point on the curve which is situated at a distance to the right of the vertical line corresponding to the age as indicated on the horizontal scale will be found at a distance above the base line corresponding to the length (Fig. 1) or weight (Fig. 2) of the fetus at that age. Time is expressed in lunar months, length and weight in the customary metric units.

The dotted lines show the lengths and weights as calculated from the formula, while the solid lines give the actual measurements (generally averages) according

to each of several different observers. It will be seen that the dotted line in each case follows the curve of actual length or weight closely enough for practical purposes; in fact, it generally diverges less from the general trend of the curves than they do from each other.

## Therapeutics

### RHEUMATISM.

Dr. Joseph E. Winters, Professor of Diseases of Children, Cornell University Medical College, read an interesting paper on this subject before the Alumni Society of Bellevue Hospital, on Nov. 6, 1907. He associates acute rheumatism with chorea and tonsillitis as having the same etiologic factors and the same complications, with, of course, endocarditis as the most important sequence. He does not mention or discuss the germ theory of acute inflammatory arthritis, but believes that hyperacidity of the system is sufficient to cause acute inflammation and account for all of the symptoms. While acute rheumatic inflammation may remain in one or more joints for a shorter or longer period, even months, the inflammation may then cease and the joint become perfect, there being no permanent impairment and no disorganization of tissue. "At any time in the course of a rheumatic fever the heart, the lungs, or the nervous centers may become involved and terminate life abruptly."

Winters believes that there is a positive chemical antidote and that this antidote is organic. Nature's antidote is natural salicylic acid. The synthetic salicylic acid, he believes, has no effect on the disease. Salicylic acid is quickly converted by the alkaline secretion of the intestines into an alkaline salicylate, sodium salicylate, while in the blood the bases are set free and salicylic acid is at once eliminated and appears in the urine in a few minutes. Winters believes it is this free base in the blood "which neutralizes the rheumatic virus," as it forms a chemical union with it, and as it must unite with an acid, therefore he reasons that the cause of rheumatic fever is an acid. As a further proof of this hyperacidity of the system he cites "the profuse, drenching, sour-smelling acid perspiration of rheumatism," and states that the saliva becomes acid, the urine is hyperacid, and the feces become acid in this fever. He therefore states that salicylic acid in its chemical ability to combat in the blood this acid poison is in consequence a specific in rheumatic fever, although it does not cure rheumatism. He believes, with Dr. Andrew H. Smith, of New York, that salicylic acid will cause rheumatic patients to become three-fourths well, but the other fourth of the disease lurks in the tissue fluids, and this fourth it is most difficult to eradicate. The salicylates, Winters claims, liberate their bases in the blood. They never reach the tissue fluids.

To neutralize this tendency to acidity in the tissue fluids he believes that we must administer the vegetable foods which contain three or four times as much basic material as animal food, and thus supply a chemical antidote for the remaining fourth of the disease. In other words, a patient with acute rheumatic fever is three-fourths cured by salicylates, and has the remaining fourth cured by a vegetable diet. Spontaneous cures or cures without drugs, he believes, are effected by this property of a suitable diet, viz., the ability of vegetable foods to neutralize the acid in the system.



"If for any reason the blood becomes less alkaline there is a disintegration of red blood cells, i. e., rheumatic anemia, often the only symptom of rheumatism in a child."

Winters thus sums up his belief: "In profound rheumatic states, as in hyperpyrexia, sodium carbonate of the plasma is decomposed and carbonic acid set free. Accumulation of carbonic acid shuts off oxidation. Menacing symptoms in rheumatic hyperpyrexia are due to rapid, large withdrawal from the blood of the basic element, sodium; fatal reduction in alkalescence of blood; liberation of carbonic acid; arrest of detoxicating oxidative processes." He believes this explains rheumatism from muscular and articular soreness following unusual exercise to rheumatic anemia and rheumatic hyperpyrexia.

A growing child is always on the verge of an excess of acid products from its metabolism because it uses so much of the basic mineral substance for its growth. This tendency is shown by the frequent attacks of gastrointestinal disturbance, generally due to an excessive acidity, with urticaria, tonsillitis, and other mucous membrane inflammation.

Winters believes, as is now generally admitted, that chorea and acute inflammatory rheumatism are closely allied etiologically and closely allied in their complications, the main complication in both instances being an endocarditis. He interprets the inability of salicylic acid to cure chorea by the hypothesis that the tissue fluids are abnormally acid, which parts, as previously stated, he believes salicylic acid can not reach.

In chorea the heart should be as carefully watched as in rheumatism, and the same care of the diet, and the same rest should be urged.

Winters believes that recurrent tonsillitis and frequent stomach upsets are both caused, in children, by too much animal broths and sweets, and that both are caused by the disturbance of metabolism described above as occurring in rheumatism.

In rheumatism, if the tongue is coated, he advises the free administration of calomel followed by rhubarb and soda, as:

For a child ten years old:

R.		gm.		
Hydrargyri chloridi mitis.....		10	or	gr. ii
Sodii bicarbonatis .....		50		gr. x
M. et fac chartulam 1.				

Sig.: To be taken at once, with plenty of water or milk. To be followed by:

R.		e.c.		
Mistura rhei et sodæ.....	100		or	℥iij
Sig.: A teaspoonful, with water, three or four times a day, as deemed advisable.				

If this preparation should cause too much activity of the bowels the following should be substituted:

R.		gm.		
Bismuthi subnitratiss.....		5	or	gr. lxxv
Sodii bicarbonatis .....		10		3iiss
M. et fac chartulas 20.				

Sig.: A powder every six hours.

He then begins the use of salicylic acid, and states that "a child of ten years may be given .60 gram (10 grains) every two hours for twenty-four hours, and thereafter according to effect."

[For the administration of salicylic acid or some preparation containing salicylic acid see THE JOURNAL, July 25, 1908, page 318.]

As above stated, neither salicylic acid nor any other

medicinal treatment will cure rheumatism. The diet is paramount, and Winters urges that "while a vestige of active rheumatism tarries milk must constitute the sole diet." In other words, milk is a purin- (uric acid forming) free diet and contains an abundance of phosphate of potash. All active tonics, alcoholics, manufactured liquid beef preparations, and all home made meat broths prevent the success of the above simple treatment of rheumatism. As there is profuse sweating in this disease the patient should be urged to drink plenty of pure water. As soon as the local evidences of rheumatism have disappeared the diet should be increased in the following manner:

First, cereals may be given, well cooked and served hot with butter and salt or with milk, but without sugar. The cereal may be rice, hominy, cream of wheat, or oatmeal. No malted food, or predigested food, or so-called baby food should be a substitute for one of the above cereal foods, freshly prepared.

The next increase in the diet is the addition of a baked potato and bread, and soon green vegetables may be allowed, excluding, however, beets and sweet potatoes. If tomatoes are craved they may be eaten raw but without vinegar or sugar.

Next, fresh fruits should be added, and these should be taken raw, not cooked. Grapes and grape fruit should not be allowed. Winters states that one ounce of lemon juice contains 3 grams (45 grains) of citric acid, and as citric acid is an antirheumatic, lemon ranks high as a fresh fruit in rheumatic conditions. All these vegetable acids oxidize to carbonates after ingestion. Winters emphasizes his belief that rheumatic patients should not eat sugar until long after complete recovery. When meat is added to the diet it should not be as broths, but in the form of meat, and whether it is red or white meat is indifferent.

Any food or drink that tends to cause intestinal indigestion or fermentation is likely to precipitate a lurking rheumatism. Hence fancy dishes and all sweets, even ice cream, alcohol in any form, and even tea and coffee, if they cause the least indigestion, should be prohibited. Alcohol in any form should generally be permanently eschewed.

A child with chorea should have a diet as rigid as the above advised for rheumatism, depending upon the intensity of the disease. It should also not be allowed at the table that it need not crave the food that it sees provided for the rest of the family. It must be very positively declared that no one shall surreptitiously give a choreic child sweets or sugar in any form. The bowels should be kept in good condition, perhaps best with the above rhubarb and soda mixture. If a stronger laxative is needed it should be administered, and none is better than an occasional dose of castor oil for such a patient. A patient with chorea should be kept at absolute rest and as quiet as possible, if the disease is at all severe, and the calmer the nurse or attendant of the child, and the fewer people or children the child sees, the more rapidly will its chorea abate.

Small doses of bromid of sodium may be necessary to aid in diminishing the muscle restlessness, as:

For a child ten years old:

R.		gm. or e.c.		
Sodii bromidi .....	10		or	5iij
Aque .....	100			℥iiv

M. et Sig.: A teaspoonful, in water, three times a day, after meals.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, SEPTEMBER 12, 1908.

## THE CALL TO HEALTH.

The important features of the present movement for better sanitary conditions are very ably summed up by Prof. W. T. Sedgwick<sup>1</sup> in the annual address in medicine at Yale University. One or two points deserve special attention, since they are not always included in the popular conception of the work. Professor Sedgwick mentions, as one of the foremost responses of the nineteenth century to the call for better living, the temperance movement which started a century ago and which in its various other aspects has become so familiar to us that we are liable to overlook its sanitary importance. When one considers in detail the relations of alcoholic indulgence to disease, the numerous and important ailments of which it is the direct cause, to say nothing of its indirect influence on human misery and degeneracy, one can hardly avoid realizing that it stands almost, if not altogether, in the first rank of the enemies to be combated in the battle for health.

In the public mind, however, the sanitary bearings of this subject are hardly considered, and it is satisfactory to have them thus emphasized by Professor Sedgwick, whose words we quote as follows: "Under whatever form, and however fanatical or foolish, or at times even harmful, he may have been, the temperance or prohibitionist agitator has always urged the salvation of the body as well as the soul; the conservation of family life threatened with ruin by drunkenness; the social significance and the economic importance of temperance, and even abstinence, as regards alcohol." Any great general movement for sanitary reform which ignores the evils from the use of stimulants and narcotics leaves a vast gap in its line against the common enemy, and whatever may be the practices or prejudices of some of its individual members, the medical profession as a body should stand for temperance as one great essential of public health. That there has been too much neglect of the matter in the past is all the more reason why the profession should do its full duty now and in the future.

Another feature of interest in the address is the announcement of the author's work in connection with Mr. Scott MacNutt verifying the statement of the sanitary engineer, Allen Hazen, that for every death from typhoid fever avoided by the purification of a public

water supply two or three deaths from other causes are also avoided. They have found this statement even conservative, and among the other diseases they particularly specify pneumonia, tuberculosis and bronchitis as well as infant mortality. They naturally ask whether this means that these are also water borne, or whether polluted water somehow depresses the vital resistance against the attacks of the micro-organisms of these diseases which the system would otherwise successfully resist, and they are still at work on this problem. A preliminary communication on this subject is contained in the same number of *Science* and the full results of their study with statistical tables, diagrams, etc., and discussion of the subject will be published in the near future.

It is perhaps a little unfortunate that Professor Sedgwick in his opening paragraphs, and to some extent elsewhere in his address, suggests the assumption that the ideal of a better future is in any way hostile to such interest in the present life as is essential to proper care for its preservation. We doubt whether physicians have often made this observation; in fact, to the majority of mankind the belief that this life is the prelude to a better one makes it the more worth living, and it certainly is not so strong in most of mankind as seriously to counteract the natural instinct of self-preservation. We mention this as what we believe to be a medical fact, entirely apart from any special religious significance it may possess. The voluntary quitting of the present stage of existence is certainly not so common among those who are hopeful in this regard as among those who are pessimistic, and the former is certainly a better mental condition in which to meet disease.

## HONESTY IN ADVERTISING.

The underlying principle of the campaign against fraud and misrepresentation in the proprietary medicine business is honesty in advertising. The essential requirement is: "Tell the truth—the whole truth." It would be difficult to formulate a simpler or more reasonable demand, and yet in spite of its simplicity—or is it because of it?—the opposition to the propaganda for reforms in proprietary medicines has been enormous. This has come not only from manufacturers whose methods and products alike were fraudulent—from such, antagonism was expected and desired—but also from firms of high standing who have insisted, to all intents and purposes, that honesty in advertising is Utopian and visionary. The reason for this attitude is not far to seek. The belief expressed not long ago by the *Cumberland Presbyterian*, that "virtually all advertisements are lies"<sup>1</sup> has been very generally held. Commerce has sanctioned "justifiable exaggeration," so long that it is impossible to decide where "justifiable exaggeration" ends and actual lying and fraud begin. Because of the peculiarly vicious results of such a policy in connection with ad-

1. *Science*, August 14.

1. Quoted from *Literary Digest*, Sept. 21, 1907, 412.



vertisements of medicinal agents the medical profession went at the problem vigorously with the aid of the Council on Pharmacy and Chemistry. About the same time, *Collier's Weekly*, in the Great American Fraud articles, took up the fight for honesty and decency in regard to "patent medicines," and at last the public awoke to the true condition of affairs. This awakening of the public conscience was materialized in the Food and Drugs Act, a law which has indirectly made the advertising of foodstuffs comparatively free from fraud. Manufacturers of worthy products within the province of the act have had their eyes opened to the fact that truthfulness in advertising is a splendid asset and that the unscrupulous manufacturer and the competitor with an inferior product are being eliminated. This having been demonstrated, manufacturers in other commercial lines are beginning to take action for the restoration of commercial morality. Such a policy was foreshadowed in the resolutions adopted by the Associated Advertising Clubs of America last winter, which was referred to at the time.<sup>2</sup> Another notable proof of this awakening is seen in the recent action of the National Association of Piano Dealers. This body has endorsed and distributed an appeal for the prevention of fraudulent advertising in its own domain, in a series of resolutions which are presented elsewhere<sup>3</sup> in this issue.

This action of the piano dealers' association was taken in consequence of a remarkably able address by Lewis H. Clement, at its annual convention recently. In his prefatory remarks, Mr. Clement said:

"A salesman who, through misrepresentation, persuades a customer to buy a thing he does not want, in belief that it is what he does want, deserves dismissal, and a firm which permits such misrepresentation deserves public condemnation. To publish misleading advertisements which not only deceive a large number, but tend to undermine that confidence on which all business rests, is far more discreditable and deserving of condemnation. Dealers insist on honest statements from manufacturers and their representatives. Their customers' rights are no less."

We may now expect other branches of commerce to take action on the subject of fraud and misrepresentation in advertising in their own particular lines. It may thus come about that at no far distant date we shall see commercial morality liberated from the slough of trickery and deceit, and planted on the firm ground of honesty and square dealing.

Meanwhile we may congratulate ourselves on the fact that so far as our own special aspect of this crusade is concerned, the widening circles have passed beyond the confines of this country. We cordially hail our new allies in the world of general commerce, for every step gained by them means the breaking down of so much entrenched resistance to the propaganda for honesty in the promotion of proprietary medicines.

#### PHYSICIANS AND MEDICINE AND MEDICAL TEACHING.

The comic papers delight in making the medical profession and medicine the butt of ridicule. For legitimate criticism and the humor that is inevitable in all things human, there can be no resentment. Many of the expressions used with regard to the profession, in the light of what it has accomplished for public health and modern philanthropy, are so ungenerous, however, as to be rather painful reading. The writers of no nation have been more free with the pen in this matter than have the French, and though Gallic humor and French wit assume the license to play around everything in life, no matter how serious, with a bitingness unexampled elsewhere, it is evident that the aspersions on the medical profession have not been without resentment, even in France. In the *Revue des Deux Mondes* (June 1) Professor Charles Richet has an article on *La Médecine, les Médecins et les Facultés de Médecine*, in which, while admitting that the medical profession can not hope to escape criticism in a time of universal criticism, he replies to certain aspersions which are unfounded.

He states forcefully the objections that are made against modern scientific medicine, its impotence in the face of cancer, its inability to stop the progress of infectious disease once it has taken hold, its utter failure with regard to the serious diseases of the heart and the liver and the internal organs generally, its inability to do away with infant mortality, that while there has been boasted progress in nervous diseases, this has been entirely in the line of diagnosis and not of treatment. He admits that there is not a little justice in the objection that many diseases develop in just the same way, whether under the care of a skillful therapist or left practically untreated. Patients who are going to recover do so. Above all, he admits the justice in the criticisms with regard to the vogue which certain new remedies gain without due reason. As the French comic papers sometimes put it, when a new remedy is in the hands of the medical profession: "Hurry and take it while it still cures, for soon it will be found to be of no value."

Professor Richet admits that many of these criticisms have a certain basis of truth, but declares that their bitterness is entirely uncalled for. In terms very nearly the equivalent of a striking expression frequently quoted that: "Life is a dangerous thing at best, and very few of us get out of it alive," he says that death is in the world and physicians are not expected, even by those who have the most implicit confidence in them, to stay its progress. The rôle of the physician, he continues, has been admirably defined: "He cures sometimes, he relieves nearly always, he always consoles." Even if he can not cure the unfortunate victim of cancer of the stomach, the physician can bring him so much relief, he can render digestion so much less painful, he

2. THE JOURNAL A. M. A., Feb. 29, 1908, p. 703.

3. Miscellaneous Department, Page 932.



can make the nights so much less cruel, he can save him so much agony, that the patient comes to consider him as almost superhuman in his power for good, and though the disease will not be cured, the rôle of the physician is one of the most beautiful and most efficient in the whole sphere of human action.

Professor Richet points out how, in spite of the many uncertainties that are left in medicine, medical science has so developed in the last two or three generations, that the practice of medicine is more exact than it was a half-century ago, and is daily becoming more so. "Patients still talk of the many different diagnoses of the same trouble that they receive from physicians, but that is because not a few of the physicians to whom they go have not been thoroughly trained. In the ordinary hospital examination for internship, the young physician applicant is asked to examine a patient, and usually the case picked out will not be very simple, yet, in more than nine times out of every ten there will be perfect agreement among the group of hospital physicians as to what the malady is, and as a rule the young physician will make the diagnosis correctly."

Even in maladies in which a physician can do little to prevent them from running their course, his presence and the knowledge that he is watching to avert complications, give reassurance and mean so much to the patient that it does more to increase that vital resistance by which disease is thrown off than anything else that could be done for him. "It is not the fault of medicine if Nature cures certain diseases, and, on the other hand, it is not the fault of medicine if it can not cure all diseases." The human machine tends to wear out, and cure would in many cases mean the re-creation of special parts for it. Medicine can not cure in these cases, but while it is without resources to circumvent death, it is all powerful in the remedies that it has to prevent pain. The saddest thing in human history is the amount of pain that men formerly had to undergo without any possibility of relief. Now there is scarcely any pain that can not be relieved in a comparatively short time.

While the humorists still continue to urge certain objections against medicine, they are mainly exposing their own ignorance as to recent developments and are doing harm just to the extent that they foster a lack of popular confidence in physicians. It is only the healthy who make fun of the physicians. Even the bitterest critic calls a physician when he is ill, and those who have had most to do with physicians because they have been ailing for long years, not only have the most confidence in them, but come to look on them as benefactors of mankind.

There are many other well-put answers to criticisms of present-day medicine in Richet's rather lengthy article, and those who read French will find an entertaining hour in perusing it. There is scarcely a criticism of modern medicine that does not find a judicious dis-

cussion here, from the use of placebos—for Professor Richet believes in the old proverb, "Better a doubtful remedy than none, provided always the remedy does no harm"—to the most recent position taken by physicians in France with regard to alcohol.

---

#### THE U. S. PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE PERSONNEL BILL.

The problem of establishing a national department of public health is one that will require careful consideration and possibly much time. While awaiting its solution, there is another matter that should have immediate attention. The salaries of the officers of the U. S. Public Health and Marine-Hospital Service were fixed originally at the same figures as those of the medical officers of corresponding rank in the army and navy. But recently bills were passed by congress raising the salaries of officers in the medical departments of the army and navy. A similar bill correspondingly raising the salaries of officers in the U. S. Public Health and Marine-Hospital Service was introduced and passed the senate; it did not, however, pass the house before adjournment. The men in this department, in the piping times of peace, are doing a work no less arduous than do the medical officers of the fighting service of our government in time of war. Many of them are constantly on the firing line, and no small number of them have lost their lives in fighting epidemics. On many occasions they have demonstrated that their service is invaluable to the United States and to each one of its component parts. Even with the increase in pay granted under the bill mentioned, these medical officers will be none too liberally paid, and to make them drag out perhaps years of further work at the present inadequate compensation, while we are waiting for a proper solution of the public health question, would be unfair and unjust. Small and but partly developed as this service is, we owe much to it for the hard, conscientious work which already has been done by its officers. To place them on the same salary footing as the medical officers of the army and navy would seem to be the least that ought to be done at the present time; and it should be done at once.

---

#### WHOLESALE PROPHYLAXIS.

To combat the caterpillar plague, which was having a disastrous effect on the forests of Saxony, search lights were thrown on the wooded mountain sides half a mile distant. The light attracted the caterpillar moths within the range of exhaust fans, which on one night captured three tons of these lepidopters.<sup>1</sup> It may seem visionary to suggest some such wholesale method of eliminating the cause of epidemics among human beings. While the removal of typhoid germs, for instance, from large bodies of water may be beyond man's inventive skill, yet that it is well within his power to prevent the initial pollution of the water is evidenced by modern scientific methods of sewage disposal. While malaria, too, is still a disease to be reckoned with, yet in certain districts the destruction of *Anopheles* by put-

---

1. Quoted from the Scientific American, Aug. 29, 1908, p. 128.



ting petroleum on stagnant water has practically abolished the *Plasmodium malariae*. The description of Saxony's method of dealing with the caterpillar plague reads somewhat Münchhausenian, yet to the people of a third of a century ago some of the methods of modern medical science in disease prophylaxis would have seemed no less far-fetched and sensational.

## Medical News

### CALIFORNIA.

**Physician Sent to Penitentiary.**—In the case of Dr. Ralph A. Huntington, Fruitvale, said to have been convicted of manslaughter in 1900 for death following the performance of a criminal operation, and who was granted a new trial, the Appellate Court on August 13 decided that he must serve a term of imprisonment of four years in the state penitentiary, at San Quentin.

**New Societies.**—An antituberculosis society has been formed in Oakland with Drs. Albert H. Pratt, J. Radford Fearn, Arthur L. Cunningham, Dudley B. Chaunell, and Nelson H. Chamberlain on the board of directors. Physicians of southern California met at Venice, August 8, and organized the Municipal Health Association of Southern California. Dr. W. H. Parker, Ocean Park, was elected president; and Dr. William S. Smith, Santa Monica, secretary; and Dr. Lyman H. Case, Santa Monica, committee on public health.

**Hospital Notes.**—Work has commenced on the addition to the Red Cross Hospital San Mateo, donated by Mrs. Whitelaw Reid. The plans for the new Marine View Hospital, Eureka, to be erected by Drs. Charles C. and Curtis O. Falk, are completed and construction will be commenced at once. The hospital, when completed, will represent an outlay of \$35,000. A corporation has been capitalized at Palo Alto to erect a large private hospital to contain from 20 to 25 patients, at a cost of \$40,000. Property has been secured in Bakersfield for the new hospital to be conducted by the Sisters of Mercy. The buildings at present on the property will be remodeled at a cost of \$2,500 for temporary use, pending the erection of a new building. The University of California has been donated \$100,000, the balance of the San Francisco relief fund contributed by Massachusetts for the establishment of a free ward in the University of California Hospital to be known as the Massachusetts Ward.

### DISTRICT OF COLUMBIA.

**Fire in Hospital.**—A slight fire occurred at St. Elizabeth's, the government hospital for the insane, August 11, which was extinguished by prompt action of the fire brigade before the arrival of the fire department of the city.

**Personal.**—Isaac Phelps, for many years instructor at Yale, has been appointed instructor in physiology in the Medical Department of George Washington University. Dr. Murray G. Motter, deputy health officer and chief inspector of the district, has resigned to accept a position in the Public Health and Marine-Hospital Service. Dr. Henry F. Sawtelle has succeeded Dr. Motter.

**Health Report.**—According to the report of health and mortality for the week ended August 22, there were 76 deaths, 42 of the decedents being white and 34 colored. There were 133 births registered, of which 99 were white. Typhoid fever showed a slight increase as compared with the preceding week, as 44 new cases were reported, bringing the total number of cases on hand to 182, with 3 deaths.

### ILLINOIS.

#### Chicago.

**Gift to Library.**—Drs. Emanuel J. and William N. Semm have presented to the John Crerar Library more than 2,000 volumes from the library of the late Dr. Nicholas Semm, to be added to the Semm collection.

**Personal.**—Dr. and Mrs. Philip S. Doane expect to sail from Europe October 17. It is announced that Dr. Antonio Lagorio, who was recently infected with rabies, is out of danger. Dr. George E. Fosberg and family have returned from Europe.

**In Many Languages.**—The health department on August 31 began issuing its bulletin on "Hot-Weather Care of Infants" in Lithuanian. The bulletin had previously been published in English, Polish, Bohemian, German, Italian, Swedish and Yiddish.

**Henrotin Bath Dedicated.**—The first public bath to be located in the Twenty-fourth ward, and named in honor of the late Dr. Fernand Henrotin, was formally dedicated September 1. The bath house has 20 shower baths and is located at Ashland and Fullerton avenues.

**School Inspection.**—Beginning September 8, each school medical director will make a daily visit to each school assigned him. At the first visit the inspector will make a rapid inspection of all pupils to determine if any seeking admission bear evidence of contagious disease. More detailed inspections will be made later.

**August Mortality.**—There were 348 more deaths in August than in July, and 132 fewer deaths in August than in the corresponding month of last year. The deaths from all causes were 2,690, of which acute intestinal diseases caused 815; consumption, 288; heart disease, 198; violence (including suicide), 194; nephritis, 157; cancer, 124; and pneumonia, 120.

**Contagious Diseases.**—To the total of 324 cases of contagious diseases reported during the week ended September 5 diphtheria contributed 61; scarlet fever, 69; measles, 11; whooping cough, 12; typhoid fever, 126; and tuberculosis, 31. All diseases were fewer in number excepting scarlet fever and typhoid fever, the former increasing 32 and the latter 79.

**Weekly Deaths.**—The mortality during the week ended September 5 was 553, or 31 less than for the preceding week, and 21 less than for the corresponding week of 1907. There was a reduction of 38 from diarrheal diseases; 19 from consumption, and 4 from typhoid fever. The deaths from diphtheria increased 3; from pneumonia, 10; and from whooping cough, 3, as compared with the preceding week. Acute intestinal diseases caused 138 deaths: tuberculosis, 46; violence (including suicide), 42; nephritis, 39; heart disease, 38; pneumonia, 35; and cancer, 32.

### KENTUCKY.

**Society Meetings.**—The Knott County Medical Association was organized at Hindman, June 26. The following officers were elected: President, Dr. John W. Duke, Hindman; vice-president, Dr. Owen Pigman, Mallie; secretary, Dr. Montford F. Kelly, Hindman; and treasurer, Dr. Richard W. Duke, Hindman. The Owensboro Medical Society at its annual meeting elected the following officers: President, Dr. Charles H. Todd; vice-president, Dr. Otway W. Rash; secretary, Dr. George L. Barr; and member of board, Dr. John J. Rodman.

**Personal.**—Dr. Joel Ross, Fort Thomas, has returned after seven years spent as medical missionary in Corea. The home of Dr. J. P. Brashear, Middleboro, was destroyed by fire August 19, he and his family barely escaping with their lives. Dr. William L. Nuttall, Newcastle, has been appointed superintendent of the Kentucky Institute for Feeble-Minded Children, Frankfort. Dr. Frank H. Clarke, Lexington, has returned from Europe. The office of Dr. Frank P. Strickler, Elizabethtown, was damaged by fire August 20, to the extent of about \$700. Drs. Virgil F. Barker and Joseph Gower have been elected members of the Newport board of health. Dr. James A. Averdick, Covington, is seriously ill with septicemia. Dr. Samuel T. Botts, Glasgow, who has been seriously ill, is reported to be improving.

### MARYLAND.

**Typhoid Fever.**—Typhoid fever is reported at Arundel-on-the-Bay, near Annapolis. Several cases are said to have been taken from there to Washington. The source of the epidemic has not yet been ascertained.

**Test Case.**—Dr. Benjamin R. Davidson, Davidsonville, register of wills of Anne Arundel County, was arrested September 1 for violating the new law which imposes a wheel tax on owners of vehicles using the county roads. Dr. Davidson, like many other residents of the county, holds that the law is unconstitutional, and will make this a test case.

#### Baltimore.

**Personal.**—Dr. H. J. Giering is in Paris. Dr. William D. Booker has returned from abroad much improved in health. Dr. James M. Carter, while suffering with despondency due to ill health, is said to have attempted suicide with a pistol, August 28.



**Delay in Opening Hospital.**—The Sydenham Hospital for Infectious Diseases will not be opened for six or eight weeks, owing to the necessity of having an administration building. The commission tried to avoid providing this building, hoping to be able to use some rooms in the hospital for physicians, nurses and employes, but this was found to be impracticable.

**Arrest for Illegal Practice.**—During the last week two arrests were made for illegal practice of medicine. One was a negro woman who prescribed herb medicine for a policeman, and was committed pending the action of the criminal court; the second case was a man calling himself "Dr." Joseph W. Reynolds, who also prescribed for a patrolman and claimed to have a certificate at his home in Cecil County.

**Tuberculosis in Factories.**—The governor's plans for dealing with tuberculosis in factories in the state, through inspectors who superintend the conditions in which the employes work, and are on the lookout for cases of tuberculosis, meets with very great favor, both among factory owners and the medical profession. It has been suggested that appointments of inspectors be made by the State Board of Health.

#### MASSACHUSETTS.

**No Trace of Plague.**—The port physician and health commissioner of Boston have released the Portuguese immigrants who were thought to have been exposed to bubonic plague, and quarantined at Gallup's Island, as the period of incubation has safely passed.

**Personal.**—Dr. Herbert L. Burrell, Boston, president of the American Medical Association, sailed September 8 to attend the International Congress of Surgery, to be held at Brussels. —Dr. H. A. Christian has been appointed Hersey professor of theory and practice of medicine in the Harvard Medical School. —Dr. Frank B. Gallivan, chemist of the Boston milk laboratory, has resigned.

**Ether Day.**—The trustees of the Massachusetts General Hospital have issued invitations to attend the exercises at that institution of the sixty-second anniversary of Ether Day, October 16. Demonstrations and operations are to be made at the hospital from 11 a. m. to 1 p. m., when luncheon will be served; the exercises of Ether Day, presentation of diplomas and the annual address by Dr. William H. Welch, Baltimore, will be held at 3:30, and the dinner of the Hospital Alumni Association will occur at 8 o'clock.

**Woman's Medical Society.**—The Woman's State Medical Society of Massachusetts has been formed with the purposes of bringing medical women of the state into communication with each other for their mutual advantage, of extending medical knowledge, of advancing medical science, and encouraging social and harmonious relations within the profession. The requirements for active membership are that applicants must be graduates in medicine, in good professional standing, and members of the Massachusetts Medical Society. Associate members consist of women graduates in medicine from recognized medical colleges, who have the privilege of becoming active members as soon as they meet the requirement of membership in the state society.

#### NEW JERSEY.

**Hospital Notes.**—The bids for the erection of the new hospital at the almshouse at New Lisbon have been received. The lowest bid was \$7,966 for the building and \$1,690 for plumbing and heating. —Dr. L. F. Hatch, Vineland, has erected a hospital in that city which has cost more than \$18,000 and is to be free to all emergency cases.

**Personal.**—Drs. Edward Whalen, James Trotter and Leo Koppel, internes in the Jersey City Hospital, are taking the Pasteur treatment. —Dr. Edward D. Bradin, Newark, who was recently stricken with cerebral hemorrhage, is reported to be improving. —Dr. James H. Curtis, Paterson, who was injured in an automobile accident at Bogota, August 2, has been removed to St. Joseph's Hospital, Paterson, and is improving slowly. —Dr. Frank P. McKinstry has been elected president of the Washington board of health.

#### SOUTH CAROLINA.

**Personal.**—Dr. Robert Wilson, Charleston, has been elected dean of the Medical College of the State of South Carolina. Charleston, vice Dr. Allard Memminger, resigned; Dr. Lane Mullaly, has been elected vice-dean and registrar; and A. Johnston Buist, secretary and treasurer. —Dr. James M. Johnson, Newberry, has been made instructor in medicine in the clinical laboratory of Johns Hopkins University, Baltimore.

#### NEW YORK.

**Personal.**—Dr. Frederick E. Lettice, Schenectady, has been appointed physician to the state prison, Ossining, vice Dr. Robert T. Irwine, resigned. —Drs. John A. Stapleton and Philip Conboy, Rochester, have sailed for Europe. —Dr. Edward A. Dean has been elected health officer of Seneca, vice Dr. Edward H. Ballou, Gardenville, deceased.

#### Buffalo.

**University to Open.**—The medical department of the University of Buffalo will open for its sixty-third annual session September 28. Dr. Julius Ullman will deliver the annual address.

**Hospital Notes.**—Work is progressing on the new United States Marine Hospital, which is to cost \$125,000. —The work of the day tuberculosis camp has been in progress for 60 days and is exceptionally gratifying, as 40 patients have taken treatment each day. —A determined effort is being made for the erection in Buffalo of a suitable municipal isolation hospital.

#### New York City.

**Millions to Charity.**—By the will of Frederick Hewitt, Owego, \$2,000,000 is bequeathed to the New York Post Graduate School and Hospital. —The Lying-in Hospital of Manhattan has been bequeathed a portion of the residuary estate of the late William B. Leeds.

**New Home for Dispensary.**—Plans have been filed for a new building for the New York Dispensary on Worth Street. The new edifice is to cost \$25,000 and will be built in Italian renaissance style. The building will contain a diet kitchen, drug store, dentist's office, small isolation wards, and a ward for tuberculous patients.

**Bellevue Wants Larger Allowance.**—The annual budget of Bellevue and Allied Hospitals asks for \$1,197,861, which is an increase of \$271,679 over last year. The principal reason for this increase is the completion of the new pavilions which will accommodate 396 patients, and it is expected that they will be fully occupied during the coming year.

**Remodel Vanderbilt Clinic.**—The Vanderbilt Clinic of the College of Physicians and Surgeons is to be remodeled at a cost of \$20,000. Among improvements to be made are the obtaining of room for setting up mechanico-therapeutic apparatus for the therapeutic department and enlargement of the laboratory of chemical pathology. By agreement of the New York County branch of the Red Cross, the Vanderbilt Clinic announces that a day camp for tuberculosis patients will soon be opened on the roof of that building. The Red Cross will provide the funds necessary for the maintenance of the camp. The executive work will be largely in the hands of the woman's auxiliary committee of the clinic.

**Personal.**—Dr. Carl Beck has returned from Europe. —Dr. Eugene B. Sanborn, Borough of Richmond, deputy health officer of the port of New York for 30 years, has retired, and will live henceforth at his farm near Machias, Maine. —Dr. Smith Ely Jelliffe sustained serious bruises in an automobile accident near Liberty, N. Y., August 4. —Dr. Mary Crawford, ambulance surgeon, was attacked and beaten by an insane patient in an ambulance, August 19, and on September 6 had an encounter with a second insane individual, whom she subdued. —Dr. Lawrence Aiken, ambulance surgeon in the Long Island Hospital, was thrown from the ambulance, in a collision with an electric car, August 27, breaking his right arm.

**What the Health Department Costs.**—The annual budget of the board of health calls for large increases in appropriations. The hospitals under the jurisdiction of the department especially urge large appropriations: Willard Parker Hospital, which has been receiving \$215,012, wants \$282,940; the Riverside Hospital wants \$269,105 instead of \$209,068; the Kingston Avenue Hospital in Brooklyn, where scarlet fever is treated, has asked for \$302,110, which is an increase of \$120,000. The United States government sends immigrants suffering from contagious diseases to this institution and pays \$75,000 annually for the privilege. There is a demand for an increase in school and district inspectors. Manhattan has at present 226 inspectors and needs 295; also 93 nurses instead of 45 as at present. The department asks for \$2,269,722 for salaries. The total asked for is \$3,416,519 for the year 1909.

#### WASHINGTON.

**Epidemic Diseases.**—The Tatoosh epidemic of diphtheria is now under control. Only one death has resulted so far. —Six cases of diphtheria and one case of scarlet fever were reported from the Catholic Orphanage, Seattle, August 20.



**To Avert Oriental Diseases.**—Dr. Spiro Sargentitch, health officer of Tacoma, has sent an invitation to the health officers of the Puget Sound and Pacific cities to hold a meeting in Tacoma to consider means to prevent the spread of bubonic plague and other oriental diseases.

**Personal.**—Dr. Mary McMillan has resigned as house physician at the Deaconess' Hospital, Spokane, and has been succeeded by Dr. Bandy, Wilbur.—Dr. M. M. Hull has returned after a year in Europe and opened an office at Green Lake.—Dr. Albert L. McClanahan, Seattle, is said to have been fined \$20 August 6, for alleged failure to report a case of diphtheria to the municipal health officer.

**Health Report.**—The health report of Seattle for July shows that there were 341 births and 146 deaths registered during the month. Among the chief causes of death were: Diseases of the circulatory system, 21; accidents, 17; diseases of the digestive system and tuberculosis, each 14; diseases of early infancy, 13; diseases of the nervous and genitourinary systems, each 12; suicide, 10; cancer, 6; diphtheria, pneumonia and puerperal diseases, each 3; and typhoid fever, 2. The following contagious diseases were reported during the month: Diphtheria, 39; scarlet fever, 32; typhoid fever, 25; smallpox, 16; and measles, 7.

#### GENERAL.

**Personal.**—Drs. William A. White, Washington, D. C., and Smith Ely Jelliffe, New York City, have been appointed delegates to represent the United States at the Third International Conference for the Care of the Insane, to be held in Vienna, October 7 to 11.

**Health in Cuba.**—The sanitary department in Cuba will maintain rigid quarantine against Mexican ports until yellow fever is officially declared extinct. All persons arriving in Havana from these ports are detained in camp to complete the incubation period, and passengers in transit are forbidden shore liberty.—At Daiquiri only one case of yellow fever and that of mild type, was reported during the week ended August 15.

**Yellow Fever in Cuba.**—Dr. Carlos J. Finlay, chief sanitary officer of Cuba, in circular No. 50, issued July 27, details the cases of yellow fever which have occurred since April 1, the beginning of the present epidemic year. In all 15 cases were reported, 2 of which were in Santiago and 13 in Daiquiri. Of these patients 3 died and 12 recovered. He gives out the last occurrence of yellow fever by provinces as follows: In Pinar del Rio, 1900; Havana City, Jan. 31, 1908; Havana province, Jan. 10, 1908; Matanzas province, Dec. 24, 1907; Santa Clara province, Feb. 18, 1908; Camaguey province, Nov. 12, 1907; and Oriente province, July 9, 1908.

**Health of the Canal Zone.**—The report of Col. William C. Gorgas, U. S. A., chief sanitary officer Canal Zone, for June, shows a reduction in the death rate for white employes for the month as compared with the rate of 1907 of 1.21 per cent.; among colored employes for the same period, a reduction of 20.50 per cent., equivalent to a reduction in the death rate of all employes of 15.18 per cent. Out of the total of 47 deaths during the month 21 were due to accidental violence; 5 were due to malaria, as compared with 8 in the corresponding period of last year; 2 to typhoid fever, as compared with 8 in June, 1907, and 5 from pneumonia, as compared with 30 during the corresponding period of last year, showing a definite improvement along all lines. Of the 4 deaths which occurred among whites from the United States, 3 were from external violence and one from organic heart disease. The first 2 deaths on the Isthmus from hydrophobia occurred in June. There was no quarantinable disease of any kind during the month.

#### THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

As we have previously noted, the work of the Congress is divided into two parts: the tuberculosis exhibit and the section work. Both the exhibition and the Congress will be held in the new National Museum at Tenth and B Streets, Washington, D. C. The exhibit continues during the entire three weeks, but the section work is limited to the second week, September 28 to October 3. The work of this week will be inaugurated in a general meeting to be held September 28 at 11 a. m., at which it is expected that Secretary Cortelyou will preside. At this meeting there will be no speaking except by the representatives of governments, twenty-four independent governments being represented. The work of the congress is carried on in seven sections. Each section will hold two sessions daily, excepting on the days when the general meetings are held. The opening session of the sections occurs Monday, Sept. 28, at 2:30 p. m. The general

meetings will be held in Assembly Hall of the New National Museum. The section meetings will be held in rooms on the second floor of the same building. The first floor will be occupied by the Tuberculosis Exhibition. The program of the Orthopedic Section was published in THE JOURNAL, August 22.

#### Section Officers.

The following are the presiding officers of the various sections:

**Section 1: Pathology and Bacteriology.**—President, Dr. William H. Welch, Baltimore; secretaries, Dr. Harold C. Ernst, Boston, and Dr. William Royal Stokes, Baltimore.

**Section 2: Clinical Study and Therapy of Tuberculosis.**—President, Dr. Vincent Y. Bowditch, Boston; secretaries, Dr. Edwin A. Locke, Boston; Dr. W. Jarvis Barlow, Los Angeles, and Dr. Guinard, Bligny, France.

**Section 3: Surgery and Orthopedics.**—President, Dr. Charles H. Mayo, Rochester, Minn.; secretaries, Dr. William D. Haggard, Nashville, Tenn., and Dr. John T. Bottomley, Boston.

**Section 4: Tuberculosis in Children.**—President, Dr. Abraham Jacobi, New York; secretaries, Dr. David Bavaire, Jr., New York, and Dr. F. S. Churchill, Chicago.

**Section 5: Hygienic, Social and Economic Aspects.**—President, Mr. Edward T. Devine, New York; secretaries, Mr. Alexander M. Wilson, Chicago, and Miss Lilian Brandt, New York.

**Section 6: State and Municipal Control.**—President, Surgeon-General Walter Wyman, Washington, D. C.; secretary, Dr. J. W. Kerr, Washington.

**Section 7: Animal Tuberculosis.**—President, Dr. Leonard Pearson, Philadelphia; secretary, Dr. John R. Mohler, Washington, D. C.

#### Public Lectures and Meetings.

On Friday afternoon, September 25, at 2:30, President Roosevelt will receive the delegates in the East Room, at the White House. On the evening of Monday, September 28, from 8:30 to 11 o'clock, there will be a reception in the Corcoran Art Gallery. During the two weeks, September 28 to October 9, there will be public lectures as noted in THE JOURNAL, August 29, 1908, p. 769.

#### Abstracts of Papers.

Abstracts of the papers to be read will be prepared for distribution on the day on which they are to be read and the full text of the papers, together with special lectures, the discussions, and an account of the chief features of the exhibition will be published in the Transactions of the Congress, which will comprise four volumes of moderate size and will be furnished free to members of the Congress.

#### Additional Papers to Be Read in Section 1.

A partial list of the papers in this Section was published in THE JOURNAL, Aug. 29, 1908, p. 769. The following are to be added:

The Ophthalmic Reaction. Dr. Fernand Arloing, Lyons, France.

Concerning Latent Tuberculosis. Prof. Francis Harbitz, Christiania, Norway.

The Predisposition of the Lung Apices and the Rules for Locating the First Disease Centers. Dr. Carl Hart, Berlin, Germany.

The Opsonic Index in Certain Tuberculous Infections. Dr. T. W. Hastings, New York.

The Opsonic Index in Early Diagnosis. Dr. George P. Sanborn, Boston.

Studies of the Opsonic Index. Drs. H. M. Kinghorn and D. C. Twichell, Saranac Lake, New York.

The Cutaneous Tuberculin Reaction. Dr. Clemens von Pirquet, Vienna, Austria.

Cutaneous and Conjunctival Reaction. Dr. A. Wolff-Elsner, Berlin.

Cutaneous and Conjunctival Reaction. Dr. Arnold C. Klebs, Chicago.

The Present Status of Serum Diagnosis. Dr. Paul Courmont, Lyons, France.

Flies as Agents in the Dissemination of Koch's Bacillus. Dr. C. André, Lyons, France.

The Possibilities of Infection from Table Utensils at Sanatoria. Dr. J. Woods Price, Saranac Lake, N. Y.

The Relations of Human and Animal Tuberculosis, with Special Reference to the Question of the Transformation of Human and Other Types of Tubercle Bacillus. Prof. Theobald Smith, Boston.

Human and Bovine Tuberculosis and the Tubercle Bacillus. Prof. J. Fibiger and Prof. C. O. Jensen, Copenhagen, Denmark.

The Susceptibility of Cattle to the Virus of Surgical Forms of Human Tuberculosis. Dr. R. M. Dinwiddie, Experimental Station, Arkansas.

Tuberculous Cervical Adenitis. A Study of the Tubercle Bacilli Cultivated from Fifteen Consecutive Cases. Dr. P. A. Lewis, Boston.

The Problem of Immunity in Tuberculosis. Dr. Edward R. Baldwin, Saranac Lake, New York.

Immunization Against Tuberculosis. Prof. A. Calmette and Dr. C. Guérin, Lille, France.

Immunity Production by Inoculation of Increasing Numbers of Bacteria Beginning with One Living Organism. Drs. Gerald B. Webb and W. W. Williams, Colorado Springs, and Prof. M. A. Barber, University of Kansas.



Considerations Concerning Lesions of Tuberculosis. Prof. William T. Councilman, Boston.

The Pathology of Hemorrhage in Incipient Tuberculosis. Prof. J. Pailot, Lyons, France.

The Distribution of Tuberculous Lesions in Infants and Young Children. A Study Based on Postmortem Examinations. (To be read in Section IV). Dr. Martha Wollstein, New York.

The Frequency of Tuberculosis in Childhood. (To be read in Section IV). Dr. C. von Pirquet, Vienna, Austria.

Papers, titles not given, will be read by Drs. B. Stiller, Budapest, Hungary; Simon T. von Unterberger, St. Petersburg, Russia; Johann von Szaboky, Budapest, Gleichenberg; N. Jaucso and A. Elfer, Klausenburg, Hungary; Ladislaus Detre, Budapest, Hungary; Isidora Spitzstein, Budapest, and J. Hericourt, Paris; S. Matejin, Budapest; S. Arloing, Lyon, France; M. P. Ravenel, Madison, Wis.; Lydia Rabinowitsch-Kempner, Berlin; A. Calmette, Lille, France; Fernand Bezancon and S. J. de Joug, Paris, and Prof. G. Nicolas, Lyons; Josef Kertesz, Budapest; R. Lepine, Lyons; E. Boinet, Marseilles, France.

#### FOREIGN.

Personal.—Dr. Emil Kraepelin, professor of psychiatry in Munich, who has been visiting the Yellowstone Park and the Yosemite, has sailed for Europe.—Dr. William Osler, Oxford University, has been made lord rector of Edinburgh University.

Progress on the Mecca Railroad.—The Hedjaz Railroad is finished to Medina, where the first train arrived August 22. It is feared that the completion of this road will throw wide the gates for the invasion of Europe by oriental epidemics. International prophylaxis is being remodeled to cope with this new aspect of the Mecca pilgrimages.

Four-Hundred-Year-Old Drug Store in Copenhagen.—The apothecary shop "at the Sign of the Swan" is approaching the four hundredth anniversary of its foundation. Two other drug stores in Copenhagen have recently commemorated their two hundredth and two hundred and fiftieth anniversaries by the publication, by each, of an illustrated souvenir pamphlet. They review the history of pharmacy in Denmark, with many sidelights on the history of medicine and of the medical profession.

Death of Becquerel.—Henry Becquerel was professor of physics and applied physics at Paris, and has made notable contributions to science besides his discovery of the rays from uranium salts which have made his name famous. He held honorary degrees from four British and one German university, and was a member of the scientific academies of Rome, Berlin and Washington. Besides the Rumford, Burnard and Helmholtz medals, he shared the Nobel prize for physics in 1903 with the Curies. At his death, August 25, he was 57 years old.

Investigation of Alleged "Miracle Cures."—The pilgrimages to Lourdes are attracting more and more persons from Germany every year, and the Germans look with much disfavor on this "wasting of Teutonic savings on French soil." A Munich society, the *Monistenbund*, has appealed to physicians to investigate the after-history of cases in which miraculous cures are alleged to have been realized. The appeal is signed by two Munich physicians, one of whom is treating for severe lupus a woman whose "miraculous cure" of the lupus is chronicled in Boissarie's book as one of the great miracles at Lourdes.

#### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Aug. 29, 1908.

##### Record Decrease in the Death Rate.

The quarter ending June last showed the lowest death rate recorded in any second quarter since civil registration was established. The deaths registered in England and Wales were at the rate of 13.8 per 1,000 of the population, which is 1.8 per 1,000 below the mean rate for the corresponding quarters of the last ten years. The lowest rates were in the counties of Middlesex (10.8), Essex (11), and Kent (11.2). The three Welsh counties, Glamorganishire, Denbighshire and Carmarthenshire, showed the highest rates, which were 15.7, 15.7 and 18.9 respectively. In the 76 cities with populations exceeding 50,000 there was a marked decrease in the mortality. The rate was 13.7, as against 14.7, 14.8 and 14.9 in the three preceding corresponding quarters. The same holds true of the 142 smaller towns, with populations ranging between 20,000 and 50,000. The rate was 12.9, as against 13.6, 13.4 and 14 in the three preceding corresponding quarters. The birth rate for the quarter shows a decrease of 1 per 1,000 as compared with the average for the preceding ten years.

##### The Danger from Illness of Locomotive Engineers.

In the London Letter of May 30 there was recorded the death of an engineer on the footplate of an express train a few minutes after leaving Newcastle. This occurrence drew

attention to the necessity of medical supervision of men engaged in this work. Another warning of a still more striking character has now been given. The escape from great loss of life was most remarkable. A market train, crowded with passengers, was about a mile from Nottingham when the driver, who had only just resumed work after a period of sick leave, was suddenly seized with paralysis and fell on the footplate. For a few minutes the fireman was so concerned for the engineer's safety that the engine was left uncontrolled, traveling at an increasing speed. At Radford the train was signaled to stop, but it dashed through the station at a high speed, alarming the officials and the passengers. The signals had been set against the train, so that an express train to London might pass. As the driver failed to stop the signalman, realizing that disaster was imminent, promptly switched the runaway train on to a branch line. He was only just in time. The train had barely cleared the main line when the express dashed past. By this time the fireman had taken command of the engine and brought the train to a standstill. The driver was found lying helpless and speechless on the footplate. In this connection the Shrewsbury disaster, which occurred in the early hours of Oct. 15, 1907, may be recalled. A train ran with a high rate of speed on a curve near Shrewsbury and consequently left the rails. Eighteen persons were killed and many others were seriously injured. An exhaustive government inquiry failed to show why the engineer (who was killed) did not, as usual, reduce speed on approaching the curve. In cross-examination the locomotive foreman admitted that he had to certify that the engineer was in good health and that the latter had not been medically examined since admission to the service, about forty years ago. The most reasonable hypothesis is that the man was taken suddenly ill. Another danger—that of defective eyesight—in locomotive engineers has recently been called attention to by Mr. A. R. Galloway, surgeon to the Aberdeen Eye Institution. He reported two cases which had come under his observation in the last few months. A locomotive engineer came to the Eye Institution who, three years before, had passed the engineer's examination which was conducted by a lay inspector and thereafter by the superintendent. The engineer had noticed that his sight was defective for ten years and it had been getting worse. Examination showed compound myopic astigmatism. In the other case there was hypermetropia of two diopters.

##### Diphtheria Mortality and Antitoxin.

The annual report of the metropolitan asylums board for 1907, which has just been published, supplies further testimony of the value of antitoxin in diphtheria. In the quinquennial period, 1887-91, the death rate in the cases admitted to the board's hospitals was 33.6 per cent., and in 1893, the year before the introduction of antitoxin, 30.1 per cent. During 1907 it was 9.6 per cent., and during the quinquennium 1902-06, 9.3 per cent. The significance of these figures is accentuated by those of the Brook Hospital, at which a record has been kept of the mortality according to the day of the disease on which the antitoxin was given. During the years 1897-1907, 6,556 cases were treated. Of these 250 patients received an injection of antitoxin on the first day of the disease without a single death; 1,513 received the injection on the second day, with a mortality of 4.3 per cent.; 1,690 received the antitoxin on the third day, with a mortality of 11.2 per cent.; 1,338 were injected on the fourth day, with a mortality of 16.9 per cent., while 1,765 received antitoxin on the fifth day, with a mortality of 18.6 per cent.

##### Legal Questions Under the Workmen's Compensation Acts.

The workmen's compensation act is constantly giving rise to difficult legal questions. Recently the liability of an employer for death due to granular kidney in a man who had previously suffered from lead poisoning was contested. The act provides that "lead poisoning or its sequelae" is a form of industrial disease for the results of which compensation is to be allowed. In the lower court the county court judge found: 1, That the immediate cause of death was granular kidney; 2, that granular kidney is a sequela of lead poisoning, but is also a sequela of gout, alcoholism, heart disease and other complaints; and, 3, that lead poisoning was not proved to be the cause of granular kidney in the deceased, but that the employers had not proved that it was not. On these findings he gave a verdict for the widow of \$1,300. This judgment was reversed by the court of appeal on the ground that the onus of proof lies on the workman and not on the employer. The court held that sequela in the act meant a consequence proved to be caused by the disease in question and not one which may have ensued from other causes.



## PARIS LETTER.

(From Our Regular Correspondent.)

PARIS, FRANCE, Aug. 20, 1908.

## Death of Professor Liégeois.

Professor Liégeois, of the law department of the University of Nancy, who has just died as the result of an automobile accident, was not a physician, but his name and his works have played a great rôle in the history of hypnotism. He was the first lawyer to study the application of hypnotism to criminal law. In a memoir published in 1884, discussing hypnotic suggestion in relation to civil and criminal law, he gave some interesting examples of criminal suggestion and drew the conclusion that every one in the somnambulistic state becomes, in the hands of the experimenter, mentally and physically, a mere automaton. "Ideas spontaneously developed or acquired through education, feeling or tendencies, sympathies or repugnances, love or hatred, prejudices or passions—all these may be in an instant modified, transformed or overthrown." M. Liégeois drew from the doctrine of the complete automatism of the hypnotized subject the conclusion that a person compelled by hypnotism to commit crime was irresponsible and should be acquitted of crime; only the person who supplied the criminal suggestion was guilty; he alone ought to be prosecuted and punished. The hypnotic subject, he declared, was a mere instrument in the hands of the hypnotizer, "like the cup which contained the poison." This was one of the chief points of difference between the views of the Nancy and Salpêtrière schools. Charcot and his pupils regarded hypnotism as an actual malady, a neurosis, the appanage exclusively of hysterical subjects; they believed in the persistence in the hypnotized subject of a certain degree of personality which opposed itself to criminal suggestions. The Nancy school, on the contrary, affirmed that the hypnotic slumber might be produced in normal subjects as well; that it was the result of suggestion alone, and that suggestion rendered the subject absolutely passive in the hands of the hypnotizer, so that it was perfectly possible to make the subject commit somnambulistic crimes.

M. Liégeois' memoir and his work entitled "Relations of Suggestion and Somnambulism to Jurisprudence and Legal Medicine," 1889, made him widely known. When, in 1890, the celebrated Gouffé case was being tried the counsel for Gabrielle Bompard summoned M. Liégeois as witness for the defense. A remarkable discussion took place during this trial between M. Liégeois, who defended the doctrines of the Nancy school, and Drs. Brouardel, Motet and G. Ballet, who upheld the theory of the Salpêtrière school. Professor Liégeois' ideas, expressed at great length, had considerable influence on the verdict, for the jurors gave Gabrielle Bompard the benefit of extenuating circumstances.

## Discussion on Hysteria Before the Neurological Society.

As in 1890, suggestion and hypnotism are just now exciting vivid interest, but from another point of view. There is, in fact, a complete change of base taking place in respect to the conception of hysteria. This is why the discussion on hysteria which has occupied two long sessions of the Neurological Society at Paris, and which will be resumed after the summer vacation, has attracted so much attention. Dr. Dupré was commissioned by the society in 1901 to prepare a report on the present status of the question of hysteria. The fact that so many years have elapsed between the selection of the subject and the presentation of the report is due to the fact that there are few subjects so vast, so complex and so articulated with the whole subject of neurology and psychiatry. Dr. Babinski initiated this campaign against the traditional conception of hysteria. He restricts the term "hysteria" exclusively to a group of manifestations characterized by the fact that they can be exactly reproduced by suggestion in certain subjects and which can be caused to disappear only by means of persuasion. These manifestations, to which he has given the epithet "pithiatic," ("curable by persuasion") are to be sharply distinguished from the phenomena that can not be modified by suggestion, such as the reflexes, circulatory and vasomotor disturbances, and the so-called hysteric fever. This novel conception of hysteria has aroused so many contradictory opinions lately that, as Dr. Dupré says, every logical and inquiring mind feels the need of defining exactly what is meant by the term "hysteria," all the more that the term is constantly employed in the discussion of the many difficult medicolegal questions which arise in the application of the law of industrial accidents. The questions propounded were detailed, with discussion, in THE JOURNAL, May 23, page 1714, and were mentioned August 8, page 537.

Babinski emphasized how necessary it is to guard against error in investigating sensory disturbances or contraction of the visual field. In the past, when he was investigating hemianesthesia according to the usual methods, he encountered cases of hemianesthesia very frequently. Gradually, as he perfected his method of examination, guarding more and more against suggestion, the number of cases of this nature diminished. In the last few years, out of one hundred subjects, each presenting at least one pithiatic disturbance, not a single instance of sensitivo-sensory hemianesthesia was encountered.

The point is that one must refrain from asking the patient such questions as: "Have you a good sense of touch?" or "Have you as good sense of touch on one side as the other?" This kind of interrogation arouses the idea of anesthesia in the patient. Babinski makes the patient close his eyes; then he begins by asking the patient to put the tip of his finger, left or right, on the spot where he has been touched. Then the physician touches various parts of the body; then he pinches the skin, or pricks it, asking each time: "What do you feel now?" or "What am I doing to you?" He proceeds with similar precautions in regard to the contraction of the visual field. Professor Brissaud asserts that he has never seen contraction of the visual field since he has taken precautions against errors. In place of beginning by asking the patient if he sees the object placed directly before him, the two thumbs are placed behind the head and brought gradually into the median line. Brissaud saw an industrial accident case in which no hemianesthesia was observed at first, but, after an inexperienced medical examination, a hemianesthesia was found. The medical origin of this hemianesthesia was beyond question.

This discussion will bring a little order into a very confused subject. According to the true and witty saying of Lasègue, "Hysteria is a basket into which we throw the papers that we do not know how to classify." Does not the progress of science consist in perfecting our methods of classification so that there are fewer and fewer papers that one does not know how to classify?

## BERLIN LETTER.

(From Our Regular Correspondent.)

BERLIN, Aug. 13, 1908.

## To Reduce Infant Mortality.

The Prussian government has recently called attention anew to the fact that, by appropriate instruction of the public, intelligent care of infants can be materially promoted, and in this way the infant mortality would necessarily be reduced. In this respect the distribution of circulars (the so-called *Merkblätter*) by the registrar's office (that is, the "Bureau of Public Statistics," to which divorces, births, etc., are reported) has been of great service. The public vaccinators are instructed to take the occasion of vaccination of infants to instruct the public in an appropriate way. The midwives also are expected to assist in this direction. With reference to the most advisable methods of public care for the feeding of infants in the less well-to-do classes of the large cities, the *Wissenschaftliche Deputation für das Medizinalwesen*, the highest official medical authority in Prussia, has published the following: 1. The best method of public care for the nutrition of infants among the less well-to-do classes of the population consists in favoring and assisting to the greatest extent possible the natural nourishment from the breast of the mother. Efforts directed to this end are to be duly carried out on the part of the community. 2. The best method for securing an unobjectionable animal milk for infants of the lower classes consists in the control and, under proper conditions, the assumption of the work of supplying milk by a communal milk bureau. For this purpose it is recommended that corresponding police regulations be enacted for the various governmental districts and provinces. 3. The most advisable method for securing an appropriate nourishment for individual infants consists in the establishment of communal milk depots. In these the single meals for the infant are to be provided, ready for use, in various mixtures; with them institutes for information and for the care of infants should be organically connected in which, on the one hand, individual medical instruction should be furnished and, on the other hand, the nourishment of the infant at home should be supervised by well-instructed, permanently employed municipal nurses. 4. All measures for the communal care of infants should be conducted by a communal central office which should be under the direction of a physician.

## Preventive Medicine in the Army.

The medical division of the Prussian War Department has held a consultation to determine which curative and pro-



tective sera can be especially recommended for the purposes of the army, from a scientific and practical standpoint, with reference to their mode of action, certainty of dose and keeping qualities, and has reached the following conclusions: Diphtheria and tetanus serum and also meningococcus serum are to be recommended, as no injurious by-effects have been observed. The greatest attention should be given to dysentery serum in epidemics. The other sera at the present time are not yet to be recommended. Their application must be entrusted to the judgment and the responsibility of the individual sanitary officers. The individual field sanitary divisions should always carry tetanus and diphtheria serum; the latter, however, in small quantity, as there is little reason to expect a diphtheria epidemic. No obligation to carry the other sera is imposed. The method of typhoid prophylaxis of Pfeiffer and Kolle is to have further trial, but at present it would be practical to use it only to a slight extent and first on those who have the care of the sick.

#### Jews as Army Surgeons.

According to a communication in the political press, which has not been contradicted, the emperor has recently issued an order according to which in the choice of officers no attention shall be given to the religion (*Konfession*) of the applicant. As heretofore, no distinction was made between the different Christian denominations, this order can affect only the Jews. As is well known, there has been for some decades no Jewish officer in active service in the German army, and in Prussia there is no Jewish officer of the reserve, that is, troops for service only in case of war, while in this respect the South German states have not carried the process of exclusion so far.

The exclusion of the Jews from the position of officer is extended not only to the officers proper, but (what especially interests us here) also to the army physicians (*Sanitätsoffiziere*). In Prussia, so far as I know, there are still only two Jewish active sanitary officers, appointed in former years, while for many years the Jews have not been admitted any longer to the active sanitary corps. They are still admitted to the reserve, and, as a matter of fact, there are at present a large number of Jewish sanitary officers of the reserve. We have here the extremely singular fact that the Jews are not considered capable of exercising the functions of physicians in the active army during peace, while in case of war, when increased trustworthiness as to capability and character is demanded of every one, this privilege is accorded them. From this contradiction it may well be claimed that the exclusion of the Jews from the active medical force of the army does not possess any essential justification, and that herein principles are at work similar to those involved in the exclusion of the Jews from the higher judicial positions and state offices—principles which need no further discussion here.

No discrimination is made against them when it is a question of soliciting contributions from them. On every such occasion when the private readiness for sacrifice is in question, the Jews are always to a recognized degree at the front, in contrast to the landed proprietors for whom the biblical sentiment: "It is more blessed to give than to receive," does not seem to exist. It is even a well-known fact that Jewish money has been drawn on for the building of evangelical churches. The reward for such sacrifices has heretofore consisted only in the conferring of orders and titles on the givers; in the civil position of our Jewish fellow-citizens no changes have been made. For the active sanitary corps, improvement in this direction would have the additional favorable result that the lack of military physicians, of which complaint has been repeatedly made, would be remedied; certainly not merely to the advantage of the medical department, but also to that of the rest of the army as well.

#### Personal News.

The successor of Professor Quinke in Kiel, whose resignation I have lately recorded, is Professor Lüthje of Frankfurt a. Main. Lüthje is only about 35 years old, and, as Professor Quinke resigned on account of age, it may be said that here "extremes meet." It is now a general principle to call as young physicians as possible to the teaching positions. Lüthje's main work has been in the field of metabolism that is now so zealously studied in the medical clinics. He was chosen as the successor of von Noorden at Frankfurt, about a year ago, for this reason, as the latter's special field had also been metabolic diseases. von Noorden went from Frankfurt to Vienna as the successor of the deceased Nothnagel. It was a difficult matter for the Viennese to fill the vacancy, which may seem very strange, as it should be considered a great honor to succeed so important a clinician as Nothnagel. But clinical

relations in Vienna are quite in a muddle, nearly as bad as politics, so that none of the clinicians called from Germany was willing to accept the invitation from Vienna. Noorden accepted the call, so rumor goes, because his position at Frankfurt was not very secure. Noorden is a man with practical views who regards the old saying: "Galenus dat opes" (Galen gives wealth), as correct and acts accordingly. The patients in Frankfurt and those who came under his care from other parts have often suffered not less from von Noorden's charges than from their disease, and many a complaint regarding the clinician has escaped from patients and from the Frankfurt physicians. Noorden still sticks to his principle—as is reported—even in Vienna. If we regard health as a priceless treasure, we must acknowledge that Noorden is right. However, even in the business employment of the physician's calling, the sentiment is valid: "Est modus in rebus, sunt certi denique fines." (There is moderation in business; at any rate there are certain limits.)

Frankfurt has recently lost another scientist in the death of Prof. E. Albrecht, a young pathologic anatomist who has produced a whole series of remarkable investigations and justified the greatest hopes by his productive power and his genius. He was a man who would have adorned the highest professional chair.

#### VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, AUSTRIA, Aug. 25, 1908.

#### Vaccination in Austria.

Partly because of the constant efforts of the medical profession, and partly because of repeated outbreaks of epidemics in various large towns, the subject of vaccination has lately received much attention from the government. In consequence of the outbreak in Vienna in the summer of 1907 more than a million persons voluntarily underwent vaccination. Vaccination is not compulsory in this country, but most civil and all military offices, positions in county establishments, schools, prisons, hospitals, as well as many private positions, are open only to those who have been vaccinated. All recruits to the army, about 200,000 a year, are vaccinated on taking the oath. In Austria proper 90 per cent. of the population has been vaccinated once, and 30 per cent. twice. In the eastern and southern parts the figures are lower—10 to 20 per cent. as a rule. There is a marked correspondence between the extent of public education and of vaccination; where total illiteracy prevails the people are averse to vaccination.

Human lymph is no longer used for vaccination here. There are seven public and three private institutions for producing cow's lymph. The largest one is that in Vienna, which is owned by the state. It produces 3,000 grams of cow's lymph a year, which is made up with glycerin into 78,000 grams of vaccination lymph, equaling 700,000 tubes, each tube sufficient for two persons. As a rule, the cow's lymph is diluted with five parts of glycerin; then kept for two weeks in a refrigerator; then once more diluted, and kept on ice for four months. The lymph prepared in this way has a mild but sufficiently protective action. During the epidemic of last year, when more than 70,000 persons applied daily for lymph, the material dispensed had to be taken from fresh stock. Strong reactions, marked by rigor and pyrexia for eight to seventeen days, were observed.

The public institutions control the products of the private laboratories, and each of the latter supplies certain districts of the empire. There is, in each town or rural district, a public vaccinator, usually the *Gemeindearzt*, or poor-law medical officer, whose duty it is to vaccinate all applicants, but people of the better classes prefer to be vaccinated by their own physicians. Smallpox is usually very rare in this country, on account of efficient prophylactic measures. In the larger cities few practitioners who entered the hospitals after 1885 know smallpox except from books. Between 1888 and 1907 there were in Vienna, in a population which has increased from 1,750,000 at the former date to over 2,000,000 at the present, only 72 sporadic cases of smallpox, mostly imported from Italy, Russia or Roumania.

A movement for compulsory vaccination has lately originated among medical practitioners, and is supported by many of the educated laity. The violent opposition of the so-called *Naturheiler* or "nature-cure" quacks has caused many persons to refrain from being vaccinated. Last year's epidemic taught a forcible lesson on the value of vaccination, for in 140 out of 172 cases the patients had never been vaccinated, and in the remainder they had not been immunized.



## Pharmacology

### Patent Remedies for Piles.

The investigation by the *British Medical Journal* (July 11, 1908) of the nostrums most extensively advertised for piles shows that the manufacturers rely either on local applications, internal remedies or both. The local remedies generally contain an emollient base, but few ingredients of active properties. One contained calomel, zinc oxid, phenol, beeswax and soft paraffin, and another lead acetate, creosote, resinoid substance, vegetable tissue, hard paraffin and oil of theobroma. The former preparation is used as an ointment, the latter as suppositories.

The preparation of the greatest interest to us is Munyon's Pile Ointment. The label states: "Munyon's Pile Ointment permanently cures all forms of piles or hemorrhoids and immediately relieves pain, burning, itching and distress at the outlet of the bowels."

According to the *British Medical Journal*: "Analysis showed the ointment to consist of soft paraffin, with a trace of ichthyol sufficient to give a slight odor, but not enough to affect the appearance of the ointment. Experiments showed that 0.2 per cent. or over of ichthyol appreciably darkens the color of soft paraffin, and it appears, therefore, that less than this proportion is present. Estimated cost of one ounce of the ointment, one farthing" (half a cent). Its price in England is one shilling (24 cents) a package.

### CELLASIN.

#### Report of the Council on Pharmacy and Chemistry.

The following report was submitted to the Council by a committee:

*To the Council on Pharmacy and Chemistry:*—Cellasin, a product of Mead Johnson & Co., was first submitted under the title of "Cellulin," with the claim that it is a ferment which is absorbed unchanged into the tissues; that it cures diabetes mellitus, and that it cures tuberculosis and establishes immunity against this disease. As these claims were unsupported by reliable evidence, they were considered extravagant and highly improbable, and it was therefore voted that the product be refused recognition. The manufacturers then indicated a willingness to modify the therapeutic claims, and the product was reconsidered and the statements made in regard to its chemical properties were submitted for verification to the committee on chemistry. This committee reported as follows:

*Report of the Committee on Chemistry:*—We have completed our experiments on Cellasin, prepared by Mead Johnson & Co., and we are obliged to report that the claims made for it are only in part true. Our tests show that it has at best only very weak fat-splitting power, too weak to make it of any real value. After digestion with pepsin and hydrochloric acid the same slight fat-splitting power seems to be present and this part of the claim of the manufacturer is admitted. We find also that the substance resists the action of 2.5 per cent. hydrochloric acid, as submitted in the modified claims of the firm. As the action on fat is very weak we have not been able to make a perfectly satisfactory experiment on the question of the behavior with trypsin mixtures. On receipt of the new advertising circular we have made further extended tests of Cellasin from which we conclude that the claims as published are very greatly exaggerated. The action of the product on cane sugar is so weak that a quantitative change could not be detected in 24 hours, either by the process recommended by the manufacturers or by tests of our own. The action on starch is quite distinct from that described and likewise very faint. Although a faint fat-splitting power is present, as reported above, the claims as a whole are so far from the truth that it is recommended the product be refused recognition.

The committee on pharmacology reported that the firm was still making extravagant claims for the product and endorsed the recommendations of the committee on chemistry. In accordance with the recommendations of the two commit-

tees the Council voted that Cellasin be refused recognition on account of exaggerated chemical and therapeutic claims. The above was submitted to Mead Johnson & Co., who in reply strongly insisted on the correctness of their claim that the action of Cellasin on carbohydrates and fats in acid solution is most powerful. In view of the emphatic assertions of the manufacturer the committee again made tests with Cellasin and reported as follows:

*Second Report of the Committee on Chemistry:*—We must again report regarding Cellasin that our findings are entirely at variance with the claims submitted by the manufacturer. Since Mead Johnson & Co. have advertised widely that their product has been submitted to the Council for inclusion in New and Non-Official Remedies, we suggest that the reasons for its rejection be published. We have given an unusual amount of time to the investigation of Cellasin and every opportunity has been afforded the firm to substantiate its claims. These claims could not be verified in any samples submitted, and the committee now and finally recommends the adoption and publication of the report.

On motion, the report was adopted and its publication directed.  
W. A. PUCKNER, Secretary.

## Correspondence

### Buffalo Lithia Water.

CHICAGO, Aug. 10, 1908.

*To the Editor:*—A few weeks ago the representative of the Buffalo Lithia Water called on me at my office. In discussing the merits of the water, I called his attention to the fact that it contained merely a trace of lithium. He replied that they made no claim for it as a lithia water, but sold it as an alkaline water which the physician might prescribe as he saw fit. He said that the name was selected simply to distinguish it from the host of other mineral waters. If my memory serves me correctly, this constitutes a remarkable change of front on the part of the promoters of this widely advertised mineral water. Not long ago it was highly vaunted as a uric acid eliminant depending on its content of lithium for its therapeutic action. Doubtless many physicians during the last twenty years have prescribed gallons of this water, sometimes for patients who could ill afford to pay for it, on the supposition that it contained lithium, and was, therefore, a valuable remedy against uric acid. What is the reason for the abandonment of this claim on the part of the proprietors? Is it because, following closely the advance of medical science as they must, they have learned that lithium is no longer regarded as a uric acid eliminant? Or have they learned for the first time from the government analyses that their water contains practically no lithium? The claim that the water is an alkaline water is no better supported by facts than that it is a lithia water. This also they can learn from the government report if they will read it carefully. The alkaline theory will doubtless serve its purpose until attention is called to the fact that it is a calcic saline water. It will be interesting then to learn what quality will next be invoked to sell it. It seems as if it is time that physicians should awake to an appreciation of the need of caution in accepting the claims of those who have mineral waters to sell. There is as much need for supervision here as in the case of proprietary remedies.  
\* \* \* \*

*COMMENT:*—Were it not for the tragic element it would be ludicrous to note the way in which manufacturers and proprietors of medicinal agents adjust themselves to varying conditions. Adaptation to environment is the essential element for success. This is illustrated by the facts brought out by our correspondent in the above letter.

When Buffalo Lithia Water was first put on the market uric acid was the scapegoat on which most of the sins of etiology ignorance were heaped. Contemporaneous with, and in a sense a corollary of, the uric acid fallacy was another hypothesis, viz., that lithium was the uric acid eliminant



*par excellence*. The proposition, therefore, was a simple one: Uric acid causes disease; lithium eliminates uric acid; *ergo*, Buffalo Lithia Water, because it contains lithia, eliminates disease. Q. E. D.

The result of these two theories, combined with skilful advertising on the part of the proprietors, made Buffalo Lithia Water a valuable piece of property. "The mills of the gods grind slowly," but finally government and other chemists, with small appreciation of the psychic and commercial value of the name, demonstrated that Buffalo Lithia Water contains but the merest trace of lithium—an amount almost as small as the hypothetical gold in a widely advertised liquor cure.

Now, therefore, it is an "alkaline diuretic." While government analysts dispute the claim that it is an alkaline water, yet its proprietors may rest assured that the statement regarding its diuretic properties is beyond contradiction, for water of any kind is the simplest, surest and most universal of diuretics. It may be noted in passing that the more recent advertisements refer to Buffalo Lithia Springs Water instead of Buffalo Lithia Water. This is a distinction with a difference and the change in title has probably been brought about by that great agency for comparative righteousness in advertising—the national Food and Drugs Act!

### Miscellany

**Piano Dealers and Fraudulent Advertising.**—The following is the preface to a pamphlet on "Fraudulent Advertising" issued by the National Association of Piano Dealers of America, which is referred to editorially in this issue. Not only are the principles expressed so admirable in themselves, but the pamphlet is such a manifest justification, from an independent quarter, of the position taken by the American Medical Association in regard to chicanery and deceit in proprietary medicines, that we reproduce it here:

"The following address, read before the National Association of Piano Dealers of America, at its seventh annual convention held in New York City, June 8, 9, 10, 1908, confines itself to a discussion of those occasional practices in the piano trade which bring discredit on the general high character of the piano business.

"Hundreds of advertisements in other lines are, however, much more reprehensible and despoil the confiding of their savings to a far greater extent.

"The glowing promises contained in the advertisements of many 'patent medicines,' electric belts, clairvoyants, fortune-tellers, fictitious mining schemes, race-track tips, and other 'get-rich-quick' schemes induce thousands of innocent persons to pay out their money to enrich those who give little but promises in return. It would seem that the time had come in our social and commercial development when something should be done by our national government to regulate public announcements of this kind in order to protect the confiding from the designing and unscrupulous; when all fraudulent and misleading advertisements should be excluded from the mails as well as those few most glaring ones which are now, through a multiplicity of complaints, occasionally brought to the notice of the postoffice authorities.

"It was through this conviction on the part of the members of the National Association of Piano Dealers of America that this address was, by unanimous vote, ordered printed and distributed; that the executive committee was instructed to investigate violations of the penal code of the State of New York as regards fraudulent advertising, and the following resolution was unanimously adopted:

"WHEREAS, Much of the present-day advertising is misleading, exaggerated and tends, not only to deceive the public, but to undermine the public confidence on which all business depends; and

"WHEREAS, There has been introduced in congress a bill looking to the prevention of fraudulent, misleading, exaggerated and deceptive advertising; be it

"Resolved, That we, the National Association of Piano Dealers of America, in seventh annual convention assembled, do hereby request that the Senators and Representatives of the United States shall pass a law, fashioned after similar laws in England and Germany, and in line with the policy of the pure food laws of our own country; and be it

"Resolved, That it is the sense of this Association that a commission, similar to that established by the pure food laws, should

be established to pass on fraudulent advertising, and through warnings and other means seek to suppress such advertising, and to be empowered to institute proceedings against those who, after due notification, persist in such advertising; and be it

"Resolved, That this act should be so drawn that periodicals continuing to publish advertisements, determined by such commission to be fraudulent, should be subject to fine and exclusion from the mails of the United States until such misleading and fraudulent advertisements be excluded; and be it

"Resolved, That this Association promise its support to such legislation, and invites the cooperation of all similar associations throughout the United States, to the end that public confidence in printed statements shall be increased."

### Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

#### TESTS FOR FORMALDEHYD IN MILK.

DECATUR, ILL., Aug. 29, 1908.

*To the Editor:*—In THE JOURNAL, Aug. 29, 1908, page 778, in reply to a query, you state that the best tests for formaldehyd in milk are Hehner's test and Leach's test. In my experience, Schiff's reagent is far better than either of these. It is prepared as follows:

Aqueous solution of magenta (fuchsin) 0.5 per cent. . . . 40 c.c.

Distilled water . . . . . 250 c.c.

Aqueous solution sodium bisulphite (sp. gr. 1.375) . . . . 10 c.c.

Pure concentrated sulphuric acid . . . . . 10 c.c.

Mix and allow to stand until colorless.

Two c.c. of this solution are added to a test tube two-thirds full of suspected milk and the tube shaken. If formaldehyd be present a pink or lilac color will appear in from 30 to 60 seconds.

LYNN M. BARNES.

**ANSWER.**—The test above given is a general test for aldehyds; that is, aldehyds generally when added to a solution of fuchsin which has been decolorized by means of a sulphite, will restore the color of the fuchsin. While it is not a specific test for formaldehyd, nevertheless it may safely be used to test milk, since formaldehyd is the only aldehyd liable to occur in it. One objection to the method lies in the care needed to prepare the reagent. The reagent should not only be freshly prepared, but considerable care should be used to avoid an undue excess of bisulphite. Since aqueous solutions of sodium bisulphite rather rapidly deteriorate with age, the amount of the solution to be used will depend on its sulphite strength. On the other hand, the method of Hehner, or preferably that of Leach, is easily applied and rarely fails, and these methods are among the methods for the detection of formaldehyd in milk as adopted by the Association of Official Agricultural Chemists (Bulletin 107, U. S. Department of Agriculture, Bureau of Chemistry, page 185). It is, of course, desirable that the presence of formaldehyd in milk be demonstrated by two or more tests. Beyond the tests above given, among the confirmatory tests, the phenylhydrazin hydrochlorid and ferricyanid method is recommended.

This method may be applied directly to liquid foods or to an aqueous or alcoholic extract of solid foods. To from 3 to 5 c.c. of liquid food or extract of the same add a lump of phenylhydrazin hydrochlorid about the size of a pea, from 2 to 4 drops (not more) of a 5 to 10 per cent. solution of potassium ferricyanid, and from 8 to 12 drops of an approximately 12 per cent. solution of sodium hydroxid. The method is not applicable to preparations containing blood-coloring matter. In such cases use nitroprussid in place of the ferricyanid. Alcoholic extracts from foods must be diluted with water to prevent the precipitation of potassium ferricyanid.

Apply the method directly to milk without any preparation of sample. In the case of meat finely comminute the sample, extract with two volumes of hot water, and employ the liquid pressed out for the test. Warm fats above the melting point with 10 c.c. of alcohol (80 to 95 per cent. by volume), thoroughly shake, cool, and filter through a moistened paper, using the filtrate for the examination.

When formaldehyd is present to the extent of more than 1 part in 70,000 to 80,000 in the solution tested, a distinct green or bluish green reaction is obtained. In more dilute solutions the green tint becomes less marked and a yellow tinge tending toward greenish brown is formed.

#### CRESCO FLOUR AND GLUTEN FLOUR.

WELLINGTON, KAN., Aug. 22, 1908.

*To the Editor:*—A diabetic patient bought a so-called gluten flour (labelled "Cresco" flour) from a local druggist. After using it for some time he was told that it was not a gluten flour; he then brought the preparation to me and I also told him it was not a gluten flour. The druggist, who claimed it was the same as a gluten flour, wrote to the manufacturers, Farwell & Rhines, who replied



that it no longer makes a gluten flour under that name, but that the preparation Cresco flour takes its place. The firm also claimed that there is no such thing as a pure gluten flour, that such a preparation would make a glue rather than a bread, etc. Please tell me what is known of the reliability of Farwell & Rhines' products and whether their Cresco flour will take the place of gluten flour.  
W. M. MARTIN, M.D.

ANSWER.—An examination of diabetic foods was made by Dr. A. L. Winton, who at that time was connected with the Connecticut Agricultural Experiment Station, but who is now in charge of the Chicago Laboratory of the United States Department of Agriculture. His report was abstracted in THE JOURNAL for June 29, 1907, page 2198, of which the following is a part:

"The author quotes from the circulars of Farwell & Rhines and of the Jireh Diabetic Food Company, two firms which manufacture food for diabetics, which contain considerable starch and no marked increase in protein. The flours thus prepared appear to possess no advantage for diabetics over ordinary wheat flour. The manufacturers attempt to justify the presence of starch in their products by appealing to medical authority for the truth of their assertion that some starch is necessary for diabetics. These statements are misleading in consequence of the fact that they fail to state that this applies only to a limited class of diabetics. They also try to make it appear that the starch has been changed so as to make it less objectionable. The author's analyses and microscopic examination do not indicate that the change, if any is of a kind that renders the materials less objectionable for diabetic use. In the author's opinion the statements are 'contrary to the best medical experience, since they urge the use of the very food elements which have been shown, without question, to aggravate the disease most seriously.'"

The analyses of Gluten Flour, Cresco Flour and Special Diabetic Flour, manufactured by Farwell & Rhines, Watertown, N. Y., given in Dr. Winton's report, showed that these preparations contained an amount of starch practically equal to that of ordinary wheat flour. Winton concludes, therefore, that they possess no advantages to diabetic patients over ordinary wheat flour.

The statement that gluten flour will not make a satisfactory food is not correct. Flours that are practically free from starch are on the market and can be used. It is just as essential to know how to use such flours so as to prepare a palatable product as it is to get a reliable flour—a fact frequently overlooked. Winton, in the report referred to, gave the following recipe for home-made gluten meal biscuit:

*Gluten Meal Biscuit.*—"To one egg add one heaping saltspoonful of salt and beat; then add 6 tablespoonfuls of cold water and beat until quite thick or until it becomes in quantity from one to one and one-half pints, and into this beat one tablespoonful of thin cream; add 2 heaping tablespoonfuls of dry gluten, stir this into the previous mixture; stir occasionally during one-half hour until of the consistency of thick gruel; bake 35 minutes in well-buttered muffin pans in hot oven."

We presume that Farwell & Rhines no longer sell their product under the name "gluten flour," as under the Food and Drugs Act this would constitute misbranding.

#### SCARLET FEVER WITHOUT RASH.

SANTA FE, N. M., Aug. 22, 1908.

*To the Editor:*—During a recent epidemic of scarlet fever in this city, in common with other physicians, I was much surprised at the high percentage of cases in which no rash was apparent. It was not an uncommon occurrence to find two children out of three in one family showing no rash, while a third had the disease in the more typical form. From my own experience and that of others, at least during the height of the epidemic, fully 25 per cent. of the cases were without eruption. I think from the fact that diphtheria was not even endemic, and that a history of contagion was nearly always easily obtained and also from the association of the cases, their symptomatology and sequelæ when the duration was sufficient to allow the same to develop, that the diagnosis may be accepted, although in my own cases no bacteriologic examinations were made. The type of the epidemic was exceedingly malignant and few of the patients without eruption recovered. Can you give me the modern conception of the factors causing or contributing to the erythema and those to the contrary?  
JAMES A. ROLLS.

ANSWER.—Even in severe epidemics of scarlatina, so large a proportion of cases without eruption as our correspondent describes, is most rare. In such "ataxic," "cerebral" or "adynamic" cases, the system is flooded with toxins of a most powerful nature, and death may occur before the rash has appeared. In some of these cases running a very rapid course, a brief rash, lasting but a short time and later marked by a cyanotic color, may be easily missed. The nervous centers appear to be most profoundly affected in this type of cases. That this is due to the character of the infection and resulting intoxication, is most probable. In the absence of any information as to the essential agents concerned in the production of scarlatina, it is impossible to arrive at any final conception of the various effects manifested by them in the human body.

#### ELIXIR OF GLYCEROPHOSPHATES.

VIRGEN, ILL.

*To the Editor:*—Will you please tell me how the Elixir Glycerophosphate of Lime and Soda is made?  
E. K. LOCKWOOD.

ANSWER.—The following is given in the National Formulary:

##### ELIXIR GLYCEROPHOSPHATUM.

	Metric.	Apothecaries.
Sodium glycerophosphate (75 per cent.)	25. gm.	360 grains
Calcium glycerophosphate	8.75 gm.	128 grains
Phosphoric acid (U. S. P. —85 per cent.)	8. gm.	115 grains
Glycerin	300. c.c.	9½ fluidounces
Aromatic elixir (U. S. P.)	300. c.c.	9½ fluidounces
Distilled water, sufficient quantity to make	1,000 c.c.	32 fluidounces

Dissolve the glycerophosphates and the acid in 300 c.c. (or 9½ fluidounces) of distilled water, add the glycerin and elixir, and finally enough distilled water to make 1,000 c.c. (or 32 fluidounces); then mix well and filter.

Four c.c. (1 fluidrachm) contains 0.65 gm. (1 grain) of absolute sodium glycerophosphate, and 0.32 gm. (½ grain) of calcium glycerophosphate. Average dose: 4 c.c. (1 fluidrachm).

#### BIDLOO'S ANATOMIC DISSECTIONS.

LOUISVILLE, KY., Aug. 24, 1908.

*To the Editor:*—I have a volume which contains one hundred and five full-page wood cuts of anatomic dissections, each having the descriptive text in Dutch. This volume was published in 1690, and the author was Govard Bidloo, who, I believe, was a professor in the University of Leyden. I want to learn more about the book and its value and author. The volume is bound in pigskin, is 21 inches long, 15 inches wide and about 3 inches thick.  
D. E.

ANSWER.—Bidloo (1649-1713) was physician to William III of England, and in 1694 became professor of anatomy and surgery at the University of Leyden. Further information regarding him can be obtained from La Grande Encyclopedie which will be found in many of the large libraries. The first edition of Bidloo's work, dated 1685, was in Latin and copies are valuable. Cowper published the same plates in 1697 with a more complete text, and a copy of this has sold for \$15. It is estimated that the Dutch edition of 1690 would probably be worth from \$10 to \$15. Further information may be found in Choulant's Geschichte der anatomischen Abbildungen.

#### SODIUM SUCCINATE IN GALLSTONES.

CHICAGO, Aug. 27, 1908.

*To the Editor:*—Allow me to correct the statement on page 692 of THE JOURNAL, Aug. 22, 1908, that "sodium succinate is not mentioned by standard text-books as useful for the treatment of gallstones." In Tyson's Practice of Medicine, reference is made to this drug. I have used sodium succinate in 5 gr. doses three times a day in chronic cholangitis for a number of years with apparent good results.  
A. JACOBSON, M.D.

ANSWER.—Tyson, in the text-book referred to (3d Edition, page 448), says: "I have been in the habit of placing my patients, between attacks, on the succinate of sodium, in doses of 5 grains (0.32 gm.) three times a day, and it has so happened that I have seldom met a recurrence in one of these cases, although many of them passed out of my observation and may have had attacks without my knowledge."

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Sept. 5, 1908:

Ashford, M., first lieutenant, ordered to proceed from Washington Barracks, D. C., to camp of instruction, Fort Benjamin Harrison, Ind., and rejoin Co. C, Hospital Corps.

Baily, H. H., capt., ordered, in addition to his present duties at Fort Myer, Va., to make the necessary sanitary inspection of the rooms occupied by the clerical force of the War Department during the absence of Major Paul F. Straub, Medical Corps.

Doerr, C. E., cont. surg., now at Cincinnati, Ohio, will report in person to the commanding officer, Fort Thomas, Ky., for temporary duty.

Daywalt, G. W., M. R. C., ordered to proceed from Depot of Recruits and Casuals, Angel Island, to Presidio of San Francisco, Cal., for temporary duty.

Koyle, F. T., cont. surg., orders to proceed from Manila, P. I., to the United States, revoked.

Carter, W. F., major, leave of absence extended one month.

Mason, C. F., major, appointed member of a board of officers to meet at Pittsburg, Pa., for the purpose of examining the plant for the purification of water by ozone now in operation at the Homeopathic Hospital in that city.



Jones, H. W., first lieut., granted three months' leave of absence, to take effect about Jan. 15, 1909, upon the arrival of the transport *Buford* at Manila, P. I. He is authorized to return to the United States via Asia and Europe.

Rhoads, T. L., capt., orders for examination for promotion at Manila, P. I., revoked.

Coffin, J. M., eapt., leave of absence extended one month.

Roberts, E. E., M. R. C., relieved from duty at Fort Logan H. Roots, Ark., and will proceed to Fort Sill, Okla., for duty.

George, W. R. S., M. R. C., relieved from duty at Fort Greble, R. I., and ordered to Fort Totten, N. Y., for duty.

Wertenbaker, C. L., M. R. C., relieved from duty at Madison Barracks, N. Y., and ordered to Fort Wadsworth, N. Y., for duty.

Birmingham, H. P., lieut. col., relieved from duty as member examining board for promotion of medical officers, to meet at Washington, D. C.

Arthur, W. H., lieut. col., appointed member examining board, to meet at Washington, D. C., for promotion of medical officers.

Brewer, I. W., M. R. C., granted 13 days' leave of absence.

### Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Sept. 5, 1908:

Mayers, G. M., P. A. surgeon, granted sick leave for three months, when discharged from treatment at the Naval Medical School Hospital, Washington, D. C.

Ely, C. F., P. A. surgeon, detached from the *Hartford* and ordered to the *Charleston*.

Moran, C. L., asst.-surgeon, detached from the Naval Recruiting Station, Dallas, Texas, and ordered to course of instruction at the Naval Medical School, Washington, D. C.

Hayward, A. B., asst.-surgeon, detached from the Marine Recruiting Station, Pittsburg, Pa., and ordered to the Naval Recruiting Station, Dallas, Texas.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Sept. 4, 1908:

#### SMALLPOX—UNITED STATES.

California: San Francisco, Aug. 15-22, 4 cases.

Indiana: Indianapolis, Aug. 17-23, 1 case.

Kansas: Kansas City, Aug. 16-22, 1 case; Topeka, 1 case.

Kentucky: Covington, Aug. 23-29, 1 case.

Minnesota: Minneapolis, July 1-31, 4 cases.

Missouri: St. Joseph, Aug. 16-22, 7 cases.

Montana: Butte, Aug. 12-18, 1 case.

North Carolina: Greensboro, Aug. 16-22, 1 case.

Ohio: Cincinnati, Aug. 22-29, 1 case; Dayton, Aug. 16-22, 1 case.

Utah: General, July 1-31, 19 cases, 1 death.

Washington: Seattle, July 1-31, 16 cases.

Wisconsin: LaCrosse, Aug. 16-22, 5 cases; Milwaukee, Aug. 9-22, 3 cases.

#### SMALLPOX—FOREIGN.

Arabia: Aden, July 26-Aug. 3, 4 deaths.

Brazil: Rio de Janeiro, July 13-26, 1,078 cases, 490 deaths;

Pernambuco, July 1-15, 26 deaths; Santos, July 6-19, 6 deaths.

China: Hongkong, July 12-18, 1 case, 1 death; Shanghai, July 13-19, 1 death.

Ceylon: Colombo, July 12-18, 4 cases.

Ecuador: Guayaquil, July 19-25, 6 deaths.

Egypt: General, July 18-22, 28 cases; Cairo, July 31-Aug. 5, 2 cases, 2 deaths.

France: Paris, Aug. 2-8, 3 cases.

Germany: General, July 19-25, 5 cases; Chemnitz, Aug. 2-8, 1 case; Königsberg, Aug. 2-8, 1 case.

Great Britain: Liverpool, Aug. 9-15, 1 case.

India: Calcutta, July 12-18, 8 deaths.

Italy: General, Aug. 3-9, 11 cases; Palermo, July 5-Aug. 1, 7 cases, 1 death.

Java: Batavia, July 12-18, 5 cases.

Mexico: Mexico City, June 28-July 11, 49 deaths.

Philippine Islands: Manila, July 5-11, 21 cases, 3 deaths.

Spain: Valencia, Aug. 9-15, 1 case, 1 death.

Turkey in Asia: Bagdad, July 12-18, 20 cases, 4 deaths.

Turkey in Europe: Constantinople, Aug. 3-16, 10 deaths.

Zanzibar: July 8-21, 1 case, 1 death.

#### CHOLERA.

Ceylon: Colombo, July 12-18, 2 cases, 2 deaths.

China: Hongkong, July 12-18, 10 cases, 6 deaths.

India: Bombay, July 1-30, 12 deaths; Calcutta, July 12-18, 19 deaths; Madras, July 18-24, 15 deaths; Rangoon, July 12-18, 1 death.

Russia: Astrachan, July 22-31, 4 cases, 2 deaths; Zaritzyn, July 24-Aug. 6, 96 cases, 55 deaths.

July 19-31, present in Samara, Simbirsk and Tambov government districts.

#### YELLOW FEVER.

Brazil: Bahia, July 16-22, 3 cases on an Italian bark; Para, June 25-Aug. 6, 8 cases, 7 deaths.

Ecuador: Guayaquil, July 19-25, 1 death.

Martinique: Fort de France, Aug. 2-8, 2 cases, 1 death.

Mexico: Vera Cruz, Aug. 22-28, 1 case, 1 death.

#### PLAGUE.

Brazil: Bahia, July 23-29, 1 case; Rio de Janeiro, July 13-19, 2 cases.

China: Hongkong, July 12-18, 20 cases, 20 deaths.

India: General, July 5-18, 1,014 cases, 834 deaths; Bengal, June 28-July 18, 54 cases, 54 deaths; Bombay, July 8-21, 67 deaths; Calcutta, June 28-July 18, 69 deaths; Rangoon, June 28-July 18, 137 deaths.

Mauritius: May 1-31, 1 case, 1 death.

Turkey in Asia: Bagdad, Aug. 2-8, 1 case, 2 deaths.

Venezuela: Caracas, July 25-Aug. 9, 7 cases, 4 deaths.

## Association News

### NEW MEMBERS.

List of new members of the American Medical Association for the month of August, 1908:

#### ALABAMA.

Bouldin, T. J., Hollywood.

#### ARIZONA.

Adamson, E. W., Douglas.  
Bell, W. M., Phoenix.  
Bridge, G. A., Bisbee.  
Greene, W. A., Douglas.  
Hart, F. J., Bisbee.  
Ketcherside, J. A., Phoenix.  
Lund, Carl H., Douglas.  
Miner, L. L., Bisbee.  
Tuttle, L. J., Douglas.

#### ARKANSAS.

Harkins, R. A., Ratcliff.  
Thompson, C. E., Ben Lomond.  
Wadley, L. D., Wesson.

#### CALIFORNIA.

Barney, T. R., Berkeley.  
Baker, W. C., San Mateo.

#### COLORADO.

Gotthelf, I. L., Denver.

#### CONNECTICUT.

Arnold, H. S., New Haven.

#### FLORIDA.

Greiner, C. M., Jacksonville.  
Sengstak, E. P. E., Jacksonville.

#### GEORGIA.

Floyd, W. B., Plainville.

#### ILLINOIS.

Buehler, W. E., Chicago.  
Danell, Karl A., Chicago.  
Eaton, Matilda, Cambridge.  
Jipson, N. W., Chicago.  
Kimery, H. A., Chicago.  
Lowell, I. S., Douglas.  
Masslow, W. C., Chicago.  
Mingle, S. G., Peru.  
Mershlmer, J. M., Chicago.  
Minnick, E. M., Moline.  
Murray, John, Joliet.  
Noggle, P. L., Cooksville.  
Owens, J. C., Plainfield.  
Peterson, M. D. E., Rankin.  
Pirosh, Sigmar, Chicago.  
Pumphrey, G. E., Ferris.  
Ross, C. F., Saunderlin.  
Skaggs, C. S., Harrisburg.  
Snider, A. B., Tinley Park.  
Wilmot, C. M., Cuba.  
Zinser, H. A., Washington.

#### INDIANA.

Baker, W. H., South Bend.  
Bostwick, J. G., Mishawaka.  
Carter, L. D., Richmond.  
Cleveland, W. F., Evansville.  
Coombs, D. H., Charlestown.  
Costello, H. F., Decatur.  
Cox, L. T., Napoleon.  
Deputy, E. M., Dugger.  
Dillinger, J. R., French Lick.  
Egbert Roy, Indianapolis.  
Graves, A. E., New Waverly.  
Gray, O. F., Spencer.  
Hawley, M. C., Logansport.  
Henley, Glenn, Fairmont.  
Hervey, S. W., Fortville.  
Holliday, D. A., Fairmont.  
Kauffman, D. E., Monroeville.  
Kinneman, J. G., Goodland.  
Kruse, E. H., Fort Wayne.  
Kunkler, Joseph, Terre Haute.  
McClintock, C. W., Pittsboro.  
McFarland, O. G., Hamilton.  
McKay, J. D., Marion.  
Miller, Harry, National Mil.  
Home.

Rayl, C. C., Monroe.  
Replogle, F. M., Dunkirk.  
Rubsam, Jos., Logansport.  
Sellers, C. A., Montpelier.  
Schwartz, W. D., Portland.  
Shadday, J. H., Vevay.  
Shook, B. O., Spencerville.  
Smith, W. E., Decatur.  
Stotelmeyer, C. I., Hagerstown.  
Thompson, W. H., Harlap.  
Titus, P. S., Fort Wayne.  
Tueker, G. W., Dana.  
Vanderburg, J. M., Albany.  
Westhafer, E. K., New Castle.  
White, B. S., Greensburg.

#### IOWA.

Allen, J. R., Waterloo.  
Bellinger, F. E., Council Bluffs.

Carpenter, L. H., Grundy Center.  
Downing, L. M., Wellman.  
Hammer, Marlon R., Newton.  
Merkle, A. E., Berwick.  
Phillips, A. B., Clear Lake.  
Struck, K. H., Davenport.

#### KANSAS.

Thomas, C. A., Danville.

#### KENTUCKY.

Adams, L. D., Smithland.  
Allen, F. L., Morehead.  
Blades, J. M., California.  
Bristow, S. W., Powersburg.

#### MARYLAND.

Peels, I. R., Baltimore.  
Scheller, C. R., Hagerstown.

#### MASSACHUSETTS.

Blenkhorn, James, Stoneham.  
Foskett, G. M., Worcester.  
Golden, Lazarus, Boston.  
Nickerson, J. P., West Harwich.  
Reed, L. D., Plymouth.

#### MICHIGAN.

Ash, C. W., St. Clair.  
Blanchette, V. J., Walkerville.  
Cardwell, J. F., Grand Rapids.  
Carson, A. W., Ishpeming.  
Ertell, W. F., Kalamazoo.  
Fraser, R. C., Port Huron.  
Ganning, Cora P., Lansing.  
Grignon, Eugene, Menominee.  
Hastie, J. D., Grand Rapids.  
Holbrook, A. G., Coldwater.  
McColl, J. A., Grand Rapids.  
Morrison, J. S., Royal Oak.  
Rumer, E. C., Flint.  
Sadowski, R. J., Detroit.  
Sassaman, F. W., Charlotte.  
Scholtes, T. W., Mnnising.

#### MINNESOTA.

Abbott, W. P., Duluth.  
Beard, R. O., Minneapolis.  
Benson, G. E., Minneapolis.  
Bergh, L. N., Montevideo.  
Brunelle, A. M., Cloquet.  
Cuff, W. S., St. Paul.  
Gillfillan, J. S., St. Paul.  
Nyquist, J. E., Cloquet.  
Randolph, Wilson, Crookston.  
Russell, Thomas, Grand Rapids.

#### MISSISSIPPI.

Carnes, W. A., Kosciusko.  
Emerson, A. L., Eudora.  
Smith, F. F., French Camp.

#### MISSOURI.

Blair, E. G., Kansas City.  
Brown, F. H., Billings.  
Casey, S. A., Lebanon.  
Gebhart, O. C., St. Joseph.  
Johnstone, P. A., Kansas City.  
Mount, R. L., Polo.  
Newman, S. E., St. Louis.  
Pitts, Barton, St. Joseph.  
Sanders, St. Elmo, Kansas City.  
Scholz, R. P., St. Louis.

#### MONTANA.

Movins, A. J., Budger.

#### NEBRASKA.

Fitzsimons, A. W., Omaha.  
Johnson, A. F., North Loup.  
Longacre, O. E., Loup City.  
Lucas, Voorhees, North Platte.

#### NEW JERSEY.

Butler, C. V., New Brunswick.  
Durand, J. L., Atlantic City.

#### NEW YORK.

Andrews, H. D., Buffalo.  
Bainton, J. H., New York City.  
Bangs, L. B., New York City.  
Barry, D. E., New York City.  
Beard, J. J., Cobleskill.  
Beatty, G. W., Brooklyn.  
Billings, W. H., Jr., Buffalo.  
Brown, R. E., New York City.  
Busby, A. H., New York City.  
Carter, C. B., New York City.  
Corning, J. L., New York City.  
Darbois, E. O., Brooklyn.  
Dockstader, C. H., New York City.  
Fraenkel, Joseph, New York City.  
Fichter, Louis, New York City.



Gage, J. E., Utica.  
Goff, A. P., Cameron Mills.  
Hasbrouck, J. F., New York City.  
Hebenstreit, Robert, Buffalo.  
Hney, A. J., New York City.  
Humphreys, G. A., New York City.

Katz, David, New York City.  
Kinney, C. W., New York City.  
La Fetra, L. E., New York City.  
Law, W. F., Syracuse.  
Lester, H. L., Syracuse.  
Lewis, W. J., New York City.  
Lewisoohn, Richard, New York City.

Lyon, J. F., New York City.  
McKenney, D. C., Buffalo.  
Meury, J. B., Brooklyn.  
Miller, G. N., New York City.  
Montgomery, W. C., New York City.  
Moore, J. L., Brooklyn.  
Morris, Lewis, New York City.  
Painter, H. M., New York City.  
Parker, R. J., New York City.  
Parrish, P. L., Brooklyn.  
Rabinovitz, Meyer, New York City.

Reinthal, J. E., New York City.  
Rommel, W. G., Grapeville.  
Rose, Achilles, New York City.  
Ruppert, F. C., New York City.  
Scott, A. W., Syracuse.  
Solley, J. B., Jr., New York City.  
Smith, C. H., New York City.  
Soule, R. E., New York City.  
Specht, W. H., New York City.  
States, W. G., New York City.  
Stephens, F. M., New York City.  
Stoddart, James, Buffalo.  
Sullivan, T. D., New York City.  
Sumner, A. E., New York City.  
Tannenbaum, Julius, New York City.

Unger, J. S., New York City.  
Weed, H. M., Buffalo.  
Wiener, Joseph, New York City.  
Williams, L. R., New York City.  
Wilson, F. N., New York City.  
Wood, T. D., New York City.  
Wylie, R. H., New York City.

#### NORTH CAROLINA.

Allan, Wm., Charlotte.  
Luckner, R. G., Asheville.

#### NORTH DAKOTA.

O'Keefe, H., Grand Forks.

#### OHIO.

Benson, C. H., Columbus.  
Brown, E. E., Cleveland.  
Hain, C. O., Cleveland.  
Herman, W. C., Cincinnati.  
Hitchcock, C. S., Toledo.  
Gerhardt, J. H., Sunbury.  
Gregg, W. B., Springboro.  
Kearney, B. F., Delaware.  
Kistler, H. B., Sunbury.  
Knight, J. A., Orient.  
Maschfield, H. Y., Columbus.

Phinney, F. D., Cincinnati.  
Reger, H. S., Ironton.  
Steward, Chas., Ashville.  
Taylor, R. B., Columbus.  
Weiss, W. S., Rock Creek.

#### OKLAHOMA.

Bagby, E. L., Fairfax.  
East, T. H., Cement.  
Logan, C. J., Alva.  
Wall, G. A., Oklahoma City.

#### OREGON.

Chilton, L. W., North Powder.  
Hall, C. G., Portland.

#### PENNSYLVANIA.

Abbatechio, Nicholas, Latrobe.  
Barnes, M. A., Pardoe.  
Beale, B. F., Duncannon.  
Brown, W. F., Philadelphia.  
Evans, Jr., J. S., Philadelphia.  
Fairbanks, Charlotte, Philadelphia.  
Nelson, Wilhelmina T., Philadelphia.  
Orr, J. D., Leechburg.  
Parkin, E. H., Pittsburgh.  
Phillips, B. W., Leeper.  
Wessels, L. C., Philadelphia.

#### SOUTH DAKOTA.

Harris, H. G., Wilnot.  
Morrison, C. W., Canton.

#### TEXAS.

Bevil, J. R., Batson.  
Carpenter, D. A., Rhome.  
Collin, J. W., El Paso.  
Hendricks, C. M., El Paso.  
Lindsey, L. A., Whitt.  
Sinks, E. D., El Paso.  
Wheeler, F. B., Tilden.  
Wright, Marcus O., El Paso.

#### VERMONT.

Perkins, C. N., Burlington.

#### VIRGINIA.

Campbell, W. A., Old Church.  
Miller, E. R., Harrisonburg.  
Payne, Jr., R. L., Norfolk.

#### WASHINGTON.

Cook, Frederick, Seattle.  
Jones, Josiah, Tacoma.

#### WEST VIRGINIA.

Hatfield, S. D., Iaeger.  
Preston, D. G., Eckman.

#### WISCONSIN.

Abbott, C. N., Fosterville.  
Caffrey, A. J., Milwaukee.  
Sommers, J. C., Madison.  
Steenberg, H. S., Milwaukee.

#### WYOMING.

McArthur, H. J., Hanna.  
Newcomer, P. W., Gillette.  
Wingo, J. C., Rock Springs.

The definition of the practice of medicine is amended to read as follows:

Any person shall be regarded as practicing medicine within the meaning of this act, who shall append the letters M.D. or M.B. to his or her name, or who shall examine, prescribe, direct or apply or shall profess or publicly advertise that he prescribes, directs or applies, for the alleged purpose of treating, curing or relieving any bodily or mental disease, infirmity, deformity, defect, ailment or injury of any person other than himself, any drug, instrument or force, whether physical or psychic, or of whatever nature or any other agency or means; whether such drug, instrument, force or other agency or means is to be applied or used by the patient or by any other person, and whether such prescribing, directing or applying be for compensation of any kind or be gratuitous; and any officer or agent, or employé or member of any corporation, association or partnership which does or professes or publicly advertises that it does examine for, treat, cure or relieve such diseases, ailments, deformities, defects, injuries or infirmities, in any of the modes mentioned in this section, shall be regarded as practicing medicine under the provision of this act.

Farmers or planters treating without compensation their families, employés or tenants, plantation midwives, opticians fitting glasses, water-cure establishments and Christian Scientists are exempt.

The section regarding revocation of license is amended to read as follows:

If any person, licensed under this act, shall be convicted of a crime or of gross unprofessional conduct, the said board shall have the power to institute proceedings before any competent court for the purpose of having the permit or license granted by them to said physicians revoked, and if it shall be shown that the physician or midwife, so licensed, has been convicted of a crime or of gross unprofessional conduct, the said board shall revoke such license or permit.

#### Satisfactory City Health Ordinances.

The new health ordinances of Paxton, Ill., are of interest as showing the increasing attention given to sanitary regulation on the part of many of our smaller cities. Beside providing for a board of health, the ordinances confer on the board full charge of the prevention, restriction and suppression of contagious diseases and of the sanitary condition of the city, giving it power to enter buildings, take samples of food, etc., for inspection, and to make arrests. All meats, vegetables and other foodstuffs, milk, cream, etc., are under the control of the board and specific regulations provide for the inspection and licensing of dairies and milk depots. Butcher shops and slaughter houses are required to be licensed, after proper inspection. The sale of ice, ice cream, poultry, second-hand goods, and all articles by which disease might be spread, is under the control of the board of health. The disposal of all slops, garbage and waste, as well as of diseased animals, is also under the control of the board. Lodging houses and schools and all public buildings are open to inspection and must comply with definite conditions. The distribution of samples of medicines is prohibited, except under license after submission of the samples to be inspected.

The ordinances are carefully drawn and will be of interest to any local health officers who are confronting any of the problems involved. If they are enforced as well as they are formulated, the people of Paxton are certainly to be congratulated on the manner in which their health is protected.

## Medical Economics

### New Medical Practice Act in Louisiana.

The Labbe bill, which has been signed by the governor, while in the form of an amendment to the medical law of 1894, practically constitutes a new law. It provides that any person (dentists and osteopaths excepted) who shall enter on the practice of medicine in any of its branches shall present to the State Board of Medical Examiners a diploma from a college in good standing and shall also pass a satisfactory examination before the board in anatomy, physiology, chemistry, obstetrics, physical diagnosis, surgery, pathology, therapeutics and hygiene. Any person not using internal medication is exempt from examination in therapeutics. The board is authorized to license without examination applicants presenting satisfactory certificates from a board of medical examiners of any other state. The law provides for two boards, one composed of physicians recommended by the Louisiana State Medical Society and the other of physicians recommended by the homeopathic state society; members are to be appointed for six years. The boards are instructed to give annually, in one of the daily papers published in New Orleans, an official list of the registered physicians and surgeons of the state, which list is to be received in evidence by the courts of the state as proof that the physicians named therein are duly registered.

### POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.  
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

#### First Month.

#### FOURTH WEEKLY MEETING.

#### VALVULAR LESIONS, RIGHT HEART.

#### TRICUSPID LESIONS.

#### REGURGITATION.

Due to (1) endocarditis, (2) secondary to left-heart lesions, mechanism of production. Characteristic signs: (1) systolic venous pulsation, (2) systolic murmur, location, transmission.

#### STENOSIS.

Age, sex, incidence. Symptoms and physical signs.

#### PULMONARY STENOSIS, AND REGURGITATION

Incidence, signs and symptoms of each.



## PULMONARY MURMURS, NOT VALVULAR.

- (1) In health. (2) exertion or fever. (3) cardio-respiratory.  
(4) anemias. Murmur of mitral regurgitation.

## DISEASES OF THE MYOCARDIUM.

## MYOCARDITIS.

Acute interstitial, parenchymatous; pathology and etiology of each. Infarcts; fibrous myocarditis; degenerations; pathology of each. Clinical types. (a) Arrhythmic form, (b) arteriosclerosis with hypertrophy and dilatation, (c) sclerosis of coronary arteries.

## ANGINA PECTORIS.

Etiology: Age, sex, heredity, constitutional and infectious diseases, cardiac and arterial disease. Theories: (a) Neuralgia of heart, (b) muscular cramp, (c) ventricular distention from dilatation, (d) ischemia of muscle from coronary disease. Symptoms: Follows exertion, emotions, gastric distention, cold. Pain, character, degree, location, reflection, duration. Heart and pulse during attack.

## CARDIAC NEUROSES.

## PALPITATION.

Etiology: Age, sex; neurotic affections, emotions; acute infections; tobacco, coffee, etc.; association with organic lesions.

ARRHYTHMIA. (See Osler: Practice of Medicine, 1907).

1. From decreased conductivity of auriculo-ventricular bundle: (a) partial heart block, (b) complete heart block, (c) paroxysmal bradycardia.
2. From increased irritability of heart: (a) ventricular extra-systoles, (b) auricular extra-systoles.
3. From influence of extrinsic nerves: (a) vagus, (b) accelerator.
4. From disturbed diastolic filling of heart: (a) from violent respiratory movements, (b) adherent pericardium or mediastinal tumor, (c) associated respiratory and cardiac rhythm.

## TACHYCARDIA.

Etiology: In health, following fright, exercise, at menopause, uterine disease, from pressure on vagi, lesions of medulla. Paroxysmal tachycardia.

## BRADYCARDIA.

- (1) Physiologic. (2) Pathologic: (a) acute infections, (b) disease of respiratory or digestive systems, (c) circulatory or nervous system, (d) urinary or sexual organs, (e) toxic agents, (f) constitutional diseases.

## HEART BLOCK.

Stokes-Adams' disease. Age, organic lesions, syphilis. Bundle of His: effect of compression; pathologic changes. Symptoms. Slow pulse, difference in first and second sounds. Cerebral attacks. Venous pulsations.

## MONTHLY MEETING.

Etiology and Diagnosis of Malignant Endocarditis.

The Factors Which Influence the Prognosis of Chronic Valvular Disease.

The Physiologic and Therapeutic Actions of Digitalis, of Strophanthus.

---

**Marriages**

---

HARRY KAHN, M.D., to Miss Grace Strasser, both of Chicago, September 2.

CHARLES F. ISAACS, M.D., to Miss Iva Hassett, both of Chicago, August 29.

FREDERICK W. BARRY, M.D., to Miss Bertha Alene Allen, both of Coffeen, Ill., August 24.

JOSEPH THOMPSON AXLINE, M.D., to Miss Mabel Leonard, both of St. Louis, August 17.

HARRY NATHANIEL KROHN, M.D., to Miss Hattie Davidson, both of Denver, Colo., August 27.

B. DORSEY WINCHESTER, M.D., to Miss Ina Brent Moody, both of Louisville, Ky., August 27.

WILLIAM S. CROUCH, M.D., to Miss Leta Goode, both of Stafford, Kan., at Kingman, Kan., August 12.

DANIEL O'BRIEN, M.D., Lapeer, Mich., to Miss Lucy Rickart of Gaines, Mich., at Montrose, Mich., August 19.

HENRY COLEMAN CHALMERS, M.D., Newport News, Va., to Miss Agnes Viola Brainard of South Orange, N. J., July 13.

HERBERT C. WOOLLEY, M.D., U. S. Army, Fort Davis, Alaska, to Miss Agnes Higinbotham of Victor, N. Y., at Seattle Wash., August 24.

---

**Deaths**

---

William Barr Woods, M.D. Berkshire Medical College, Pittsfield, Mass., 1841; assistant surgeon of the Twenty-fifth Connecticut Volunteer Infantry and later regimental, brigade and division surgeon during the Civil War; representative from Somers in the state legislature of 1851-1852 and 1870; state senator from the Twentieth District in 1857; a member of the local board of school visitors for more than thirty years; died at his home in Somers, Conn., August 25, from dysentery, after an illness of two weeks, aged 88.

Calvin De Witt, M.D. Jefferson Medical College, Philadelphia, 1865; brigadier general, Medical Corps, U. S. Army, retired, who served during the Civil War as captain in the Forty-ninth Pennsylvania Infantry; entered the permanent establishment in 1867; was promoted to captain in 1870; to major in 1885; to lieutenant-colonel in 1898; to colonel in 1901, and to brigadier general immediately before his retirement on Aug. 9, 1903; died from heart disease at Fort Yellowstone, Wyo., September 3, aged 68.

Jacob Farnum Holt, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1859; a member of the American Medical Association; a surgeon in the Army for about three years during the Civil War; professor of anatomy, physiology and hygiene, and later professor of biology at the Central High School of Philadelphia; who accompanied Lieutenant Peary in his trip to the Arctic in 1891; died at his home in Philadelphia, August 30, from heart disease, after a short illness, aged 77.

George Hodge, M.D. Faculty of Medicine of Queen's University and Royal College of Physicians and Surgeons, Kingston, Ont., 1870; a member of the British, Canadian and Ontario medical associations; a member of the medical staff of Victoria Hospital, London, Ont., and professor of clinical medicine in the medical department of the Western University for twenty years; died at St. Joseph's Hospital, London, August 26, after an illness of several months, aged 61.

Isaac L. Millspaugh, M.D. College of Physicians and Surgeons in the city of New York, 1850; a member of the Medical Society of the State of New York; a member of the Old Richmond County Board of Health; acting assistant surgeon during the Civil War; physician of the New York City Farm Colony for more than twenty-five years, and commissioner of lunacy for the Borough of Richmond; died at his home in Richmond, August 27, aged 81.

Angus McLennan, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1873; of Inverness, N. S.; a member of the Inverness Common Council for sixteen years; of the Nova Scotia Legislative Assembly for four years, and member of Parliament from Inverness County for three terms; died in Port Hood, C. B., from cerebral hemorrhage, August 28, after an illness of two days, aged 64.

Frederick Rustin, M.D. New York University Medical College, New York City, 1897; a member of the Nebraska State Medical Association; professor of operative surgery in the John A. Creighton Medical College, Omaha; visiting surgeon to the St. Joseph's, Clarkson, Mercy and Douglas County hospitals, Omaha; was shot and killed by himself, or by a person at present unknown—while entering his home in Omaha, September 2.

Edward Harris Johnson, M.D. Washington University School of Medicine, Baltimore, 1869; of Troy, Ala.; a member of the Medical Association of the State of Alabama, and a Confederate veteran; local surgeon for the Atlantic Coast Line; was struck by a train while making a professional call, August 27, and died a short time later, aged 63.

John M. Hamme, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1889; a member of the Kansas Medical Society; for the last four years state senator



from the Twenty-third District; was found dead in bed in Cottonwood Falls, Kan., August 26, from heart disease, aged 45.

**William E. Fraker, M.D.** University of Nashville (Tenn.) Medical Department, 1873; twice a representative from Greene County (Tenn.) in the legislature; died suddenly, August 29, at his home in Rheatown from cerebral hemorrhage, after five years of invalidism due to injuries received in a railway wreck, aged 56.

**Hugh McG. Willson, M. D.** Albany (N. Y.) Medical College, 1856; Bellevue Hospital Medical College, New York City, 1870; surgeon during the Civil War; and formerly a well-known practitioner of San Francisco; died in his apartments in Los Angeles, August 15, after a long illness, aged 65.

**Luther R. White, M.D.** Medical School of Harvard University, Boston, 1878; coroner of Republic County, Kansas, from 1887 to 1897, but for the last ten years a resident of Edmond; died at his old home in Seandia, Kan., August 15, from cerebral hemorrhage, after a long illness, aged 58.

**Edgar L. Phillips, M.D.** Medical Department of Washington University, St. Louis, 1856; surgeon of an Illinois volunteer regiment during the Civil War; for many years a practitioner of Galesburg, Ill.; died at his home in Goshen, N. Y., September 1, after a prolonged illness, aged 81.

**John E. Holt, M.D.** Medical School of Maine at Bowdoin College, Brunswick, 1878; a member of the American Medical Association and of the Maine Medical Association; for twenty years a practitioner of Berlin, N. H.; died at his home in that city, August 20, after a long illness, aged 61.

**James Leon White, M.D.** Jefferson Medical College, Philadelphia, 1881; four years member of the board of health of South Amboy, N. J.; for a portion of that time its president, and for three years borough physician; died at the home of his sister in that city, August 11, aged 47.

**Ernest A. White, M.D.** Medical Department of the Tulane University of Louisiana, New Orleans, 1892; while despondent from recurrent attacks of dyspepsia, and disease of the ear, is said to have shot himself through the head, August 18, and died a few minutes later, aged 36.

**Calvin Knox Davison, M.D.** University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1869; a member of the Medical Society of New Jersey; died at his home in Stanhope, August 18, after an invalidism of nearly four years following influenza, aged 61.

**Stephen Bartlett Kenney, M.D.** Dartmouth Medical School, Hanover, N. H., 1861; assistant surgeon in the Army during the Civil War; for many years examining surgeon for the National Soldiers' Home, Hampton, Va.; died at Windsor, N. C., Dec. 30, 1907, aged 69.

**Joseph A. Hodge, M.D.** University of Louisville (Ky.) Medical Department, 1850; a member of the Kentucky State Medical Association, and one of the oldest practitioners of Henderson; died at his home, August 31, from cerebral hemorrhage, after a short illness, aged 80.

**Dyer D. Webb, M.D.** Rush Medical College, Chicago, 1883; a member of the Illinois State Medical Society; for thirty years a practitioner of Hoopston, Ill.; died at his home in that city, August 24, from malignant disease of the neck, after a long illness, aged 57.

**Augustus P. Throop, M.D.** New York Homeopathic Medical College and Hospital, New York City, 1862; a veteran of the Civil War; formerly a practitioner of Palmyra, N. Y.; died at the Willard State Hospital, Nov. 28, 1907, after an illness of several years, aged 75.

**Haywood B. Bartholomew, M.D.** Rush Medical College, Chicago, 1895; a member of the American Medical Association; a member of the staff of the City and County Hospital, Denver; died suddenly at his home in Denver, from uremia, August 24, aged 38.

**Abner Lewis**, a retired practitioner of Oelwein, Iowa; for about 60 years a practitioner of Ohio, Indiana and Iowa; a senator from Elkhart and LaGrange counties, and later a member of the state legislature; died at his home in Oelwein, July 13, aged 89.

**Luther Stowell Arnold** (Examination, Vt.); for more than 40 years a practitioner of Londonderry, Vt.; and in 1889 representative to the state legislature; died at his home, Nov. 23, 1907, from cerebral hemorrhage, after an illness of 17 months, aged 73.

**James Clifford Kennedy, M.D.** Hahnemann Medical College and Hospital, Philadelphia, 1871; a veteran of the Civil War;

and postmaster in Sharpsburg, Pa., for several years thereafter; died at his home in Pittsburg, August 25, from pneumonia, aged 75.

**Alva L. Snyder, M.D.** Eclectic Medical Institute, Cincinnati, 1860; a member of the Ohio State Medical Association; of Bryan, Ohio; was struck by the tongue of a carriage in a runaway accident near Bryan, August 14, and instantly killed, aged 80.

**Louis Franklin Schussler, M.D.** Hahnemann Medical College and Hospital of Chicago, 1884; of Alton, Ill.; a member of the Illinois State Medical Society; died at the home of his sister in New Sharon, Iowa, from cancer of the stomach, August 14, aged 54.

**Elijah E. Winne, M.D.** Vanderbilt University, Medical Department, Nashville, Tenn., 1859; of Sherman, Texas; surgeon in the Confederate service during the Civil War; died at Port Lavaca, Texas, Dec. 1, 1907, aged 77, from carcinoma.

**Mary H. Bowen, M.D.** Northwestern University Woman's Medical School, Chicago, 1876; for 30 years a practitioner of Chicago; died at the home of her son, August 29, from paralysis of the throat, after an illness of six months, aged 74.

**Ava Michener, M.D.** University of Iowa, College of Medicine, Iowa City, 1888; of Homer, Ill.; a member of the Illinois State Medical Society; died in El Paso, Texas, August 20, from asthma, after an illness of about two years, aged 50.

**Isaac W. Herron, M.D.** Medical College of the State of South Carolina, Charleston, 1865; a Confederate veteran; died at his home in Steele Creek Township, Mecklenburg county, N. C., Aug. 23, 1907, after a long illness, aged 75.

**Alexander G. Orr, M.D.** Jefferson Medical College, Philadelphia, 1869; a member of the Illinois State Medical Society; died at his home in Benton, August 25, from cerebral hemorrhage, after an illness of a few hours, aged 68.

**Oscar Fitzerland Miller, M.D.** University of Buffalo (N. Y.) Medical Department, 1858; a surgeon in the Army during the Civil War; died suddenly at the home of his son in Flint, Mich., August 11, from heart disease, aged 77.

**Benjamin Colson** (Registration, Maine, 1895); an eclectic practitioner of Bangor, Maine; who represented Monroë in the legislature in 1875; an active practitioner for 51 years; died at his home, January 14, aged 81.

**Alvah W. Miller** (license, Michigan, 1900, years of practice), a member of the Osceola County Medical Society; died at his home in Reed City, Nov. 25, 1907, from paralysis agitans, after an illness of one year, aged 67.

**Nelson B. Richards, M.D.** Western Reserve University Medical College, Cleveland, 1853; Bellevue Hospital Medical College, New York City, 1865; died at his home in Kansas City, Kan., August 28, aged 86.

**Matthew H. Young, M.D.** Jefferson Medical College, Philadelphia, 1859; surgeon of the Fourth Kentucky Mounted Infantry during the Civil War; died at his home in Ashland, Ky., August 19, aged 74.

**Manuel H. Davis, M.D.** University of Louisville (Ky.) Medical Department, 1881; of Mayslick, Ky.; died suddenly Aug. 11, 1907, in his automobile while en route to Blue Lick Springs, from his home.

**Elbert Ferguson Nebeker, M.D.** College of Physicians and Surgeons, Chicago, 1906; a member of the Illinois State Medical Society; died suddenly at his home in Danville, August 27, aged 37.

**Samuel G. Bryning, M.D.** Medical Department, Victoria College, Toronto, 1863; for nearly a third of a century a practitioner of Fulton, Ill.; died in a sanitarium in Chicago, January 8, aged 81.

**Julius Godfrey Heene, M.D.** University of Berlin, Germany; a practitioner of Jamaica Plain and Roxbury, Mass.; died at Mount Pleasant Home, Dorchester, Mass., Dec. 24, 1907, aged 85.

**Enoch A. Baum** (Examination, Minn., 1887); formerly of Litchfield, Minn.; died in the Fergus Falls State Hospital, January 19, from brain disease, after an illness of six years, aged 77.

**Manley William Work, M.D.** Dartmouth Medical School, Hanover, N. H., 1899; a member of the New Hampshire Medical Society; died recently at his home in Manchester, aged 48.

**Gilford L. Laws, M.D.** Vanderbilt University, Medical Department, Nashville, Tenn., 1891; died at his home near Wildersville, Tenn., Dec. 12, 1907, from heart disease, aged 68.



## Society Proceedings

### COMING MEETINGS.

Med. Soc. of the State of Pennsylvania, Cambridge Spgs., Sept. 14-17.  
Internat'l Congress on Tuberculosis, Washington, Sept. 21 to Oct. 12.  
American Assn. of Obstet. and Gynecol., Baltimore, Sept. 22-24.  
Kentucky State Medical Association, Winchester, Sept. 23-25.  
American Dermatological Association, Annapolis, Sept. 24-26.  
Con. of State and Prov. Bds. of N. A., Washington, Sept. 25-26.  
Nevada State Medical Association, Goldfield, Oct. 6-7.  
Minnesota State Medical Association, St. Paul, Oct. 7-8.  
Idaho State Medical Association, Boise, Oct. 8-9.

### AMERICAN PUBLIC HEALTH ASSOCIATION.

*Thirty-sixth Annual Meeting, held at Winnipeg, Manitoba, August 25-28, 1908.*

The President, DR. RICHARD H. LEWIS, Raleigh, N. C., in the Chair.

#### Report of Committee on Ophthalmia Neonatorum.

DR. F. PARK LEWIS, Buffalo, N. Y., chairman, presented a lengthy report on this subject.

Ophthalmia neonatorum is still a most prominent cause of much unnecessary blindness. The efforts that have been made have lessened its disastrous results in a large degree, but in many instances where it seems to be infrequent it will be found to be producing blindness among the poorest and most neglected classes. In these the burden on the public treasury is greater because the victims of this neglect almost inevitably become charges on the state. The responsibility for the investigation, the recognition and the control of this infection rests on the department of public health. The committee recommends that the conclusions reached by the Committee on Ophthalmia Neonatorum of the American Medical Association be approved by the American Public Health Association, and that whenever practicable the health officer of a state or territory be urged to confer with the committee appointed by the American Medical Association and to inaugurate such measures through the state and its counties for the enlightenment of the people and the control of this disease as may in their judgment seem advisable.

The recommendations of the Committee on Ophthalmia Neonatorum of the American Medical Association are:

1. To secure the enactment of laws in each state or federal territory requiring the registry of births and placing the supervisory control and licensure of midwives in the boards of health, requiring that all midwives be examined and registered in each county, and that they be required immediately to report each case of ophthalmia occurring under their ministrations under penalty for neglect if found guilty, of fine, and for a subsequent offense, forfeiture of license.

2. The distribution by health boards through bulletins and otherwise of circulars of advice to midwives and mothers giving instructions as to the dangers, methods of infection and prophylaxis of ophthalmia neonatorum.

3. The preparation and distribution by the health boards of ampules or other receptacles containing the chosen prophylactic with specific directions for its use. It is advised that the choice of the prophylactic be determined by the health officer with the advice of the committee representing the obstetricians and ophthalmologists for that state from the American Medical Association.

4. To insist on the maintenance of proper records in all maternity institutions and other hospitals in which children are born, of the number of cases of ophthalmia neonatorum, with the method of treatment and the results. These reports, which should include all cases of scarred cornea as well as of blindness, should be filed at regular intervals with the department of public health, and the records published.

5. Periodical report to boards of health by all physicians engaged in obstetrics of the number of cases of ophthalmia neonatorum that have occurred in their practice within a specified time, whether or not a prophylactic was used, and if so, what, together with the result.

#### DISCUSSION.

DR. GARDNER T. SWARTS, Providence, R. I.: Inasmuch as ophthalmia neonatorum is a communicable disease, the proper health authorities and health associations should take cognizance of that fact and endeavor to combat this disease as they do other communicable affections. In Rhode Island there is a law requiring that if inflammation of the eye or eyes occurs in a child the first five days after birth a physician or health authority shall be sent for to take charge of the case. It is the duty of health officers, if they find that this disease is prevalent, to notify physicians of that fact, and particularly

W. Reid Thompson, M.D. Kentucky University, Medical Department, Louisville, 1905; of Mackville, Ky.; a member of the Kentucky State Medical Association; died August 29.

George Bailey, M.D. University of Pennsylvania, Department of Medicine, Philadelphia; of Cambridge, Mass.; died in North Conway, N. H., Sept. 12, 1907, from heart disease, aged 80.

William C. Riley, M. D. Cooper Medical College, San Francisco, 1891; a member of the American Medical Association; died recently at his home in San Francisco, aged 40.

Samuel Y. McClung, M.D. Central College of Physicians and Surgeons, Indianapolis, 1880; died at his home in Pleasantville, Ind., August 27, after an extended illness, aged 50.

Edward G. Fahnestock, M.D. Pennsylvania Medical College, Gettysburg, 1850; a veteran of the Civil War; died at his home in Minneapolis, Minn., Dec. 8, 1907, aged 78.

A. D. W. Cutler, M.D. Memphis (Tenn.) Hospital Medical College, 1848; died at the home of his daughter in Gleason, Tenn., Dec. 23, 1907, from pneumonia, aged 79.

Charles McLeod, L.R.C.S.; L.R.C.P. Edinburgh; L.F.P. & S. Glasgow, 1903; of Winnipeg, Man.; died recently at Rochester, Minn., from ulceration of the esophagus.

Horace Blair Durant (Registration, Philadelphia County, 1887); assistant surgeon of volunteers during the Civil War; died recently at his home in Philadelphia.

Rufus P. Blacknall, M.D. Philadelphia; died at his home, near Arkadelphia, Ark., January 3, from pneumonia, after an illness of about two weeks, aged 73.

Titus Albright, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1885; died at his home in Hatfield, Pa., August 31, aged 48.

Chester S. Gitchell (years of practice, Michigan, 1900) died at his home in Hobart, June 26, 1907, from angina pectoris, after a short illness, aged 73.

Calvin Washington Corriher, M.D. Jefferson Medical College, Philadelphia, 1890; died April 19, at his home in Landis, N. C., from pneumonia, aged 66.

Daniel R. DeLong, M.D. Pennsylvania Medical College, Gettysburg, 1857; formerly of Stroudsburg, Pa.; died in Philadelphia recently, aged 74.

John H. Maddux, M.D. Atlanta (Ga.) Medical College, 1882; died at his home in Chuloden, Ga., August 21, after an illness of two months, aged 52.

Alonzo Chamberlin, M.D. Bellevue Hospital Medical College, New York City, 1870; died at his home in Frost, Texas, August 23, aged 61.

O. W. Clark (License, Tenn., 1889); of Gainesboro, Tenn.; died suddenly at his home, near Rough Point, Tenn., Nov. 20, 1907, aged 45.

Myles S. Moore (License, Ark., 1903); formerly of Warren, Ark.; died in Hot Springs, Ark., August 17, after a brief illness, aged 66.

Joseph L. S. Whitney, M.D. University of Buffalo (N. Y.) Medical Department, 1853; died at his home in Union, N. Y., August 21.

William H. Robb (License, Missouri, 1889); a veteran of the Civil War; died at his home in St. Louis, March 5, 1907, aged 66.

Howard L. Hawkins, M.D. College of Physicians and Surgeons, Baltimore, 1896; died at his home in Pine, Colo., Nov. 30, 1907.

Garner Gahan, M.D. Manitoba Medical College, Winnipeg, 1892; of Hartney, Man.; is reported to have died in March last.

Robert Kerr (License, Tenn., 1889); died at his home in Savannah, Tenn., August 18, from pulmonary hemorrhage.

William Kiplinger (License, Ind., 1898); of Burkett, Ind.; died August 15, aged 73.

#### Death Abroad.

Harold Leslie Barnard, M.R.C.S., L.R.C.P. London, 1892; F.R.C.S. England, 1895; surgeon in charge of out-patients, London Hospital; demonstrator in surgery and pathology in London Hospital Medical College; a distinguished young surgeon of London; whose article on "Simulation of Acute Peritonitis by Pleuro-pneumonic Diseases" attracted widespread attention; co-inventor, with Leonard Hill, of the sphygmomanometer; died recently in Highbury, London, from heart disease, aged 41.



the younger practitioners. As the disease is a preventable one, such prophylactic measures as suggested by Dr. Lewis should be carried out.

DR. F. F. WESBROOK, Minneapolis: It should be a comparatively easy matter to convince the provincial or state authorities that money expended in providing for printing, postage, nitrate of silver, argyrol, or some other drug, is more than saved in the cost of providing for the education, housing and maintenance of blind people. In Minnesota it would probably save in the State Hospital for the Blind more than it would cost to carry out the recommendations of this committee.

DR. CHARLES F. FAGAN, Victoria, B. C.: For a number of years I have devoted my entire attention to health matters, and am ashamed to say that I have entirely neglected my duty on this question. In the future I shall endeavor to keep this subject before medical and health authorities, so that they will take action, and shall certainly take up this question in my own district.

DR. WILLIAM HENRY GUILFOY, New York City: Steps have been taken by the New York City Department of Health in prosecuting successfully some of the midwives who have been accused of not reporting cases of sore eyes among very young infants. It has been found necessary to go further, and at the last session of the legislature a bill was passed which gives the New York City Department of Health complete power over registration and the practice of midwifery, and in consequence certain rules have been formulated, a violation of which is a misdemeanor and punishable by fine and imprisonment. Very soon it is hoped that the way will be clear to have about 1,500 midwives under constant supervision.

DR. JOHN N. HURTY, Indianapolis: All those who are engaged in public health work should fully appreciate the importance of this report and its recommendations. While progress has been made in this regard, still it will be a long time before the legal authorities take hold of the matter in the right way and it will be a long time before the people will become interested in that which concerns them so deeply. It is strange that the people themselves are so indifferent in regard to such an important matter as the prevention of blindness.

#### Vaccinating with Humanized Lymph.

DR. FRANCISCO DE P. BERNALDEZ, Mexico, described the methods adopted by the vaccination department of the Supreme Board of Health of Mexico, with the most satisfactory results:

The region in which the vaccine is to be inserted, whether on the arm or on the leg, is carefully washed with sterilized water, soap and a brush, rubbing with the latter until the skin becomes red, and is then dried with sterilized cotton. The inoculation is done with lancets that have previously been dipped in boiling water or passed through the flame of an alcohol lamp. The pustules of the child from whom the vaccine is drawn are cleansed exclusively with sterilized water and cotton, are very superficially scarified, and not used if they bleed. A small quantity is taken up on the lancet and the inoculation made by means of small punctures, almost joining each other, and from six to eight in number. In making these punctures the lancet leaves the lymph spread over the place where the punctures have been made. These should not reach beyond the dermic layer of the skin, because that is where the lymphatic network is found abundant and fine. Moreover, this is the way to prevent the vaccine pustules from bleeding. The object in making the punctures in the form above described is to produce pustules in a series, so that the collection of the lymph will be facilitated, because there will be only one scar and not several. The pustules may be numerous and the vaccination is not painful. The advantages of this method over others that have been described are that it does not cause any pain, does not give rise to any flow of blood, facilitates the collection of the lymph, and the pustules can easily be examined to find whether they present the characteristics of true vaccination. If other methods are employed, or the skin is scratched, the pustules can not present those characteristics, and the operator remains in doubt as to whether the individual has obtained immunity or not.

#### Prevention of Smallpox.

DR. JAMES ROBERTS, Hamilton, Ont., described an outbreak of this disease which comprised some eighty cases, the handling of which cost the municipality of Hamilton approximately \$10,000.

The feature which appeared more striking than any other in this outbreak was the precision with which, in family after family, the disease singled out the unprotected for attack. After careful scrutiny of the personal history of each patient previous to this illness no evidence was found to prove that in more than one or two instances vaccination had ever been performed. Practically all the patients were without the semblance of a scar. More thorough investigation and closer inquiry into the causes of disease furnished more convincing evidence in favor of contact infection as the chief factor in the spread of this as well as the other exanthemata, notwithstanding all that has been said and written on aerial transmission. If the enforcement of the vaccination act is entrusted by law to the sanitary authorities alone, with the necessary legislation adequately to protect them in the discharge of their duty, the great bulk of the people of Canada would be found as willing to have the law carried out as are the people of Germany. On the practicing physician devolves the great and serious responsibility of seeing that the performance of vaccination for contract prices among school children and among the industrial population in large cities is carried out in such a scrupulous and conscientious manner as in no wise to bring discredit or reproach on the twenty years of quiet and painstaking investigation which gave to the world the greatest discovery known for the preservation of the human species.

#### DISCUSSION.

DR. W. F. ELGIN, Glenolden, Pa., referred to the effect of heat on vaccine:

Taking virus from the same animal and subjecting it to various temperatures and noting the results, it was found that a temperature exposure of 60° C. killed the vaccine matter in five minutes. When the vaccine is kept at the temperature of the body, and is carried by physicians in their pockets for three days, it has little or no effect. At a temperature of 25° C., or ordinary room temperature, vaccine will last for a week; at a temperature of 15° C., it will last from three to six months, and if kept below the freezing point, minus ten to fifteen degrees, it has been kept for four years, and was good at the end of that time.

DR. F. M. SMERSH, Owatonna, Minn.: In order to have a successful vaccination, the arm, the towel and the vaccine must be aseptic. In a great many instances people who have been vaccinated infect themselves through carelessness. In many cases they put a dirty rag around the sore.

DR. ALTON S. FELL, Trenton, N. J., referred to the methods of quarantine in cases of smallpox:

Prior to seven years ago I had not seen a case of smallpox. In December, 1901, the disease broke out in the city of Trenton, and the president of the board of health, who had had some experience with smallpox, insisted that, no matter what the stage of the disease, every one should be taken to the Isolation Hospital and isolated for a period of eighteen days. This worked much harm, and later such rigid isolation measures were not enforced, but the results were equally as good.

DR. WILLIAM A. EVANS, Chicago: There is a growth of antivaccination sentiment in this country which is founded on the prevailing principles of American law. In addition, it is founded on a growing diminution in the virulence of the disease, due largely to the fact that men protected are modifying the causative agency of smallpox just as the causative agency of smallpox, in turn, modifies man. Some organization should prepare a refutation of the arguments advanced by antivaccinationists, and this refutation should be given the official endorsement of the organization responsible for its preparation. No organization is better prepared to do this work than the American Public Health Association.

Dr. Evans moved that a committee be appointed to prepare an argument as to the efficacy of vaccination, that the association devise some means for the dissemination of that report.



and that some effort be made toward a simultaneous and concerted movement throughout the country in opposition to the antivaccination sentiment.

This motion was carried, and a committee of seven is to be appointed by the President.

DR. L. LABERGE, Montreal: In 1885 there was a serious epidemic of smallpox in Montreal—10,000 cases in eleven months. Physicians struggled with this epidemic, using vaccination and isolation. Since then they have tried to have a compulsory vaccination act in the city, but have not been able to obtain it. They have, however, an ordinance which holds the employer and the superintendent of schools responsible. They have now power to vaccinate, and since that time vaccination has been very efficacious. They have no hesitation in isolating a case from the first hour of making the diagnosis.

#### President's Address.

DR. RICHARD H. LEWIS, Raleigh, N. C., pointed out the difficulties in the way of establishing a national department of public health in the United States by the dual nature of the government and the distribution of constitutional powers:

It is unquestionably to the interest of the general cause that each state should look after its own health work, acting always in a spirit of cordial cooperation with the great national bureau, which spirit the latter should be careful to foster and encourage in every way, not only to its own interests, but those of the whole country. It would not be at all difficult so to conduct the national bureau as to have the state boards look to it as both guide and friend. In a general way the kind of national bureau of health we ought to have, and the kind most desirable, is one including within its scope and management all the specific health agencies of the government now in existence, with the addition of others when needed, so thoroughly manned by the best men in their respective departments, and so richly endowed with funds that work of the highest class in demonstrating the principles underlying all subjects bearing on the public health can be done. Having by the study of the work of others and by original research settled on the correct principles of sanitation, it should make a practical application of them to the actual every-day problems of preventive medicine in the sanitary management of the District of Columbia and the territories over which the United States has absolute control. It should give a clinical demonstration of the best methods as carried out by its own thoroughly educated and trained health officers. But it is as a source of information and education that we find the chief value of the bureau. First, in the education of its own officials and the health officers of the country; second, of the medical profession, and, third, of the people. In a bill now pending in Congress further enlarging the powers and duties of the Public Health and Marine-Hospital Service, authority is given for the establishment of a school of hygiene for the training, free of charge, of such health officers as may choose to attend. The granting of a certificate is allowed, but it should go further and grant the degree of Doctor of Public Health, as is done in England. In this way we might hope for the gradual development of a sanitary profession of equal dignity with that of medicine or the other regular professions.

#### Typhoid in the Province of Manitoba.

DRS. R. M. SIMPSON and A. J. DOUGLAS, Winnipeg, in a joint paper on this subject, directed their attention in particular to Winnipeg:

Winnipeg is separated, for the purposes of this article, into two parts, north and south: in the south district, where nearly all houses were furnished with improvements, 549 cases of typhoid were found in the years 1903-4-5. In the north district where box closets dotted the landscape at frequent intervals, during the same period there occurred 1,983 cases. Particularly striking was the fact that as soon as the evenings began to grow cold in August, and the flies were driven indoors, the typhoid rate rose, and when the first hard frosts of winter set in, and the snow fell early in November, a diminution at once took place. Box closets offered every possible facility for flies to act as infection carriers, the excreta

being above ground and accessible, and the light not excluded. It was a common thing not only to see flies swarming in these places, but also to see abundant evidence of their actually breeding in them. It was a frequent occurrence to visit houses and find two or three typhoid patients being cared for in one room where the cooking was done and food kept, the individual who was doing the cooking usually acting as nurse as well. Drastic regulations were undertaken. No patient with typhoid was allowed to remain at home unless the conditions were such that proper isolation should be obtained, and that excreta could be handled in a manner precluding the chance of infecting others. Rigid disinfection of the premises was carried out in all cases. The use of metal garbage receptacles was insisted on, also that manure should be kept in covered boxes and removed frequently and regularly to avoid affording breeding-places for flies. The provincial Board of Health and the local health department distributed literature on typhoid prophylaxis and on the care of cases. Circulars were issued instructing people to screen their houses and to keep down the number of flies by the use of fly paper and other means. Milkmen were instructed as to what their duties were. Careful supervision was exercised over the water supply, and a large number of public and private wells have been closed. Low lots were drained or filled in, rubbish heaps were burned or destroyed, lanes paved or graded, many insanitary premises were closed altogether, and work along these lines is still going on. Last year some results from their efforts were evident, and from indications the present year will exhibit an even more satisfactory showing, as up to the present they have had only 160 cases, which is considerably less than last year's total at the same time.

#### Epidemiology of Typhoid Fever.

DR. H. W. HILL, Minneapolis: In former times typhoid could be attributed to flies. Contact and fly contamination are the great causes of the spread of the disease.

DR. JOHN F. ANDERSON, Washington, D. C.: Flies are a fruitful source of infection, and milk is also a source of contamination, due to the lack of proper washing of the cans and other causes.

DR. HENRY ALBERT, Iowa City, exhibited a table showing the epidemics that have taken place through the carriage of bacilli from infected places, the period of infection extending over several years before the disease made itself known.

An interesting case was reported early in the present year from Germany, in which 32 cases of typhoid fever developed among a population of 130. In one case, for fifty-two years a woman had been a carrier of typhoid bacilli, and was the cause of an epidemic that prevailed last year. She was the keeper of a hotel. Women and children are the greatest carriers of the disease. One in every five hundred adults who have never had typhoid are chronic carriers. It is impossible to state how long the bacilli carriers act as such, but it is certain that there are as many carriers as there are cases of the disease. Many cases are to be traced to the gall bladder. In a few years there will be sufficient knowledge to prevent the carriage of the disease, and one of the greatest preventives will be vaccination.

#### Typhoid Fever in Richmond, Va., with Certain Conclusions Relating to Typhoid Fever in the South.

DR. ERNEST C. LEVY and DR. ALLEN W. FREEMAN, Richmond, in a joint contribution on this subject, pointed out the importance of prompt reporting of all cases of typhoid fever by the physician in attendance:

Freer use should be made by physicians of the laboratory aids to diagnosis which are now furnished gratis by all progressive city and state boards of health. There should be immediate inspection of every reported case, the securing of full information and the study of the data so obtained, with the view of determining the origin of the case. Instruction should be given to the members of the household, at the time of this visit, in the elementary points in the epidemiology of the disease, and printed directions should be left covering the same points. The sewerage system should be extended so



that dry closets may be entirely abolished. Pending this, rigid rules should be enforced governing the construction and maintenance of dry closets in those sections which are forced to rely on this primitive means of disposal of excreta. When a good public water supply is available, all wells in the city should be closed, and the supply extended to reach all the people. There should be thorough dairy inspection, and the rigid enforcement of a rule requiring every dairyman, under penalty of revocation of his permit, to report immediately any case of illness among the members of his household, as well as among his employes and their families. There should also be prompt investigation of such reports by the health department, and the temporary shutting off of the milk wherever a typhoid case that can not be perfectly isolated is found. Disinfection of excreta should be rigidly supervised in all typhoid cases, and disinfectants supplied gratis by the health department in indigent cases. The campaign against flies must be carried on, including the limiting of their breeding places and the screening of all typhoid cases, on the one hand, and living rooms, dining rooms and kitchens, on the other. Supervision must be instituted over "carrier" cases, although just how this can be done legally and efficiently is at present an unsettled problem. Education of the public and the medical profession by lectures and literature in the main points of typhoid prophylaxis, especially in regard to the hygiene of the sick room and the danger of carrier cases, are important points. If the greater part of southern typhoid is of the residual type, the above measures, in the light of present information, constitute the chief means of lowering the typhoid death rate in the South generally.

#### Commercial Pasteurization of Milk.

MR. B. R. RICKARDS and MR. W. M. CAMPBELL, Boston: A large amount of milk is pasteurized in Boston every day. Some of the milk of one contractor is pasteurized in the country and is again pasteurized in the city. It is evident that the larger part of the milk now pasteurized is before pasteurization above the limit established by the Board of Health of Boston, 500,000 bacteria to a cubic centimeter. Some of this milk is of high bacterial content. Bacteria will increase much faster in pasteurized than in unpasteurized milk. Souring bacteria are killed out quicker by pasteurization than other forms. The tendency, therefore, is for such milk to remain uncurdled much longer than unpasteurized milk, the milk thus having a chance to putrify. The pasteurization of milk affects the microscopic estimate of bacteria and leucocytes. In conclusion: (1) The commercial pasteurization of milk without restriction puts a premium on dirty milk, since dirty and old milk, otherwise unsalable, can then be put on the market.

(2) Pasteurized milk may well mean cooked dirt, cooked dung and cooked bacterial products and the laboratory is powerless to detect it.

(3) The commercial pasteurization as at present practiced in Boston probably would destroy all disease-producing organisms, with the possible exception of the bacilli of tuberculosis. The latter would probably be killed in the majority of instances. One machine only out of the three tested would be likely always to destroy the latter. The toxins produced by these and by the putrefactive organisms in dirty milk would undoubtedly escape unharmed and in many cases be capable of producing severe intestinal disturbances, especially in babies.

(4) A false sense of security is undoubtedly conveyed by the term pasteurized milk. The lack of security may come from either improper pasteurization, the pasteurization of improperly handled milk or improper care of pasteurized milk.

(5) The unrestricted pasteurization of improperly kept, old or dirty milk should be prevented by regulations or ordinances prohibiting the pasteurization of milk containing over a certain specified number of bacteria to the cubic centimeter, the bacterial limit being set with due regard to local conditions, especially the distance from which the milk comes. Such regulation should be coupled, of course, with a regulation forbidding the sale of milk above the bacterial limit established

(6) The law should require that milk heated above 140° F. should be marked heated or pasteurized milk. Pasteurized milk should not be sold as fresh milk. The pasteurization of milk in itself is probably not a harmful process and is to a certain extent a necessity under modern conditions in large cities, but commercial pasteurization should be carried on only under the most stringent supervision.

#### Result of Reincubation and Reinoculation of Atypical Diphtheria Cultures.

MR. B. R. RICKARDS, MR. F. H. SLACK and MR. B. L. ARMS, Boston, presented the results of reincubation and reinoculation of 242 atypical cultures:

In many instances a final result may be obtained by these means and a report sent to the physician before the result can be obtained from a secondary culture. Of 242 such cultures, 120 proved either from these or subsequent cultures to be positive; 82 proved to be negative; no subsequent cultures were received on the other 40, although requested. Of the positive cases, reincubation was positive and reinoculation negative in 20 instances. Reincubation was negative and reinoculation positive in 16 instances. Both were positive in 43 instances. Both were negative in 41 instances, the subsequent culture being positive. The results tend to show that the diagnostician who reports positive or negative only is liable to be in error in about 50 per cent. of those cultures which contain atypical forms only. It is preferable in such cases to report "suspicious organisms present," request another culture, and do further work with the culture already obtained. In many instances positive results were obtained from such cultures after from five to seven hours' additional incubation.

#### Report of Committee on Standard Methods for the Diagnosis of Rabies.

The committee gave a summary of its knowledge in regard to the diagnosis of rabies. In consideration of the fact that there are still many unsettled questions in regard to this subject, the committee recommends as a working method to use in diagnosing rabies the following:

1. Removal of central nervous system and of salivary glands under aseptic conditions.
2. Smears or impression slips made from ammon's horn, fixed in neutralized methyl alcohol, and stained over the flame until steamed, with the following solution:

Methylene blue, sat. alc. sol.....	30 c.c.
Fuchsin, sat. alc. sol.....	5 c.c.
Distilled water .....	300 c.c.
(To be kept in ice-box until used.)	

If typical Negri bodies are demonstrated, the diagnosis of rabies can be made; if they are not found, similar slides should be made from the gray matter: (1) of the cerebellum, (2) of the cerebral cortex (motor areas), (3) of the gray matter from other areas. At least six slides should be made, covering a wide area of gray matter in order to exclude the possibilities of localization of definite Negri bodies. If no Negri bodies or suspicious forms are found in any of the slides, and the examined material is fresh, the diagnosis is probably not rabies. If suspicious forms are found in fresh material, rabies is probable. If no definite forms are found in decomposing brains, the diagnosis, doubtful, must be given. In all cases in which the diagnosis is uncertain, animals must be inoculated with a fine emulsion made from material taken from various parts of the brain and pieces from surrounding parts should be prepared for sections. Pieces should also be taken from the Gasserian and several spinal ganglia for demonstrating the presence of the rabies tubercles as well as of the Negri bodies. Two rabbits or four guinea-pigs should be used for the inoculations, which may be either subdural or intracerebral. The inoculated animals should be kept under observation for at least three months before a negative diagnosis is made. An emulsion from different parts of the brain should be made in sterilized neutral glycerin for later inoculations, if, for any reason, the first should be unsatisfactory. Decomposed brains should be allowed to remain in the glycerin for from one to three weeks before inoculation, unless very weak solutions are used. In the latter case, negative results will necessitate another inoculation.



### Committee on Standard Methods of Chemical Analysis for Water and Sewage.

The committee (Earle B. Phelps, Robert S. Weston, Edward Bartow, A. Elliot Kimberly, L. P. Kinnicut) has been at work collecting information looking to a revision of the present standard methods. A circular letter has been sent out to water chemists and others. The present standard methods are in wide use and no very important changes are suggested. Some additional matter is needed, particularly in the case of mineral analysis of water and of the analysis of alum and other materials used in water and sewage treatment. The committee has planned a comparative study of all alternative methods and modifications, which will be undertaken by the various laboratories volunteering. The final form which the various methods shall assume will be determined by the results of the proposed study. Changes are proposed in the following determinations, some of the changes being only in minor points: Turbidity, free ammonia, organic nitrogen, nitrates, copper, hardness. Additional methods are planned as follows: Complete mineral analysis, manganese, free chlorine, alum and other commercial products.

### Stability and Putrescibility in Sewage Filter Effluents.

MR. EARLE B. PHELPS, Boston: The development of the modern rapid sewage filter has given a somewhat altered conception of the function of sewage disposal in general, and the rapid introduction of such filters has necessitated changes in schemes of sewage analysis and their interpretation. The most important result of all this is that we look now for qualitative changes rather than quantitative removal. The putrescibility test has become a most important one, especially as regards arriving at a definition which will be acceptable to all, and outlining a method or methods of determining putrescibility which will harmonize with that definition, and a method of expressing results so that they shall have quantitative significance. Putrescibility must mean ultimately the availability of the material as a bacterial food. To avoid confusion and conflict of the present conceptions with various past uses of the term, the word stability would better represent the thing sought after in sewage purification. Stability is not an absolute characteristic to be recorded as plus or minus, but a relative and quantitative property of organic matter, which requires quantitative treatment. The methylene blue or similar test might be adopted as a standard test. It combines great simplicity with quantitative accuracy, a combination possessed by no other test. A method of recording results should be utilized by which the time required to decolorize methylene blue can be properly weighted to give a stability factor which would be an accurate index of the quality of the effluent.

### State Control of Public Water Supplies.

DR. C. O. PROBST, Columbus, Ohio: If a polluted public water supply concerns only the community that uses it there might be some argument in favor of home rule, although in this case it will be more properly home misrule. The state has become, in a large measure, one community and it must assume increased responsibility for the conditions which threaten the lives and health of the people. It should be the duty of the state to protect from pollution, so far as possible, all sources of water supplies of which use is being made. The question coming up in all populous states is: Can the streams and watersheds that must furnish public water supplies be kept free from contamination by laws and inspection? This may be possible for some of the states, but not for the great middle west territory, where usually municipal and industrial wastes must go to the streams. Should these wastes be purified in all cases in which the stream is used in any part of its course as a public water supply, or should water purification be depended on for protection? We can not settle this problem for all communities in general terms. Each community affords a problem of its own.

### Means to Promote the Health of School Children.

DR. M. L. PRICE, Baltimore: School education is important. The first education of the child should be to save itself from

death. Teachers should carefully instruct the children in methods of hygiene. There should also be medical inspection of the schools. Children are subject to many diseases and should not be allowed to exchange food or clothing or any article of personal use.

DR. SAMUEL G. DIXON, Ardmore, Pa., strongly urged the vaccination of children before entering school and said that all schools should have a regular medical inspection and regular disinfection.

Several other papers were read bearing on public health matters.

### Model Registration Law Wanted.

The following resolution was adopted:

*Resolved*, That the draft of a model law for the registration of births and deaths in the United States, based on the essential requirements of registration, as laid down by the American Public Health Association in conjunction with the United States Bureau of the Census, and approved by the American Medical Association and by the Conference of Commissioners on Uniform State Laws, be cordially endorsed by the American Public Health Association; and that the Committee on Legislation of the Section on Vital Statistics be authorized to cooperate on behalf of this association with the representatives of the other organizations named, and with the Bureau of the Census in making such minor changes as may be necessary and in urging the adoption of such legislation in non-registration states.

### U. S. Public Health and Marine-Hospital Service.

The following resolution, offered by Dr. John N. Hurty, Indianapolis, was unanimously adopted:

*Resolved*: By the American Public Health Association, That it heartily recommends to the American Congress the passage of such legislation as is intended to enlarge the scope and increase the efficiency of the Public Health and Marine-Hospital Service. To this end the association believes the powers of the service should be increased; that provisions shall be made for the retirement under pay of the members of the service, and that the salaries of the said members should be made commensurate with the medical services of the Army.

The secretary shall send a copy of this resolution to the chairman of the House Committee on Interstate and Foreign Commerce, and to the corresponding committee in the Senate.

### Election of Officers.

The following officers were elected for the ensuing year: President, Dr. Gardner T. Swarts, Providence, R. I.; first vice-president, Dr. R. M. Simpson, Winnipeg, Manitoba; second vice-president, Dr. Jesus Chico, Mexico City; third vice-president, Major Charles F. Mason, U. S. Army, Washington, D. C.; secretary, Dr. Charles O. Probst, Columbus, Ohio; treasurer, Dr. Frank W. Wright, New Haven, Conn.

Section on Vital Statistics: Chairman, Dr. Charles A. Hodgetts, Toronto, Ont.; vice-chairman, Dr. William H. Guilfoyle, New York; secretary, Dr. W. R. Batt, Harrisburg, Pa.

Section on Municipal Health Officers: Chairman, Dr. William C. Woodward, Washington, D. C.; vice-chairman, Dr. A. J. Douglas, Winnipeg, Manitoba; secretary, Dr. E. C. Levy, Richmond, Va.; recorder, Dr. C. V. Chapin, Providence, R. I.

Laboratory Section: Chairman, Dr. J. J. Kinyoun, Washington, D. C.; vice-chairman, Dr. William Royal Stokes, Baltimore; secretary, Mr. B. R. Rickards, Boston; recorder, Dr. H. D. Pease, Albany, N. Y.

Richmond, Va., was selected as the next meeting place.

## Medicolegal

### Rights to Damages Where Mother and Unborn Child Are Injured.

The Supreme Court of New Hampshire says that in the case of Prescott vs. Robinson, the question was presented as to whether the plaintiff was entitled to recover damages for her mental distress due to her fear or apprehension before the birth of a child that it would be deformed in consequence of the defendant's negligent act, and whether her mental suffering since the birth of the child and her prospective anxiety and disappointment on account of its deformity and diseased condition could be considered by the jury as recoverable elements of damage. She alleged that the defendant negligently ran an automobile into a carriage in which she was riding, hurling her to the ground, whereby she was severely injured in and on her head, body, abdomen, back and limbs, and internally so



that the child to which she later gave birth, and of which she was at the time of said injury pregnant, was born deformed, disfigured and diseased, etc.

Assuming that she suffered mental distress, not only in regard to the effect of the accident on her person, but in regard to its effect on the unborn child, it could not be doubted that it was proximately caused by the alleged negligence of the defendant. It was a natural result reasonably to be apprehended under the circumstances. The fact that the defendant was ignorant of her condition did not lessen his liability for the natural consequences of his negligent act.

It was contended that, while the plaintiff might be entitled to recover for distress of mind due simply to her fear of the results of the accident to her person, her apprehension that the child might be deformed thereby was too remote or fanciful to be deemed in law an element of damage, although proximately caused by the defendant's negligent act. But if a fetus is deemed to constitute a part of the mother's person, an injury to it is plainly an injury to her, as much as an injury to her hand or arm would be. And it would seem to follow that she has as much right not to be harmed in the one respect as in the other. A denial of that proposition would be equivalent to an assertion that the law protects persons in the use and enjoyment of some parts of their physical organisms, but not of all parts thereof. Such a conclusion rests on no logical basis, and is supported by no legal principle. If in consequence of a blow inflicted on his person a man sustains an injury which may reasonably be expected to produce a deformity or to impair his health, his right to recover damages of the negligent defendant for his mental suffering occasioned by the prospect of such a result is a recognized and enforceable right.

The fact that one of the results of the alleged injury in this case was the deformity of the fetus, which became the child's misfortune on its birth, did not prove that no right of the plaintiff was invaded in this regard for which damages were allowable. On the contrary, it showed that her natural right to the normal action of her physical organs in the growth and development of the fetus was seriously infringed. Her ability to be delivered of a normal and healthy child was jeopardized, and her grief and apprehension before the birth on account of what the probable or not unreasonable effect would be on the child was not a remote consequence of the alleged negligence of the defendant. It was her right to produce a healthy child; and, if by the defendant's negligence her enjoyment of that right was diminished or violated, her mental distress for the unnatural result to be expected was an element of damage for which she should be compensated, as well as her disappointment at the birth of a deformed child.

In this view of the case it was unnecessary to consider or determine what, if any, rights a child in *ventre sa mere* has for injuries received by it, which may render its existence after birth painful and burdensome. Whether it may or may not, after birth, maintain an action on that account, was immaterial in this case.

The mother's right to the damages she suffers for the defendant's wrongful act in causing her to bring forth a misshapen and sickly child, instead of a well-developed and healthy one, does not depend on the question whether at the time of the injury the fetus is deemed in law a person, or whether after birth it may maintain an action to recover for the wrong to it before its birth. She can not recover in her own right for the child's injuries for which, if it were deemed a person in law, it would have a right of action; and, if it is deemed not to be a person at the time of the injury, but *pars viscerum matris*, she suffers no damage for its deformity merely, that is, the fact alone that it is deformed is a misfortune to the child, for which she is not entitled to damages, unless it causes her special physical pain and suffering. Such damages pertain to the child alone. The mother is no more entitled to them than the father is. On the birth of the child the physical consequences of the injury to it become effective. From the time of the injury to the time of the birth the mother suffers no physical damage merely because the child's limbs are distorted or because its health is impaired. It therefore follows that the child alone suffers damage on that account; and, if that damage is held to be *damnum absque injuria* (that kind

of damage for which no action will lie), the mother's right thereto would not be increased. If the child can not recover therefor, it does not follow that she can. In fact, there is no legal connection between their rights of action for their respective damages. But while the injuries suffered by each are distinct and independent, the mother's anxiety before the birth of the child, in view of the reasonable probability that the defendant's act will cause her to produce an abnormal child, is peculiarly an element of damage to her.

This result is not in conflict with the cases in which it has been held that no recovery could be had by the mother for the miscarriage and death of a child. These cases do not decide that the mother's solicitude consequent on the injury and before the birth is not an element of her damage, but that the death of the child and her loss of the comfort and enjoyment of the company of a living child are too remote consequences to be considered by a jury in assessing her damages. But injured feelings and regret before the birth and while the mother is seeking to perform her function of childbearing through the organs of her body may be proper elements of recoverable damage, for the same reason, substantially, as led to the holding that solicitude occasioned by the bite of a dog, including the apprehension of hydrophobia, although the dog was the holding that solicitude occasioned by the bite of a dog, in consideration of the jury.

The fact that the plaintiff would undoubtedly suffer great disappointment during her lifetime, occasioned by her continual observation of her child's deformity and its probable suffering, though in some sense caused by the defendant's negligence, was a misfortune for which the law could afford no compensation in an action for negligence. If the collision which caused the injury both to her and her child had occurred while she was carrying the child in her arms, it would be a novel proposition to urge that she might recover damages for her subsequent mental distress on account of the disfigurement and ill health of the child. However severe the grief may be of the friends and relatives of the victim of a catastrophe, they can ordinarily maintain no common-law action for damages on that account. The deformity of a crippled child and its suffering may be an ever-present cause of disappointment to its parents, and their lives may be miserable thereby, but they can obtain no redress on that ground against the person whose negligence was the cause of the child's condition. The policy of the law requires that no action be maintainable for that cause.

If in the case at bar the fact was that the defendant maliciously inflicted the injury on the plaintiff, one of the natural and intended results of the act would be to cause the plaintiff great mental distress, not merely on account of the injury to her and the unborn child, but on account of her parental anxiety for the future healthfulness of her child. It might not be incorrect to say that it would be conclusively presumed that the defendant's purpose was to inflict on her the mental suffering she sustained, and hence that he ought to pay for it. But if the act causing the injury was merely a negligent act, the recovery of compensation for such remote, secondary, and speculative injuries could not be justified on that ground, since a negligent defendant is answerable only for the direct, proximate, and natural results of his act. If a negligent defendant inflicts a violent blow on the person of the plaintiff, in consequence of which the latter falls on another, who is crippled thereby, the sorrow of the plaintiff for the suffering of the third party could not be considered a proximate result of the defendant's involuntary act, for which he should be charged in damages. As the child's suffering in this case was his misfortune, the plaintiff's regret on that account was not a legitimate element of her damage for the mere negligence of the defendant.

It was not necessary to discuss at length the claim that the plaintiff was entitled to recover for the "pain and suffering and inability to labor of said child," for the obvious reason that the child's peculiar injuries afforded it, if anybody, a right of action; and if it should be held, on consideration, that it could not maintain an action for the damages suffered by it after its birth, it was not apparent how a right of action therefor would become vested in the mother.



## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Medical Record, New York.

August 29.

- 1 Plague: Mode of Dissemination and Methods for Control. J. C. Perry, Ancon, C. Z.
- 2 \*Simplification of the Jakoby-Solms Ricin Method for Pepsin Determination. M. Einhorn, New York.
- 3 Tuberculosis Other than Pulmonary Treated with Tuberculin. G. R. Pogue, Greeley, Colo.
- 4 Early Diagnosis of Carcinoma of the Sigmoid. E. M. Foote, New York.
- 5 \*Painful Cutaneous Zones in Visceral Disease. M. D. Bloomfield, Philadelphia.
- 6 Four Cases of Perforating Ulcers of the Alimentary Canal. H. B. Delatour, Brooklyn, N. Y.

2. **Pepsin Determination.**—Einhorn describes in detail his simplification of the Jakoby-Solms ricin method for the determination of pepsin. By the aid of his special apparatus, which is fully described and illustrated, he is able to carry out this test in half an hour instead of three hours. The apparatus consists of a cylindrical glass, surrounded by a vacuum. This glass tube contains a frame holding twelve graduated pepsin tubes. The whole apparatus can be filled with water and corked. Each pepsin tube is marked with a different letter and shows a mark at 2 c.c., 3 c.c., and 3.5 c.c. The lower part is graduated into millimeters. His technic is as follows: Fill each pepsin tube up to 2 c.c. with 1 per cent. ricin solution, then add up to the 3 c.c. mark filtered and diluted stomach contents, and finally add decinormal hydrochloric acid solution up to 3.5 c.c. The tube is well corked, shaken up thoroughly, and then placed in the frame. The letters on the tubes identify the various dilutions. The vacuum tube is filled with fairly hot water (50 to 60 C.), the frame with the pepsin tubes is placed in it, then the apparatus is corked and allowed to stand for half an hour. Observations are taken of the time at which the deposits in the various tubes disappear and are noted. After thirty minutes the amount of precipitate left in any of the tubes is recorded. In making the test the dilutions of 10, 20, 40 and 100 are most serviceable. Normally, the precipitate disappears in a dilution of 10 or 20. If a precipitate is present at 10 the pepsin is diminished; if it disappears at 40 the pepsin is increased. In achylia or marked subacidity the filtrate is used undiluted or only slightly diluted (from two to five times).

5. **Painful Cutaneous Zones in Visceral Diseases.**—Bloomfield expresses surprise that such an important subject as this has received so little attention. He asserts that visceral diseases cause pain referred to definite cutaneous areas, distinct for each organ affected, and in which tenderness exists. He quotes Head, of London, to the effect that these areas correspond to the farthest fibers of certain posterior spinal nerve roots. By mapping out the tender area it is possible to ascertain from which portion of the spinal cord the affected viscus receives its sensory nerve supply. The reflexes are always exaggerated over the hyperalgesic zone. Bloomfield describes the method of examining a patient in order to elicit these signs. On the right side the hyperesthetic area over McBurney's point indicates appendicitis. Hyperalgesia of the umbilical zone accompanies inflammation of the lower surface of the diaphragm affecting the pleura or peritoneum. In acute visceral disease the zones of tenderness are easily elicited, less so in chronic disease. Bloomfield records eight cases as examples of these hyperesthetic areas, and tabulates the zones in ninety-three patients.

#### New York Medical Journal.

August 29.

- 7 \*Treatment of Tuberculosis by Administration of Mercury. B. L. Wright, U. S. Navy.
- 8 Beard's Theory in the Crucible of Test. J. W. Weinstein, New York.
- 9 Properly Constructed Filtering Beds. P. F. Bussman, Buffalo, N. Y.
- 10 Open Air Treatment. J. Carling, New York.
- 11 Hernia of Tube and Ovary, Complicated by Strangulation of Intestine. C. F. Kivlin, Troy, N. Y.
- 12 Case of Actinomyces of the Pelvis. F. McMorrow, Syracuse, N. Y.

7. **Mercury in Tuberculosis.**—This article constitutes a supplementary report on the treatment of tuberculosis by administration of mercury described by Wright in the *United States Naval Medical Bulletin*, April, 1908, and abstracted in *THE JOURNAL*, July 4, page 75. Since the previous report the percentage of improvements has risen to 85, thirty-four patients being improved. Sixty-five patients are now being treated, and Wright believes that from present indications the percentage of improvement will equal if not surpass that obtained from the forty cases already reported. A few of the patients have moderately advanced lesions, but the majority are well or far advanced in the disease. He reports the cases in detail and describes his method of administration of mercury practically as follows: An injection is given every second day until thirty injections have been given. Then potassium iodid is given for two weeks—0.64 grams three times a day. After this one week is allowed to elapse without any medication; then the injections are resumed. This method is giving Wright satisfactory results.

#### Boston Medical and Surgical Journal.

August 27.

- 13 The Psychopathic Hospital and Psychiatric and Neurologic Wards. P. C. Knapp, Boston.
- 14 Present Status of Sanatorium Treatment for Tuberculosis. V. Bowditch, Boston.
- 15 Gastromyorrhea. J. Friedenwald, Baltimore.
- 16 Renal Insufficiency: Importance of Its Early Recognition. G. M. Randall, Lowell, Mass.

#### Archives of Internal Medicine, Chicago.

August.

- 17 Systemic Blastomycosis. Its Etiologic, Pathologic and Clinical Features; Relation of Blastomycosis to Coccidioides Granuloma. F. H. Montgomery and O. S. Ormsby, Chicago.
- 18 \*Blood Pressure in One Hundred Cases of Tuberculosis at High Altitude. L. S. Peters, Silver City, N. Mexico.
- 19 \*Serum Diagnosis of Syphilitic Diseases. E. E. Mayer and F. Proescher, Pittsburg, Pa.
- 20 Acute Insufficiency of the Suprarenals. R. S. Lvenson, Philadelphia.
- 21 Comparative Morphology of the Spirochetes of Syphilis and Yaws (Frambesia Tropica). F. F. Russell, Washington, D. C.
- 22 Theory of Chemical Correlation as Applied to the Pathology of the Kidney. R. M. Pierce, Albany, N. Y.

18. **Blood Pressure in Tuberculosis at High Altitudes.**—Peters bases his article on observations made in the New Mexico Cottage Sanitarium, which is at an altitude of 6,000 feet, and states his belief that altitude has an important effect on blood pressure. As he shows in tables, the average pressure is far higher than at lower elevations or at sea level; and this holds true even in patients in an advanced stage of the disease. The pressure was taken with a Janeway sphygmomanometer, with the cuff applied to the left arm above the elbow, the patient sitting with the forearm flexed on a level with the heart. The systolic pressure alone was recorded, as Peters believes that for all practical purposes this is sufficient. The observations were made between 9 and 10 a. m. Pressures were taken at different hours throughout the day, but only slight variations in the readings were noted. He took into consideration pulse, hemoglobin, previous infections, use of alcohol, age, sex, temperature, heart lesions and kidney disease. He did not take into consideration venereal disease in women. The estimation of hemoglobin was made with a von Fleischl instrument. The average was practically normal; he states that at that altitude and in that climate anemia is a comparatively insignificant factor. He believes that in hemorrhage the blood pressure is usually low. "If it were true that during hemorrhage the blood pressure is higher than usual, it would be interesting to determine why it is that, in a high altitude, with attending high blood pressure, hemorrhage should be a very infrequent manifestation of tuberculosis." One or two hemorrhages a year, in an institution with from fifty to sixty patients, could not be called a high percentage. While he admits that 100 cases is too small a number on which to base radical conclusions, he believes that this increase in blood pressure on coming into a high altitude may bear a direct relation to the possibility of the alleviation or cure of pulmonary tuberculosis. From these observations he draws the following conclusions:

1. Altitude has an important influence on blood pressure. The average pressure is higher here (Silver City) than at lower altitudes or at sea level.



2. There is little if any relation between blood pressure and pulse rate. The same holds true for hemoglobin.
3. Gonorrhea, syphilis, pneumonia, diphtheria and typhoid have no influence on blood pressure.
4. Alcohol has no effect on blood pressure.
5. Blood pressure increases with advancing age.
6. The blood pressure in the female is a little lower than that in the male.
7. Apparently the higher the temperature, the lower the blood pressure.
8. A complicating nephritis tends to increase blood pressure.
9. The degree of involvement and the blood pressure bear no necessary relation to each other. The pressure tends to increase as the pulmonary condition improves.
10. The blood pressure is increased in pulmonary hemorrhage.
11. The blood pressure in tuberculosis is far more reliable as a prognostic than as a diagnostic sign.

19. **Serum Reaction to Syphilis.**—Mayer and Proescher discuss the importance of this reaction. They followed the technique of Wassermann and Sachs and Altmann, which is as follows: From 4 to 5 c.c. of blood was obtained by venesection; from 0.5 to 1 c.c. of serum being enough for from 4 to 5 tubes with decreasing quantities of antigen. As antigen they employed a freshly prepared 1 per cent. solution of sodium oleate in 0.85 per cent. sodium chlorid solution. This substance, in itself hemolytic, is inhibited by blood serum in proper proportions (Noguchi and Liebermann); and as Sachs and Altmann have showed, it prevents the hemolytic action of the complement. The anticomplement action of the blood serum plays no part in these experiments.

The difference between the inhibition of soap hemolysis by syphilitic and normal serum is slight: Sachs and Altmann found it so, and Mayer and Proescher confirm their findings. The best amboceptor is the serum of a rabbit injected with calf's blood and rendered inactive by heating to 56 C.; this is known to hemolyze sheep's blood. Three injections of from 50 to 80 c.c. of calf's blood intraperitoneally suffice in from two to three weeks to furnish a sufficiently strong hemolytic serum. From two to two and one-half amboceptor units are sufficient. It is necessary to value accurately the hemolytic amboceptors used. The sheep's blood is washed several times with normal salt solution. To activate the amboceptor, fresh guinea pig serum is used. The complement can be kept for about a week, if 1 per cent. sodium chlorid is added and then frozen. To carry out the reaction 0.6, 0.5, 0.4, 0.3, 0.25, 0.2, 0.1 c.c. of sodium oleate solution is employed (using tubes containing about 10 c.c.) and 1 c.c. of a 1 to 10 solution of guinea-pig serum and 1 c.c. of serum to be examined heated to 56 C. This is allowed to stand for one hour at 37 C. to bind the complement, then 0.5 of amboceptor thinned out to a 1:200 solution is added (from 2 to 3 amboceptor units) and 1 c.c. of 5 per cent. sheep's blood (normal salt solution). Each tube is filled to 5 c.c. with normal salt solution. The tubes are then kept at 37 C. in the thermostat and hemolysis observed for about two hours. They tabulate the results in a number of cases. Of 31 cases, 12 were diagnosed clinically as paresis; 10 of these gave a positive reaction; 2 were negative. Two cases of tabes gave a positive reaction. In three other patients lues might have been suspected, but they reacted negatively. Thirteen other cases were either positive or suspicious of lues, and three of these were negative. Thirty-one absolutely non-syphilitic patients were selected from the wards of the Allegheny General Hospital and all were negative. The authors state that although results differ somewhat most observers agree in accepting the value of this reaction when positive. When the result is negative, however, it can not be accepted as indicating anything. The fact that the results in tabes and dementia are so positive indicates strongly, they assert, that these diseases must be taken from the category of metasymphilitic and parasymphilitic diseases and be grouped positively as diseases of luetic origin; and more than this, as diseases in which there is still an active agent at work.

#### Bulletin Johns Hopkins Hospital, Baltimore.

July.

- 23 International Congress on Tuberculosis. President Roosevelt.
- 24 Recent Visit to Some of the Medical Laboratories Abroad. W. L. Moss, Baltimore.
- 25 Further Note on Mrs. Packard. W. R. Dutton, Towson, Md.
- 26 \*Obstetrical Significance of the Blood Pressure and Its Relation to the Work of the Heart. J. M. Slemons and F. C. Goldsborough, Baltimore.
- 27 The Barred Road to Anatomy. H. A. Kelly, Baltimore.
- 28 Variations in the Calcium Content of the Blood Following Therapeutic Measures. T. R. Boggs, Baltimore.

26. **The Blood Pressure and Obstetrics.** Slemons and Goldsborough have made observations on ten normal pregnant women, five primigravidae and five multigravidae, noting simultaneously the pulse rate with the estimation of the blood pressures, from which it is possible to determine an index for the volume of the blood put out by the heart per minute, and finally an index of the work of the heart. They state that the average of this index in all their patients was 418,000 during pregnancy and 267,000 during the puerperium. The hearts of multiparae invariably do less work in the puerperium than in pregnancy—the average of the authors' observations showing a difference of nearly 50 per cent. Among the primiparae it is the rule to find the heart work in pregnancy in excess of that in the puerperium, though the contrast is less marked—the difference being only about 10 per cent. The greater cardiac work in pregnancy than in the puerperium is referable to two factors, namely, a relatively more vigorous systole and a relatively more frequent pulse rate. Whether one or the other of these factors is always predominant, the authors' material is not large enough to determine. This point, as well as the primary cause for each of these phenomena, remains for further research.

A predominance of greater cardiac work among multigravidae would be expected, since the first-born children are commonly not so heavy as their successors, and one would suppose that a more active circulation would predispose to larger children. That there is some connection between the heart work and the child's weight is borne out not only by the fact that the babies of multiparae in the authors' series have a larger average weight than those of the primiparae, but also by the finding that larger children were born to those primiparous women who presented the larger work indices. They did not, however, find the variations in this index corresponding absolutely with the variations in the weights of the children. Nor would this be expected, since many factors other than the growth of the child enter into the requirements for work made on the heart. The early part of labor shows no greater values for the work index that existed in pregnancy save a slight temporary rise with each uterine contraction. With the advent of the second stage the heart is subjected to a heavier strain than formerly, both during and between the pains. This continues, in not a few cases, into the first few hours of the puerperium, and in general is recovered from much more promptly by multiparous women than by those who have just passed through their first confinement.

#### Yale Medical Journal, New Haven, Conn.

July.

- 29 \*The Call to Public Health. W. T. Sedgwick, Boston.
- 30 \*Case of Varicose Epigastric Veins Following Phlebitis. J. E. Lane, New Haven, Conn.
- 31 \*Medical Aspects of Hernia in the Linea Alba. G. Blumer, New Haven, Conn.

29. **The Call to Public Health.** Sedgwick says that the call for public health is not merely a call for individual welfare, it is also one of the primal social duties. He discusses it from the humanitarian, the moral and the economic sides, and says that the call to leadership in the public health service is a call to the educated everywhere, but especially to educated physicians. He eulogizes the services of the Army and Navy medical departments to the cause of public health, and particularly the brilliant achievements of the United States Public Health and Marine-Hospital Service. The relation of the physician, he says, to the public is rapidly changing. He will soon have to be as proficient in the art of prevention as in that of healing. While he will not have to build water-works, sewerage or other sanitary systems, to be an analyst of foods or a bacteriologist, save perhaps occasionally to boards of health, he will have to fulfill the ancient and honorable function of the medical man and remain the trusted and intimate medical adviser of individuals and of families in sickness and in health, and, more important still, he will have to prevent disease among individuals, families and communities, by urging higher standards of living; by teaching temperance in all things; by advocating pure water, pure milk, pure food, pure living. If it is in him to be an investigator and a leader, he will be one or both of



these things. If not, he will be a frank and honest, but not captious, critic; he will mold and reform, if he can not lead, public opinion.

**30. Varicose Epigastric Veins.**—Lane describes a case in which, on the left anterior side of the trunk, two dilated veins stand out prominently. One vein, the superficial thoracic-epigastric vein, starting from the groin and running along the outer border of the trunk to the axilla, connects the femoral vein with the axillary. The other, running near the center of the trunk from the groin to the end of the sternum, starts as the superficial epigastric, and above the umbilicus anastomoses with the superficial median xiphoid vein, which empties into the transverse anastomotic or prexiphoid. This last vein connects the two internal mammaries.

**31. Hernia in the Linea Alba.**—Blumer describes a form of hernia recognized for over a century, but not generally noted by the profession, which begins as a rule in the median line at some point between the ensiform cartilage and the umbilicus; much more rarely between the umbilicus and the pubes. It has been described as gastrocele. It is not to be confounded with the ordinary umbilical hernia or with the visceral protrusions associated with diastasis of the recti muscles following childbirth or ascites. It is more common than is supposed. During the last eighteen months Blumer has seen nine cases and has heard of two others. They are said to be four times as frequent as femoral and umbilical hernias; though they may occur in infancy, it is unusual to find them under 18 or in extreme old age. They are more frequent in males than in females and among the laboring classes. The condition does not always arise in the same manner, a few congenital cases are on record. Straining and trauma are the commonest causes. Blumer discusses the anatomy and symptoms and quotes his nine cases in abstract. He says: "The radical operation for this form of hernia is so simple and so satisfactory that it is much to be preferred to any other form of treatment when the condition of the patient warrants it. A mere linear incision over the mass with removal of the nodule of fat, if it happens to be a properitoneal hernia, or excision of the sac if it is true hernia is all that is necessary."

#### Archives of Ophthalmology, New York.

July.

- 32 Case of Septic Thrombosis of the Cavernous Sinus. W. L. Simpson, Memphis, Tenn.
- 33 \*Treatment of Trichiasis. T. H. Butler, Coventry, Eng.
- 34 Case of Unilateral Congenital Fistula of the Lachrymal Sac. H. H. Tyson, New York.
- 35 Dacryocystitis Due to Typhoid Bacilli. N. L. Foster, New York.

**33. Treatment of Trichiasis.**—Butler divides trichiasis into three groups: those caused by entropion, those caused by growth of adventitious lashes in a false position, the so-called distichiasis, and, finally, trichiasis caused by a combination of the other two causes. He gives the details of Van Millingen's operation, which he asserts is the only satisfactory one, and also describes Walhauer's modification of Jaesche-Arlt operation, and of various modifications of some others. He states that he has never seen a recurrence after the Van Millingen operation and that in children this operation is the one which should always be selected. For trichiasis of the lower lids he performs Snellen's operation exactly as for the upper lid. If, however, as often happens in young children, the lids are much rolled in, he advises Pann's plastic operation as it gives good and permanent results with little or no deformity. In cases in which there is much atrophy combined with entropion of the upper lids, Van Millingen's operation must first be performed, followed later by the Caut operation. He states, however, that his patients so far, have not had patience enough to allow him to do this.

#### Annals of Ophthalmology, St. Louis, Mo.

July.

- 36 \*Abscess in the Zygomatic Fossa. M. L. Foster, New York.
- 37 New Applanation Ophthalmometer. E. B. Coburn, New York.
- 38 Import of Opsonins in the Eye. Z. Nedden, Bonn, Germany.
- 39 Case Showing Manifest Canal of Cloquet. A. C. Maisch, Hagerstown, Mo.
- 40 Diseases of the Iris and Ciliary Body. M. L. Foster, New York.

**36. Abscess in the Zygomatic Fossa.**—Foster reports an interesting case of this rare condition. The patient, a woman, awoke one morning (May 16) with pain in the left cheek and eye, and some swelling of the side of the face and congestion of the eyelid. One physician prescribed but gave no relief. Another, who was called two days later, ordered a linseed meal poultice and later lanced the gum above the carious stump of the left canine tooth, but found no pus. All the teeth on the affected side were badly decayed and had given trouble for years. Not until after the final operation was it learned that at this time the patient was unable to open her mouth and that the physician who lanced the gum was unable to force the jaws apart far enough to allow him to make the incision as far back as he desired. This important symptom, which might have furnished a clue to the true diagnosis, was not mentioned till comment was made on its absence in the presence of the patient's son. After the incision had been made in the gum poultices were applied, and a day or two later a profuse flow of pus appeared. By this time the swelling and the exophthalmos had become very great and neither was lessened by the discharge of pus. The patient was sent to a hospital and the lower fornix was incised through the conjunctiva, but no pus was found; on the next day, however, there was free discharge from the wound. Although the incision was kept open there was no diminution in the exophthalmos. A week later, under ether anesthesia, the swelling over the stump of the canine tooth was again incised but no pus found. A knife about the size of a Graefe knife was passed between the rectus and oblique muscles and into the posterior part of the orbit in four places, but without finding pus. The antrum was opened near the canine tooth, without result. Next day in spite of profuse discharge of pus from the incision on the nasal and lower side of the eyelid, the exophthalmos did not decrease and vision was rapidly failing. About a month later the lower lid appeared to be very swollen near the outer canthus and an incision at this point evacuated a large amount of pus. A probe was introduced and passed along the margin of the orbit to the nasal bone. Although the discharge from this wound continued to be profuse the exophthalmos persisted. A nasal specialist was consulted and removed part of the turbinate and explored the sinuses, but did not find them affected.

On July 30, under anesthesia, an incision was made along the lower border of the orbit and a sinus resulting from the previous operations was followed to its extremity. Beyond this the periosteum was pressed back and separated from the bone by means of an elevator and a subperiosteal collection of fluid found that extended backward and outward from the inner wall of the orbit. This area of exposed bone was carefully examined for caries or an aperture which might lead to the ethmoid or elsewhere, but nothing of the sort was found, and no evidence of a retrobulbar tumor or abscess was detected. On the next day it was found that fully two-thirds of the detached periosteum had become reattached to the bone and the patient seemed much relieved. Though no history of syphilis could be obtained, the patient was given potassium iodid. By the end of August she was discharged from the hospital with the sinus still open and leading to a small area of exposed bone. In January next, the patient was again anesthetized and it was found that the sinus terminated behind the ramus of the jaw. The cavity was thoroughly irrigated with salt solution, the skin adherent to the bone and tissues of the lid was dissected free and the cavity packed with sterile gauze. The symptoms gradually disappeared and in September of that year the patient was completely well. Foster believes that in this case the infection must have originated from the carious teeth or from the mucocele of the lachrymal sac, as the zygomatic fossa is so situated that it is almost impossible for infection to reach it from without.

#### Journal of the Indiana State Medical Association, Fort Wayne.

July.

- 41 The Physician as a Citizen. D. C. Peyton, Jeffersonville.
- 42 \*Intestinal Auto-intoxication and Its Treatment. J. M. Anders, Philadelphia.
- 43 Opportunity for Work, Progress and Peace. W. N. Wishard, Indianapolis.
- 44 Rural and Village Hygiene. D. W. Robertson, Deputy.
- 45 Pathology and Treatment of Lobar Pneumonia. H. T. Montgomery, South Bend.



**42. Intestinal Autointoxication.**—Anders presents the subject of toxins formed within organized bodies in a broadened aspect. In summarizing the known etiologic factors he would assign conspicuous positions to the following, in the order given: 1, Impaired metabolic processes; 2, errors of diet, or the ingestion of too large a quantity of proteids, and, although less commonly of fats and sugars; 3, constipation; 4, intestinal pathologic states, such as chronic appendicitis, mucous colitis and gastroptosis, with or without coloptosis. From an etiologic standpoint the cases should be subdivided, according to their origin, into gastric and intestinal forms of chronic autointoxication. He quotes Forchheimer's description of the chemical aspect of chronic intestinal autointoxication (*Am. Jour. Med. Sci.*, July, 1907, abstracted in *THE JOURNAL*, Aug. 3, 1907, p. 443). His personal experience indicates an increase in the elimination of indican in nearly all cases, especially in those showing marked accumulations throughout the colon. It is obvious, he says, that in direct proportion to the renal elimination of indican will be raised the autoprotective power of the human organism. On the other hand, its disappearance from the urine does not impair the protective processes, but points to a subsidence of the putrefactive fermentative changes in the intestine. He discusses the microscopic urinary findings, acetoneuria, the nervous phenomena, emphasizing depression, dread, fear, nostalgia, melancholia, delusions, etc., but cautions against the fallacy of making an assured diagnosis of either autotoxie hysteria or neurasthenia without clear and convincing evidences of the presence of the etiologic conditions; for while the influence of intestinal autointoxication is undoubted, most cases of neurasthenia do not bear the stamp of an enterogenous toxiosis. Anders discusses cutaneous symptoms and says that there is no more difficult problem than the positive recognition of chronic intestinal autointoxication. He draws a practical distinction between primary chronic autointoxication of intestinal origin and that form which occurs secondarily to other acute and chronic diseases. The latter variety is more common than the former, and the alimentary autointoxication is sufficiently open to observation. In treatment, he discusses the diet, restriction of which, sometimes to fluids alone, is advisable. The lighter and more digestible albuminoids, milk, eggs, fish, oysters, fowl (except turkey) and game (in season), in moderate quantity, with wholesome fruits, green vegetables, cereals, potatoes, either mashed or baked, and a small amount of fat and sugar, are suitable. In the secondary form, particular attention must be paid to the primary affection. Milk, cocoa and hot water should replace tea and coffee. Alcohol should be used only cautiously—a small amount of acid wine, claret or Rhine, may help nutrition. Antiseptic laxatives, of which calomel is the best, are to be used; also certain of the alkaline saline mineral waters. Irrigation of the colon is useful in intractable forms. Further elimination should be aided by stimulating the sweat glands. The urinary tract is an important route of elimination. Physical exercises are recommended.

#### Washington Medical Annals.

July.

- 46 Review of Pathology. E. B. Behrend, Washington.
- 47 Review of Gynecology. G. B. Miller, Washington.
- 48 Postoperative Mechanical Hens. I. S. Stone, Washington.
- 49 Catalytic Action of Lipase in Relation to Acidosis. P. S. Roy, Washington.
- 50 \*The Syncytium, Its Functions and Relations to the Toxemia of Pregnancy and to Cancer: Probability of a Primal or Universal Antitoxin. G. W. Wood, Washington.
- 51 Chronic Ulcer of the Duodenum. J. F. Moran, Washington.
- 52 \*Snake Poisoning in the United States. P. Willson, Washington.

**50. The Syncytium.**—Wood discusses the literature of the anatomy, physiology and pathology of the placenta, the toxemia of pregnancy—advancing it as his own opinion that acute yellow atrophy of the liver in pregnancy is due primarily and directly to the digestive action of the syncytial enzymes of the parenchyma of the liver and that the real toxemia of pregnancy is peptone poisoning, due to the presence of a syncytio-peptone in the blood—and the cause of cancer. Of this he says: "To put it tersely, all that is needed to start a cancer is an embryonic cell, some bile, a medium con-

taining elements necessary to its nutrition, and a suitable receptacle." He announces "the discovery of a new law of pathenogenesis" in the following terms: "When an invading or misplaced cell possessing proteolytic, amylolytic or lipolytic enzymes comes into contact with bile in sufficient quantity it takes on new activities, its digestive powers are doubled, and the tissue in which the meeting occurs has its power of resistance lessened to a corresponding degree." He asserts the "peculiar immunity of nursing babes from all contagious diseases and the lightness of the attack when acquired," and suggests the possible presence in the mother's milk of an immunizing substance, probably derived from the antisyncytio-toxin. This, he holds, suggests in turn the possibility of a primal or universal antitoxin. He adds: "The serum from the blood of any healthy pregnant animal—cows excepted, because their enzymes are probably depleted by excessive milking—would be a ready-made antitoxin for many conditions." It should never be used intravenously, but should be injected into the tissues, like diphtheria antitoxin.

52. This article was published in full in the *Archives of Internal Medicine*, June, 1908, and was commented on editorially in *THE JOURNAL*, July 11, p. 132.

#### Therapeutic Gazette, Detroit.

July.

- 53 \*Test to Determine the Adaptability of the Donor's Blood to the Receiver's Blood in Transfusion. J. Funke, Philadelphia.
- 54 Value of Acetone in the Treatment of Inoperable Carcinoma of the Uterus. F. H. Maier, Philadelphia.
- 55 Treatment of Sarcoma by the Roentgen Rays. P. H. Pfahler, Philadelphia.
- 56 \*Palliative Treatment of Malignant Diseases by the Roentgen Rays. C. L. Leonard, Philadelphia.

**53. Transfusion.**—Funke says that statistical study shows the result in 42 per cent. of the cases transfused to be favorable and in 53.5 per cent. unfavorable. In all probability the last-named figure could be greatly reduced by searching for compatible blood, and he believes that this can readily be done by appropriate preliminary tests. If, on animal experiments, the diluted blood should prove to be beneficial, the danger from embolism would be diminished and the technic of the operation greatly simplified.

**56. Palliative Use of X-Ray in Malignant Disease.**—Leonard says that this agent has a wide field of use in the palliation of malignant disease, but good results can not be expected unless it is vigorously and intelligently employed by those possessing the clinical and technical experience essential to its effective use.

#### Old Dominion Journal, Richmond, Va.

July.

- 57 \*Syphilis of Bone and Joints. L. B. Wiggs, Richmond.
- 58 Diseases of the Thyroid. M. Willis, Richmond.
- 59 Case of Sporadic Trichinosis: Methods of Diagnosis. D. Vanderhoof, Richmond.
- 60 Rectal Neuralgia. B. R. Tucker, Richmond.
- 61 Cesarean Section in Eclampsia; Recovery of Mother and Child. M. Tompkins, Richmond.

**57. Syphilis of Bone and Joints.**—Wiggs discusses these conditions in detail under Lancereaux's classification, viz.: (a) inflammatory osteoperistitis, (b) gummy tumor of bone, (c) dry caries, atrophic form. In determining whether or not a particular bone or joint lesion is of specific origin, Wiggs gives the following as a working summary:

1. We must consider carefully the history—venereal sores (no matter how mild), sore throat, skin eruptions, nocturnal pains, etc.
2. Presence of glandular enlargements (epitrochlear, mastoid, femoral).
3. We must remember that obscure cases, in general, and atypical symptom-groups are often due to syphilis.
4. We should make careful examinations of all suspected cases for iritic adhesions, throat and skin scars, etc. Special attention is due to these scars, as an aid in making a retrospective diagnosis. They are pigmented, usually, and clear up gradually in from four to eight years. They are apt to be found on the scalp and anterior surfaces of the legs.
5. Nocturnal pains, double deafness without otorrhea, paralysis of single cranial nerves—these all point to a possible luetic condition.
6. Justus' blood test, which consists in quick transient reduction of hemoglobin after injection of mercury.
7. Therapeutic test—in obscure cases.

Keeping these facts in mind and depending more on the physical examination than on mere statements of the patient,



one can usually arrive at a relatively positive conclusion. Finally, he discusses the treatment.

#### Colorado Medicine, Denver.

July.

- 62 \*Indirect Injuries of the Optic Nerve. E. W. Stevens, Denver.
- 63 The Effect of Altitude on Heart Lesions in Children. O. P. Shippey, Saguache.
- 64 \*The Medical Supervision of Schools. J. T. Melvin, Saguache.
- 65 Plea for Greater Preventive Care During Scarlet Fever. H. W. Rover, Denver.
- 66 Case of Primary Mastoiditis. C. E. Cooper, Denver.
- 67 \*Tuberculous Seminal Vesiculitis. J. F. McConnell, Colorado Springs.

62. **Injuries of Optic Nerve.**—Stevens reports two cases that seem to corroborate the conclusions of Jameson Evans (*Brit. Med. Jour.*, July 8, 1905), that a special type of incomplete unilateral blindness may result from blows in the region of the external angular process of the frontal bone, the lesion probably being one of limited contusion of the nasal fibers of the optic nerve by *contre-coup*. The ophthalmic artery winding around the nerve on its outer side from below probably protects the nerve on the side away from the blow against the impact with the outer side of the foramen. The treatment is rest, physical and mental, light diet, and aperients for a week or two.

64. **Medical Supervision of Schools.**—Melvin considers medical supervision of schools necessary to train the teachers, to relieve the patients of incapacitating defects, and to supervise the school itself, its light, temperature, ventilation, capacity, desks, seats and blackboard, hours of study and play, etc.

67. **Tuberculous Seminal Vesiculitis.**—McConnell, after discussing this subject and reporting cases, points out the frequency of the involvement of the vesicles by the tuberculous process; that they are sometimes the sites of a primary lesion; that the disease may be unilateral or bilateral; that the gonococcus is influential in preparing the soil for the proliferation and growth of the tubercle bacillus. The interference with the mechanism of ejaculation and the presence of pyuria must also be noted as prominent clinical symptoms. The necessity for accuracy in diagnosis is probably the element that is most striking in the consideration of this subject, since the stripping seances, so effective in dealing with the non-tuberculous varieties, are here sources of considerable danger. The prognosis is exceedingly hopeful in the early case.

#### Kentucky Medical Journal, Bowling Green.

July.

- 68 \*Tuberculosis of Bone. B. F. VanMeter, Lexington.
- 69 Present Day Status of Tuberculosis. D. Caldwell, Paducah.
- 70 Relation of Bovine to Human Tuberculosis. T. S. Lewis, Lexington.
- 71 The Opsonic Index and Bacterial Vaccines. S. Marks, Lexington.
- 72 Acute Parenchymatous Nephritis. A. P. Dowden, Eminence.
- 73 Common Gastrointestinal Diseases of Infancy and Childhood. S. H. Ridgeway, Shepardsville.
- 74 Management of Typhoid Fever. N. H. Rodgers, Salvisa.
- 75 The Physician and the Laity. J. M. Taylor, Glasgow.
- 76 Typhoid Fever and Its Treatment. C. T. Riggs, Upton.
- 77 Cancer of the Rectum. J. H. Rice, Hopkinsville.
- 78 Gastric Ulcer. E. C. Anderson, Hopkinsville.
- 79 Preventive Medicine in the Home and School. W. Blair, Glen's Fork.
- 80 \*Device for Prolonged Irrigation and Drainage of Bladder After Prostatectomy. J. S. Chenoweth, Louisville.
- 81 Use and Abuse of Opium. C. A. Edelen, Louisville.

68.—Abstracted in THE JOURNAL, Nov. 9, 1907, p. 1625.

80. **Prolonged Irrigation of Bladder.**—Chenoweth describes a device for continuous and efficient irrigation and drainage of the bladder without pain or inconvenience after prostatectomy. It consists of two principal parts: 1, the reservoir; 2, the exhaust pump. The reservoir, for which he does not claim originality, consists of a two-gallon glass bottle with an opening at the top and a lateral opening near the bottom. Through the perforated rubber stopper which closes the upper opening pass two glass tubes. The shorter of these tubes is connected by a rubber tube with a short bent glass tube which passes through stopper in lateral opening. This rubber tube has near the lower end a perforation, 3 mm. in diameter, through which the water escapes. The longer tube

reaches a level one-half inch above this outlet and serves to admit air to the bottle. Leading from the reservoir is a rubber tube in which is set a glass coil. This tube is provided with a clip or stop-cock. The reservoir is mounted on a movable stand, so that it can be raised or lowered at will. The *modus operandi* is described in detail. The article is illustrated.

#### St. Louis Medical Review.

July.

- 82 \*Importance of Proper Advice to the Consumptive. O. H. Brown, Mt. Vernon, Mo.
- 83 Parathyroid Glandules. W. E. Leighton, St. Louis.
- 84 Treatment of Skin Disease, by the Roentgen Rays. R. H. Boggs, Pittsburg, Pa.
- 85 Direct Laryngoscopy. R. H. Johnston, Baltimore.

82. **The Consumptive.**—Brown reports cases advised on the home treatment of tuberculosis, prior to their admission into the Missouri State Sanatorium. These patients, when first seen, were all going the usual course of a consumptive; none of them was gaining. All began to improve at once, though they did much better later, when place was found for them in the sanatorium. This is due to the fact that at home there is usually no one who can act as a competent nurse to discipline the patient as he should be disciplined. The success of sanatorium treatment is discipline. But because a patient does well at home is no reason for making him feel that there is no use in going to a sanatorium. "There is little use in a patient's being restored to a fairly good state of health unless he is also taught how to retain his health." This, Brown maintains, is the most significant feature of sanatorium treatment.

#### American Journal of Urology, New York.

July.

- 86 Symptomatology, Diagnosis and Treatment of Simple Chronic and Tuberculous Prostatitis. C. G. Cumston, Boston.
- 87 \*Recovery in Case of Multiple Fractures of the Pelvis and Femur with Extensive Trauma of One Kidney and Impaction of Pubic Arch in the Bladder. J. F. Menestrina, St. Louis.
- 88 \*Differential Diagnosis Between Complete and Incomplete Ureterovaginal Fistula. E. Jonas, St. Louis.
- 89 Specimens of Faulty Descent of the Testicle. D. E. Wheeler, Buffalo.
- 90 Prophylaxis of the Functional Disturbances of the Male Sexual Organs. V. G. Veckl, San Francisco.

87. **Multiple Fractures of Pelvis.**—Menestrina describes a case of multiple fractures of the pelvis and femur with extensive trauma of one kidney and impaction of the pubic arch in the bladder. He suggests that when similar cases are encountered, an x-ray examination should be made as early as possible to avoid errors. He adds that when exploratory incision in the linea alba shows an infiltrated condition of structures covering the pelvic peritoneum, even if no crepitus be present, fracture of the innominate should be suspected and if possible the displaced fragments should be molded back to their proper positions. If a distention of the bladder exists by a hematoma and no visible communication is found from the peritoneal site the bladder should be explored by cystoscopy. He warns against making his mistake of omitting examination of the anterior portion of the bladder. Rectal examination may also reveal protruding fragments. Sounding may assist in locating existing conditions, but it must be carefully done lest fresh hemorrhage be started. He advises against trying to do too much at once, for the shock may kill the patient. If renal catheterization after such an injury shows pus later, the affected kidney should be explored without hesitation by a nephrotomy incision. Reclaiming the functional activity of the kidney will certainly be a great reward for the effort. Hemorrhages during and after exploration are best controlled by packing gauze on either side of the kidney. He reiterates: "Do not omit the use of the cystoscope in such a case, as it is indispensable." One with sufficiently small caliber must be used, such as can be used in a child's urethra by enlarging the external meatus, aiding its introduction by chloroform anesthesia. Urinary antiseptics and fluids should be used freely.

88. **Complete and Incomplete Ureterovaginal Fistula.**—Jonas summarizes his remarks as follows: 1. *Leerygehen*



(empty contraction) of the ureter is an important point for differential diagnosis between a lateral opening and complete interruption of the continuity of the ureter in ureterovaginal fistula. 2. Operative interference in ureterovaginal fistula where there is only a lateral opening in the ureteral wall is not advisable until there has been a chance for spontaneous healing.

#### Monthly Cyclopedia and Medical Bulletin, Philadelphia.

July.

- 91 \*Psychotherapy: Its Scope and Limitations. C. K. Mills, Philadelphia.
- 92 Personal Experience in Psychotherapy Inculeated by Physiologic Analogies. T. A. Williams.
- 93 Dactylitis Streptococci. J. K. Young, Philadelphia.
- 94 The Bier Hyperemia. How to Enhance Its Efficiency. C. E. de M. Sajous, Philadelphia.
- 95 Address to Graduating Class of the Medico-Chirurgical College. L. W. Fox, Philadelphia.
- 96 Scabies. J. V. Shoemaker, Philadelphia.
- 97 Treatment of Early Cases of Ectopic Pregnancy Before and After Rupture. J. A. McGinn, Philadelphia, Pa.
- 98 Alnus Serrulata. J. M. French, Milford, Mass.

91. **Psychotherapy.**—Mills discusses hypnotism, suggestion without hypnosis, educational or reasoning methods, the light shed by psychic medicine on the nature of disease, limitations of psychotherapeutics, and religion and psychotherapy. In regard to the last point, now being much discussed, he says: "I repeat, therefore, that psychotherapy, like medicinal or mechanical or surgical or climatic or any other sort of therapy, belongs to the physician and not to the clergyman; however sincere the latter may be in his idea that it is his duty to invade the province of his medical brother."

#### Iowa Medical Journal, Des Moines.

July.

- 99 Study of Pediatrics by the General Practitioner, or Is the Study of Pediatrics Worth the Attention It Gets, and Does It Get the Attention It Deserves? C. F. Wahrer, Ft. Madison.
- 100 Positive Diagnosis of Incipient Pulmonary Tuberculosis by Roentgen Rays. J. Rudis-Jelinsky, Cedar Rapids.
- 101 Sulphocarbolates in Typhoid. J. H. Seibert, Bellevue.
- 102 History of the Iowa State Medical Society and Its Connection with the Iowa State University. A. A. Noyes, Mason City.

#### Long Island Medical Journal, Brooklyn, N. Y.

July.

- 103 Inaugural Address—Associated Physicians of Long Island. H. B. Delatour, Brooklyn, N. Y.
- 104 Scillitin—Its Properties. J. Burke, Manitowee, Wis.
- 105 Study of Calculus Lodged in the Ureter: Part II. R. Hazen, Brentwood, L. I.
- 106 Fracture of the Patella. M. Figueira, Brooklyn, N. Y.
- 107 What Shall be Brooklyn's Contribution to the Medical Progress of the Twentieth Century? A. C. Jacobson, Brooklyn, N. Y.

#### Archives of Diagnosis, New York.

July.

- 108 \*Relative Value of the Roentgen Rays in Diagnosis of Pulmonary Tuberculosis. R. A. Bolt, Cleveland, Ohio.
- 109 The Differential Blood Count as an Aid in Diagnosis of Empyema in Children. L. Fischer, New York.
- 110 I. Case of Pyloric Cancer; Gastrectomy; Gastrojejunostomy—No Evidence of Recurrence After Nearly Two Years, When Ovaries Were Removed for Sarcoma. II. Two Cases of Very Early Cancer About the Pylorus. J. B. Deaver, Philadelphia.
- 111 \*Appendicitis—Extra Significance of Left Side Pain. J. F. Erdmann, New York City.
- 112 \*Pathognomonic Symptom (or Sign) of Appendicitis not Hitherto Described. H. Malloway, New York.
- 113 Dyspeptic Type of Appendicitis. C. G. Cnniston, Boston.
- 114 \*Diagnosis of Multiple Sclerosis. D. R. Brower, Chicago.
- 115 Diagnosis of Tabes and Pseudotabes. P. Zenner, Cincinnati.
- 116 Case of Muscular Dystrophy Following Acute Poliomyelitis in Infancy. S. D. Ingham, Philadelphia.
- 117 Diagnosis of Mastoid Disease Without the Presence of the Classical Symptoms. E. L. Meierhof, New York.
- 118 \*Prognosis of Prostatic Obstruction After Operation. F. Cabot, New York.

108. **The Diagnosis of Pulmonary Tuberculosis.**—Bolt discusses the use of the x-rays in the diagnosis of incipient pulmonary tuberculosis and also in following up the course of a chronic trouble. He believes the following conclusions are warranted:

1. The use of the Roentgen rays in the diagnosis of pulmonary tuberculosis requires of the Roentgenographer a thorough training in technical methods of handling his apparatus and in developing his negatives. His interpretation of results will depend largely on his general medical training, and experience in studying chests by means of fluoroscope and radiograph.

2. The rays, when rightly used, offer a valuable aid to the already useful methods of physical examination. The latter, however, should never be neglected.

3. While confirming many times the results of the older methods, the Roentgen rays have a peculiar value in showing more exactly the extent, position, and something of the nature and progress of the process in the lungs. The diagnosis of incipient tuberculosis, even by means of the rays, is often a difficult matter. Some observers claim to have discovered by means of the rays the morbid changes in an apparently sound lung before they could be elicited with auscultation and percussion.

4. With unilateral limitation of the movements of the diaphragm; darkening at the apices, or even diffuse haziness, with distinct mottling; accentuation of density about the bronchial lymph glands; relative opacity on deep inspiration, and alteration of the normal outline of the heart shadow, we are justified in treating a case as incipient tuberculosis, even if other physical signs are absent. The presence of distinct areas of calcified tubercles, marked peribronchial thickening, infiltration shadows at the apex, and increased transparency of cavities give grounds for definite diagnosis.

5. In every well-equipped hospital Roentgen-ray examination of the chest should be made a matter of routine procedure, especially in all suspicious and doubtful cases. Radiographic study of chronic cases may also prove advantageous in watching the progress of the lesions.

6. Finally, no opportunity should be lost to examine postmortem findings of patients who have previously had a Roentgen-ray examination. In this way we may be able to correct faulty interpretations, and thus accumulate data for a more rational diagnosis. This has largely been neglected in the past, but should henceforth receive the earnest attention of all interested in the subject.

111. **Left Side Pain in Appendicitis.**—Erdmann calls attention to the fact that pain present in the lower quadrant, with evident tenderness, pain and resistance in the right quadrant—appendicitis, in other words—and without any marked evidence of abdominal distention, signifies free fluid in the pelvic cavity, varying in character from serous to seropurulent or purulent, although the appendix, and abscess if present, be thoroughly walled off. He does not recall making a failure in this diagnostic factor in a single case.

112. **New Pathognomonic Symptom of Appendicitis.**—Malloway describes a sign which he has come to look on as pathognomonic of appendicitis as follows:

It is elicited in this manner: The patient is placed at full length on the operating table or chair for the purposes of examination. This is made in the usual way, and when all the data have been obtained the patient is told to flex the leg on the thigh and the thigh on the trunk. The physician then asks if the movement, or rather the upward pressure thus made, causes any pain or soreness in the lower portion of the right half of the abdomen, i. e., the appendicular region.

If the answer is "no" or "very little," either the physician flexes the thigh more closely, more forcibly, on the trunk or directs the patient to do so, and again inquires if it causes pain or soreness or increases the pain or soreness. The patient is then told to extend the leg to full length with a quick and rather sudden movement and is asked if this has caused any pain or soreness. If neither of these movements has caused any appreciable pain or soreness, the patient is directed to execute the same movements with the left leg and to compare the sensation produced as to whether it is any different from that caused by the right leg or is the same on both sides. Malloway has found that invariably (and in a number of instances this has been verified by a subsequent operation) only when appendicitis was present, whether as the primary malady or as a secondary involvement, did the flexion of the thigh on the trunk give rise to a feeling of pain or a sensation of soreness—deep down (as the patient would say), and even when this was not so marked the rapid extension would cause an accentuation of it.

It may happen that the more forcible flexure of the thigh on the trunk may cause some slight pain or soreness, but if this is not due to appendicitis there will be no pain or soreness on extension. It is the pain, or even soreness, produced both on flexion and extension—and he lays the greater stress on the extension—that he regards as a positive and unfailing sign of the presence of appendicitis.

114. **Multiple Sclerosis.**—Brower, discussing the diagnosis of multiple sclerosis, says that hysteria is the disease with which it is most frequently confounded. The differentiation must be made by the hysterical stigmata, by sensory disturbances, being much more conspicuous in hysteria, and by a careful study of the eye findings. In hysteria the optic nerve is normal; nystagmus, developed by forced lateral movements,



is not severe in hysteria; the regular concentric contraction of the field of vision in hysteria does not inconvenience the patient, and is associated with conjunctival anesthesia.

**118. Prognosis of Prostatic Obstruction.**—Cabot analyzes a number of cases of the postoperative results in prostatic obstruction. He states that what we want to learn is more about each individual case at time of operation and whether the patient finally regained good urinary control; also whether he was again able to do his share in the world's work. Many patients would better have died at time of operation than have been condemned to constant distress as an after-result. It seems to Cabot that, before we can gain much value from statistics, it should be stated that the patient's wound has healed and that he has been out and about for at least three months from time of operation.

#### Military Surgeon, Carlisle, Pa.

July.

- 119 German Field Sanitary Regulations. P. F. Straub, U. S. Army.
- 120 An Improvised Litter on Horseback. F. T. Woodbury, U. S. Army.
- 121 History of the Typhoid Cases Occurring on Board the U. S. S. Connecticut. P. E. McDonnold, U. S. Army.
- 122 Method of Transporting Disabled Soldiers in the Field on a Regulation Litter, Attached to a Saddle, Using Only a Mounted Soldier's Equipment. G. P. Reed, U. S. Army.

August.

- 123 \*Treponema Pertenuis (Castellani) of Yaws and Experimental Production of the Disease in Monkeys. P. M. Ashburn and C. F. Craig, U. S. Army.
- 124 Report of Four Operations on the Stomach. L. L. Williams, U. S. P. H. and M.-H. Service.
- 125 Disabled Foot in the Military Service and Its Diagnosis by the Use of the Skiagraph. G. H. Richardson, U. S. Army.
- 126 Autointoxication. W. F. Waugh, Chicago.
- 127 Improvised Horse Litter for Two Patients. G. M. VanPoole, U. S. Army.
- 128 Military Medical Service of Sovereign Order of Knights of Malta in the Austro-Hungarian Army. S. Steiner, Austria.

123.—Essentially the same article by these authors appeared in the *Philippine Journal of Science*, October, 1907, and was abstracted in *THE JOURNAL*, Feb. 29, 1908, p. 728.

#### Virginia Medical Semi-Monthly, Richmond, Va.

August 7.

- 129 Pernicious Anæmia. W. S. Gordon, Richmond.
- 130 Bier's Hyperemia in Surgery. H. H. Trout, Roanoke, Va.
- 131 Tetanus—Its Prevention and Treatment. J. H. Underwood, Woodbury, N. J.
- 132 Electrodiagnosis. F. K. T. Warwick, Richmond.
- 133 Principles of Surgery. S. McGuire, Richmond.

#### Annals of Otology, Rhinology and Laryngology, St. Louis.

June.

- 134 Surgery of the Facial Nerve. J. C. Beck, Chicago.
- 135 Operation for Thrombosis of the Sigmoid Sinus and Internal Jugular Vein of Otitic Origin. F. Allport, Chicago.
- 136 Treatment of the Infective Labyrinthitis After Fifteen Years' Experience. A. Jansen, Berlin, Germany.
- 137 Pathology and Bacteriology of Suppurative Diseases of the Temporal Bone. E. de W. Wales, Indianapolis.
- 138 Operation for Brain Abscess of Otitic Origin. J. A. Stucky, Lexington, Ky.
- 139 Causation of the Suppuration of the Temporal Bone. W. E. Sauer, St. Louis.
- 140 Report of Atypical and Typical Cases of Sinus Thrombosis Complicating Mastoiditis. W. R. Dabney, Marietta, Ohio.
- 141 Diagnosis and Treatment of Suppuration of the Labyrinth. R. B. Canfield, Ann Arbor, Mich.
- 142 Chondroma and Osteoma in the Facial Tonsils. L. N. Grosvenor, Chicago.
- 143 Developmental Absence of the Outer Right Sphenoidal Wall Occupied by a Vein Communicating Directly with the Cavernous Sinus. Operative Fatality and Autopsy. F. P. Emerson, Boston.
- 144 Case in which Deficient Cerebration was a Prominent Symptom in Chronic Purulent Otitis Media: Cure by Radical Mastoid Operation. D. W. Layman, Indianapolis.
- 145 Treatment of Intumescent Rhinitis by a Submucous Method. H. Horn, San Francisco.

#### Journal of Outdoor Life, Trudeau, N. Y.

August.

- 146 New Method of Tuberculosis Prevention. L. Veiller, New York.
- 147 \*Choice of Occupation for Tuberculous Convalescents. A. E. Roussel, Philadelphia.
- 148 Home Treatment of Tuberculosis. C. A. Robertson, Nashville, Tenn.

147. **Occupation for Tuberculous Convalescence.**—Roussel says that the statistics showing the distribution of the farming industries demonstrate that here is a class of work available to every one, and the supplemental work of the school gardens, vacant lots associations and the sanatoria farm

colonies proves conclusively that in this direction only can the consumptive find economic relief—first, in that he is independent of everything but meteorologic changes; second, that he may not worry about a market, as the home consumption of his products is a certainty. This alone is a great gain. When we consider the close connection between improper and insufficient food and the disease there seems to be no argument. The allied industries, the rustic crafts, etc., already enumerated should also be borne in mind. He believes that work as a street car conductor or itinerant merchant, peddler, book agent, insurance agent, etc., if in these latter rôles there is not too much walking, could be assumed by such patients with safety and profit. The keynote of this entire subject is outdoor employment, and it is with the hope that this may be added to the propaganda against tuberculosis that this essay is written.

#### Journal of the Arkansas Medical Society, Little Rock.

July.

- 149 The State Board. M. Fink, Helena, Mont.
- 150 The Necessity of a State Sanitarium for the Treatment of Tuberculosis. C. E. Witt, Little Rock.
- 151 Public Health and Vital Statistics. G. M. D. Cantrell, Little Rock.

#### West Virginia Medical Journal, Wheeling.

July.

- 152 Annual Address, West Virginia State Medical Association. F. Howell, Clarksburg.
- 153 Tuberculosis Sanitarium for West Virginia. G. A. MacQueen, Charleston.
- 154 Piece of Steel in the Eye Seventeen Years. J. L. Dickey, Wheeling.

#### Northwestern Lancet, Minneapolis.

August 1.

- 155 \*Disease of the Cerebral Vessels, with Its Problem in Diagnosis. W. A. Jones, Minneapolis.
- 156 Tuberculin in Pulmonary Tuberculosis. G. D. Head, Minneapolis.

August 15.

- 157 "Pollinosis," or Hay Fever. F. C. Todd, Minneapolis.
- 158 Four Cases of Hypernephroma. E. L. Tuohy, Duluth, Minn.
- 159 Home Treatment of Pulmonary Tuberculosis. J. W. Bell, Minneapolis.
- 160 Treatment of Exophthalmic Goiter. H. Wiedow, Worthington, Minn.
- 161 Chronic Infectious Metritis. C. O. Cooley, Madelia, Minn.

155.—This article was published in *THE JOURNAL*, July 18, 1908, p. 179.

#### Western Medical Review, Omaha, Neb.

July.

- 162 Static Electricity and Its Therapy. F. A. Wells, Kearsaw, Neb.
- 163 Movable Kidney—When to Operate. A. C. Stokes, Omaha, Neb.
- 164 Treatment of Eclampsia. C. R. Watson, Sumner, Neb.
- 165 Adding a Grain of Salt to Professional Ethics. C. L. Alger, Leigh, Neb.

#### Advanced Therapeutics, New York.

July.

- 166 Roentgen Dermatitis: Its Prevention and Treatment. M. K. Kassabian, Philadelphia.
- 167 The Climatotherapy of Tuberculosis: Considered on Physical Rather than Bacillary Grounds. C. Denison, Denver, Colo.
- 168 Cancer and Its Treatment by Cataphoric Sterilization. G. B. Massey, Philadelphia.

#### Detroit Medical Journal.

July.

- 169 Diagnosis and Treatment of Hemorrhoids. L. J. Hirschman, Detroit.
- 170 The Use of Plaster-of-Paris in Surgery. W. E. Blodgett, Detroit.
- 171 Catgut Prepared with Collargolum and Argyrol. T. R. MacChure, Detroit.
- 172 Chronic Laryngitis. E. L. Shurly, Detroit.

#### Journal of Ophthalmology and Oto-Laryngology, Chicago.

July.

- 173 Spontaneous Exenteration of the Mastoid Resulting from Acute Otitis Media. A. H. Andrews, Chicago.

#### The Providence Medical Journal.

July.

- 174 \*Some Sanitary Problems. C. V. Chapin, Providence, R. I.
- 175 Digestive Disturbances in Infancy Due to Overfeeding of Fat. W. H. Jordan, Providence.
- 176 Two Cases of Edebohls' Operation of Decapsulation of the Kidneys for "Bright's Disease." H. Terry, Providence.

174.—Abstracted in *THE JOURNAL*, July 25, 1908, p. 342.



## The Alabama Medical Journal, Birmingham.

July.

- 177 Golter. C. H. Mayo, Rochester, Minn.  
178 Direct Laryngoscopy, Tracheobronchoscopy and Esophagoscopy.  
J. H. Abraham, New York.  
179 Postpartum Hemorrhage. J. I. Reid, Aldrich, Ala.  
180 Pneumococcus Empyema—Résumé of Twenty Operative Cases.  
J. F. Oechsner, New Orleans.  
181 Jaundice and Its Significance. S. Harris, Mobile, Ala.  
182 Why Should Exact Hygiene be a Negligible Factor in Sick  
Room? J. D. Haecock, Birmingham.

## Atlanta Journal-Record of Medicine.

July.

- 183 The Physician and His Relation to Society. J. C. Olmsted,  
Atlanta.  
184 Review of the Work on the Appendix. W. Jones, Atlanta.  
185 Pyelitis in Pregnancy. F. G. Hodgson, Atlanta.  
186 Nervous Disease Caused by Alcoholic and Metallic Poisoning.  
J. C. Kling, Atlanta.  
187 Higher Medical Education. E. R. Anthony, Griffin, Ga.  
188 Outdoor Life for the Prevention and Cure of Disease. P.  
Paquin, Asheville, N. C.

## FOREIGN.

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

## Lancet, London.

August 15.

- 1 Opium Habit and Morphinism. D. Duckworth.
- 2 Traumatic Enophthalmos. H. P. Dunn.
- 3 Case of Kala Azar. D. G. Marshall.
- 4 Malignant Disease of the Stomach Associated with Malignant Disease of the Glands Above and Behind the Inner Extremity of Each Clavicle. H. Morris.
- 5 \*Observations on the Phagocytosis Occurring in Human Blood Serum when Mixed *in Vitro* with Horse Serum. S. G. Shattock and Leonard Dudgeon.
- 6 Excision of the Tonsil: Its Operation. H. Upcott.
- 7 Treatment of Immature Cataract. H. Smith.
- 8 Renal Calculi Nephrolithotomy; Subsequent Nephrectomy, on Account of Hemorrhage. H. A. Lediard.
- 9 Vesical Calculus, the Nucleus of which was a Revolver Bullet. C. F. Lassalle.
- 10 Treatment of Spina Bifida by Drainage of the Cerebral Subdural Space. P. Paterson.

5. Phagocytosis.—Shattock and Dudgeon state that seeing, that the administration of normal horse serum either by subcutaneous injection or by the mouth is followed by a rise in the opsonic value of the blood in human beings, it becomes a matter of interest to ascertain how this result is brought about. They consider certain possibilities in the form of the following questions and give in detail the results of their experiments: 1. Does horse serum act simply by supplying "common" or non-specific opsonins directly to the patient's blood? 2. Does horse serum act by supplying agglutinin, which brings about a "precipitation" of the micro-organisms on the leucocytes and so increase the phagocytosis independently of any increase in opsonin? 3. Does horse serum activate normal human serum so as to render the latter of higher opsonic value? 4. Does horse serum activate the serum of a patient suffering from an infective disease so as to render the latter serum of higher opsonic value (a) by simple admixture, (b) by the intermediary action of the patient's cells on the mixture? They conclude that the opsonic value of normal horse serum is decidedly lower than that of normal human serum or than that of patients suffering from chronic pulmonary tuberculosis. There is nothing noteworthy, they state, in the behavior of horse serum as studied by saturation with deopsonizing agents. They found that saturation with either *Staphylococcus pyogenes aureus* or *Bacillus coli communis* considerably reduces the phagocytosis toward both these micro-organisms. Saturation with human red blood has a somewhat similar effect in regard to both of the micro-organisms named. Horse serum does not increase phagocytosis by reason of the agglutinin it contains, as distinguished from its opsonin, for heating the serum to 60 C. (which removes the opsonin but leaves the agglutinin) so markedly reduces the phagocytosis that this possible factor is negligible. The admixture of horse serum to normal human serum *in vitro*, after incubation, does not raise the opsonic value of human, but, on the contrary, reduces it. The admixture of horse serum to a patient suffering from chronic pulmonary tuberculosis does not, after incubation *in vitro*, raise the opsonic value of

the tuberculous serum. The admixture of horse serum to the serum of a patient suffering from chronic pulmonary tuberculosis does not, after incubation *in vitro*, and allowing the immune cells to work in the mixture, raise the opsonic value of the tuberculous serum.

## British Medical Journal, London.

August 15.

- 11 \*Pyopericardium in Children Under Twelve Years of Age. F. J. Poynton.
- 12 Pneumonia in Children. G. H. M. Dunlap.
- 13 \*Physiologic Antagonism Between Aconite and Belladonna. H. Speirs.
- 14 New Apparatus for Chloroform Anesthesia. N. H. Alcock.
- 15 Zinc Ionization in Chronic Urethritis. P. C. Fenwick.

11. Pyopericardium in Young Children.—Poynton declares that fortunately for our reputations this is rather a rare disease, though it is an interesting and difficult clinical one. In young children the condition may occur in a general pyemia as a sequel to a local infection, complicating, for example, suppurative otitis media, osteomyelitis, or septic wounds. In such cases the physician must be prepared to find multiple abscesses in various parts of the body. Under these circumstances, pericarditis is a deadly complication, and although it is well to have made the diagnosis, it is only seldom that any treatment is of use. Poynton discusses at length the symptoms and diagnosis, and states that the most common errors are: 1. Mistaking the half truth for the whole. Suppurative pericarditis may never occur to the physician; he may diagnose empyema, or pneumonia and empyema. If an empyema has been drained, he suspects a loculus or retention of pus. In case of bilateral empyema he may ascribe all the symptoms to that cause. 2. Another pitfall is tuberculosis. This, mistake, Poynton asserts, is liable to be made in the case of a marasmic child who has had subacute pneumonia. The failure in recovery, the wasting and breathlessness, together with the signs in the lungs, are ascribed to pulmonary tuberculosis and the consequent toxemia. The most pronounced signs of the pyopericardium he gives as:

1. Progressive muffling of the heart sounds synchronous with enlargement of the cardiac area, together with marked percussion dullness over the pericardium and sometimes posteriorly in the interscapular region. Tubular breathing or absent breath sounds may also be noted in the interscapular region.
2. A rapid and extensive increase of the cardiac dullness upward toward the left clavicle. I have seen a case in which there was absolute dullness reaching to the left clavicle, and the post-mortem examination showed that the upper lobe of the left lung was collapsed and pushed backward by the distended pericardial sac.
3. The pear-shaped outline of a distended pericardium.
4. The abrupt transition from the dullness of fluid to resonant lung tissue.
5. A wavy and diffuse pulsation to the left of the sternum.

He is rather pessimistic as to treatment. The prognosis, he states, is exceedingly grave and unless a serum can be obtained which will combat general pneumococcal infections, improvement in methods of diagnosis will not help in treatment. Surgical intervention, he believes, offers the best chance of success, and a certain number of cases of recovery are on record following operation. The best results are to be expected in older children (over 12) in whom there is considerable effusion of liquid pus. Inflammatory changes in the anterior mediastinum and great thickening of the pericardium itself make it difficult to tell when the pericardial cavity has been opened, and it is not surprising that now and again a pericardial cavity has been thought to be opened and a drainage tube introduced into the mediastinal anterior tissues.

13. Physiologic Antagonism Between Aconite and Belladonna.—Speirs reports the case of a patient who took by mistake half an ounce of a liniment, composed of chloroform, aconite and belladonna. The patient took 53.3 grains of aconite root, which represents  $\frac{1}{4}$  grain of aconitine of which  $\frac{1}{16}$  grain has been known to be fatal. He also swallowed 40 minims of fluid extract of belladonna (B. P.), which is equal to 0.3 grain of the total alkaloids. This would represent approximately thirty times the official dose of atropin. Of chloroform he took 40 minims, about eight times the official dose. The interest in the case lies in the fact that the lethal effect of a large dose of aconite was abolished by the simultaneous action of a large dose of belladonna. Muscular weak-



ness, numbness of the extremities and tendency to complete collapse were the only purely aconite symptoms observed. Salivation, which is usually present in aconite poisoning, was absent, and the usually contracted pupil was overcome by the action of the atropin. Finally, the intensely depressant action of aconite on the central nervous system was counteracted by the stimulating influence of the belladonna. Spiers declares that the obvious lesson to be drawn from the case is the great value which should be attached to hypodermic injections of atropin in aconite poisoning.

#### Medical Press and Circular, London.

August 12.

- 16 Visual and Ocular Defects Associated with General Disease. J. Taylor.
- 17 Calmette's Ophthalmo-Reaction for Tuberculosis. F. P. Weber.
- 18 \*Examination of Sausages and Their Hygienic Preparation. W. G. Savage.
- 19 Artificial Respiration. T. P. C. Kirkpatrick.

18. **Sausages.**—Savage demands the examination of sausages, of which he describes the composition, investigates the bacterial content and considers the hygienic condition of the premises on which they are prepared. He urges that the amount of fat, proteids, starch, water, etc., may be ample from the standpoint of nutrition, but sanitary requirements demand a bacteriologic examination of contents and casings for *Bacterium coli* and other micro-organisms, a chemical examination for various preservatives and a microscopic examination for added starches. He describes the methods of examination for the different substances.

#### Glasgow Medical Journal.

August.

- 20 \*Gangrene of the Extremities After Pneumonia. A. N. McGregor.
- 21 \*Experimental Investigation into the Function of the Thymus. A. MacLennan.
- 22 Case of Chorioepithelioma. G. B. Marshall.
- 23 Rare Pelvic Tumor in a Child of Four Years. T. Kay.

20. **Gangrene After Pneumonia.**—McGregor reports a case of gangrene of the fingers of the right hand consequent on pneumonia. He discusses the subject of pneumonic gangrene, closely analyzing the literature, and says that the following factors in pneumonia may determine gangrene of the extremities: 1. Pneumococci in the blood, probably in all cases, and with marked agglutinating power of the blood which increases up to the crisis and then gradually diminishes. 2. The weakness due to the acute fever, and in particular the cardiac asthenia, which is most marked immediately after the crisis. 3. The occurrence of pneumococic endocarditis, even in the earlier stages of pneumonia, sometimes resulting in the formation of clots or vegetations, which, passing into the arterial circulation, become emboli. 4. The invasion of the veins by pneumococci causing phlebitis and thrombosis, sometimes followed by pulmonary embolism. 5. A probably similar invasion of the intima of the arteries resulting in arterial thrombosis. 6. Thrombosis of arteries following embolism, in which the clot formation extends to some distance and shuts off the collateral circulation.

21. **The Thymus.**—As the result of an experimental investigation MacLennan arrives at the following conclusions:

1. The thymus may be a lymphatic gland, but it is so specialized as to be virtually something more; it is one of the series of glands which by an internal secretion regulate the various functions of the body.

2. The gland is really an accessory one, for its function can be taken up by others. Simultaneous extirpation of the spleen and thymus invariably results in death. One would infer, therefore, that along with its other manifold functions the spleen can carry on those of the temporary thymus. Extirpation of the thymus does not give rise to hypertrophy of adenoid tissue elsewhere.

3. The function of the gland is temporary, for as growth advances the gland atrophies, though in man it never quite disappears till after puberty. There are cases on record, however, in which there has been no thymus.

4. The thymus and the thyroid are closely associated developmentally, anatomically, physiologically and pathologically.

The results of experiments have shown that the thymus is unnecessary to the economy when the thyroid is gone, and when the thymus is removed less thyroid suffices. The importance of this relationship is apparent in certain diseases. An enlarged thymus is credited, rightly in some cases, with being the cause of death in the so-called status lymphaticus, and after removal of the thyroid the enlarged thymus gives rise to the same conditions as produce the so-called thymus death. Therefore, when thyroidectomy is deemed necessary in exophthalmic goiter MacLennan recommends that the thymus be first sought for, and, if enlarged, removed as a preliminary to the thyroidectomy.

5. In certain other diseases, notably laryngismus stridulus, thymusectomy has given good results. The result of the extirpation is not mechanical, but due to the removal of the internal secretion of the thymus. In this disease thymusectomy offers some hope of cure. In cretins, thymusectomy, by reducing the necessity for thyroid secretion, will be beneficial, and ought to be tried.

6. In children who present a fulness over the suprasternal notch during expiration, straining or coughing, special care ought to be taken during surgical anesthesia, which ought to be of the lightest possible.

#### Journal of Obstetrics and Gynecology of the British Empire, London.

July.

- 24 \*Rupture of the Uterus and Its Treatment. J. M. M. Kerr.
- 25 Congenital Umbilical Hernia Successfully Treated by Operation. A. N. McGregor.
- 26 Primary Carcinoma of the Fallopian Tube. J. E. Gemmell.
- 27 Bilateral Tuberculous Salpingitis. F. J. McCann.

24. **Rupture of Uterus.**—Kerr says that while it is true that rupture of the uterus is ordinarily a disgrace to the obstetric art, there are exceptions, and it may occur even during pregnancy. He discusses rupture during pregnancy and after protracted labor, and then rupture during early labor, which he regards as holding etiologically a middle point between the two others. He further discusses the varieties of rupture, symptomatology and diagnosis, and prognosis—which last, he says, is much more favorable to-day than when the condition was treated expectantly. Finally, he deals with the treatment, both prophylactic and active. He especially warns the accoucheur against the danger of performing vaginal operations, such as turning, etc., with the woman only partially anesthetized.

#### The Practitioner, London.

August.

- 28 Diagnosis of Iliac Swellings. W. H. Battle.
- 29 How to Secure Mental Health and How to Prevent Mental Breakdown. R. Jones.
- 30 \*Surgical Treatment of Incompletely Descended Testis. L. B. Rawling.
- 31 Experiments in the Treatment and Prevention of Infection in Typhoid. A. K. Gordon.
- 32 Review of Recent Work in Gynecology. H. Playfair.
- 33 Treatment of Trachoma. A. W. Ormond.
- 34 Review of Recent Literature on Diseases of the Nervous System. H. C. Thomson.
- 35 \*Major Operations in Treatment of Puerperal Sepsis. F. E. Taylor.
- 36 \*Symptoms and Condition of the Blood in Pernicious Anemia. J. G. Taylor.

30. **Incompletely Descended Testicle.**—Rawling discusses the various operative measures and, with regard to the treatment of a patient with one incompletely descended testis, says that the condition may be watched up to about the seventh year of life, after which operation should be advised in case of failure in scrotal descent. After full exposure and division of cremasteric fibers and all restraining bands, and removal of peritoneal process, the operator will be enabled to gauge the possibility of scrotal placement. If this is apparently impossible, the organ should be removed, a radical proceeding, no doubt, but one that is apparently indicated by the almost inevitable failure of all palliative measures, and by the absence of any physical or mental alterations in those patients in whom such a course had been adopted. With regard to the question of double incomplete descent, double abdominal replacement has been advocated, the hernial protrusion being cured and the canal closed up. With this view he does not agree, for two main reasons: 1. The abdominally replaced or-



gans almost certainly lose their spermatogenetic powers. 2. The inguinal, pubic and pubo-scrotal organs retain, in from 40 to 50 per cent. of cases, some spermatogenetic power, at any rate up to about the age of 30 or 40, and, so far as one is able to state, the inguinal testicles retain this power longer than the pubic or high pubo-scrotal varieties. In cases of double incomplete descent, therefore, operative measures should be carried out well before the age of puberty, the canal exposed, the testicle delivered, and the hernial protrusion cured. If the cord is fairly long, the testicle should be sewn to the scrotum. In other circumstances it is preferable that the organ should be allowed to remain in the inguinal canal. The usual disadvantages of such testicular position will be experienced, but the patient will, at any rate, have the advantage of possessing some power of reproduction if he marries early.

35. **Puerperal Sepsis.**—Taylor analyzes the literature of major operations that have been performed for puerperal sepsis under three headings: 1, hysterectomy; 2, ligature of pelvic veins for thrombosis; 3, abdominal or vaginal section for puerperal peritonitis.

36. **Pernicious Anemia.**—Taylor discusses the symptoms and condition of the blood in pernicious anemia, and says that the recognition of idiopathic pernicious anemia in any case with obscure symptoms, rests on the following blood changes: Reduction in the number of red corpuscles, with a high color index, and leukopenia; the presence of megalocytes in large numbers, and of normoblasts and megaloblasts; among the white corpuscles, a lymphocytosis, usually of over 40 per cent. and a not greater percentage than 4 of eosinophiles. Lastly, he urges that blood examinations should be undertaken as a part of routine work almost as frequently as examination of the urine.

**Archives Générales de Médecine, Paris.**

July, LXXXVIII, No. 7, pp. 401-464.

- 37 Accidents Due to Antiseptics in Surgery. (Accidents dus aux antiseptiques en chirurgie.) S. Mercadé.  
38 \*Modern Treatment of Gout. (Traitement actuel de la goutte.) L. A. Amblard.  
39 Diagnostic Importance of Inequality of the Pupils in General Paralysis. (Inégalité pupillaire dans la paralysie générale.) A. Rodlet.

38. **Treatment of Gout.**—Amblard outlines a course of treatment based on recent research which has apparently demonstrated that uric acid is derived from the xanthin bases and that both these and thymic acid are derived from nucleic acid, and that, normally, the thymic acid keeps the uric acid dissolved. The diet should be regulated to avoid food containing much purins, and he gives Hall's tables showing the percentage in purin of the different articles of food. They show that white meat contains as much or nearly as much purin as dark meat, and that beans and oatmeal also contain large amounts. As high temperature destroys the combinations of thymic acid with the purin bases, by setting them free, it follows that meat too well cooked is less desirable than rare meat. Among the articles allowed are milk, butter and fresh cheese, eggs and a little red meat once a day. Among the few drugs which may be found useful are the salicylates and alkaline drugs. Courses of mineral waters are especially useful, not only for the gouty but for their children, as a preventive measure, with a suitable diet and moderate exercise. He quotes Mathien to the effect that children inherit from their parents not only an organic predisposition, but their bad habits of general hygiene and eating; they also inherit their fortune, and thus continue to live in the same environment and under the same condition in most cases. He warns that many disturbances formerly attributed to gout are in reality due to latent arteriosclerosis and uremia. Continued traces of albumin in the urine warn of the necessity of preventive measures to arrest the progress of latent arteriosclerosis. It is important, however, to remember that excessively strict directions may cause them to be followed to an exaggerated extent or to be disregarded altogether.

**Presse Médicale, Paris.**

August 8, XVI, No. 64, pp. 505-550.

- 40 Remote Results of Appendicectomy in Chronic Appendicitis. A. Broca and F. Barbet.  
41 \*Dermatitis of Workers on Cement. (La "gale" du ciment.) R. Martlal.

41. **Cement Dermatoses.**—Martlal has observed a number of cases of a skin affection in men working in cement. Pruritus, swelling and a papulous eruption, with a tendency to lichen and eczema, are the main features. The French call it "cement workers' itch." He advises rubbing lanolin or wax on the hands and forearms before going to work, and keeping the shirt buttoned at the neck. Some firms supply cotton gloves and protecting goggles to their workmen, especially those working in tunnels, etc.

**Semaine Médicale, Paris.**

August 12, XXVIII, No. 33, pp. 385-396.

- 42 \*Paroxysmal Excessive Secretion of Intestinal Mucus. (L'entéromyxorrhée nerveuse.) L. Cheinisse.

42. **Paroxysmal Excessive Secretion of Intestinal Mucus.**—THE JOURNAL, Dec. 7, 1907, page 1961, summarized a case of what Cheinisse calls isolated nervous enteromyxorrhoea. He here reviews the literature on the subject and emphasizes the importance of differentiating this purely nervous form, distinguished by the absence of pain and inflammation, the excessive discharge of thin mucus being evidently a nervous phenomenon. The absence or scantiness of formed elements in the discharge is a prominent feature. Treatment should be addressed to the nervous predisposition and the accompanying constipation. In Richartz' case the affection had lasted for three years, but yielded at once to vigorous purging. This left the intestine at rest afterward, and its excitability gradually subsided to normal, hastened by astringent enemata.

**Berliner klinische Wochenschrift.**

August 10, XLV, No. 32, pp. 1477-1516.

- 43 \*Pathology of Tumors in Cerebellum. (Kleinhirngeschwülste.) M. Martens and W. Seiffer.  
44 Localization of Motor Aphasia. N. v. Mayendorf.  
45 \*Suprasymphyseal Cesarean Section. (Zum suprasymphyseären Kaiserschnitt.) L. Blumreich.  
46 Schütz's Law of Pepsin Digestion. (Ist das Schütz'sche Gesetz der Pepsinverdauung ungültig?) K. Meyer.  
47 Unreliability of Serum Diagnosis of Syphilis with Urine. (Verwendung von Urin zur Wassermann'schen Syphilisreaktion.) F. Hoehne.  
48 \*Technic of Serum Diagnosis of Syphilis. (Zur Technik der Serodiagnostik der Syphilis.) M. Stern.  
49 Microsporon Affection of Scalp. (Mikrosporieerkrankung der behaarten Kopfhaut.) B. Chajes.  
50 Dyspnea of Gastric Origin. (Eigenartige Dyspnoe gastrischen Ursprunges.) G. Galli.  
51 Occupational Accidents of Telephone Girls. (Betriebsunfälle der Telephonistinnen.) M. Bernhardt. Commenced in No. 31.

43. **Tumors in the Cerebellum.**—Martens and Seiffer report a case of multiple glioma on the ependyma causing symptoms as from a tumor in the cerebellum. The largest glioma was located in the fourth ventricle and was responsible for the clinical manifestations observed. The patient was a boy of 13, healthy until he had been hit on the head with a stick three months before. There were no appreciable symptoms, but a week later headache developed, so severe that he soon was unable to attend school. Vomiting, vertigo when doing gymnastic exercises, and diplopia were observed, with some exophthalmos. The patient survived only a few hours the operation for removal of the assumed tumor in the cerebellum. This diagnosis was based on the objective findings, which are described in detail, all pointing to an organic affection of the cerebellum. Since Virchow described this ependyma glioma in 1858 scarcely a dozen cases have been reported. A history of trauma is evident in nearly every case. The multiple localization renders the affection inoperable, resembling central neurofibromatosis in this respect.

45. **Suprasymphyseal Cesarean Section.**—Blumreich believes that this new technic is destined to supplant the classical Cesarean section, but he does not approve of it for infected cases. In a case reported he followed the transperitoneal technic, and in this article emphasizes its advantages. It avoids danger of hemorrhage and of injury of urethra or bladder. Complications of the puerperium with thrombosis occur fifty times as frequently with sawing operations on the pelvis as with other deliveries, but nothing of the kind has hitherto been reported in connection with suprasymphyseal Cesarean section. The region of the uterus incised is the least vascular, and the child is delivered and the placenta follows—both along physiologic lines. The patient can get up much earlier than with other technics.



48. **Serum Diagnosis of Syphilis.**—Stern mentions a few technical points which he has found of importance in his research on 2,500 sera. For example, he states that the proportion of complement in the serum of different guinea-pigs varies within a wide range. He has found it necessary to test the serum in this respect before using it for application of the complement. He also remarks that the intensity of the positive reaction is immaterial.

**Centralblatt f. d. Grenzgebiete der Medizin und Chirurgie, Jena.**

August 6, IX, No. 14, pp. 529-560.

52 \*Surgical Treatment of Pericarditis and Chronic Adhesive Mediastino-Pericarditis. (Cardiolysis, etc.) E. Venus. Commenced in No. 11.

52. **Operative Treatment of Pericarditis.**—Venus has traced the history of operative treatment of pericarditis back to Riolaus in 1653. He summarizes about 300 articles on the subject, and tabulates the details of 110 cases in which treatment was by puncture alone, 51 by incision without resection of ribs, and of 36 by pericardiotomy after resection of ribs—a total of 178 cases of surgical intervention on account of pericarditis. He warns that the results can not be estimated by statistics, as the affection is seldom primary. Of the total 72, or 40.45 per cent., were cured and 6, or 3.37, were improved. Puncture is allowable only when there is no suppuration, which can be determined by an exploratory puncture. In case of suppuration, resection of ribs and pericardiotomy only can be considered. After pericardiotomy the pericardial cavity should be carefully rinsed with salt solution and extensively drained. In case of chronic adhesive mediastino-pericarditis Brauer's technic of cardiolysis—osteoplastic resection of the wall of the thorax to release the adherent pericardium—has proved a life-saving operation and is evidently destined to play a prominent part in the treatment of this affection. The signs of failing compensation subside, diuresis is increased, the albumin vanishes from the urine, while the ascites grows less and the liver and spleen become smaller. Patients who were incapacitated and bedridden were restored to comparative health and could resume their occupations. He gives the full details of the 17 cases in which cardiolysis has been performed to date. The effect was invariably favorable. A complete cure can not, of course, be expected, from the nature of the affection, but by relieving the heart the general health is notably benefited.

**Deutsche medizinische Wochenschrift, Berlin.**

August 6, XXXIV, No. 32, pp. 1377-1416.

53 Pathology of Urine Concrements. (Pathogenese der Urolithiasis.) W. Ebstein.

54 \*Recent Research on Experimental Diabetes. G. Zuelzer, M. Dohrn and A. Marxer.

55 Action of Glutaric Acid on Phloridzin Diabetes. (Glutarsäurewirkung auf den Phloridzindiabetes.) G. G. Wilenko.

56 Traumatic Paralysis of Cervical Sympathetic. (Traumatische Lähmung des Halssympathicus.) Siebold.

57 Operative Treatment of Perforation of Stomach. (Operative Behandlung der Magenperforationen.) F. Michelsson.

58 Steam Cauterization of Uterus. Indications and Limitations. (Leistungsfähigkeit der Vaporisation in der Praxis und ihre Grenzen.) L. F. Schaller.

59 Intestinal Parasites Locating Outside of Intestine. (Darmparasiten im Körper ansserhalb des Darmes.) W. Rimpau and W. Loewenthal.

60 Homogeneous Radiation in Therapeutics. (Homogenbestrahlung.) F. Schultz.

54. **Treatment of Diabetes on New Basis.**—Zuelzer and his associates have succeeded in demonstrating an antagonistic action between the hormon of the pancreas and the hormon of the adrenals. They describe extensive experimental research which seems to show that the adrenalin plays the active part in the mobilization of the sugar metabolism, both in physiologic conditions and in pancreatic diabetes. Among the experiments related on which this assumption is based are some in which normal blood was made to circulate through the surviving kidney, inducing a slight increase in sugar. When the same procedure was done on the liver of a dog whose pancreas had been removed, the sugar increased by from 50 to 70 per cent.; the increase in sugar was even more pronounced when the liver was from a dog with suprarenal diabetes. They assume that in the liver the adrenalin and the hypothetic internal secretion of the pancreas become combined, and that their joint action keeps the elimination of sugar within

normal bounds. In pancreas diabetes the lack of the pancreatic secretion, and thus the predominance of the adrenalin, explain the increase in the sugar. They review a number of experiments undertaken by other investigators for other purposes, all of which confirm the possibility of the antagonistic action of pancreas extract and suprarenal substance. From these premises they proceeded to use a pancreas extract in treatment of suprarenal diabetes. When both the pancreas and the suprarenals are incapable of functioning, no diabetes will follow. After pancreatectomy they ligated the veins from the suprarenals, thus shutting them off from the circulation, and no diabetes followed. Zuelzer has extirpated more than a hundred pancreases, and pronounced glycosuria invariably followed, except in these cases in which the veins from the suprarenals had been ligated. All their research tends to prove that adrenalin has physiologically the task of mobilizing the sugar from the liver, and probably also from the other tissues. Lépine has recently reported a case of diabetes with sarcoma of the suprarenals. The excessive production of the suprarenal secretion was probably responsible for the diabetes. In conclusion are given the details of several clinical cases of diabetes in which marked benefit was obtained by injection of a pancreas extract to antagonize the excessive action of the adrenalin. In one very severe case the urine was freed from acetone and acetic acid and the sugar was reduced to traces after a single injection of the pancreas preparation. The effect lasted for four days, as also in the case of a boy of 6 with 4.8 per cent. sugar and large amounts of acetone and acetic acid. In another case a woman eliminated from 650 to 850 gm. sugar in an average of 18 liters of urine a day. The day after the injection of the pancreas hormon the amount of sugar dropped to 129 gm., the next day to 109 gm., and then it gradually returned to its former figure. Besides these severe cases others are mentioned in which a daily average of from 20 to 25 gm. sugar was reduced to 7.2 the first day, then to 2 gm. and then to zero for four days. At first they used the pancreas from the slaughter-house, that is, after death, but they found that this material was too weak. They had to use 10 gm. to neutralize the action of 1 mg. adrenalin; they now obtain the pancreas hormon in a different way, by which 0.2 gm. accomplishes the same results. The best technic for this production has not yet been worked out, but they are working along lines suggested by Pawlow's biologic research, using the living animal at the height of digestion and eliminating the toxic properties by removing the albumin.

**Medizinische Klinik, Berlin.**

August 9, IV, No. 32, pp. 1219-1256.

61 \*Training for Obstetrical Practice. (Verwöhnung und Anpassung in der Geburtshilfe.) H. Sellheim.

62 Physiology and Pathology of the Play of the Pupils. (Pupillenspiel.) C. Hess.

63 Lumbar Puncture for Psychiatric Differentiation. (Lumbalpunktion in der psychiatrischen Diagnostik.) F. Chotzen.

64 Dietetic and Pharmaceutic Treatment of Epilepsy in Private Practice. A. Eulenburg.

65 \*Meat Poisoning. (Zur Kasuistik der sogenannten Fleischvergiftungen.) L. Wachholz.

66 \*Dietetic and Physical Treatment of Gout. (Gicht.) M. Hirsch.

67 Toxin and Antitoxin of Dysentery Bacilli. E. Schottelius.

68 Improved Technic for Romanowsky Blood Stain. (Panoptische Universalanfärbung für Blutpräparate.) A. Pappenheim.

61. **Training for Obstetrical Practice.**—Sellheim discusses a number of points useful to bear in mind, and urges practical object lessons instead of too much didactic instruction. In his clinic (Tübingen) he has some rooms arranged like the bedroom in an ordinary farm-house or laborer's cottage. Nothing is provided except as the medical student demands it, and he is thus trained in the technic of transforming an ordinary bedroom into an aseptic lying-in room, with provisions for the convenience of the patient and her infant later. This supplies conditions such as the young practitioner is most liable to meet, and it has the further advantage of giving the woman a separate room for her ordeal. The only way to obtain confidence is to have the student conduct the childbirth himself, he says, under the direction of his chief, which has also the best stimulating effect on the rest of the class as spectators.

65. **Fish and Meat Poisoning.**—Wachholz reports five cases observed last year at Craców, with autopsy findings. In two



cases the meat had been from a cow with anthrax; a man of 45 and his son, 12 years old, succumbed in less than three weeks to malignant pustule, but two other persons who ate freely of the meat escaped all disturbances. Anthrax bacilli were found in the blood of the heart, liver, spleen, etc., of the boy. The meat had been condemned and buried by the meat inspectors, but the man had dug up a piece and carried it home to boil. In another case a man died, with vomiting and diarrhea, two days after eating some fish. Autopsy five days later gave negative findings. Another patient was a large landed proprietor taking treatment at the Pasteur Institute, as he had been bitten by his dog, known to be rabid. Ten days later symptoms of fish poisoning developed after a fish dinner at the leading restaurant. He lived only four days. Autopsy findings were negative, as also inoculation of animals, showing that he had escaped hydrophobia.

66. **Treatment of Gout.**—Among the other measures which Hirsch has found effectual are the Bier hyperemia and hydrotherapy.

#### Münchener medizinische Wochenschrift.

August 4, LV, No. 31, pp. 1625-1672.

- 69 \*Clinical Diagnosis of Pulmonary Arteriosclerosis. A. Posselt.
- 70 \*Modifications in Nervous System After Stovain Anesthesia. W. Spielmeyer.
- 71 \*Artificial Hyperemia of Brain in Incipient Arteriosclerosis. G. Galli.
- 72 \*Results and Prospects of Cytologic Examination of Cerebrospinal Fluid. (Zytologische Untersuchung der Zerebrospinalflüssigkeit und deren Aussichten.) O. Rehm.
- 73 \*Carrot Soup in Digestive Disturbances in Infants. (Karrotensuppe bei Ernährungsstörungen der Säuglinge.) E. Moro.
- 74 Imperfect Absorption of Antitoxin from Rectum. F. Hamburger and R. Monti.
- 75 Operation for Recurrence of Carcinoma of Uterus. (Rezidivoperation nach Uteruskarzinom.) O. v. Franqué.
- 76 Diazo Reaction of Normal Urine. (Diazoreaktion des normalen Harns.) R. Engeland.
- 77 Stomach Disturbances in Masturbators. (Magenstörungen bei Masturbanten.) A. Siegmund.

69. **Clinical Diagnosis of Sclerosis of the Pulmonary Artery.**—Posselt has encountered ten cases of sclerosis of the pulmonary artery during the last fifteen years. In three cases it was an autopsy surprise; in the others a presumptive diagnosis was made, with positive differentiation in one case. The subjective and clinical signs and symptoms are mostly referable to the obliterating endarteritis of the smaller vessels, while the physical signs reveal the involvement of the main trunk. A history of severe infection in the past is frequent, especially smallpox, and accompanying aortic sclerosis with insufficiency or mitral stenosis is the rule. Striking cyanosis is an early symptom, while there is little if any dyspnea and edema. Intermittent dyspragia is common, but there seems to be no tendency to drumstick fingers. Another symptom is repeated bleeding from the lungs, without infarcts. There is an area of dullness at the upper left margin of the sternum and vicinity, sensitive to pressure and percussion, and the heart dullness extends unusually far toward the right. When these signs accompany primary mitral stenosis, pulmonary arteriosclerosis is probable, especially when the diastolic thrill and presystolic murmur gradually move upward toward the pulmonary ostium, and the Roentgen rays give characteristic findings.

70. **Changes in the Nervous System After Stovain Spinal Anesthesia.**—Spielmeyer has had opportunity to examine the central nervous system in thirteen cases after spinal anesthesia. The patients succumbed to peritonitis, sepsis or cachexia in from two to eight days after the spinal anesthesia, with the exception of one case, in which the anesthesia was evidently responsible for the fatal outcome, the patient dying in coma forty hours after the injection. The neurohistologic findings in these cases and in considerable experimental research showed degeneration in the motor ganglion cells of the anterior horn of the spinal cord. These motor elements seem to be especially susceptible to the action of stovain. The changes were observed in this class of cells high in the neck as well as low down, and in some the changes seemed to be irreparable. He adds that none of these changes were discovered in the cases in which the dose of 0.07 gm. (0.9 grains) stovain had not been surpassed. In the fatal case 0.12 gm.

(1.7 grains) stovain had been injected; paralysis of the respiration was the first sign of trouble.

71. **Induced Hyperemia in Treatment of Cerebral Arteriosclerosis.**—In this communication from Baccelli's clinic at Rome, Galli reports excellent results from the Bier technic in treatment of 20 patients with incipient cerebral arteriosclerosis. His clinical and experimental experience has shown that the application of a constricting band to the neck reduces the pressure in the arteries while it increases that in the veins, and materially improves the conditions of the circulation in the vasa vasorum. This renders it improbable that the application can cause a rupture in an artery, although the pulse rate may increase by a few beats. In a number of cases he has obtained remarkable results; the vertigo and signs of mental debility vanished and the patient felt very much better. This treatment is particularly beneficial in that form of incipient arteriosclerosis known as neurasthenia, but which resists all treatment addressed to the latter. He applies the constricting band daily for from half an hour up to two hours.

72. **Cytology of the Cerebrospinal Fluid.**—Rehm has been studying this subject at Kraepelin's clinic and in Nonne's hospital service, with 650 lumbar punctures. The results have convinced him that general medicine can derive as much benefit from cytologic examination of the cerebrospinal fluid as from that of the blood, and that the method should not be abandoned to psychiatry and neurology alone. Less than ten cells in the cubic millimeter is the normal range.

73. **Carrot Soup for Sick Infants.**—Moro found that newly born guinea-pigs fed on cow's milk succumbed in a few days to acute digestive disturbances as a rule. The syndrome suggested the alimentary intoxication of infants. The symptoms can be arrested if the young are fed with sliced carrots or allowed to suckle the mother. He has applied this experience in treatment of infants suffering from digestive disturbances, and reports excellent results in 48 cases in which the infants were fed on carrot soup. He boils the carrots and passes them through the finest wire sieve, adding about 200 c.c. to one liter of meat broth made from 500 gm. beef and bones. The carrot soup is made fresh each day and represents from 235 to 260 calories to the liter. This supplies nourishment, while it causes complete transformation of the intestinal flora. The French also use an aqueous decoction of several kinds of vegetables, but this lacks the special properties which render the carrot soup so beneficial, as Moro describes in detail.

#### Therapie der Gegenwart, Berlin.

August, XLIX, No. 8, pp. 337-384.

- 78 \*Treatment of Neurasthenia. (Neurasthenie-Behandlung.) A. Eulenburg.
- 79 Artificially Carbonated and Oxygenated Baths in Arteriosclerosis. (Sarasonsche Ozetbäder bei Arteriosklerose.) Schnitzgen.
- 80 \*Principles of Feeding the Sick. (Grundsätze der Ernährung für die Kranken-Küche.) W. Sternberg.
- 81 \*Improvement of Peripheral Centripetal Neuron in Tabes by Frenkel's Exercise Therapy. (Verbesserung des peripheren zentripetalen Neurons bei Tabes dorsalis durch die Frenkelsche Übungstherapie.) D. de Vries-Reilingh.
- 82 Stutterers in Business and in Court. (Der No. 51 des D. St. G. B. und das Stottern.) T. Hoepfner.
- 83 \*Connection Between Diseases. (Krankheitszusammenhänge.) F. von den Velden.
- 84 Modern Views of Regeneration of the Blood and Their Importance for Treatment of Blood Affections. (Blutregeneration und Therapie der Blutkrankheiten.) H. Hirschfeld.
- 85 Idiosyncrasy to Aspirin. E. Melchior.

78. **Treatment of Neurasthenia.**—Eulenburg's long article emphasizes that the end and aim of treatment of neurasthenia are the restoration of the patient to his normal capacities to enable him to fill his proper place in life. This requires systematic training, increasing and development of latent and reserve energy by methodical education and exercise. Rest and protection from excitation—however indispensable they may be at times—should be only the prelude or a brief episode in the treatment.

80. **Principles of Feeding the Sick.**—Sternberg remarks that the first principle of feeding is that the food must nourish. The subjective side of eating should be studied more, and modern medicine should aim to combine science and art, theory and practice, in this domain more than has been the rule hitherto.



81. **Influence of Exercise Therapy on Tabes.**—Reilingh reports a case in which the nerve conductivity was much reduced. He found that exercise therapy improved conditions in this respect; he is inclined to attribute the result to training of the peripheral centripetal neuron and presents arguments to sustain this view. Frenkel ascribes the benefit from exercise therapy to re-education of the coordination center, but the findings of the case reported, especially the interval between stimulus and reflex action, speak for a peripheral rather than for a cerebral process.

83. **Connection Between Diseases.**—This article reviews Riffel's tables showing the mortality in three generations of the entire population of several villages—4,000 souls. They show that a number of diseases which we never think of connecting with each other, in reality have certain relations. This can be better understood when it is seen how they develop on a common soil. The tables show, for instance, that cancer occurred almost exclusively in tuberculous families. The tuberculous families furnish 149 of the 165 pneumonia deaths; 44 of the 48 deaths at childbirth; and 25 of the 28 deaths from heart defects, and 48 of the 50 deaths from meningitis. Apoplexy, typhoid, gout, emphysema and asthma do not accompany tuberculosis, but seem to take its place in the second generation, the tuberculosis reappearing in the third generation.

#### Zentralblatt für Chirurgie, Leipsic.

August 8, XXXV, No. 32, pp. 961-992.

86 \*Reduction of Size of Scar by Application of Iodin. (Jodpinselungen zur Erzielung schmaler Narben.) A. Schanz.

86. **Iodin to Reduce Size of Scar.**—Schanz has found that the least trace of a scar is observed when a wound, healing aseptically, has a very slight irritation on the surface. Probably this is owing to the hyperemia induced by the slight irritation. He accomplishes this result in an ideal manner by painting the wound with the tincture of iodine the third or fifth day after the operation. A single application is enough for a small wound, on well-nourished parts, but for larger wounds he applies the tincture every day for from two to five days. The edges of the wound under the influence of the iodine stick so close together that they heal without spreading, and the wound leaves no more trace than a needle scratch.

#### Zentralblatt für Gynäkologie, Leipsic.

August 8, XXXVII, No. 32, pp. 1033-1080.

87 \*Removal of Bilateral Diseased Adnexa by Transverse Fundal Excision. (Neue Methode der Exstirpation doppelseitig erkrankter Adnexe.) O. Beuttner.

88 The Nongravid Uterus Can Change Its Size in Response to Stimuli which Do Not Act Directly on It. (Der nicht schwangere Uterus kann selbst auf Reize hin, die ihn nicht direkt zu treffen brauchen, sein Volumen wesentlich verändern.) Id.

89 Two Cases of Puerperal Inversion of Uterus. A. Schönbein.

90 \*What Can We Learn from After-History of Seven Cases of Reimplantation of the Ovaries? Pankow.

91 Triplet Pregnancy with Special Regard to Site of Placenta. (Drillingsschwangerschaft.) O. Jaeger.

92 Treatment of Abortion. (Zur Anwendung der Abortzange.) Hammerschlag.

87. **Fundal Extirpation of Adnexa.**—Beuttner regards Faure's technic for removal of the adnexa from within the uterus outward as a great advance, but he has modified Faure's method so as to permit retention of one of the ovaries. He gives an illustrated description of his method, with details of three cases in which he has applied it with fine effect. His method avoids all conflict with the bladder, and sacrifices only so much of the broad ligaments as is absolutely necessary for the removal of the diseased adnexa. After a transverse incision, according to Pfannenstiel, he incises the fundus of the uterus from side to side, cutting out a long oval wedge, extended on each side into the broad ligament to include the tubes and one or both ovaries. This retains Faure's principle of removing the adnexa from within the uterus. It has the still further advantage that wedge resection of the body of the uterus is liable to have a curative influence on chronic metritis and has recently been recommended by Dührssen for this purpose alone.

90. **Ultimate Results of Reimplantation of the Ovaries.**—Pankow relates the after-history of seven women treated for

hemorrhages, dysmenorrhea or osteomalacia by reimplanting the ovaries at another point, two or three years ago. He gives the details of the cases and the histologic findings in some of the ovaries. In one case the ovaries were found functionally, and anatomically normal more than three years after the operation. The results on the whole suggest that the ovaries contain two kinds of tissue, as has been demonstrated for the testicles—glandular tissue with an internal secretion, besides the follicular apparatus. He is confident that better results will be attained if it is possible to destroy the latter while leaving unimpaired the tissue in charge of the internal secretion. In two recent cases he has tried to realize this ideal. On account of excessive hemorrhages he removed the ovaries; slit them lengthwise; placed them in physiologic salt solution, and exposed them for ten minutes to a moderately soft Roentgen tube at 25 cm. distance, and then reimplanted them.

#### Gazzetta degli Ospedali e delle Cliniche, Milan.

August 2, XXIX, No. 92, pp. 969-984.

93 The Dorsal Veins in the Hand as Means of Individual Identification. (Le vene dorsali della mano come indice di identificazione personale.) A. Tamassia.

94 \*Differentiation of Exudates from Transudates by Rivalta's Test. (Valore diagnostico della prova di Rivalta.) G. Romanelli.

95 Ocular Tuberculin Reaction. (Oftalmoreazione di Calmette.) A. Plessi and C. Tosatti.

96 Hypertrophy of Mammary in Exophthalmic Goiter in Man of 52. (Ginecomastia primitiva e secondaria ad alterazioni dei testicoli, tiroide, ipofisi ed organi genitali.) A. Cerioli.

94. See abstract 137 in THE JOURNAL, Aug. 22, 1908, page 718.

#### Policlinico, Rome.

August, XV, Medical Section No. 8, pp. 337-384.

97 Negative Results of Attempts to Induce Experimental Endocarditis with Bacterial Toxins. (Intorno all'esistenza di un'endocardite da tossine batteriche.) F. Fulei. Commenced in No. 7.

98 Leucocytes with Sudan-Staining Granules in Respiratory Affections, Especially Croupous Pneumonia. P. Pozilli.

99 Modification of Günzburg Reaction. (Reazione del Günzburg: osservazioni e modificazioni.) M. Barberio.

## Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

TEXT-BOOK OF PHYSIOLOGIC CHEMISTRY. In Thirty Lectures, By Emil Abderhalden, O. Professor für Physiologie des Physiologischen Institute der Tierärztlichen Hochschule Berlin und Universitäts-Professor. Translated by William T. Hall, Instructor in Chemistry, Massachusetts Institute of Technology, and George Defren. First Edition. Cloth. Pp. 722. Price, \$5.00. New York: John Wiley & Sons, 1908.

SANATORIA FOR CONSUMPTION AND CERTAIN OTHER ASPECTS OF THE TUBERCULOSIS QUESTION. Supplement in Continuation of the Report of the Medical Officer for 1905-06, to the Thirty-fifth Annual Report of the Local Government Board, 1905-06. Paper. Pp. 670, with Illustrations. Price, \$1.25. London: Darling & Son, 1908.

MANUAL OF PSYCHIATRY. By J. Rogues de Fursac, M.D., Formerly Chief of Clinic at the Medical Faculty of Paris. Translated by A. J. Rosanoff, M.D., Second Assistant Physician, Kings Park State Hospital, N. Y. Second Edition. Cloth. Pp. 406. Price, \$2.50. New York: John Wiley & Sons, 1908.

INDEX OF 1,180 POSTMORTEMS OF THE INSANE. State Hospital for the Insane, Norristown, Pa. By H. J. Sommer, Jr., M.D., Pathologist, Formerly Assistant Physician of the Institution. Cloth. Pp. 316. Norristown: Hospital Printing Office, 1908.

BLUTARMUT UND BLEICHSUCHT. Wesen, Ursachen und Bekämpfung. By Dr. Karl Bernhard Martin, leit. Arzt des Sanatoriums Lorettoberg, Freiburg i. Br. Paper. Pp. 50. Munich: Verlag der Aerztlichen Rundschau (Otto Gmelin), 1908.

TWENTY-NINTH ANNUAL REPORT OF THE ST. ELIZABETH HOSPITAL, Dayton, Ohio. Under Charge of the Sisters of the Poor of St. Francis. For Year 1907. Paper. Pp. 36. Dayton: Press of the U. B. Publishing House, 1908.

DIE BEHANDLUNG DER STRAFFÄLLIGEN JUGEND. By Dr. Eugen Neter, Kinderarzt in Mannheim. Paper. Pp. 56. Munich: Verlag der Aerztlichen Rundschau (Otto Gmelin), 1908.

NATIONALIZATION OF THE SANITARY SERVICES. By Dr. J. A. Lopez del Valle, Local Chief Sanitary Officer of Havana. Paper. Pp. 127. Published for Free Distribution.

FIFTY-EIGHTH ANNUAL REPORT OF THE PASSAVANT HOSPITAL, Pittsburg, Pa. For the Year 1907. Paper. Pp. 30.

PITTSBURG HOSPITAL REPORT, Sisters of Charity. From Jan. 1, 1905, to Dec. 31, 1907. Paper. Pp. 62.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOLUME LI

CHICAGO, ILLINOIS, SEPTEMBER 19, 1908

NUMBER 12

## Addresses

### CRIMINAL ABORTION IN ITS BROADEST SENSE.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON OBSTETRICS AND DISEASES OF WOMEN, OF THE AMERICAN MEDICAL ASSOCIATION, CHICAGO, 1908.

WALTER B. DORSETT, M.D.  
ST. LOUIS.

I wish to express my deepest gratitude to the members of this, one of the most important sections of the American Medical Association, for having chosen me as their chairman. This honor comes to but few of us in a lifetime, and when I was selected I could not but feel that the honor carried with it a great responsibility. In accepting the position, it will probably be remembered, I said: "The success of a year's work would not be accomplished by the chairman but by the work of each individual member."

In looking over the program one must be impressed by the wealth of subjects to be discussed, as well as the names of the authors of the papers. This certainly should convince us that we are to enjoy a treat seldom offered in bodies of this character. Should I attempt to add anything of a scientific nature, I fear it would rather detract from than add to its interest. I have, therefore, concluded to present a subject that concerns us not alone as obstetricians and gynecologists, but as citizens of a great republic—"Criminal Abortion in Its Broadest Sense."

It is high time we should have a heart to heart talk.

The accepted definition of the word "crime" is "a breach of law, whether divine or human." Laws are rules, whether human or divine, for the government of the human race, and are enacted for the good of mankind. While the subject may be viewed from many standpoints, still there is a common ground on which we all must stand in order to view the subject in its composite form. It is reasonable to assume that the infraction of a law should carry with it a penalty; whether that law is human or divine, else it would be useless to enact laws; and no law holds good that does not have attached a penalty, which should be commensurate with the importance of the law. While there is probably no one in this audience who would deny that criminal abortion is fast becoming more and more common, still there may be many who may not be willing to take a decided step toward its suppression. The question may be asked: "Does it concern us as physicians? Does it concern us as members of the American Medical Association and of this section? Does it concern us as citizens of this, our beloved country?"

It is a rule in law that no case can be prosecuted without first obtaining sufficient information from those

who possess it. The abdominal surgeon sees almost daily the results of the work of the abortionist, and the obstetrician can not be blind to the practice of the disreputable midwife and the unprincipled doctor. Admitting, then, that these statements are true, who should be concerned in this matter?

Possessing the information that we undoubtedly do, should it not be our duty as citizens, as well as physicians, and members of this important branch of the great American Medical Association, to suggest some means for the suppression of an evil that threatens such an onslaught to our civilization? When I say possessed with the information, I say it advisedly. Each and every member of this section can at this moment relate sad death-bed scenes that fairly make the blood run cold. Beautiful women are robbed of their lives, beautiful babes made orphans, and whole families wrecked, by a conscienceless scoundrel who goes free and unpunished by the law of our land.

It is useless to expect ecclesiastic intervention. The clergy do not seem to be at all concerned. To furnish them with this information is to throw away your time. Few sermons are preached from the pulpit for fear of shocking the delicate feelings of a fashionably dressed congregation, and the begging for money to save the souls of the far away heathen seems of more importance. They can not but realize the enormity of the crime from knowledge gained at the bedside of the victim of the abortionist. Yet they do not possess the moral courage to express their convictions to those to whom they are "called" to minister. Their education along biologic lines has, I am certain, in many cases been sadly neglected.

Young people marrying deliberately agree not to be parents for two or three years. They prefer to enjoy life by getting into and keeping in the social whirl. They may be, and often are, considered good and respectable people—possibly church-going people.

Self-induced abortion, or abortion produced by a fashionable or fad doctor, is, as we know, a fruitful cause of the horrible pus cases in which we are now and then called to operate. This fad doctor is one with a lucrative practice, and is often "the lion" at social functions. He it is who empties the uterus in cases of emesis gravidarum without first racking his precious brain in trying all recognized remedies and methods to check the vomiting. He it is who finds so many cases of contracted pelvis where it is utterly impossible to do anything but an early abortion to save the woman's life. He it is who finds so many cases of retention of menses, that require dilatation and curetment. He it is who finds the urine "loaded with albumin," necessitating an immediate emptying of the uterus to prevent death from Bright's disease. Such men and women prostitute the profession of medicine and should be exposed.



A careful review of our medical college announcements fails to furnish sufficient evidence of properly taught medical ethics, or medical jurisprudence (I say medical jurisprudence in contradistinction to legal medicine) to justify us at this time in hoping that we may receive much help from them toward the control of criminal abortion.

The average student is not impressed by precept or example with the enormity of the crime, and coming into practice, often a poor young man, is first shocked when he is asked to procure an abortion; but after the wolf has howled at the door for a time he yields to the temptation and often drops into the practice. Far from the Hippocratean teaching of the ancients have our colleges wandered by their utter disregard as to the morals of their students.

The secular press, that for money consideration, carries the offensive advertisements of abortionists and manufacturers of abortifacients in direct violation to our municipal, state and federal laws, will be slow in responding to a call to suppress criminal abortion, and not until the filing of information with officers of the law will they cease to carry into your household the filthy announcements as to how and where the pregnant mother can most easily and safely rid her womb of the products of conception.

Much has been said by the chief executive of our nation on race suicide, and much has been reiterated by other right thinking people; still, little has been done toward the enactment of new laws or the enforcement of those already on the statute books to punish those guilty of the crime. The prevalence of the crime is so patent, that few physicians can say that they are not frequently importuned by what society calls the "respectable element" to commit abortion. Pleas of limited income, the exacting demands of the social world, the desire to travel, the already too large family, and numerous other "reasons" are to you stories "too oft told" to be repeated here.

In an editorial in the *Illinois State Medical Journal*, March, 1908, attention is drawn to a statement of Justice John Proctor Clark to the effect that 100,000 abortions are annually committed in New York.

In a paper read before the Chicago Medical Society by Dr. C. S. Bacon it was estimated that from 6,000 to 10,000 abortions are committed annually in the city of Chicago, and that from 20 to 25 per cent. of all pregnancies terminate in abortion and that of this per cent. one-half are from induced abortion.

With feticide among our best element, and with a constantly increasing influx of degenerates from foreign countries, what can be expected of us as a nation a few generations hence? We, physicians, above all others, are best prepared to answer the query.

It is not my purpose to institute utopian plans, through or by which criminal abortion can be suppressed, still some suggestions may be in order.

1. The obligatory teaching of medical jurisprudence and medical ethics in its true sense in our medical colleges. This should be statutory, and medical examining boards should be empowered to enforce the laws of their states, and declare all schools not requiring a full course in medical ethics not in good standing and their graduates ineligible to practice medicine.

2. The enactment of good and sufficient laws and the amendment of insufficient laws now on our statute books.

This may raise the question as to how this can be done. Or by some it may be asked, are not our laws good and sufficient as they stand? In order to answer the last question, I propounded the following questions to a very able lawyer and had him prepare by way of answer a digest of the now existing laws in the several states and territories.

QUESTION 1.—Is the woman herself guilty of any crime? In how many states is she and how many is she not?

ANSWER.—In nine states a woman who solicits, submits to or performs an abortion on herself is guilty of a felony. In seven states the above offense is a misdemeanor, and in the remaining states and territories, viz., thirty-five, the woman is guilty of no crime.

QUESTION 2.—What is the charge and penalty for giving away, selling or advertising abortive drugs and drugs or appliances to prevent pregnancy?

ANSWER.—The charge is a felony in but twelve states and territories out of fifty-one, and the penalties vary from imprisonment for from one to ten years, and in some states a fine ranging from \$20 to \$5,000. In twenty states the offense is only a misdemeanor. In thirty states and territories there are no laws on this subject.

QUESTION 3.—What is the charge and penalty as dependent on the age of the fetus?

ANSWER.—In four-fifths of the states and territories the age of the fetus is immaterial.

QUESTION 4.—What is the effect of death of the woman operated on as to charge and penalty?

ANSWER.—If the death of the woman results from the operation, in eighteen states and territories out of fifty-one the crime is murder and the punishment is death or imprisonment for life. In six states it is murder in the second degree, and the penalty is imprisonment for life or for a term of not less than three years.

QUESTION 5.—May the offending physician or midwife have his or her license revoked?

ANSWER.—The license may be revoked in only fifteen states out of fifty-one. In thirty-two states there are no laws that can be invoked successfully for the purpose of depriving a physician of his license for this cause. In other words, he may successfully murder indefinitely and go unmolested.

QUESTION 6.—Is a physician who gives subsequent treatment allowed to testify, or is his information privileged?

ANSWER.—There is only one state, Missouri, in which it is provided by statute that a physician is allowed to testify as to facts learned while attending a woman on whom an abortion has been performed.<sup>1</sup>

Are not these answers startling? I think they show conclusively that our laws are inefficient and inadequate in most, if not all, of our states. Now arises the question, how can new laws be enacted and inefficient laws be amended? My answer is, through the influence of the American Medical Association, through its House of Delegates. Let us, the members of this section, through our representative in the House of Delegates appeal to this body and request the president of the

1. Section 2635a (Revised Statute of Missouri): In prosecutions for abortion or for manslaughter occasioned by an abortion or miscarriage, or by an attempt to produce either, or attempted abortion, or for any crime of which abortion or miscarriage may be a part of the essential facts to be proved, the dying declarations of the woman whose death is charged to have been caused thereby shall be competent evidence on trial of any person charged with such crime, with like effect and under like limitations as applying to dying declarations in cases of felonious homicide; provided, that the party offering such declarations shall first satisfy the court by competent testimony that such woman was of sound mind when said declarations were made; and provided, further, that no conviction shall be based alone on such declarations unless corroborated as to the fact that an abortion or miscarriage has taken place, and in all such prosecutions aforesaid any physician or medical practitioner who may have attended or prescribed for such woman shall be a competent witness in said cause to testify concerning any facts relevant to the issue therein, and shall not be disqualified or held incompetent by reason of his relation to such woman as an attending physician or surgeon.



American Medical Association to appoint a committee to be known as the Committee on Criminal Abortion, whose duties shall be to see that the state societies have appointed similar committees, whose duty it shall be to enlist the interest of their state legislatures in the enactment of good and sufficient laws against criminal abortion, and that this committee of the House of Delegates report annually as to the status of laws on criminal abortion in the different states, as well as what suggestions they may have to make in the prosecution of the cause.

Each state has an attorney-general, whose office is at the capital of the state. He is paid a salary by the state, and he, above all others, ought to be interested in the enactment and enforcement of wholesome and useful laws in his state. It is the duty of the attorney-general and his assistants to follow up the convictions of the lower courts for the various crimes. A man is tried in the circuit court or criminal court of one of the counties, and if convicted he appeals to the supreme court of the state. The county prosecuting attorney does not follow the case to the supreme court but the whole record of the case is written up and forwarded to the supreme court and it is the duty of the attorney-general to use his best efforts to uphold the conviction. He studies the case, writes a brief for the state and argues it in the supreme court. Many times he finds that he can not uphold a conviction because of some uncertainty in the wording of the law, or on account of some blunder made by the man who wrote it and got it passed in the legislature. The more convictions the attorney-general gets upheld, the greater reputation he gets. He is, if a studious man, better able to decide than the ordinary lawyer, whether a proposed law will meet the requirements of the state constitution and whether it will be held a valid law.

It might be suggested that this committee, or the state committee, acting in accord with the national committee, draft a bill, submit it to the attorney-general of the state and ask suggestions from him as to the proper wording of the law before first submitting it for passage by the legislature. When they are sure the law is in good form, then printed copies of it should be sent to every member of both houses of the legislature, and this should be followed by letters from influential physicians in every county of the state to representatives and senators of their respective counties, or by personal interviews, explaining the object, need and purpose of the law proposed, and they should be urged to vote for it. There is no doubt but we can in this way do much good. Let's do it.

#### DISCUSSION.

DR. W. H. WATKIN, Louisville: No subject could be brought before this Section which is of more vital importance in a moral, and I might say in a pathologic sense, than this. We who are doing abdominal and pelvic surgery know how frequently we are compelled to operate because of the induction of abortion. In a moral sense it is offensive to every honest doctor and to every honest citizen. This offense is not any more an offense on the part of the woman on whom the abortion is committed, be she married or single, than it is on the part of the person who commits it. I believe that in most of the cases in which I operate for pelvic trouble resulting from induced abortion, the abortion has been induced on the advice of a physician or done by a physician, and I have seen many cases in which abortions have been induced by members of reputable medical colleges. The matter is disguised by the fact that a woman six weeks or two months pregnant is often

taken to a hospital for the purpose of curettage. Her uterus is curetted and the product of conception removed. In order to secure legislation there must be impressed on the profession the belief that, if there is any moral offense in destroying the life of an unborn child, the moral offense is just as bad four weeks after conception as if the child were killed at eight months. From the moment of conception the child is a spiritual being. Let us all join in our efforts to educate the people, the women and the men, of this country concerning the immorality of having abortions produced at any time and let us join in our efforts in a determination to ostracise any man who will produce a criminal abortion. Let us also join in efforts to have laws enacted that will make it a criminal offense, punishable by such penalties as the state sees fit to inflict, death or a sentence to the penitentiary, for any man producing an abortion.

DR. J. H. CARSTENS, Detroit: Laws have been enacted all over the country concerning murder, but still people commit murder. We have laws in some states concerning abortions, but people produce abortions just the same. With the peculiar development of our civilization, with the rapid bringing up by a very rapid process of evolution of people from a lower stratum of society to a higher, people have not grown morally as fast as they have otherwise. They think that there is nothing earnest in this world, that it is just made for them and for their pleasure, and everything that interferes with that pleasure they object to and try to do away with. This question of abortion involves the lack of moral responsibility and the superficial education of our girls all over the country. They are not impressed with the true import of life and the responsibilities of married women. They are not taught that a woman does not exist for social pleasure alone, or that she can take her place in society and have pleasure, but that she should still remember her moral responsibility and that it is good and noble and great to be a mother. If we can impress this idea on the minds of the people we can do something to prevent the committing of abortion. If we do not we shall never accomplish much by law. I believe that it is the duty of the medical profession to emphasize this view of the matter, to develop this view of moral responsibility, to try to induce women to have a love for children.

DR. HELEN C. PUTNAM, Providence: I want to support what Dr. Carstens just now said about education. For the American Academy of Medicine during several years I have been visiting our public schools to investigate the teaching of physiology and hygiene. I have included in that investigation inquiry concerning how teachers feel, and what they are doing, with reference to teaching the physiology and hygiene of sex. I have found many instructors anxious about the matter because they see in the schools the need of such teaching. I have found a few trained in biology doing admirable work which I wish to bring to the attention of the medical profession, hoping that physicians will encourage such teachers and will find more, especially in their own communities, to do similar work. These women trained in biology begin with children at about 8 years of age, and include those up to 14 or 15. They instruct through direct personal observation (the "laboratory method") concerning the origin and functions of life in plants and animals. After a year's work, especially if the children are 13 or 14 years of age, they give a frank "sex talk," telling them of the importance of life as they have seen it in plants and animals and comparing it with human life before birth and after. The children's minds in their course of study have traced evolution in Nature, and when they have this sex talk by the teacher they are not startled, but receive it as naturally as they learned of plant and animal reproduction. Parents are not offended with startling stories, for the children have grown to the subject naturally. The school committee is not disturbed, because there is no complaint from any source. If any wish to know more about what a few teachers are doing to create a changed public sentiment which shall support our views with regard to abortion, I refer you to the detailed reports which the Academy is publishing in its bulletin. While it is not possible to have such instruc-



tion in all the schools at once, we can begin with one teacher in a school in each community: see that she has a good training in biology and have her do good work in her school as an object lesson to others. If personal effort were made in this way I believe that within ten years we should have accomplished a great deal in changing the public attitude toward sex matters and the sacredness of parenthood that would do more than laws to reach the result we want.

DR. R. W. HOLMES, Chicago: I have had the misfortune for three years to be a sort of mentor on criminal abortion work in Chicago. During this period I have presided over a committee of the Chicago Medical Society to investigate, and to attempt to eradicate the evil; I have come to the conclusion that the public does not want, the profession does not want, the women in particular do not want, any aggressive campaign against the crime of abortion. I have secured evidence. I have asked different physicians, who either had direct knowledge of crime against the prisoner before the bar or who could testify as to her general reputation, to come and testify. They promised to come, but when the time for trial is at hand no one appears. On the other hand, so-called reputable members of our Chicago Medical Society regularly appear in court to support the testimony of some notorious abortionist. A Chicago attorney has told me that it is not possible to get twelve men together without at least one of them being personally responsible for the downfall of a girl, or at least interested in getting her out of her difficulty. I am convinced that legislation is not needed, at least, in Illinois. We have as good a law as perhaps can be made. It is the enforcement of law that is needed. What can you expect when a member of our legislature is backing financially and politically one of the most notorious abortion hospitals in Chicago? It is necessary to go back and educate the boy and girl concerning the meaning of sexual life. The fact should be taught that life begins with conception and not with quickening. Then perhaps in the coming centuries we shall have reached a time when there will not be abortions. I believe that half of the midwives of Chicago get their support from criminal abortion work, as I know definitely a quarter do. One midwife took out a license to help out the family exchequer. For one week she had a sign up; then the husband said that they could not run the risk of the police coming down on them. In that one week there were ten applicants for criminal abortion and not one for a confinement. I do not think that it is a good thing for the woman to be held criminally. Morally she is a criminal. If she is legally a criminal you can not get any evidence of it. I have evidence of this every day. I have repeatedly taken antemortem statements, with the express provision that if the woman recovers nothing shall be done, that only if she dies shall the person be prosecuted. I have positive evidence that prominent men in Chicago—and Chicago is not different from other cities—will commit abortion. What can one do? In a certain county society complaints were lodged with the censors concerning three physicians known by reputation and deed to be professional abortionists, and the censors refused to take action.

Fundamentally it is a matter of education which should be begun in the medical school. Until three years ago the school with which I am connected did not have any systematic instruction on criminal abortion. It had a little lecture by a lawyer who did not present the actual facts. Every medical school should have a course on that subject. There should be impressed on the men before they take up their work the dangers to the woman, to themselves and the moral responsibility assumed in the matter of abortion. If also the boy and girl in school are taught something of this they will grow up with moral stamina not easily overcome. They will know facts and will live accordingly. Many now make themselves believe that there is no life until the movements are felt. When the false teaching in this respect is put aside good will be accomplished.

DR. EDWARD T. ABBAMS, Dollar Bay, Mich.: For the past two years I have been a member of the Michigan legislature and also chairman of the committee on public health of that

body. One of the bills which came before the legislature was drawn, I think, by the committee on legislation of the state medical society, and bore directly on the first question raised by our chairman to-day—whether or not the woman should be made a party to the criminality of the act. I introduced the bill at the request of the committee, and within twenty-four hours after I was called before the judiciary committee, which was composed entirely of lawyers, to answer the question whether or not I favored abortion. I received half a dozen letters from half a dozen circuit judges in the state of Michigan who were my friends, asking me how long since I had turned over a new leaf. I was assured by the best legal authority in our state that there would be no more powerful inducement for the concealment of abortion than to make the woman a party to the criminality of the act, because it would destroy absolutely the method of getting evidence. All the lawyers told me that. *Per contra*, we had absolutely no trouble in adding an amendment to our medical act giving the board of registration an absolute right to take from any practitioner his license to practice within the borders of the state after he had been convicted by due process of law of having committed an abortion without requiring further evidence than the records of the court.

DR. W. O. HENRY, Omaha: I believe that the medical profession should feel responsible for the education of the boys and girls in the public schools concerning this question. These boys and girls should be taught two things: First, the physical wrong and injury that results. Many do not know this until they have passed through the experience. In the second place, they should be taught the moral wrong. In a measure we should depend on the clergy for this latter. I believe that the clergy should be informed concerning the physical injury and the moral as well. I should be glad to see work carried out along the lines of education on this matter in the high schools, seminaries and colleges, and among men and women of the country through the medical men and the clergy.

DR. DENSLOW LEWIS, Chicago: It is well and good to enact laws and to punish the criminal practitioner and midwife, but what good does that do to the girl, and how does it save the next girl? I believe, as I have believed for many years, that this matter of education of the young in sex relationship and also regarding venereal infection is our sovereign duty and should be our chief privilege. I am delighted that at last the American Medical Association has created a Board of Public Instruction in medical subjects, but I am astonished to find in the report of this Board of Public Instruction, made yesterday, the statement that gynecologic subjects and matters pertaining to sexual questions can best be taken up through circular letters to physicians and carefully prepared monographs by some first class authority in the medical profession. This is well, but action in this very important matter should be immediate. The girl requires no monograph from a first-class authority to learn the truth. She needs to know that impregnation and conception often follow the sexual act. Those of you who, like myself, have had charge for years of maternity hospitals, know that many young girls seen there have submitted to the sexual act without the slightest knowledge of the probable result. For that reason it is incumbent on us to urge on this Board of Public Instruction immediate action in the hope that another year may not pass without something being done so that every girl may know the consequence of indiscretion. The boy should know the dignity of virility and his duty and honor toward every woman. He should be taught the healthfulness of continence and the advisability of sexual control.

PROF. AUGUST MARTIN, Berlin, Germany: I believe that in Germany and everywhere all agree in condemning criminal abortion. It is forbidden by law; it is forbidden by the professional code of ethics. Laws have been issued in numerous communities to try to suppress criminal abortion, but I do not know of any which have had success. Our laws themselves place great difficulties in the way of legal action by forbidding us to speak about professional secrets. When we are called in a case of criminal abortion we are not allowed to give evidence unless the parties interested in the case give



us permission, and frequently this permission can not be given, as the poor patient is dead. But when a good chance is offered to give evidence then, indeed, in every case our courts condemn criminal abortion with the utmost severity. Joint efforts in condemning criminal abortion as on this occasion by and by will contribute to restrain the evil among professional men.

DR. R. S. YARROS, Chicago: To formulate laws and have them enacted is comparatively easy. To enforce a law is an entirely different thing. You can not enforce laws, as some of the speakers have already said, with which the public has little sympathy. Even if we could enforce anti-abortion laws, the problem would not be solved. I find that among the poor there is very little danger of race suicide. They have not learned yet to practice prevention, nor do they frequently resort to abortion. Their great love for their children is a factor in the situation, and in this respect the higher classes might well take a lesson from them. Unfortunately, they often have too many children, and one is inclined to preach moderation and restraint without regard to race suicide. The rich, on the other hand, go to the other extreme. They frequently have no better excuse than that it is inconvenient to have a child at this or that particular time. They have no difficulty in securing professional services to help them out of their difficulty. As for the unmarried victims, it is the disgrace that society has imposed on them, as well as the economic inconvenience, that drives them to commit abortion. It seems to me, therefore, that the most stringent laws and their enforcement would not remedy the evil. The proper education of the public on the subject is the most important duty before us. The blame should not always be placed on the woman. It should be realized that there are two parties. I do not want the woman not to take her share of the blame, but I want the man to take his. We all know that men frequently encourage the woman to have an abortion produced, and are willing to pay any amount of money for such services. In this city there has been considerable education carried on among women of the dangers of infection following abortion and the sex problem in general. The work has met with sympathy and enthusiasm, on the part of the women. We hope that the same kind of work will be carried on among men with the same success.

DR. FLORUS F. LAWRENCE, Columbus: Moral problems can not be settled by statutory enactments. A certain amount of restriction can be had and a certain amount of educational value must follow every statutory enactment, provided that enactment is enforced. It has been mentioned that there has been great difficulty in obtaining evidence to enforce the statutes in question. In Ohio one of the greatest stumbling blocks has been the question of viability. The courts determined that there was no great legal responsibility unless the fetus were of viable age. If our statutes are to accomplish the results they should we must first educate the public mind and morals to the belief that conception means human life, and that the interruption or destruction of that conception means murder just as much as if the child had been murdered with a bludgeon after it had been delivered into the world. Anything less than that is a mere travesty on the truth and on true morality. Something more must be considered if we are to accomplish that which we hope in these matters. There is an insidious psychologic element constantly at work in the pseudo-medical journalism of the country. Every now and then a journal which has been, or has purported to be under ethical management, passes into the hands of the most blatant charlatans of the country. One such within the past few months has passed from ethical management in to the hands of one who has made "peruna" a household word, and who has fought serum therapy and everything which modern truth and science have established as valuable in the saving of human life. Sixty thousand of his journals are to-day being distributed among the laymen of the country to educate the public against the truth and to believe that the doctors when they stand for truth stand for some selfish purpose. The time has come when we must educate not only the doctors but the laymen. We must reach the layman in a way that will go

home to him and cause him to respect the teaching as he listens to the priest or reveres his Bible. The truth must go to him in such a way that he will not look on such teaching as an advertising scheme for the physician, but as truth and as something for which he pays. Then he will accept it. We have all learned that the man who gets something for nothing appreciates it not. We must start with a higher moral conception among medical men. We must realize our own professional responsibility to the laity. In our consideration of criminal abortion we must not feel that we are referring to abortion among unmarried women alone, but of abortion as it is found in general to-day.

DR. WALTER B. DORSETT, St. Louis: The city of St. Louis has not been remiss in her duty in this regard. A paper was read recently in one of our meetings by Dr. John Grant of St. Louis on the subject of criminal abortion. The meeting was attended by many of the laity and clergy. One clergyman, who was much interested, promised to preach a sermon before his congregation, but his board advised against it. It seems to me from this that things have come to a bad pass. In order, however, to show you what has been done and what can be done, not only in the enactment of laws but in the enforcement of them, I will quote from a letter which I received from Dr. Wheeler Bond, the health commissioner of St. Louis, in response to an inquiry I made of him. He said that when he accepted the position of health commissioner there were licensed physicians and midwives who concealed illegitimate under the pretense of legitimate practice, and charlatans who without any authority proclaimed themselves doctors and waxed fat on abortions. There were also lying-in institutions which advertised that they accepted only legitimate confinement cases, but which gave out the understanding that all cases would be received. The St. Louis Medical Society found on investigation no less than three of these abortion shops in which young women who came there to await their confinement were kept as prostitutes to pay for their confinement. During the following year many of these were put out of business. By the enforcement of the federal laws also we have in St. Louis dealt with a number of the advertising quacks. We must have good laws before we can expect results, and therefore I believe that we ought to take some action on the question.

---

## IN MEMORIAM: NICHOLAS SENN: THE RESPONSIBILITIES OF THE HOUR.

INTRODUCTORY REMARKS BY THE CHAIRMAN BEFORE THE  
SECTION ON SURGERY AND ANATOMY,  
CHICAGO, 1908.

RUDOLPH MATAS, M.D.  
NEW ORLEANS.

*Distinguished Guests and Fellow Members:* I feel, as your presiding officer, that I would be remiss in the discharge of my duty and grievously at fault with my own sentiments, if I failed to notice that this day is made sadly notable by the absence of one who for more than a quarter of a century was a Titan in our midst and whose voice, now stilled forever, thrilled and swayed our assemblies with the fervor of his eloquence, the magnitude of his accomplishments, the stimulus of his example and the vast power of his exhaustless energy—Nicholas Senn.

*Vir praeclarus et ornatus*—Senn, the incomparable teacher, the peerless clinician, the scrutinizing pathologist, the perennial investigator, the faithful historian and charming raconteur; the world traveler, the philosopher, soldier, patriot and organizer; Senn, the philanthropist, the citizen of Chicago and of the world; Senn, one of the greatest masters of our art—will remain an imperishable name in the great pantheon of American surgery. His passing out of this community,



of which he was a *magna pars*, must be felt like the extinction of some great elemental intellectual force, as serene and unfailing and strengthening as the great natural forces that freshen and invigorate the earth.

In the shades of this great and hospitable metropolis, for so many years the center of his tireless activity; in the great city which he enriched by the products of his puissant intellect and generous bounty; in the heart of this great Northwest—so prolific in extraordinary men; here, in this region of vast potentialities, and following in the footsteps of his eminent predecessor and friend, Christian Fenger—he sowed and assiduously cultivated the vigorous seed of Teutonic genius and made it yield rich fruit in the cult of surgical philosophy and surgical art. Again, in the councils of this Association, which he strengthened by his wisdom and example; in the gatherings of this, his special section, where he stood as a high priest at the shrine of science; and throughout the American continent and wherever the science and art of surgery are taught and practiced and the language of medicine is spoken, the name of Nicholas Senn will always be mentioned with reverence, honor and affection.

His life work, his deeds and marvelous achievements have become a part of the history of surgery. His unparalleled labors have been told only too recently by more eloquent and gifted panegyrists to justify repetition on this occasion. As one who enjoyed the privilege of his personal friendship and encouragement in the earlier days of his professional life, and in the name of this great gathering of representative American surgeons, his associates and fellow workers, successors and friends, now assembled to prosecute and continue the great work with which his life was most closely identified—I join the medical profession and people of this great city, especially those within the immediate circle of his life, who mourn his loss with the greatest poignancy, and condole with them in profound sympathy at a common bereavement.

\* \* \*

As the needle on the dial points to the hour when the "Clans must gather to the trysting place," we are reminded that the Section of Surgery and Anatomy will now assemble for the forty-seventh time since June 7, 1860, when it was created a separate arm of our national body. As the chariot of time has rolled by, each annual session has left its impress on the history of American surgery, an imprint which has yearly become wider, deeper and more indelible, as the parent organization has advanced in maturity, strength and prosperity.

The labors of our predecessors have not only contributed to our individual betterment as members of this guild, but they have added to the dignity and luster of surgery by their magnificent accomplishments. With this great heritage and its traditions, a measure of accountability for the safeguarding of the trust has also been handed to us, which adds to the grave responsibilities of the hour. As I stand before this great gathering of distinguished fellow-workers, privileged by your grace and good will to give the signal which is to inaugurate the forty-seventh session and launch it into history, I feel profoundly conscious of my own shortcomings and unworthiness, yet deeply grateful that I should be vouchsafed the privilege of gazing on the inspiring and magnificent panorama offered by the ever expanding conquests of American surgery, from this lofty height.

As I survey the field before me and read the past,

the present and the future, in the faces of the stalwart men who represent the diverse generations of productive workers here assembled, including those who have accomplished, those now accomplishing, and those who are still to accomplish great deeds, and who are to exalt our traditions, I feel assured that one year more of fruitful endeavor and achievement will be added to the emblazoned and imperishable chronicles of our organization by the proceedings of the surgical section, which I now have the honor to open.

## SIMPLICITY IN PRESCRIBING.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON PHARMACOLOGY AND THERAPEUTICS, OF THE AMERICAN MEDICAL ASSOCIATION, CHICAGO, 1908.

M. HOWARD FUSSELL, M.D.

PHILADELPHIA.

Are fixed formulas of drugs necessary or desirable in the treatment of disease? When the animal organism is injured by disease or traumatism there is an inherent tendency to self-repair. Usually this repair by Nature is toward complete restoration of the function of the organism. Occasionally the repair is vicious and harmful to the further normal use of the body. The physician's duty is to stand by and allow Nature to complete her work if the tendency is toward cure, to guide her if erratic, to correct her if vicious.

### OUR KNOWLEDGE OF DRUG ACTION.

In so far as drugs are employed in thus aiding Nature, it must be remembered that, even with our properly boasted advance of knowledge, we are woefully ignorant of many of Nature's methods, and know little accurately of the effects of chemicals and drugs on these methods. We know practically nothing of the effects of the myriads of combination of drugs. We do know the physiologic action of enough simple drugs or their active principles so that we may properly employ them in helping Nature rid herself of injuries however obtained.

The physician, therefore, acts wisely when he uses only a single drug or a simple combination of drugs which experience has taught him or he has learned from others will do good but the limitation of which he recognizes. Of necessity one can not have the slightest idea of the effect of a mixture of drugs when he is ignorant of the effect of any one of the ingredients of the mixture. How often do we live up to this standard of action?

I believe that the host of nostrums, the myriads of ethical preparations, the many formulas of the National Formulary and the fixed formulas of the Pharmacopeia are the outcome of the natural desire of the laity for relief, coupled with their inherited belief from ancestors cons past, in the infallibility of drugs in curing disease. This latter, a mistaken belief of the laity, was fostered in ages past by the total lack of knowledge on the part of the physician of the causes of disease affecting the human family and of proper remedies for the relief of disease. Such men as Harvey, Louis, Virchow, Pasteur, Koch, have pointed the way along which every whit of our efficient therapeutic knowledge is to be gained.

### TREATING THE PATIENT RATHER THAN THE DISEASE.

Given the exact knowledge of the diseased condition of a patient and its cause, therapeutics is usually simple. If we know the cause our present knowledge will either



enable us to remove that cause or it will not. The cause once removed, the patient recovers so far as his powers of recuperation allow. If we can not remove the cause, then the condition of the circulatory organs, respiratory, eliminating and digestive organs must receive our attention, and it seems to me in the great majority of cases we must as yet apply our various remedies in this way, be they drugs, surgery, hygiene, mechanics or what not.

Physicians when in practice must remember that of which they have full knowledge, that diarrhea, constipation, cough, dyspnea, etc., are but symptoms, the causes of which may be as far apart as the antipodes. We may be forced to treat these symptoms, because of their inherent danger or annoyance, but to treat a diarrhea which is caused by overeating and one which is caused by an inflammation of the intestine with the same remedy or combination is to fall far short of our duty. Therefore, it seems to me all formulas for any disease or set of symptoms are wholly out of place.

The sooner our young men are taught and come to realize what the master minds for ages have always taught, and what Waring wrote in 1866, that "the practice of treating a disease according to the name, without minutely examining into each particular case and adapting the appropriate remedies to the several indications which present themselves, can not be too strongly reprobated."

Then, and not till then, will fall out of fashion the prescribing of nostrums, the combining of drugs of unknown quantities, of ethical formulas and of any formulas ready made, be it found in the National Formulary, in the Pharmacopeia, in Non-Official Remedies or where not. As can be seen by examining the various works on therapeutics published about the time Waring wrote, all of the authors were insisting that physicians should study their cases and should not prescribe for the name of a disease from which the patient is supposed to be suffering. A century before isolated minds insisted on the same sound principle.

It needs but a glance at the various so-called ethical preparations with which the market is flooded to-day and the literature which finds its way into the office of every practicing physician to see that the same admonition needs to be given as often and with as much force to-day as it was announced by Waring in 1866.

Indeed, the lesson needs to be pushed home more forcibly than ever. Most firms of manufacturing chemists, or combination of individuals in the guise of pharmaceutical chemists, have on the road visiting the office of every physician detail men, plausible, cute, superficially informed, glib talkers, who take hours of the physicians' time to tell them that this combination for typhoid fever, or this for neurasthenia, or that for pneumonia, is efficacious, it is elegant, it is a favorite prescription of a famous physician. It is the rare young doctor who is not caught, and either puts in his own office these combinations or orders them from the pharmacist.

The young doctor, possibly without hospital experience, fails to grasp the fact that one compound prescription even of his own devising never fits numerous cases, even of the same conditions. He tries some combination offered by the detail man, his patient gets well (probably in spite of the medication), he then gets into the habit of prescribing some firm's formulas until either his own shelves or those of the neighboring pharmacists are filled with bottles for fixed conditions.

#### PRESCRIBING PROPRIETARIES.

Examination of the prescription files of any of the drug stores proves that proprietary preparations are used by reputable physicians to-day in a large percentage of the prescriptions. It will also be seen that there is a large percentage of prescriptions which contain more than three active ingredients which are not proprietary.

Dr. F. E. McCullough of St. Timothy's Hospital has been good enough to examine 6,200 prescriptions now on file in various drug stores of Philadelphia; 4,000 of these were from the files in 1907, 2,200 were from files of 1901 and 1902. In 1907 930 of these, or 23.25 per cent., were written either for a proprietary remedy to be used alone or contained a proprietary remedy in the body of the prescription, and 100, or 4 per cent., contained more than three active remedies.

It is extremely interesting to note that in the year 1901 exactly 32 per cent. of the prescriptions were for proprietary remedies, while in the year 1907 only 23.25 per cent. contained proprietary remedies, showing a reduction of 8.75 per cent. in the last year. This is an excellent showing for the result of the agitation against the use of proprietary remedies.

#### WHY THESE MIXTURES ARE USED.

Now there must be some reasons for the use of these various mixtures, some containing nine or more ingredients. Likewise there must be some reason for a physician prescribing or dispensing a "shotgun" mixture containing four or more active, and often incompatible, drugs. What are the reasons and what the remedies for the evil?

The greatest reasons for this defect in our practice, it seems to me, are ignorance, indolence and cupidity on the part of the physician, manufacturing chemist and pharmacists; ignorance on the part of both physician and pharmacist, due to faulty training or to the deliberate putting aside of facts well known at graduation, because it is much easier to follow than to originate; cupidity due to the desire for unusual financial returns, which can seldom come from scientific practice of medicine and pharmacy. The physician has either failed to learn the great lesson stated by Waring in the book above quoted, or has ignored it when practicing his profession.

The pharmacist may have been so impressed with the importance of drugs that he helps to fix the same error on the physician. He may easily impress his customers that there are certain combinations which are good for coughs and constipation. That druggist is almost unique who does not have his own "blood purifier" or vermifuge. He also, too commonly, will prescribe over the counter a concoction of his own combining, or a "patent medicine," for any symptom or ailment of which the patient complains. If pharmacists are to have the proper relations with physicians, if they are to aid in the proper use of drugs, they will refer every complainer to competent physicians who they know do not prescribe for symptoms, but who study their cases and prescribe for the condition found.

The physician or the pharmacist who thus fails in his duty has missed, or not appreciated, Waring's views:

In prescribing medicines for the removal of disease, it should be borne in mind, that Nature tends to repair injuries inflicted on the body, and repair the disturbed conditions of the system without the assistance of any medicine whatever. The credit which is really due to this natural healing tendency is too often ascribed to some drug which the patient may happen to be taking.



UNSCIENTIFIC PRESCRIBING.

Both physicians who prescribe and pharmacists who advise a recipe containing many ingredients, either proprietary or original, are apparently ignorant of the fundamental principle of rational therapeutics, or they are too indolent to apply it. That is, before a drug or a remedy of any kind can be expected to aid in the cure of a disease, the history of the case must be obtained, a careful physical examination must be made, in which the condition of each organ must be noted. When this is done, and only then, can a remedy or a drug be rationally applied.

It is true that we give certain names to certain groups of symptoms which may or may not have a known cause, pneumonia, typhoid fever, neurasthenia, etc. It is also true that it frequently occurs that in spite of the most careful history and painstaking physical examination we are unable to find the cause of the symptoms present, or even to give a name to the ailment. If the physician has been properly schooled, however, by education or by experience, he will not be at a loss as to the proper actions in the case.

He must treat the conditions found present, of the heart, the kidneys, the respiratory organs, the nervous system, the digestive organs, etc. It makes no difference whether he recognizes the name of the disease or not, so long as he attempts to find the cause of the symptoms. If the medical schools are at all to blame for the present, happily decreasing, custom of using remedies for grippe, pneumonia and typhoid fever it is because they have failed to grind into their students these important principles of medicine and surgery. When the millenium arrives and all physicians and pharmacists act together, the one in properly diagnosing the condition and prescribing for it, the other in limiting himself to the filling of the doctors' prescriptions, and abstaining from counter-prescribing and the doling out of remedies asked for rheumatism, constipation, etc., then will the cause of polypharmacy have disappeared, and with it the long array of proprietary mixtures. For the physician who studies his cases will soon learn from experience, if he has not from his school, that it is useless to mix in a conglomerate two or three stimulants, and sedatives, and worse than foolhardy to prescribe some firm's remedy for rheumatism, even though it be "the favorite prescription of some eminent practitioner." That in order to control the action of the heart, of the kidneys, etc., it is much better to use a single drug or drugs in very simple combination than it is to use such mixtures as the following:

SPECIMEN PRESCRIPTIONS.

Each fluidounce contains:

Tincture Pillulifera	120 m.
Syrup Lactucarum	120 m.
Tincture Cocellana	40 m.
Syrup Squill Compound	24 m.
Cascarin (P. D. & Co.)	8 gr.
Heroin Hydrochlorid	8-24 gr.
Menthol	8-100 gr.

R. Natrii Iod.	5iss
Natrii Brom.	5iii
P. Glandulna Thyreoide.	5iss
Ext. Ignat. Amara	gr. x
Ext. Hydrastus	5i
Ext. Valerian	5i
Ext. Sumbul	5i

Cap. xxx.

Sig.: One Capsule at Mealtime.

Each two fluidrams is said to contain:

Hexamethylenetetramine	7½ grs.
Saw Palmetto	5 grs.
Sautol	2½ grs.
Coca	2½ grs.
Nux Vomica	¼ gr.

The first of these is a so-called ethical preparation. The formula is taken from an advertising page of the *American Journal of Pharmacy*, January, 1907. If it is of value, can there be any doubt that the 8/24 of a grain of heroin is the active ingredient? And this active ingredient is not indicated on the label. Would it not be better, cheaper and more scientific to prescribe the heroin? But perhaps the preparation is a "good repeater," as is claimed by the manufacturers in another advertisement. The second is culled from a prescription file and was written during the last year. The writer is a good doctor. The third is taken from page 136 of "New and Non-Official Remedies." It should have been omitted, if the plea for simple medication here made is of any value.

Ignorance of how to write a prescription may deter beginners and may be one reason why young physicians fall easily into the habit of using ready-made mixtures. If this is true, then it must be the duty of our medical schools so to implant a knowledge of the use of drugs and remedies that the recent graduates will not be led away by agents of any of our manufacturing drug firms.

INDOLENCE.

The normal indolence common to us all finds great encouragement in the fact that many ailments, indeed the vast majority, will be cured by Nature, if the patient is but let alone. It is, therefore, tempting to take chances with all patients who apply, instead of making examinations carefully, to tell the patient he is suffering from some certain disease and prescribe for him or give him a remedy we may fancy will relieve. This is all the ordinary patient desires, and he wants to be given some remedy for that name. How often a patient comes into the office and says, "Doctor, please tell me what ails me." He then asks what the drug is in the prescription which has been given. When the laity demands careful treatment they will get it from all and not only from a few.

CUPIDITY.

Cupidity on the part of drug firms leads to the exploiting of all sorts of combinations with which the ignorant, and the enlightened but careless, physicians are waylaid. Far be it for me to say or to intimate that all the firms of manufacturing chemists are a menace. To some of these firms we owe many of the most useful remedies we have to-day, but many of the combinations of capital which call themselves drug firms trade on such good names as are known to us all. They are composed of irresponsible individuals, who have no other desire or motive than to sell goods. Such firms' preparations can not be too strongly condemned. Most firms make extravagant claims for preparations and combinations without sufficient data.

THE REMEDIES.

First, our schools, both of medicine and pharmacy, must send out into the world men so grounded that the one will diagnose his case and prescribe for the condition found present, and the other will compound the prescriptions written for, out of the best drugs. Proper education is absolutely necessary. A deep sense of the



obligation of the physician to the laity and to his co-laborer, the pharmacist, is equally necessary. I very much doubt if the majority of practicing physicians have any accurate knowledge of what the U. S. Pharmacopeia is. I doubt if one in fifty physicians have either the Pharmacopeia or a dispensatory on their shelves.

Ignorance must breed disuse. I believe that there are still many errors in the Pharmacopeia. For instance, I can imagine no good reason for the insertion of the formula for the clay poultice; certainly the mixture is useless, and it would appear to give the manufacturing firm a good basis for recommending its use, because it is now official. Like remarks can justly be made of the compound powder of morphin and the compound acetanilid powder. There are about 1,000 remedies in the Pharmacopeia; of these sixty-eight are compounds. If these compounds are examined it will be seen that while they comprise but 7 per cent. of all the remedies in the Pharmacopeia, they are, for the most part, rational; that is, they are not of the conglomerate class that I have quoted. All the teachings of this book and of the dispensatory point to the proper method of using drugs, viz., either singly or in such a simple combination that the one will not antagonize the other, but may actively help. These two books, therefore should be on our shelves; the doctor should familiarize himself with their contents and use them, rather than rely on manufacturing firms for his combinations, or combine for himself a senseless lot of drugs. The little volume, "New and Non-Official Remedies," published by the American Medical Association for the Council on Pharmacy and Chemistry, should be of great value to practitioners of medicine. The Council on Pharmacy is composed of learned, hard-working men, illy-paid for their labor. Sollmann<sup>1</sup> gives a warning, however, when he says that the rules for admission of preparations to the pages of the report should be made more exacting.

I feel that it would work vast good if compound prescriptions, mere pharmaceutical mixtures, like the one quoted, were omitted. The following is another example of what seems to me an error:

ELIXIR VIBURNI COMPOSITUM (STEARNS).

An elixir each 30 c.c. (one fluidounce) of which is said to represent: Blackhaw, 2.6 gm. (40 grains); cramp bark, 2 gm. (30 grains); squaw vine, wild yam, Jamaica dogwood and saw palmetto berries, of each 1.3 gm. (20 grains); pulsatillo, 0.65 gm. (10 grains), in a menstruum containing 17 per cent. of alcohol.

The admission of such mixtures, it seems to me, must bring discredit on the book and work harm to the Council.

What is the active principle or the physiologic actions of a single one of the drugs in the compound? Unfortunately there are many such articles admitted. They, one and all, violate the principle, the sound practice, of prescribing only drugs of which we know something singly or in simple combination. The Council of Pharmacy through its publications must teach physicians what *not* to use as well as what articles are useful.

The pharmacist can help or hinder the physician in his aim toward correct prescribing.

First, he must be a learned compounder of drugs, a graduate from a reputable school of pharmacy.

Second, he must not do counter prescribing. He must by argument with both physician and laity, and

particularly with the latter, teach that ready-made formulas are as a rule not desirable. His arguments will have great weight.

Third, he must absolutely never recommend ready-made formulas for any disease. As rapidly as possible pharmacists should rise to the position of drug compounders only and keep no patented or proprietary remedy in their shops.

CONCLUSIONS.

Physicians should use simple drugs or simple combinations of drugs of known value directed to the condition found.

Pharmacists should confine themselves to drug dispensing and discourage self-medication by the laity.

189 Green Lane (Manayunk).

## Original Articles

### DIPHThERITIC GENITAL INFECTION SIMULATING PUERPERAL FEVER.\*

WILLIAM CUTHBERTSON, M.D.

Associate in Gynecology, Northwestern University Medical School;  
Attending Gynecologist, St. Luke's Hospital.  
CHICAGO.

The gravity of puerperal fever, its widespread prevalence, and its persistence in spite of all the safeguards thrown about the puerperal patient by the adoption of modern aseptic precautions, make any addition to the literature of this subject acceptable.

It is, unfortunately, the almost universal custom to call every septic fever occurring during the puerperium "puerperal fever," and this arises from the fact that bacteriologic examinations are not made often enough to determine the exact cause of the fever, and thus properly to classify the variety of the disease. In the light of our present knowledge, it is as manifestly improper to call a diphtheritic genital infection in the puerperal woman "puerperal fever" as it would be to call a malarial infection occurring during the same period by a similar name.

We know that true puerperal sepsis is one of the most fatal infections we are called on to treat, while diphtheritic infection, if recognized early, is one of the most hopeful. Early recognition of the disease by bacteriologic examination, and the resort to anti-diphtheritic serum should enable us to cure every one of these cases, and thus contribute materially to the reduction of the mortality at this critical period of woman's life.

The puerperal infections are best classified etiologically by Dr. C. S. Bacon,<sup>1</sup> of Chicago, as follows:

1. Streptomyces and staphylococcus (true puerperal fever).
2. Colon bacillus infection.
3. Pneumococcus infection.
4. Diphtheria.
5. Gonorrhea.
6. Sepsis.
7. Puerperal tetanus.
8. Mixed infections.

All the older text-books on obstetrics mention diphtheria as a not infrequent cause of puerperal fever, but as they antedate the discovery of the Klebs-Loeffler

\* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

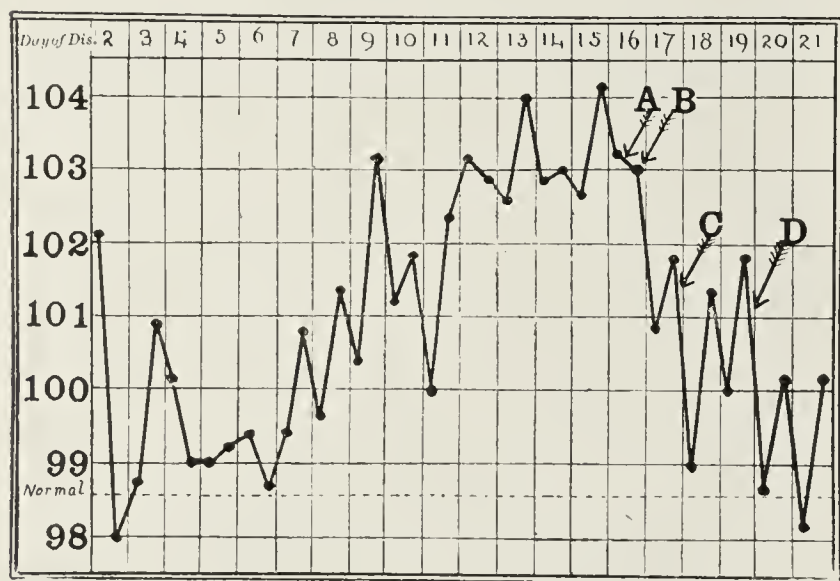
1. Bacon, C. S.: Lectures on Obstetrics.



bacillus, they make no mention of any cultures, consequently the conclusion must be drawn that not all the exudates which they describe were due to that particular germ. It is well known that not all those cases in which there is a grayish or yellowish membrane lining the vagina, covering the cervix or spreading over the torn surfaces of the perineum, and which leave a bleeding surface on removal are true diphtheria. The investigations of Bumm and Widal have shown that the majority are due to a superficial necrosis, caused by the streptococcus alone or in conjunction with other organisms, usually saprophytes. We must not be led into the belief that a puerperal woman with an exudate in her throat and also on her genitals is suffering from diphtheritic infection; but only after cultures have been made from the genitals and the Klebs-Loeffler bacillus demonstrated are we justified in resorting to the diphtheria antitoxin treatment.

Erich Martini<sup>2</sup> states that the first definite report confirming the presence of bacteria in the blood of patients suffering from puerperal fever dates from the year 1869. Coze and Feltz<sup>3</sup> demonstrated streptococci (chain bacilli), and by subcutaneous injection succeeded in fatally infecting a guinea pig. They failed to procure pure cultures, however.

In 1872 Waldeyer<sup>4</sup> described spherical bacteria



Temperature chart in a case of diphtheritic genital infection simulating puerperal fever. A, antitoxin administered, 3,000 units; B, antitoxin administered, 3,000 units; C, antitoxin administered, 2,000 units; D, antitoxin administered, 2,000 units.

(cocci), which he demonstrated in the diphtheritic exudate or membrane from the uterine mucosa of four patients who died from puerperal fever. He also demonstrated their presence in the puriform masses of the uterine lymph vessels and ligamentum lata, in the peritoneal exudate—in the liquid as well as in the pus flakes—and once, also, in the pericardial fluid. In all his cases the bacteria were located outside of the pus cells. The pure culture of these bacteria was affected after Koch had solved the problem of pure culture. Czerniewsky was the first to succeed in obtaining pure cultures of the exciting cause of puerperal sepsis; in this manner he was able to demonstrate the presence of streptococci in the lochia of mild and severe cases of puerperal fever.

Comparatively few cases of diphtheritic fever are on record, and all writers regard the condition as a serious one. It was not until 1895 that true diphtheritic fever

during the puerperium was demonstrated by the culture of Klebs-Loeffler bacillus, and its treatment by anti-diphtheritic serum instituted.

The following table summarizes the reported cases:

LIST OF REPORTED CASES.

Author.	Admin. diph. anti-toxin.	Bacillus demonstrated.	No. of cases.	Result.
Bumm <sup>5</sup> .....	Yes	Yes	1	Recovery.
Nisot <sup>6</sup> .....	Yes	Yes	1	Recovery.
Haultain <sup>7</sup> .....	Yes	Yes	1	Recovery.
Longyear <sup>8</sup> .....	No	Yes	1	Recovery.
Longyear.....	No*	Yes	1	Death.
Longyear.....	Yes	Yes	1	Recovery.
Longyear.....	No	Yes	1	Recovery.
Longyear.....	Yes	Yes	1	Recovery.
Longyear.....	Yes	Yes	1	Recovery.
Jacobs <sup>9</sup> .....	Yes	Yes	1	Recovery.
Williams <sup>10</sup> .....	Yes	Yes	1	Recovery.
Clark <sup>11</sup> .....	Yes**	Yes***	1	Recovery.
Favre <sup>12</sup> .....	No	Yes	1	Recovery.
Plassetzky <sup>13</sup> .....	Yes	Yes	1	Recovery.
Lop <sup>14</sup> .....	Yes	Yes	1	Recovery.
Orband <sup>15</sup> .....	Yes	Yes	1	Recovery.
Ungara <sup>16</sup> .....	Yes	Yes	2	Recovery.
Raw <sup>17</sup> .....	Yes	Yes	3	2 recoveries
Fitzgerald <sup>18</sup> .....	No	No	1	Recovery.

\* Antistreptococcus serum used.

\*\* Double serum used.

\*\*\* Staphylococci also found.

J. Anderodias states that Mahieux, in 1857, published an observation of a gangrenous diphtheria occurring in a recently delivered case which was transmitted from the mother to the infant. This diphtheritis was carried from the uterus to the mouth, affecting the infant also, and terminating in the death of both.

There is little doubt from his report that these cases were due to infection by the bacillus of Loeffler, although this bacillus was at that time unknown.

Hervieux published a case in 1866<sup>19</sup> which was evidently true diphtheria, but here also the science of bacteriology had not been developed.

In 1885 Garrigues<sup>20</sup> published an article on puerperal diphtheria, in which he describes the appearance of the diphtheritic exudate occurring in the genital region of recently delivered females. His observations are based on 29 cases. As diphtheritic cultures were not made, it is, of course, impossible to state whether they were all purely diphtheritic or not.

I present the following case:

*Patient.*—Mrs. M. K., Irish, aged 37, housewife.

*History.*—Patient had had no serious illness since childhood, but had been pregnant four times. Her last pregnancy required instrumental interference, but there was some edema during all four pregnancies. She had had no miscarriages or abortions. During the present pregnancy there had been some headache and emesis. Had been a moderate edema of the face and extremities during the last three months. The urine had been diminished in quantity and muddy in appearance.

*Labor.*—Labor came on at 5 a. m. June 21. The pains, at first weak, became very strong, but the patient was not able to deliver the child. She had two convulsions during the day. Forceps were applied at 2 p. m., but the attending physicians were unable to effect delivery. Patient who was delirious was admitted to the obstetric service of St. Luke's Hospital at 11 p. m. of the same day. Examination revealed a very extensive

5. Bumm, E.: *Ztschr. f. Geburtsh. u. Gynäk.*, 1895, xxxii.

6. Nisot: *Bull. Soc. belge de gynéc. et d'obst.*, Brns., viii.

7. Haultain, F. W. N.: *Lancet*, London, 1897, 1.

8. Longyear, H. W.: *Am. Jour. Obst.*, 1897, xxxvi.

9. Jacobs: *Jour. d'anat.*, Dec. 12, 1897.

10. Williams, J. Whitridge: *Am. Jour. Obst.*, 1898, xxxviii.

11. Clark: *Boston Med. and Surg. Jour.*, 1898, No. 2.

12. Favre, A.: *Ann. Soc. obst. de France*, 1899.

13. Plassetzky, A.: *Ejened. jour. Prakt. Med.*, 1900, vii.

14. Lop: *Vull. Soc. d'obst.*, Paris, 1904, vii.

15. Orband: *Allg. Wien. med. Ztg.*, 1906, li.

16. Ungara, V.: *Rassegna d'ostet. e ginec.*, 1906, xv; *Centralbl. f. Gynäk.*, Jan. 18, 1908.

17. Raw: *Jour. Obs. and Gynec.*, 1905, v.

18. Fitzgerald: *Brit. Med. Jour.*, ii, 1895.

19. Hervieux: *Gaz. d. hôp.*, 1866, xxxix.

20. Garrigues: *New York Med. Jour.*, 1885, xlii, 354.

2. Martini, Erich: *Deutsch. med. Wchnschr.*, 1905, xxxi.

3. Coze and Feltz: *Gaz. méd. de Strasbourg*, 1869.

4. Waldeyer: *Arch. f. Gynec.*, 1872, iii, No. 2.



edema of the entire body, especially noticeable at the umbilicus and external genitalia. The umbilical cord was prolapsed and pulseless. Fetal heart tones and uterine souffle could not be heard. The position of the child was left occipito-anterior. The cervix was partially dilated. The patient was anesthetized and a craniotomy performed. The placenta was removed by expression, after which an intrauterine douche with sterile water was given. The fetus was a male, weighing ten pounds, was full term and not macerated. Two hours subsequent to delivery the patient had a severe convulsion, which lasted five minutes. This was followed in four hours by a second convulsion, which lasted three minutes. The patient became rational nine hours after delivery and did not again lose consciousness. At this time there were emesis, involuntary passage of feces, and incontinence of urine. The first specimen of urine was obtained by catheter at the time of admission. It contained albumin, blood and granular casts. The first twenty-four-hour specimen also contained the above, was acid in reaction, and had a specific gravity of 1018. The quantity of urine was small. On the first day there was a leucocytosis of 17,500.

*Treatment.*—The early treatment was directed against the nephritis. It was as follows: Potassium acetate, grains 15, every four hours; calomel, grains 5, followed by elaterin, grain 1/30, all in broken doses; sweats and rectal injections of physiologic salt solution with coffee. Four days after delivery the involuntary passage of feces and incontinence of urine ceased; the edema became greatly reduced, and the patient felt much improved. June 30 there was a slight chill, followed by emesis. July 2 the case was diagnosed and treated as "septic peritonitis," and the patient was transferred to the gynecologic service, when she came under my care. Vaginal smears were made, and these contained many bacilli, whose protoplasm stained unequally. No cocci were present. A slight membrane was visible in the vagina at this time. The patient was free from pain, but was restless and there was some twitching of the fingers. She had occasional emesis. Smears were again made on July 4, and the same irregularly staining bacilli were obtained from the vagina; these were not present in smears made from the uterine discharge. Cultures from the vagina were made on Loeffler's medium. In twenty-four hours there appeared colonies of the diphtheria bacillus. Smears showed the same bacillus, which were present in the vaginal secretion. Three thousand units of diphtheria antitoxin were administered, when the temperature fell from 40.1 C. (104.2 F.) to 39.4 C. (103 F.) by the following day. Three thousand units more were given and the temperature fell during twelve hours to 37.9 C. (100.3 F.). Forty-eight hours later the temperature was above 37.8 C. (100 F.), two thousand units were given and the temperature fell that evening to 37.2 C. (99 F.). During the next three days the temperature varied, reaching 38.5 C. (101.3 F.) the evening of the third day. The following morning 2,000 units more were injected and the temperature fell to 37 C. (98.6 F.) that night. It fluctuated slightly during the next three days, reaching 37.8 C. (100.1 F.), but fell to normal by the morning of the fourth day. The patient received in all 10,000 units of antitoxin.

July 6 vaginal examination was made under anesthesia and the following record made: "A dull-gray membrane, with slightly elevated margins, is seen just inside the introitus. It extends upward toward the cervix. The membrane is in the form of scattered patches, the largest of which lies to the right of the anterior column; the mucous membrane at the margins of each patch has an angry appearance; at one point near the vulva is an irregular gangrenous area. There is a dense membranous patch, one centimeter ( $\frac{3}{8}$  in.) in diameter, on the anterior vaginal wall. When this is removed there is some oozing of blood from the denuded surface. Around the cervix is a dense membrane, and here, at the site of a recent cervical laceration, is also found a markedly gangrenous area."

*Later History.*—An intrauterine douche of sterile water was given at this time, but only a few fibrous threads came away; a single strip of iodoform gauze was inserted into the uterus. The tincture of the chlorid of iron was given in glycerin, and vaginal douches with protargol and Thiersch solutions em-

ployed. July 7 the pulse was weak and the patient was prostrated; she could move her limbs only with the greatest effort. A second intrauterine douche was given, and, as before, nothing came from the uterus. July 8 the condition of the vagina was much improved. The membrane was fast disappearing, and the marginal mucous membrane had lost its angry appearance. The pulse remained weak, and camphor in oil was given hypodermically, 2 grains every three hours. There was a slight discharge of blood from the vagina on July 9 and 11. The diphtheria bacillus had disappeared from the vagina by July 13, and the site of the former membranes now appeared like a very superficial erosion.

The patient made a slow and uneventful recovery, and was discharged in good condition August 7, seven weeks after admission. Cultures of the Klebs-Loeffler bacilli from this patient proved fatal to a guinea-pig, and pure cultures of the germ were then made from the animal, proving beyond all doubt the exact nature of the infection.

Foulerton and Bonney,<sup>21</sup> on investigating puerperal infections, state that in seven cases a diphtheroid bacillus was found in the uterus. The characteristics of the diphtheroid bacillus taken from two cases showed it to be morphologically undistinguishable from the *Bacillus diphtheriae*, but that it otherwise presented the following points of distinction:

1. It did not produce any acid in glucose peptone broth after six days' incubation, at a temperature of 31 C. (98.6 F.).
2. It was non-pathogenic for the guinea-pig.

They found a "similar diphtheroid" bacillus in the cervical secretions of non-pregnant women, but it seems probable that in the two cases of puerperal fever in which it was found the organism was present in the pathogenic capacity. The bacillus described is possibly the same species as that found by Halle in the vagina, and believed by him to be the pseudodiphtheria bacillus of Weeks. They say further, "that it is on record that the *B. diphtheriae* has been found several times in the uterus or in the vaginal lochia, but, so far as they can ascertain, the description of the bacillus found in these cases would apply to the 'diphtheroid' bacillus equally as well as to the true *B. diphtheriae*."

In spite of these researches, and bearing in mind the excellent results obtained from the use of the anti-diphtheria serum, where the bacillus diphtheria has been demonstrated by culture, I do not think it necessary to resort to the inoculation of a guinea-pig, except in those instances in which such a procedure is entirely feasible.

Most of the case reports show that active local antiseptics was instituted by means of the vaginal douche containing mercuric chlorid, iodine solutions, or other powerful agents. The general experience in the use of diphtheria antitoxin would seem to prove that these measures are unnecessary, a simple boric acid douche for cleansing purposes being the only thing required.

The diphtheria invasion does not seem to have any definite period after confinement for making its appearance, the time varying from the third to the twenty-sixth day. Pain in the genitals is apparently one of the prominent symptoms.

The membrane covering the genitals is grayish-white in color, with a red coloration around the edges. In all but one of the reported cases its appearance was accompanied by fever, ranging from 37.8 C. (100 F.) to 40 C. (104 F.), with a corresponding acceleration of the pulse.

All of the patients recovered in those cases in which the antitoxin was used. Every puerperal woman devel-

21. Foulerton and Bonney: *Lancet*, London, 1905, 1.



oping a fever, more especially where a membrane has made its appearance, should have a bacteriologic examination made from the genitals, and the variety of the infection classified.

Welch, of Johns Hopkins, says: "The efficiency of the antitoxin treatment has passed beyond the experimental stage, and is settled beyond all doubt." The initial dose should not be below 1,500 units, if the infection is evidently a mild one. I believe, however, we would get quicker results if we were to commence with 3,000 units, to be repeated in six to eight hours, if no improvement is manifest. When enough of the serum has been given, the membrane shrivels, the pulse becomes stronger, the temperature falls, and the general condition of the patient is improved.

After the favorable experiences in the use of the diphtheria antitoxin serum in the cases reported, there is no doubt that in all patients suffering from diphtheritic puerperal infection, where the Klebs-Loeffler bacillus has been demonstrated, diphtheria antitoxin is a specific for the disease. Curettement, either with a sharp or dull curette, or with the finger, should be scrupulously avoided, as, the membrane being densely adherent, its removal results in leaving raw surfaces which serve as open avenues for the absorption of a greater amount of toxic material.

I wish to acknowledge my indebtedness to Dr. Charles P. Clark, for his painstaking attention to the details of the bacteriology of this case.

#### DISCUSSION.

DR. A. BELCHAM KEYES, Chicago: Years ago I started in general practice. I have many records in my office of faucial diphtheria in which the temperature was absolutely normal and other cases with a temperature of 99.5 to 100 F. in the most malignant faucial diphtheria. Uterine diphtheria should not necessarily differ in this regard from the faucial; neither one presents any chill, there being a *schleichende*, creeping, insidious onset and only a moderate rise of temperature of, say, one or two degrees, unless there is mixed infection, when the temperature may reach 104 or 105 F. From the history of Dr. Cuthbertson's case I should say that this was a mixed infection. It seems to me that we should not wait for the culture in suspicious cases, whether mixed infection be present or not. I believe that this is a very important point. Diphtheria antitoxin should be injected first and the infection proved by the microscope afterward. I believe that a larger amount of antitoxin should have been used at once. Some years ago we gave smaller amounts. To-day we give 10,000 units at once, without waiting; indeed, we may give large amounts like this to very small children. Therefore we should not hesitate in the case of a puerperal woman. A point of special interest in the paper relates to the carefulness with which the bacteriologic work was carried out. As Dr. Cuthbertson said, we have much data on puerperal fever as a general infection during the puerperium, but we have very few true data compared to the number of patients who have died of the actual bacteriologic infection of these cases. To treat them intelligently in the future I think we should be extremely careful concerning the bacteriologic findings.

DR. A. ERNEST GALLANT, New York: The subject is one of great interest to those who see many cases in consultation and from the standpoint of the man who is not in the place where the bacteriologic examination can be quickly made. If we wait until the bacteriologic report comes to us, we shall have lost a golden opportunity. Some years ago, before the days of antitoxin, I was in an institution where there were 400 children, among whom there were a large number of diphtheritic cases. I saw various experiments and methods employed in treating the disease, and I could not help smiling when I remembered the plan told to my mother by a neighbor when we had diphtheria in the house. One child was ill with diphtheria and six had sore throats. A neighbor advised my mother to use pow-

dered sulphur blown into the throat through a glass tube. The child not so treated died and the rest recovered without diphtheria. I have tried the same experiments in New York City, sending specimens to the Board of Health and having the report returned of diphtheria. After I applied the sulphur it was impossible to find a trace of the diphtheria bacilli. The point is, that in the case of membrane vaginitis, either post-partum or otherwise, I should not wait for the bacteriologic report, but would apply the powdered sulphur in this way. After that no bacteriologist could find any diphtheria germs. It is especially valuable, when using the sulphur, to insert a roll of gauze as a wick. The temperature usually returns to the normal within thirty-six hours. I recall one case in which the entire vagina was one cylinder of black exudate. The sulphur treatment was the only one carried out, and the next day the temperature was down to normal. The French use powdered sulphur in the treatment of diphtheria, and, in spite of our antitoxin treatment, their results are far superior to ours in the treatment of diphtheria and the sequelæ are very much less. I think that the method is an important one to bear in mind and one which can be carried out without difficulty. I am not opposed to antitoxin treatment, but think that it is well to apply the sulphur while waiting for the bacteriologic report.

DR. WILLIAM CUTHBERTSON, Chicago: The remarks of Dr. Keyes about the size of the dose of antitoxin are quite correct. We should have better results if we started with larger doses. In regard to the efficacy of sulphur mentioned by Dr. Gallant, I should feel much safer from the use of the antitoxin, although there is no harm in making topical applications of sulphur. It is well to start the antitoxin first and wait for the report of the culture afterward. We should make much more careful distinctions in the diagnosis of these cases than we have in the past, and by remembering that we would have much better results in puerperal infection. I have just had a case at St. Luke's Hospital in which there was a mixed infection, that of the streptococcus and the staphylococcus, and I summoned up nerve enough after receiving the bacteriologic report to treat the patient exclusively by means of the polyvalent serum of Marmorek. The patient entirely recovered through the use of the serum. If we will differentiate and use the serum that the bacteriologic report indicates, our mortality among puerperal women will be less in the future than it has been in the past.

#### GENITAL TUBERCULOSIS.\*

AUGUST MARTIN, M.D.

Formerly Professor of Gynecology, Greifswald University,  
BERLIN, GERMANY.

I wish to thank you for the invitation to address this section and assure you that I appreciate the honor.

Permit me to draw your attention to a group of diseases, which, I believe, has not received the attention it deserves, viz., tuberculosis of the genital organs. In fact, only twenty years ago the well known pioneer of gynecology, Hegar, of Freiburg, published his monograph on this particular form of genital disorders. At the meeting of the International Congress of Obstetricians and Gynecologists at Rome in 1902 it was proposed for discussion. Reviewing the literature we must confess however, that an astonishingly small number of observers have paid thorough attention to tuberculosis of the genital organs, including the peritoneum. This is all the more astonishing, as we know more about the tubercle bacillus than any other. From clinical observations we are not allowed to decide the possibility of its immigration by means of sexual intercourse. On the basis of experimental research by inoculation von Baum-

\* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty ninth Annual Session, held at Chicago, June, 1908.



garten denied an ascending infection, but Philip Jung has proved it beyond a doubt, at least in animals, by experiments in the laboratory of the gynecologic clinic at Greifswald. I agree that these cases make among women a very small minority of the cases of primary tuberculosis, though it seems to be important enough not to be forgotten.

In the large majority of cases the infection arises from other tuberculous deposits in the body—a secondary form—more frequently it seems to come from the alimentary tract rather than from the respiratory. In most instances, the bacillus may be brought down in the lymphatics or blood vessels, but we know that immigration does occur also by means of immediate contact. In more than two-thirds of our cases it came from the ovarian follicles to the Fallopian tubes; to the uterus in only one-third. It was also found in the corpus uteri. Localization in the cervix is very rare, still more than in the vagina.

Peritoneal infection was observed in the majority of cases. We could not ascertain this fact exactly, as we did not examine the peritoneum completely, the cases being clinical, not those of postmortem examination. The infection may occur at any age, but particularly during the menstruation and gestation periods.

Hegar, Freund and von Rosthorn called attention to the frequency of infantilism in these cases of genital tuberculosis. It is true that we meet infantilism, but I do not dare say what may be the connection.

An effort has been made to determine the frequency of genital tuberculosis by means of postmortem examination. Posner fixed it at 30 per cent.; von Hanseman at 5.4 per cent., figures undoubtedly incorrect, as postmortem examination only rarely extends to every gland, not every corpse being examined in all parts microscopically.

Fixing the frequency by the examination of the specimens removed by operations is unsatisfactory. If we do not examine every specimen, even when very slightly suspicious, we are likely to err. Another question under discussion is whether we are to diagnose tuberculosis when we see giant cells and epithelial tubercles, or must we see the bacillus? Many very good pathologists say the former. I believe that we must insist on the latter, as tubercles and giant cells are recognized also in other cases of irritation. Prof. Jung found that 24.6 per cent of the seriously affected adnexa of my Greifswald material were tuberculous (the bacillus being present) and this little city lies in the midst of a country which has been hitherto rather famous for its general healthfulness. If we should add to these cases those instances in which we met also with tubercles, the proportion would increase to a considerable amount. I am thoroughly convinced that when you examine your preparations with equal energy you all will feel astonished as to the frequency of tuberculosis of the genital organs.

We must acknowledge that tuberculosis of the genital organs is to be met with in about a quarter of those cases which require surgical interference when we base such interference on strict diagnosis and indication. In this connection we should be very precocious, indeed, to admit statistical numbers. Examining our cases with the same care, future meetings can only show us with some certainty the percentage of this form of tuberculous disease.

The clinical diagnosis in most instances is made with difficulty. In fact, the insignificance of the symptoms

is characteristic. Menstruation, in our material, was disturbed in only 55 per cent.; more or less aching feeling was complained of; many patients denied all such. Some complained of a reddish colored offensive discharge. They feel uncomfortable, weak, unable to work, lose flesh and show an unsatisfactory complexion. The sexual appetite not rarely seems to be increased. Not very rarely this disease arises from a well noted incident, puerperium, abortion, gonorrheal infection, local treatment. A severe cold we find related particularly in virgins and sterile women. In fact, seriously developed genital tuberculosis seems to exclude impregnation. There is no doubt that we find not very rarely tuberculosis of the placenta, particularly in case of general tuberculosis, which spreads to the ovum by the way of the blood. Sixty-six per cent. of our patients had never been pregnant. Thirty per cent. of the pregnancies occurred before tuberculosis manifested itself. One person in nineteen gave reasons to infer that she fell ill three weeks after confinement. Von Franqué believes that in one of his cases symptoms set in the second day after abortion.

Tuberculosis of other organs, heredity and contact with tuberculous people is very important for the diagnosis. The general condition of health, the slow development of the disease, the inefficiency of any treatment as to convalescence must be particularly looked at.

The diagnosis remains a very difficult task as long as we do not test for the bacillus either by means of biologic investigation or by microscopic examination of removed preparations. As to the former, Koch's test by tuberculin injection has been frequently applied. Many disapprove of it. According to my observation, I never met with any untoward effect, but I agree that only a marked positive reaction gives clear evidence. Tuberculin injections are not to be given in fever, and this is a somewhat disappointing complication.

The subconjunctival instillation of Pirquet-Calmette seems to give another means of specific examination. A more extended experience is to be waited for. Dr. E. Martin showed the peculiar value of this subconjunctival instillation in cases of pregnancy in tuberculous women. It is only too well known with what difficulties we meet in those cases when endeavoring to decide whether pregnancy is to be interfered with or not. A positive subconjunctival instillation proves, as E. Martin showed in more than two dozen cases, that such patients show a sufficient power for producing antibodies so that we may allow pregnancy to continue. A negative reaction proves the deep injury the disease has produced on the self-defending power of the pregnant patient, and interruption of the pregnancy is indicated at once. E. Martin's researches have been made in Prof. Bumm's clinic in Berlin, and it is hoped that they will be confirmed elsewhere. Hyperleucocytosis is of no special value in the diagnosis of tuberculosis.

Ulcers of the external parts up to the vaginal portion are suspected to be of tuberculous origin when their sloughing surfaces are indurated, where undermined borders resist local treatment and when they are tested not to be syphilitic. In such instances the microscopic examination of excised parts frequently requires much work. Only after examining about 100 slides do we sometimes find the bacillus. In some instances the ulcers of the vaginal portion show a very remarkable tendency to hypertrophy so as to form cauliflower outgrowths. These also can be determined only by careful



microscopic examination. Enlarged glands with slight sensitiveness demand attention.

The peritoneum shows two remarkable kinds of reaction, exudative and sloughing, giving rise to the development of hard masses of considerable size. Both are the production of the same infection. We are still ignorant as to why the reaction sometimes takes one form and sometimes the other. This tuberculous peritonitis, particularly that of the exudative form, is met with with astonishing frequency in young girls who rarely show in the very beginning any localization in any other organ. We noted a peculiar variation in the frequency of its combination with genital tuberculosis. The sloughing form we met with in one-third of our cases and one-fifth of these were complicated by local infection of the adnexa. Two-thirds proved to be of the exudative form and one-half of these showed local infection of the genital organs.

The clinical diagnosis of peritoneal tuberculosis can be made with relative certainty in many instances. Ascites is always a suspicious symptom in the absence of neoplasms and diseases of heart, liver and kidney, particularly in young women. In advanced age carcinoma of the peritoneum also occurs. The clear straw color of such a fluid removed for diagnostic purposes indicates tuberculosis, while a bloody fluid indicates carcinoma. Hegar and Sellheim called attention to the pinhead-like prominences felt from the rectum or the vagina on the peritoneal layer as a sign of peritoneal tuberculosis. I have met with a rather remarkable number of exceptions to this.

The dry or sloughing form of peritonitis gives rise to the formation of hard masses which simulate neoplasms or inflammatory infection. The anamnesis must help as well as the localization of the tuberculosis in other organs. Especial attention is to be paid to careful examination of the genital organs by touch so as to determine their proper condition. In most instances, the tuberculous masses show an abnormal location not connected with any organ of the peritoneal cavity. The observation of the general condition and the application of our diagnostic resources leave us to recognize the true nature of these masses.

The prognosis in all these cases is very grave. Healing depends on so many conditions, particularly on the possibility of constant care. We dare not forget that only too frequently besides these localizations which for the moment attract our attention, a latent localization may exist in other parts which escapes recognition. As to the prognosis of the especially diseased parts of the genital organs, our means of attack are not yet powerful enough to allow us to give the prognosis as absolutely favorable. In any case we are not ensured against the outcropping of tuberculosis in any other part, in the organs of respiration and digestion, bones, joints, skin and elsewhere.

As to the treatment: This is both general and local. I will speak only of the latter. Tuberculous ulcers of the vulva and vagina and of the endometrium can easily be removed. As to the latter, I prefer the application of strong astringents after curetting.

Particular attention is to be paid to those cases where we meet with a complicating gonorrhea and septic infection. These cases require special care; I think it is much better not to operate at once, but to interfere only when urgent indication sets in. The tuberculous diseases of the tubes and ovaries can be diagnosed definitely

only after operation. Frequently, the special organs participating in the formation of these masses can be separated only by dissection. These organs, when they are destroyed by the tuberculous process, should be removed. Many surgeons advise removal of all the genital organs in these instances. I prefer to take away only what is so thoroughly diseased that healing seems to be excluded.

We are not allowed to speak of a radical treatment, as we do not know in every case whether there is tuberculosis in any remote organ, even in a latent form. That parts of the genital organs left in position after the removal of others can come to normal function is not to be doubted, as long as the blood vessels can be conserved and defects of the peritoneum covered by the neighboring parts. I apply drainage only in recent cases, that is to say, in the cases of a mixed infection of tuberculosis and sepsis or sapremia.

If possible, I perform the operation by the vaginal route. Ascites I remove, as a rule, by free abdominal incision, through which I can reach its localization—occasionally only by the vaginal. The removal of big nodules and big sloughing masses seems to be useless, particularly when they are connected with the intestines. Experience taught me this precaution, as we are not sure in such instances whether we have to deal with an old intestinal fistula.

The results of this treatment I have been able to control in 53 patients, who suffered to some extent from disease of other organs. Three of these died after laparotomy, two from the development of colon bacteria infection from old intestinal fistula; the third patient at the postmortem examination proved to have a large tumor of the right kidney. Five others died from the pulmonary disease, the surgical intervention on the genital organs neither aggravating nor relieving the process. In 85 per cent. primary convalescence went on satisfactorily. Two of these cases showed recurrence of their ascites when they were dismissed after some weeks' treatment in the hospital.

Especial attention was paid to the after-treatment. The family, the physicians, and for our poor patients some charity institution, were warmly interested in the case and all instructed in the methods of modern phthisico-therapeutics. In some instances we met with remarkable benefits from guaiacol and creosote preparations.

As to the definite result, Dr. B. Martin has examined for me 53 per cent. of these cases. Out of 27 patients observed, all after more than a year, 16 proved to be perfectly well. Two have not improved. Two died later of progressive tuberculosis, one from other causes, and six have been considerably improved. One of these, whom I could examine repeatedly, has gained 15 pounds and is very comfortable; at the last examination beginning endometritis was noted, but as there was only slight backache and a very moderate discharge she declined any treatment.

In comparing these results please remember that in every instance the tubercle bacillus was present. If I should add those cases in which the anamnesis and the local condition pointed to a genital tuberculosis, but in which this could not be proved positively the results would be much more favorable. This I observe particularly in my private patients, many of whom I have been able to control for long years.

Conservative operations were done whenever indicated.



Both the primary and secondary results were satisfactory and generally the menstrual function was conserved. Occasional amenorrhea and dysmenorrhea were easily supported because of the general improvement. Especially after the vaginal operation patients were free from pain and were able to do a certain amount of work and to enjoy life. They rapidly gained flesh. In those cases of complication of pregnancy and tuberculosis I interfered when the general condition sank in a notable degree. For the future I shall follow E. Martin's advice and depend on the result of the subconjunctival inoculation of Koch's tuberculin.

The operation did not prove unfavorable in any of these cases. The narcosis can be performed in a most convenient manner by lumbar anesthesia. Particular attention is to be paid to the loss of blood, to the disturbance of proper nutrition and to the necessity of keeping the patient in a quiet position in bed. In view of this, every operation was done only under a special and urgent indication when every other treatment failed to heal the disorders. Interference was done at once when fever was diagnosed in connection with septic or sapremic infection, including helpless cases in which, nevertheless, some relief was given by the operation. Genital tuberculosis formed nearly a quarter of the more serious cases of inflammatory disease.

Surgery was applied only to the diseased parts and the others were conserved. The result proves that such treatment benefits our patients, when supported by a proper general treatment.

Let me hope that the general interest in these cases will increase, and that future meetings will prove that my ideas are agreed to by the majority of my collaborators.

#### DISCUSSION.

DR. H. J. BOLDT, New York: Most cases of genital tuberculosis and tuberculosis of the peritoneum are of the ascending form, and in many of these instances the endometrium is diseased primarily. That can be ascertained, for in some cases where we remove tuberculous organs and curette the endometrium we find on careful examination a number of cells showing tubercle bacilli. With regard to the Fallopian tubes and ovaries, in about two-thirds of the cases, unless the disease has advanced too far, involving the pulmonary organs, we have a permanent cure by removal of the diseased adnexa. That so far has been my experience.

DR. E. E. MONTGOMERY, Philadelphia: The early stage of tuberculous disease of the peritoneum seems to be most amenable to treatment. The opening of the abdomen, even without the removal of any organs, often brings about conditions enabling the physician to restore the patient to health. I have seen this again and again in peritoneal tuberculosis. The great advantage is that we are made acquainted with the actual conditions and thus enabled to treat the patients from a hygienic standpoint.

DR. HENRY T. BYFORD, Chicago: We should not treat tuberculosis as a local disease. Surgery is not the whole treatment for it. When we have local disease of the lungs it is seldom surgery that does any good, and yet we know that the majority of cases of lung disease can be cured. In tuberculosis of the peritoneum all we need to do sometimes is to let out the fluid and treat the case medically. I have cured many cases without drawing off the fluid. I remember one case which for a couple of years apparently presented a brilliant cure, but some time afterward the patient went to pieces with tuberculosis. Had more attention been paid in this case to the after-treatment I have no doubt recovery would have been permanent. I believe that this part of the treatment rather than surgery should be emphasized.

DR. D. TOD GILLIAM, Columbus: Despite the growing tendency to minimize operative interference, excellent results are

still to be had from operation in properly selected cases. From my own experience and observation I am convinced that the great majority of cases of tuberculosis of the genital tract are from above, and that a number of them, as Professor Martin intimated, come from some lesion of the alimentary canal. Fine particles of colored matter, such as cinnabar, let loose in the peritoneal cavity, are swept into the Fallopian tubes, and I have no doubt that an endometrial infection may result in this way. I believe that the ascending form is largely limited to the cervix, as there is usually a sharp line of demarcation between cervical and corporeal tuberculosis. Regarding the treatment of these cases I was a little surprised to hear Dr. Byford, for whom I have the most profound regard, say that genital tuberculosis is a general disease. I am willing to admit that in many cases the infection is much wider spread than the surface markings would indicate, and that in a proportion of such surgery is of no benefit, but, on the other hand, an attack on the center of infection will often result in prompt and permanent relief. How often will a widespread genital tuberculosis be arrested by the removal of the uterine appendages, and the removal of the cervix beyond the grossly diseased area arrest a cervical tuberculosis? I am persuaded from past experience that not a few of the supposed advanced cases of cancer of the cervix in which recurrence did not follow operation were in reality cases of cervical tuberculosis. The diagnosis of cancer, of course, could only come from slipshod methods, but slipshod methods are by no means exceptional, especially in the smaller general hospitals. In the widespread tuberculous infections of the peritoneum, in the absence of adhesions and especially if associated with peritoneal effusion, the brilliant results following section are so sudden and so conspicuous as to leave no doubt as to the efficiency of the operation. While I have long been of the opinion that too much was expected of operative interference in this class of cases in the past, I am equally convinced that the present-day tendency to taboo operations is ill judged and prejudicial. Professor Martin has shown us that genital tuberculosis is much more common than we had reason to believe.

DR. G. BETTON MASSEY, Philadelphia: We surely have a local disease to deal with in tuberculosis, with a reduced resistance of the general system. I suggest the inadvisability of curettage in the local deposits of this disease. It may be taken as a rule that curetting should not be practiced in any microbic disease if that disease be of a kind that can be sown into the cut surfaces.

PROF. AUGUST MARTIN, Berlin: This discussion is undoubtedly very difficult, for we do not all stand on the same basis. In all these cases the bacillus has been proved. That which entitled me to draw these conclusions was the clear clinical indications. Indeed, the diagnosis is a very difficult question, and only by the most careful examination at the time of operation can we find the same basis to stand on. If I should be permitted to meet you in a meeting, say ten years hence, I think we should all look on these cases from the same point of view. One of the gentlemen spoke of not applying the curette. I do not make a curettement without special indication. The treatment must be to a great extent a general one, and when Dr. Byford prefers medical treatment I absolutely agree with him. Whenever I can I send these patients to a milder climate. There is in Germany some difficulty in securing such care for poor people. While fighting for the admission of poor patients with tuberculosis of the genital organs to the hospitals treating patients with tuberculosis of the lungs I first began to publish my observations. If by proper general treatment these patients did not recover, surgical intervention was advised. From the fact that more than 24 per cent. of seriously injured genital organs partly or totally removed were found to be tuberculous it must be considered that my standpoint for surgical interference is a conservative one. The surgical interference I have pointed out is especially opposed to the radical treatment recommended by our French confrères at the congress in Rome. One may take out these parts altogether, but if one does not know whether there are any other glands in the body that are affected by and by one may have develop-



ment of the condition in some other part. So I think we should not speak about radical operation if we can only say that we took out all of that organ that was diseased. I think that by examining with the utmost care not only the mucous membranes, but every part not apparently suspicious, we shall find that tuberculous is a frequent disease of the genital organs. Perhaps we can then agree on an improved way to fight this fearful and dangerous disease.

## THE CONSERVATIVE SURGEON AND THE SYMPTOMLESS UTERINE FIBROID.\*

THOMAS B. EASTMAN, M.D.  
INDIANAPOLIS.

From time to time various operators have shown that in a considerable percentage of cases of fibromyoma of the uterus there have been found complications which, in their opinion, would in time bring about a fatal termination. The existence of such complications has been brought forth as constituting an argument in favor of the removal on diagnosis of all fibromyomata regardless of whether the symptoms at the time of diagnosis were threatening or not.

It is, of course, a question as to whether a complication such as a cystic tumor of the ovary, for instance, coexistent with a fibromyoma, constitutes a reason for the removal of the latter, any more than a fibromyoma constitutes a reason for the removal of a cystic tumor of the ovary. Does or does not the fibromyoma itself present probabilities, present and future, of such gravity as to warrant operation?

This paper is written for the purpose of emphasizing the fact that frequently there are found fibromyomata wherein there are conditions threatening the life of the patient, the existence of which conditions can not be determined and may not be suspected prior to operation, and in some instances not until microscopic examination has been made.

The various degenerations existing either at the time of examination or likely to exist later constitute a danger which should be forestalled. A certain element of the profession has been disposed to the belief that degenerations are not so common as others would have them to believe. However, only within the last few years has this subject been studied, and in view of the results of the investigators one must conclude that up to recent years degenerations were not found because they were not sought for.

Tracy<sup>1</sup> discusses this subject, taking as the basis of his article 3,561 cases reported by various operators. There was necrosis of the tumor in 197 cases, or 4.9 per cent.; myxomatous degeneration in 160, or 4 per cent.; hyaline degeneration in 72, or 1.8 per cent.; hyaline degeneration and calcareous infiltration in 12 or 0.3 per cent.; cystic degeneration in 141, or 3.5 per cent.; calcareous infiltration in 12, or 3.4 per cent.; carcinoma of the body of the uterus in 63, or 1.7 per cent.; sarcoma in 54, or 1.5 per cent., and various other degenerations, among which is carcinoma of the cervix, in 25 cases, or 0.7 per cent., and intraligamentous development of tumor, which latter conditions are not pertinent to the subject, carcinoma of the cervix and fibromyoma being rarely, if ever, more than coincident.

and intraligamentous development of tumor not being a degeneration.

That there is an etiologic relation between fibroma and cancer of the uterus is generally conceded. Strictly speaking, a fibroma does not undergo degeneration into carcinoma, but, as has been shown by numerous investigators, results from prolonged irritation of the epithelium elements of the remains of the Wolffian body.

Piquand,<sup>2</sup> tabulating the statistics of some seventeen authors, says that out of 3,231 cases of fibroma 96 were attended by cancer (48 each of body and of neck), or thirty out of one thousand, or 3 per cent. On the other hand, he finds from the study of 136 cases that 25 per cent. of cases of cancer of the uterus are accompanied by fibroma. He says: "Cancer of the body appears to be, then, eight or nine times more frequent when there is a fibromatosis than when there is not; and it seems to us that we must justly conclude that fibromata predispose to cancer of the body of the uterus. Again, from the different statistics, we find an average of seventeen cancers of the body to one hundred uterine neoplasms. Then, in a general way, cancer of the neck is at least five times more frequent than that of the body, while, when there is present a fibroma, the number of cases of cancer of the neck and cancer of the body are about the same. Therefore, one may conclude that fibroma actually predisposes to cancer of the body."

In explaining how a fibroma favors the occurrence of a body cancer, he says: (1) Mechanical disturbances set up by the fibroma, degeneration of mucosa, displacements, etc. (2) Circulatory disturbances. Changes analogous to those of gestation are present, and the uterus is the seat of constant and prolonged irritation, and, therefore, a high degree of congestion and, therefore, a glandular endometritis is produced. (3) The chronic glandular endometritis by progressive transitions, due to continued irritation of the tumor, forms an atypical adenoma, and then carcinoma, by regular and then irregular proliferation.

"Cancer of the uterine body," he continues, "is much more frequent in cases where there is a fibroid than in others; therefore, the fibroid predisposes to cancer of the body. Fibroma favors the occurrence of cancer in determining the lesions of hypertrophic metritis which are susceptible of being transformed into an epithelioma."

J. Bland-Sutton<sup>3</sup> finds that in a consecutive series of 500 cases of fibroids operated on, 63 of the patients were between 50 and 73 years old. Among these 63 women there were eight cases of cancer of the corporeal endometrium. He cites these cases to show that the combination of fibroids and cancer is most likely to occur between the ages of 50 and 60, as in his series only one cancer patient was over 60. When cancer of the body of the uterus occurs unassociated with fibroid, it has a wider age range.

One rarely reads an article on sarcoma of the uterus in which the rarity of this disease is not emphasized. This rarity is apparent, not real. In the last few years, since this subject is undergoing investigation, the proportion of sarcomatous degeneration is increasing because they are being found out. For instance, Dr. Howard C. Taylor<sup>4</sup> reports six cases of sarcoma of the uterus. Particularly interesting is Case IV of this series, as it illustrates the impracticability of differential diagnosis, as well as the treacherous character of these

\* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Surg. Gyn. and Obst., March, 1908, 246.

2. *Id.*, November, 1905, 465.

3. *Id.*, July, 1905, 88.

4. *Am. Jour. Obst.*, September, 1907, 373.



growths. In the case mentioned a tumor which at the time of admission reached to the margin of the ribs was first noticed on the left side, but later became median. The patient had lost considerable flesh and had constant abdominal pain. On Aug. 18, 1905, Dr. Taylor opened the abdomen and removed a tumor weighing about fourteen pounds, which was attached to the fundus of the uterus by a pedicle about one inch in diameter. The uterus was not removed, as the tumor was considered to be a fibroma.

The pathologic report was small spindle-cell sarcoma. Seventeen days later, when the patient seemed in condition for a second operation, the uterus and one appendage were removed through the vagina. The vaginal route was selected, as the patient was not in good condition. The pathologic report on the uterus showed it to contain numerous sarcomatous foci.

There is little force in the argument that the so-called sarcomatous degenerations are really not degenerations and were sarcomatous in the beginning. This proves nothing against removal of the uterus. Certainly no one would attempt to make a differential diagnosis before removal, and so far as the writer's observation is concerned, the development of sarcoma or of sarcomatous degeneration is quite as insidious and oftentimes as symptomless as the fibromyoma.

The most interesting and important degeneration noted in the statistics tabulated by Tracy<sup>1</sup> was necrosis, of which there were 197 cases, or nearly 5 per cent. Necrosis constitutes the most dangerous degeneration with which we have to deal. None can say that necrosis may not exist throughout a long period of time and produce no threatening symptoms, although it is the observation of all of those who do practical work along this line that this process is very treacherous and that patients apparently in the best of health are suddenly stricken down by a sudden exacerbation in the necrotic process. Then it is that we must operate oftentimes on a patient *in extremis*, whose every tissue is so invaded by the poison that removal of a tumor only serves to eliminate the original focus of infection and leaves the system so overwhelmed that the results are fearful.

Including carcinomatous, sarcomatous, necrotic and myxomatous degeneration, we have 12.1 per cent. of degenerations of which it may be said that (1) they are conditions which, if not removed, will at least in all probability terminate fatally; (2) if not removed, such developments will occur as will render subsequent surgical procedure much more difficult and less productive of satisfactory results, and (3) these conditions are such that in the majority of cases could exist unknown and even unsuspected by the examiner.

What, then, is to be done about it? To me it has been a thing unfathomable why it is that those who are pleased to call themselves conservatists demand a special dispensation for fibromyomata. Many a small cystic tumor of the ovary exists without symptoms and is only discovered by accident. In all other parts of the body we remove new growths which are benign; remove many of them which at the present time threaten nothing, not even inconvenience, simply because they may undergo malignant degeneration. Do the conservatists remove such growths? So far as I am able to learn, they do. Not because its condition is at present alarming, but because of what it may become. Many a case of chronic appendicitis goes on to apparent recovery. Do the conservatists advise that this appendix be let

alone? Not at all; they advise its removal because the patient may have a recurrent attack.

If the conservative surgeon in palpating an abdomen without suspicion of the existence of gallstones should find such stones, would he advise against their removal? Not at all. He would advise their removal, because he knows that gallstones may later become a source of trouble and predispose to cancer of the gall bladder. Take a lipoma, for instance. Certainly there is no more innocent form of tumor, and how many of these escape the surgeon's knife, once he has seen them? Only those occurring in patients who positively refuse operation. And yet statistics show that over 12 per cent. of fibromyomata show conditions which, if allowed to persist would bring about results far more to be dreaded than those coming from a cystic ovary, a chronically inflamed appendix, gallstones or a lipoma.

There are those who make a plea for the conservation of these fibromyomata, particularly those occurring in young women who are anxious to bear children. Certainly the prospect for children in the case of a young woman with a fibromyoma is not a very bright one. Under such conditions ten women will abort or miscarry where one will carry a child to full term, and even where the pregnancy goes to full term the dangers are such as to make very few of us willing to risk such a state of affairs, particularly when it comes close home to us, and it certainly becomes a matter of ethics as to which horn of the dilemma we are to take.

Naturally it devolves on such men as sit in this section to brush away the fallacious ideas which exist among a certain element of the profession and the laity. The idea which has cost as many lives as any other is the one that the menopause offers a certain and safe cure to all the diseases to which woman is heir. We hear that at the menopause these fibromyomata shrink up and cease to cause any trouble. Certainly the percentage must be very small, and to offset this percentage we know that 64.9 per cent. of degenerations occur after the age of forty years.

It is hard to realize in this day of advanced and intelligent surgery that men of unquestioned standing will delay these operations, trusting to good luck or the menopause to do away with the symptoms of which these women complain. According to my observation, so far as the menopause is concerned, it aggravates rather than improves the symptoms in at least half the cases. The idea of the menopause curing such a thing as fibromyoma is a relic of the surgical dark ages, and admitting the bare possibility of such a thing occurring, the chance is so small that it should not be taken by the intelligent, modern operator.

In this connection, J. Bland-Sutton<sup>2</sup> has been frequently quoted, and what he says ought to be read and studied by every woman who hangs to this will-o'-the-wisp in the hope of relief from a fibromyoma. He says: "Surely there is nothing in the whole range of surgery more ironical than a woman spending twenty or even thirty years of her life as a chronic invalid on account of a uterine fibroid, in the expectation that at the menopause she will be restored to health and begin a new life, and then to realize that far from this being fulfilled, the fibroid becomes necrotic, extruded or septic, and places her life in the gravest peril, and that she may die in spite of surgical intervention."

The teaching that it is well to advise patients having fibromyomata giving rise to no symptoms to return from



time to time, is weak in theory and bad in practice. This advice is just what the woman who shuns an operation wants. Where one will return, ten will never be seen again until some radical pathologic process has developed which will greatly diminish the patient's chance for recovery from an operation delayed without reason. I was myself in the habit of advising the patient with the so-called innocent fibromyoma to return from time to time. The death of two such patients from an overwhelming necrosis convinced me of the mistake.

With the mortality of ten years ago, the advocacy of the removal of all fibromyomata on diagnosis might have been questionable, but with a mortality of 6 per cent., or even less, in operations performed by competent men, a certain portion of which, it is reasonable to presume, occurred in cases where an earlier operation would have given different results, and with 12 to 14 per cent. of cases showing degenerations, threatening death if neglected, it seems that the radical view taken in this paper is the one which, if maintained, will be the means of relieving many a woman from a life of invalidism or from death.

#### DISCUSSION.

DR. H. J. BOLDT, New York: It is doubtful to my mind whether these sarcomas of the uterus are degenerated fibromas or have been sarcomas from the beginning. There is no proof at all to convince me that the tumors have not been of a malignant type from the beginning. In operating on cystic ovaries, conservative surgeons retain as much ovarian tissue as apparently is normal. I believe that every woman who has a myofibroma causing symptoms should be advised to have the tumor removed.

But I am absolutely opposed to removing a woman's uterus when there is nothing to indicate whether it is the seat of myoma or not. There are women who will absolutely decline to have an operation. I have watched some of these women for fifteen or twenty years and have a number under observation now. Such tumors sometimes retrograde and become smaller long years after they had first been diagnosed. I know from personal observation that they atrophy and shrink. I would not say, however, that it was a proper thing to have the patients advised against surgical intervention.

DR. HUGO O. PANTZER, Indianapolis: I do not wish to detract from the force of the argument made for the removal of uterine myomata, but some of the adverse evidence should be presented. The fatality and morbidity which follows such work by expert operators in well-appointed clinics, should be additionally stated, if not the untoward results following the work of less experienced surgeons. The incidents by infection, by anesthetics, by idiosyncrasy, by unexpected complications and sequelae certainly justify and demand a discriminating and differential course in these cases.

DR. F. F. LAWRENCE, Columbus: It is strange that there should seem to be any necessity for discussing the advisability of removing any neoplasm from the body, except possibly in cases in which operation is absolutely impossible. The dangers of operation before complications occur are almost *nil* in hysterectomy. Noble and others have shown that the danger of malignant degeneration in fibroids is much beyond 5 per cent. The question is not simply one of malignancy. What are the dangers of suppuration of fibroids left alone? Another 5 or more than 5 per cent. Particularly is that true when these fibroids are made the subject of local treatment.

What about the resistance of the patient when she is allowed to go on with a fibroid. A patient carrying a fibroid for six or eight years is reduced in every way.

What can be gained by the expectant treatment? Some years ago we were told that we must not remove an ovarian cyst until it became as big as a wash-tub. Some

years ago we were taught that a fibroid should not be removed until after the menopause and patients had to go on to a necrotic condition of the growths with a mortality at the time of operation of 35 per cent. To-day the mortality in operation is less than 3 per cent. This difference is due to teaching such as Dr. Eastman's advocating the removal of every neoplasm, no matter where situated, as soon as it is discovered.

DR. J. H. CARSTENS, Detroit: There is something to be said about symptomless fibroids. How do you ever find the fibroids? The patient has some symptom before she consults a physician. There is no doubt that many women are going about with symptomless fibroids. When they finally come to the physician there are symptoms and the tumor should be removed.

There are some fibroids, however, that do not produce symptoms and the question is simply, what will you do? What do you call symptoms? Are there not other symptoms than pain? Does not the patient suffer in the consciousness that she has a fibroid that will cause her trouble? Is she symptomless when she goes around for a year or more dreading lest something will happen? Is it not a good thing to remove that fibroid when the danger is *nil*, not 6 per cent., when you often can do it by the vaginal method, or by simply enucleating the fibroid and leaving the uterus intact and the woman in good health?

I think that we ought to relieve a woman and remove the fibroid whether or not it is degenerated. There is mortality in the very cases that are called symptomless but are allowed to drag along year after year until they are almost *in articulo mortis*; and then the patients present themselves for operation and the mortality statistics are not good. Is it not better on general principles to remove the fibroid and relieve the woman, not necessarily to-day or to-morrow, but as soon as possible, in two or three months, when the woman is in the best condition?

DR. T. B. EASTMAN, Indianapolis: The *reductio ad absurdum* argument has been applied to this question. Some one asks why we do not remove the uterus for fear of carcinoma. I answer for the simple reason that the conditions are not pathologic. We advocate the removal of fibroid tumors because they are pathologic and that is sufficient reason. Now, there is one thing which those who are pleased to call themselves conservatives never have explained in any discussion on this subject, and that is why in the world they demand a special dispensation for fibromyomata. They take out a cystic ovary or the appendix on the slightest suspicion. If they can show any reason why they should have this special dispensation I have nothing to say.

#### METABOLISM IN TYPHOID FEVER.\*

PHILIP A. SHAFFER, PH.D.

Department of Experimental Pathology, Cornell Medical College,  
NEW YORK.

I shall not attempt to review the many-sided subject of metabolism in typhoid fever, but shall devote the time to a brief discussion of one phase of the subject, which is of great importance, as well as of interest, both to the clinician and to the pathologic physiologist.

During the course of the disease a typhoid patient loses from ten to sixty pounds, or even more, of his body tissue. This loss is divided among water, subcutaneous fat and protein from the body fluids or cells. The loss of water we may leave out of consideration because we know neither its amount or significance. Since the observation of Leyden<sup>1</sup> in 1869 it has been believed that there is a retention rather than a loss of water from the body in fever. This belief is supported by the

\* Read in the Joint Meeting of the Section on Practice of Medicine and the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, at Chicago, June, 1908.

1. Arch. f. klin. Med., 1869, v, 366.



decreased quantity of urine and by the supposed decrease in the evaporation from the skin; but few or no accurate data on this question are available, and no positive statements concerning it can be made.

The burning of body fat may, in the absence of carbohydrates, and perhaps also other conditions, lead to varying degrees of acidosis, with an abstraction of alkalis from the tissues, and possibly in other ways may be of distinct harm to the patient. This is borne out by the clinical observation that fat individuals are comparatively poor subjects for typhoid fever, or for that matter, for any infectious fever or for surgical operations. We have, however, as yet no good reason for believing that the metabolism of fat in fever is in any way different qualitatively from that in other conditions of undernutrition; and it seems to me probable that the excretion of the acetone bodies occasionally recorded in typhoid fever is merely the result of a burning of body fat in the absence of sufficient carbohydrates—the frequently observed starvation acidosis. If this is true, acetone, diacetic and beta-oxybutyric acids will not be excreted by the typhoid patient who receives an abundance of carbohydrates. Aside from the production of organic acids in the burning of body fats, the mere loss of fat is probably of no great consequence.

In addition to the loss of body fat there is a great loss of body protein in typhoid fever, and this is what I shall speak of in some detail. Many data are to be found in the literature as examples of the amount of this loss of protein. In a case reported by Leyden and Klemperer<sup>2</sup> there was a loss of 109 gm. of nitrogen, the equivalent of 3.2 kilos or seven pounds of pure muscle tissue in twelve days. In a case of Frederick Müller<sup>3</sup> there was a loss of 86.4 gm. of nitrogen, the equivalent of 2.5 kilos or five and one-half pounds of muscle tissue in eight days. These are not very unusual figures; a loss of the equivalent of even one and one-half pounds of muscle tissue in a single day is not very rare. There are many reasons for believing that this febrile loss of protein from the body is a serious and dangerous proceeding. The emaciation, muscular weakness and decreased resistance, and the long convalescence are certainly in part the results of the loss of body protein. The amount of protein lost appears to bear a close relation to the severity of the disease, and Ewing believes that the pathologic processes concerned in the metabolism of this body protein take a prominent part in determining the patient's condition. Ewing's<sup>4</sup> idea is that many of the phenomena of typhoid fever, especially in the severe and fatal cases, are due to an autointoxication resulting from the "burning of thirty pounds of body tissue in three weeks"—and not directly to the endotoxins of typhoid bacilli. This idea is to some extent supported by the fact that the so-called nitrogen partition of the urine in severe or fatal cases is decidedly abnormal, and similar to those found by Wolf, Ewing and others in toxemia of pregnancy. Furthermore there are severe so-called toxic cases of typhoid fever which terminate with acute yellow atrophy of the liver, a condition which appears to be closely associated with a particular type of faulty protein metabolism. But aside from the possibility of its creating an autointoxication, the consumption and loss of body protein must be of

great harm to the patient, both during the disease and during convalescence.

The causes for this loss of body protein are apparently three in number.

The first is partial starvation. An individual is obviously undernourished unless he absorbs from the digestive tract food of sufficient caloric value to equal the energy expended. Except by very difficult and accurate measurements it is impossible to know the amount of energy being expended by a particular patient, and few such measurements have been made on fever patients; but we may readily calculate average figures which are satisfactory for practical purposes.

At ordinary rest the heat and other energy expended by a normal individual receiving sufficient food is about thirty-three calories per kilo body weight. In fever there is an increased heat production, with an average, according to Krehl, of 20 to 30 per cent. Twenty-five per cent. added to the thirty-three calories gives about forty calories, or, for a patient weighing seventy kilograms, or 150 pounds, 2,800 calories. This represents the minimum amount of energy which the average typhoid patient is expending in each twenty-four hours. If he does not receive food equivalent to this amount of energy he merely draws on his body tissues to make up for the deficit. Few or no typhoid patients receive enough food to maintain an equilibrium, and they consequently burn up for fuel varying amounts of their body fat and protein.

Any physician can readily calculate the probable deficit with the diets he uses. The deficit in calories is usually about 50 per cent., and this, according to von Noorden's figures,<sup>5</sup> may be responsible for loss of 2 to 3 gm. of body nitrogen per day.

The two other causes for the febrile loss of body protein are the pyrexia and the action of the bacterial toxins. From the experiments of Linser and Schmidt,<sup>6</sup> Fritz Voit<sup>7</sup> and Schleich,<sup>8</sup> we know that artificially raising the body temperature causes an increase in protein metabolism. The pyrexia itself is therefore one of the causes for the loss of body protein; but the loss due to this cause can be prevented, just as the loss due to partial starvation, by the intake of sufficient food.

The third factor is the so-called "toxic" destruction of body protein from the poisonous action of the bacterial toxins on the body protein. This last factor is still open to discussion, but I am inclined to the belief that some such action does take part. It is, however, at present impossible to discuss the toxic destruction apart from the result of the pyrexia, because we can not distinguish between the two when both are present, as they usually are in typhoid. The question which is of importance for the practical treatment of typhoid is, can the combined effect of the pyrexia and the bacterial toxins be prevented from causing a loss of body-protein? There are already some encouraging answers to this question. May,<sup>9</sup> working with rabbits infected with pig erysipelas, was able to decrease the febrile loss of body protein by carbohydrates; though May later doubted the correctness of his first interpretation. Puritz<sup>10</sup> worked on human typhoid in St. Petersburg, and his results

5. Handbuch der Pathologie des Stoffwechsels, 1906, I, 497.

6. Arch. f. klin. Med., lxxix, 514.

7. Sitzungsber. d. Gesellsch. f. Morphol. u. Physiol. in München, 1895, No. 2.

8. Arch. f. exp. Pathol. u. Pharmacol., iv, 82.

9. Ztschr. f. Biol., 1894, xxx, 1.

10. Virchows Arch. f. Path. Anat., 1893, cxxxi, 327.

2. Von Leyden: Handbuch der Ernährungstherapie, 1904, ii.

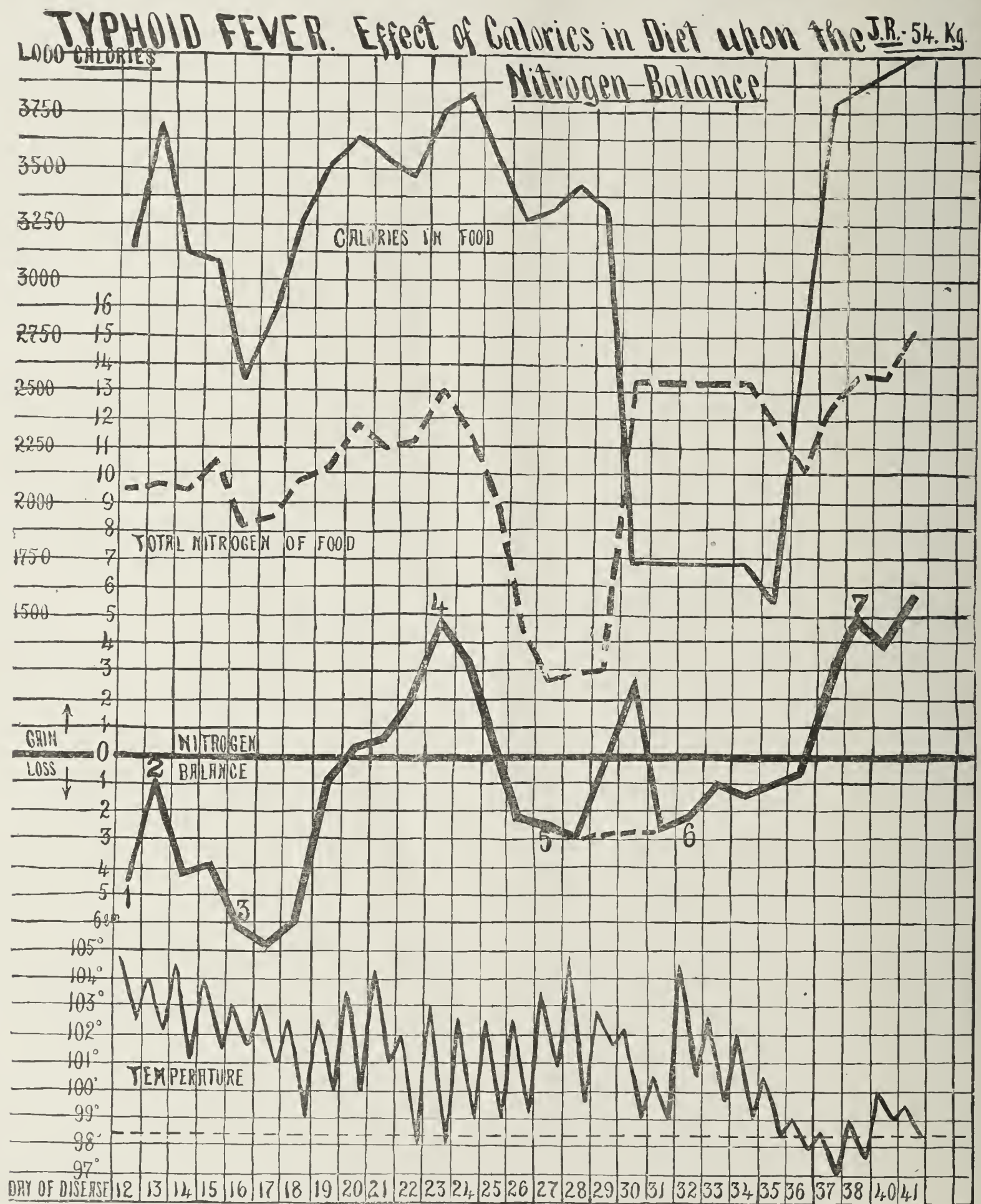
3. Cong. f. inn. Med., 1902, p. 192.

4. Proc. Path. Soc. Philadelphia, 1905; paper before New York Acad. Med., New York Med. Rec., 1907, p. 537.



led him to favor a liberal diet in this disease. His diets, however, were rich in protein and of only moderate caloric value, and were therefore, I believe, not well adapted for his purpose, which was to retard the loss of protein. Weber,<sup>11</sup> working with a sheep inoculated with an extract of glanders bacilli, was able wholly to prevent any febrile loss of body protein by giving the

Last summer Dr. Warren Coleman and I undertook in Bellevue Hospital, New York, a further study of the extent to which the loss of body protein in typhoid fever might be retarded by dietetic means.<sup>12</sup> Our results were on the whole very encouraging, in that we were able to diminish the loss of body nitrogen to a comparatively small amount during the fastigial temperature and were



animal a liberal diet containing much carbohydrate. Leyden and Klemperer, on the other hand, conclude from their experiments on typhoid and pneumonia that, while a liberal diet is desirable, it is not possible to prevent the febrile loss of protein; this view is generally accepted.

able to make patients gain body protein during the steep curve period of the disease.

I need not here go fully into the reasons underlying

11. Arch. f. exper. Path., xlvii, 10.

12. We are indebted to Dr. Armstrong, medical superintendent of Bellevue Hospital, for placing the facilities of the hospital at our disposal. The experiments will be published elsewhere in detail.



our choice of diet, which is the opposite of that used by Puritz, and indeed the opposite, in some particulars, of the diets at present used in typhoid fever by most physicians. Our principle has been to have the diet contain a moderate amount of protein and the largest possible amount of carbohydrate. The reasons for choosing carbohydrates as the basis of the diets were briefly as follows: Carbohydrates are the strongest spacers of body protein in health, according to Voit, Lusk, Folin and others; and the experiments of May, Weber and Linser and Schmidt indicate that this sparing action takes place in fever as it does in health.

A large amount of fat is objectionable because of its tendency toward digestive disturbances and diarrhea; and the protein should be kept at the minimum effective amount because of its action in increasing the heat production (Rubner) and because of the large amount of work it throws on the intestine and the kidneys. The results from one of our cases are given in the accompanying chart. Samples of the diets used are given in the table.

TABLE OF COMPOSITION OF FOOD DURING EXPERIMENT  
SHOWN IN CHART.

The numbers at the left refer to corresponding numbers on the "nitrogen balance" curve in chart.

	Gm.	Calories.	Per Cent. Total Calories.	Calories Per Kg. Body Wt.
1. { Protein..... Fat..... Carbohydrate.....	60 80 525	245 745 2150	7.8 23.7 68.5	
		3140		58.
2. { Protein..... Fat..... Carbohydrate.....	56 78 670	230 725 2750	6.2 19.5 74.3	
		3705		69.
3. { Protein..... Fat..... Carbohydrate.....	53 63 410	217 585 1680	8.7 23.6 67.7	
		2482		46.
4. { Protein..... Fat..... Carbohydrate.....	75.5 120.4 569	310 1120 2330	8.2 29.8 62.0	
		3760		70.
5. { Protein..... Fat..... Carbohydrate.....	16.2 108 547	66 1004 2240	2.0 30.3 67.7	
		3310		62.
6. { Protein..... Fat..... Carbohydrate.....	84 96 120	315 893 490	20.0 51.7 28.3	
		1728		32.
7. { Protein..... Fat..... Carbohydrate..... Alcohol.....	85 122 583 80	349 1234 2390 80	8.8 28.7 62.5	
		3953		73.

Our results with other cases show essentially the same thing, although in some cases there was no gain, but a continued slight loss of one gram or so per day. On the high caloric diets, however, the patients were almost always in a condition not far from nitrogen equilibrium.

Our results show, we believe, that the febrile loss of body protein, including the result of the three factors, undernutrition, pyrexia and the action of toxins, may be retarded and even wholly prevented, or compensated for. But the results show likewise how difficult this is to accomplish. It was only when we gave sixty to seventy or even eighty calories per kilogram—between

3,000 and 4,000 calories—that the greatest sparing was observed.

The important point is, however, that it is possible to give typhoid patients such liberal diets without, so far as our experience shows, producing any harmful results, but, we believe, with decided benefit.

Having learned that it is possible to retard the febrile loss of body protein, we have still to decide whether it is desirable to do so in typhoid fever.

There are many objections, some apparent and others real, and many formidable difficulties; but I know of no reason why we should not attempt to do all in this direction that the circumstances will allow. Among the possible objections to liberal feeding in typhoid is the commonly supposed digestive limitation of these patients. The digestion in typhoid fever undoubtedly has its limitations, but they are not such as to prevent the proper absorption of amply sufficient food if given in the proper form. The experiments of von Hoesslin,<sup>13</sup> Leyden and Klemperer,<sup>12</sup> Puritz,<sup>10</sup> Folin<sup>14</sup> and others show very positively that the average typhoid patient absorbs food from his intestine almost as completely as does the healthy individual. Only in the severest cases is the absorption very materially decreased. In the average case without profuse diarrhea the digestion of protein, fat and carbohydrate is within 10 or 15 per cent. of the normal. Folin,<sup>14</sup> in his recent work on typhoid, has directly determined the degree of absorption of carbohydrates and has found it practically normal.

What seems to me an objection to liberal feeding in typhoid fever is the effect of the protein in increasing the heat production. Rubner<sup>15</sup> has shown how a strict protein diet in a dog may increase the heat production more than 50 per cent. The effect in a human patient could never be so great, but with the decreased heat loss in fever it is quite possible that this factor may be of considerable importance. This objection does not hold against the diets Coleman and I have used, but may apply to the high protein diets used by others. Carbohydrates have only a very slight effect in increasing heat production.

The objection has been raised to the use of large quantities of carbohydrates, from the fear of fermentation and tympanites. I can only say that we have had no such experiences with the use of milk sugar or starch.

The greatest practical difficulty that we have so far encountered in this work is the choice of food products. After trying or considering various carbohydrates we have used milk sugar almost wholly. This has the advantage of fermenting only with difficulty and of being less sweet than cane sugar and much more soluble than any form of starch. Milk, diluted cream, and eggs have been used to furnish protein and fat. Cocoa, lemon juice, tea, coffee and other things have been used as flavoring agents and as vehicles for milk sugar.

The patients did not object to our diets more than to milk alone, but some persuasion was frequently necessary to get them to take the amounts of food found to be necessary for our purposes.

The full advantages as well as the possible objections to our dietetic plan have still to be demonstrated; but there are a few reasons in favor of such liberal nourish-

13. Virchows Arch. f. Path. Anat., 1882, lxxxix. 317.  
14. Unpublished experiments.  
15. Rubner: Die Gesetze des Energieverbrauchs, 1902.



ment for typhoid patients which are worthy of consideration at this time.

As I pointed out earlier, the average typhoid patient receives at present 50 per cent. or less of his energy requirement. This is half starvation; and we know that starvation is harmful even in health, in that it leads to weakness and to an increased susceptibility to many infectious diseases. If starvation is harmful in health why should it be beneficial in typhoid fever? During the course of typhoid fever great demands are constantly being made on the defensive power of the organism; and it certainly does not seem probable that the patient will be as well prepared to meet those demands when in a starved or half-starved conditions as when he is being supplied with sufficient energy in the form of food.

It is a common laboratory observation that strong, robust, well-fed animals develop the strongest artificial immunity; and it seems fair to believe that we are assisting the patient to acquire his immunity to typhoid fever by keeping his nutrition at the highest possible level. Is it not possible that one of the factors determining the outcome of the disease may be the state of nutrition in which the body cells are maintained? Retarding the loss of body protein should leave the patient at the end of the fever in better physical condition and so make possible a shorter convalescence.

This sort of reasoning is, however, largely speculative; and long experience alone can tell the true value of such treatment. We can merely say at present that it is possible by the means already outlined to retard and even to prevent the febrile loss of body protein.

414 East Twenty-sixth Street.

#### DISCUSSION.

DR. LAWRENCE LITCHFIELD, Pittsburg: During last summer I spent a great deal of time reading all I could find in the Surgeon General's Library on metabolism in typhoid, and from the crude experiments of Leyden, published in 1869, attempts made by increased feeding to prevent or control the loss of weight during the course of the fever, through the work of von Hösslin, whose classic article was published in 1882, and the excellent work of von Leyden, Klemperer and others down to that of Lüthje, who published in 1902 the report of his successful attempts to establish a plus nitrogen balance during the period of steep curve, though with very high proteid feeding, this work of Drs. Shaffer and Coleman is unquestionably the best that has been done on the metabolism of typhoid up to the present time.

### THE BACTERIOLOGIC DIAGNOSIS OF TYPHOID FEVER.\*

FRANCIS W. PEABODY, M.D.  
BOSTON.

Since the introduction of modern laboratory aids in the recognition of typhoid fever the problem which has presented itself to practitioners of medicine is that of more accurate and earlier diagnosis. The demand for a scientifically accurate diagnosis is the outcome of the realization that clinical typhoid fever is a disease which may be caused by any one of several bacteria. The physician of the present day is no longer satisfied with the old term "enteric fever." He tries, so far as possible, to supplement his clinical diagnosis by an accurate bac-

teriologic diagnosis. The establishment of the bacteriologic diagnosis is only to be accomplished by the isolation of the specific organism infecting the individual patient.

From a practical standpoint the question of early diagnosis is of much greater importance than that of absolutely accurate diagnosis. To the individual patient early diagnosis in typhoid means better treatment, better nursing, perhaps more adequate domestic arrangements, and often a great saving of strength during the first stages of the disease. Moreover, if we are to have any specific method of treating typhoid, its value will probably depend to a great extent on the time at which its use is begun. In the sphere of preventive medicine the problem of the early diagnosis of typhoid has lately assumed enormous proportions. That the typhoid patient is a source of danger to the community during his sickness has long been recognized. That he may continue to disseminate the bacilli for months and years after his convalescence is now becoming a well-known fact. That he may, and doubtless often does, spread the contagion even before he shows any clinical symptoms of the disease, that the disease is infectious during the incubation period, has, however, only recently been proved. Conrad,<sup>1</sup> in a striking article, has demonstrated that the typhoid bacillus can be isolated from the blood of an apparently healthy individual, and has shown that in eighty-five cases of so-called "contact infection" the infection occurred in 58 per cent. of the cases during the first week. In the fight to limit the spread of typhoid fever the task of isolating and controlling the late dangerous cases, the chronic bacilli carriers, falls to a great extent on the public health authorities. The detection of the early bearers of contagion must, however, be the duty of the individual practitioner.

Although the bacillus of typhoid fever may be isolated from various sources, the only methods which have proved themselves to be of considerable value are the examinations of the urine, the stools and the blood. The first of these—the urine—has never come into special prominence as a routine procedure. The organisms can be isolated from the urine in about 25 per cent. of the cases, and often early in the disease; but this percentage of favorable results is hardly sufficient to warrant the method being used very extensively.

The examination of the stools as a diagnostic measure in typhoid appeared at one time to have a brilliant future. The conception of the disease as an intestinal infection went hand in hand with the idea that the dejecta swarmed with typhoid bacilli. The first difficulty encountered was the necessity of differentiating the typhoid from the colon bacillus. In answer to this need there was brought forward a long series of special culture media on which these organisms could be distinguished from one another with more or less accuracy. Some of these media were difficult to use, others comparatively simple. All of these methods, however, for their success depend on being used by skilled bacteriologists; and even so, the results obtained by them have not, on the whole, been favorable. In the hands of some observers they have done well, and there are many series of cases in which the bacilli have been isolated from a large percentage of the stools. Other equally good workers have failed to confirm these results and have only been able to find them in a comparatively small proportion of their cases. The conflicting reports as to

\* Read in the Joint Meeting of the Section on Practice of Medicine and the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, at Chicago, June, 1908.

1. Deutsch. med. Wchnschr., 1907, p. 1684.



the frequency of the presence of the bacilli in the feces are, however, at least partially explained in the light of our present knowledge of the disease. If, instead of regarding typhoid as a primary intestinal infection, we regard it as a primary septicemia, which usually has secondary intestinal lesions, with a secondary infection of the gall bladder, the uncertainty of finding the organisms in the stools is more easily accounted for. There is good reason to believe that the intestine and its contents form a very poor culture medium for the typhoid bacillus, for autopsy may show a gall bladder with bile so infected with typhoid bacilli that a single drop will give hundreds of colonies, while cultures from just below the ampulla of Vater, and from the intestinal contents at different points down to the cecum, will not show the presence of a single typhoid colony. It is possible, on the other hand, that the organisms growing in the gall bladder from time to time may be discharged into the intestine in such large numbers that many of them survive the passage of the intestine and may be isolated from the feces. It is a clinical fact that many negative examinations in a case may be followed finally by a positive examination, thus making the element of luck a prominent factor in the value of the process. The different results obtained by various observers may be accounted for also in some degree by the viability of the special race of organisms infecting the case. It is probable that some races of the typhoid bacillus are much more resistant to the hostile conditions in the intestine than are others. An analysis of the cases in which the organisms have been recovered from the stools shows that this method of diagnosis may often be useful in early as well as in late stages of the disease, but the difficulty of the technic, together with the relative uncertainty of the results, makes the method of comparatively small value as a routine procedure. The examination of the stools is, on the whole, chiefly important in the recognition of chronic bacilli carriers.

If typhoid fever is primarily a septicemia, it is natural to seek for the first signs of the disease in the blood itself. Since Castellani<sup>2</sup> first isolated the typhoid bacillus from the blood of a patient in 1899 the numbers of workers with blood cultural methods has shown a steady increase from year to year, and the literature on this branch of diagnosis has lately exceeded any other. Whereas the first reports on the subject were rather of bacteriologic and pathologic interest, the larger series of cases which have since been collected have shown that the method is of clinical value as well, and have begun to establish it on a practical basis.

The technic which has been most commonly used in making blood cultures has been thoroughly to clean the patient's arm and to take with a syringe about 10 c.c. of blood from one of the veins at the bend of the elbow. The blood is then distributed into several flasks of bouillon and diluted by the medium to such an extent that its bactericidal properties are overcome. Although this method has given excellent results in many hundreds of cases, there is no wonder that it has never become a routine procedure outside of a comparatively few large hospitals. It is distinctly a laboratory rather than a clinical method. Apart from the necessity of having a more or less trained bacteriologist to work out the culture, there are marked objections to the method itself. The culture medium is too bulky; it is often inconvenient to carry flasks of bouillon to the bedside.

Then the technic of drawing the blood is not always simple. In fat persons, or in those with small vessels, it is at times almost impossible to insert the point of the needle into a vein. Of more importance, however, is the fact that to the patient and to the family the method must always appear to be a somewhat radical procedure. This is alone sufficient to limit the extent to which even a measure of recognized value will be used as a routine practice.

In order that any diagnostic method shall be accepted by practitioners in general, it must be stripped of all its technical difficulties and reduced to its simplest terms. Toward the accomplishment of this, and toward making the blood culture a practical aid in the diagnosis of typhoid fever, there has been much advance in the last few years. The first step of importance was the introduction by Conradi,<sup>3</sup> in 1906, of ox bile as a culture medium to replace bouillon. The peculiar advantage claimed for the new medium was that the bile salts prevent the coagulation of blood and the formation of bactericidal elements in the blood serum. Whether or not this explains the whole of the action of bile has been doubted. However, from the frequency with which the gall bladder is found infected at autopsy, and from the fact that in chronic bacilli carriers the gall bladder is the usual seat of infection, it is evident that bile must be especially well suited for the growth of the typhoid bacillus. By Conradi's original method, test tubes containing a mixture of ox bile with peptone and glycerin were used. The peptone was added to increase the growth and to aid in preventing coagulation of the blood. The glycerin was to limit the growth of saprophytes. Kayser,<sup>4</sup> however, later demonstrated that as good results can be obtained from the use of pure ox bile alone, and he showed that if the blood added to the medium contains even as few as 2 or 4 bacilli the cultures after incubation will give a profuse growth. Working on another line toward a practical blood-cultural method, Müller and Gräf<sup>5</sup> have reported a series of cases in which they used small amounts of coagulated blood sent to the public laboratory for agglutination tests. After separating the clot from the serum, they used the latter for the agglutination, and the former they rubbed over the surface of Drigalski-Conradi plates. The plates were then incubated, and in 360 cases, including convalescents and chronic bacilli carriers, they were able to isolate the organism in 110, including 10 cases of infection with the paratyphoid bacillus. The disadvantage of such a plate method is that there is no increase in the number of organisms, and if not numerous they might be overlooked or overgrown by saprophytes. Fornet<sup>6</sup> has devised a method analogous to that of Kayser, in which he also uses the clot of blood sent in to be tested for the agglutination reaction, planting it in bile, and examining the culture after incubation. Of a series of 19 cases, 14 gave positive results. It is not expected that this will replace the technic of Conradi and Kayser, but it is a valuable method when it is impossible to get the uncoagulated blood into bile.

Of these various simplified blood cultural methods, one of the most satisfactory is the use of the medium of Kayser with small amounts of blood obtained from the patient's ear.<sup>7</sup> The technic is as follows: The lobe

3. Deutsch. med. Wchnschr., 1906, p. 58.

4. Kayser: Münch. med. Wchnschr., 1906, pp. 823 and 1953.

5. Zentrbl. f. Bakt., 1907, xliii, p. 856.

6. Münch. med. Wchnschr., 1906, p. 1053.

7. Peabody: Arch. Int. Med., 1908, i, p. 149.

2. Zentrbl. f. Bakt., 1902, xxxi, p. 477.



of the ear, after being carefully cleansed with sterile gauze and alcohol, is pricked rather deeply with a small lancet-pointed knife, the blood squeezed out drop by drop, and allowed to run into a test tube containing about 5 c.c. of plain, sterile ox-bile. It is usually easy to collect 2 c.c. of blood without any inconvenience to the patient. The mixture of blood and bile is then placed in the incubator at 37° C. for from 12 to 15 hours, after which a few loopfuls are transferred to a tube of Löffler's blood serum. In some cases, examination of a drop of the original bile culture after incubation shows the presence of a motile bacillus, but more often this is better demonstrated in the water of condensation of the blood-serum tube after about five hours. The presence of a motile bacillus is in itself excellent evidence in favor of an infection by one of the typhoid group; but in order to prove the organisms it is customary to test them for their cultural characteristics and for the agglutination reaction.

That this simplified method is one of clinical value has been proved many times. At the Massachusetts General Hospital, where it has been used as a routine measure in all cases of typhoid during the past few months, it has been the means of establishing the diagnosis in 55 of 82 cases examined. In 28 per cent. of the cases the culture gave the diagnosis before the agglutination test. In the first week the culture was positive in all of 17 cases; in the second week, in 70.2 per cent. of 37 cases, and in the third and fourth weeks, in 42.8 per cent. of 28 cases. The agglutination test was positive in 52.9 per cent. of the cases in the first week, in 67.5 per cent. in the second week, and in 82.1 per cent. in the third and fourth weeks. The results are similar to those obtained in larger series of cases, in which the old method of taking a greater amount of blood from a vein has been used.

It is thus evident that in the ox-bile culture method we have a measure of considerable diagnostic importance in the early stages of typhoid fever. It is, moreover, a method which can be used, not only by trained bacteriologists, but by any practitioner. When a man can not do his own bacteriologic work the culture may be sent to a laboratory to be worked out. In Germany some of the large chemical firms have put on sale tubes of bile so sealed that they can be sent through the mail to the public laboratories, where the cultures are incubated and the diagnosis made in the same way in which the public health laboratories in this country perform the agglutination reaction. The physician merely has to prick the patient's ear, collect the blood, and put the tube in the mail. The technic is thus only slightly more troublesome than that of the Widal reaction, and when it is considered how valuable the method is in making an early and accurate diagnosis it would seem that the blood culture must assume a major rôle in the future.

Of all laboratory methods in the diagnosis of typhoid fever there is none which has been used so extensively, or has given such excellent results in the hands of many clinical observers, as has the agglutination reaction. That it has been generally adopted the world over is due to its high degree of accuracy combined with its simplicity. The establishment of public laboratories, where samples of blood are examined for individual practitioners, has brought the test within the reach of a vast number of physicians. While, however, the reaction has proved itself of inestimable value, there are

certain important drawbacks to its use. The chief of these is that the agglutination reaction is often late in making its appearance. It is frequently not obtained during the first week of the disease, and while it is present in about three-quarters of the cases during the second week, it may be delayed much longer, and even into convalescence. Its value is, therefore, limited at the very period in the disease in which a diagnostic test is most needed; for while it is often comparatively simple to recognize typhoid fever in its later stages, it is at the onset, during the first week, that the most doubt arises, and it is in the early days of the disease that the danger of contact infection is probably greatest. Moreover, there are certain atypical cases in which the reaction is never obtained. Next to the lateness of the appearance of the agglutination test, its greatest disadvantage is that it is not absolutely specific. It does not always give an etiologic diagnosis. That an agglutination of the typhoid bacillus may be produced by the serum of a patient infected with one of the paratyphoid bacilli is not of great clinical importance; but that the test may be obtained in cases in which the etiologic organism is the pneumococcus,<sup>7</sup> the *Bacillus proteus*,<sup>8</sup> or some other organism not closely allied to the typhoid group, is a fact not to be neglected. The exact percentage of error in the agglutination test it is, of course, impossible to calculate. That it is, however, a very appreciable error any one who has had occasion to use the test extensively must realize. In spite of the fact that the agglutination reaction is in itself by no means an ideal diagnostic measure, it is of the utmost value in certain cases, and especially so when taken in conjunction with the blood culture. In the early stages of the disease, before the agglutination test is positive, the diagnosis is made in most cases by the culture; and in the later stages, when the organism can no longer be isolated from the blood, the agglutination reaction is usually present. Thus the one test is supplemented by the other, and in these two comparatively simple clinical methods—the agglutination test and the blood culture in ox bile—we have the means of making an accurate diagnosis of typhoid fever, in the great majority of cases, at any stage in the course of the disease.

#### DISCUSSION.

DR. R. L. JONES, Nashville, Tenn.: One of the most important additions to our knowledge of the subject of typhoid fever made in recent years is the means for an early diagnosis, which has been made practicable for us by Dr. Peabody. He will place us under still further obligation if he will make the technic clearer. I have been engaged in this work and have had to work out some of the technic myself. Does the kind of ox bile used make any difference? I find that it is quite different when you get a steer in good condition whose bladder contains considerable bile; the bile will be of a bright green color, while that from a cow or steer not in good condition is more apt to be of a golden yellow color. Butchers tell me that this is the rule. This bright green bile if kept some time will change to the golden yellow color, and I have found that it takes the typhoid organisms longer to develop in the golden yellow bile. If Dr. Peabody uses fresh bile I would like to know how fresh; how long it will keep after sterilizing; and if there is any method by which we can keep it indefinitely in stock.

DR. FRANCIS W. PEABODY, Boston: I can only say that we have never had any trouble at all. We have taken the bile from several different animals and used it as it came from the slaughter-house. Lately we have been using pig's bile, which seems to give as good results. As to keeping the bile after it

<sup>8</sup> Zeit. f. klin. Medizin, 1905, p. 27



is sterilized, we have had no difficulty on this point, and have used successfully bile that was four months old. It was sterilized as soon as it came from the slaughter house, kept in bulk in the ice chest, and put into test-tubes as it was needed.

## TYPHOID BACILLI CARRIERS.\*

WILLIAM H. PARK, M.D.

NEW YORK CITY.

The obscurity of the origin of a large percentage of typhoid fever outbreaks led many observers to the supposition that perhaps some saprophytic member of the colon group might change under bad hygienic conditions to the typhoid bacillus.

Further investigation revealed the fact that a small percentage of persons after recovering from typhoid fever pass typhoid bacilli in the urine. The attack of typhoid fever in some of these cases had been a number of years before. Continued examinations showed that these cases were comparatively rare, and it did not seem possible that they could account for all outbreaks of typhoid fever, where one could not trace the infection to those having the disease.

In 1902 von Drigalski and Conradi found typhoid bacilli in stools of four persons who had had no typhoid fever symptoms, but had been in contact with typhoid patients. Soon it was found that a number of typhoid convalescents continued to pass typhoid bacilli for long periods after recovery. Examinations of persons who had had typhoid fever years before revealed the remarkable fact that 1 or 2 per cent. of them were passing typhoid bacilli, sometimes in enormous numbers. The knowledge that the gall bladder had been found infected at operations for calculi suggested this as the source of the bacilli.

A number of autopsies or operations have since been held on these typhoid bacilli carriers and proven this to be the case. Thus, Levi and Kayser reported, in 1906, a case of a woman, 49 years old, who had had typhoid fever in 1903 and made a good recovery. In 1906 the woman died from some other disease; autopsy was held nineteen hours after death. Typhoid bacilli were present in the liver, in the wall of the gall bladder and inside a number of calculi.

Kayser reports that in Strassburg during the year 1904-5 13.5 per cent. of all cases of typhoid were traced to 6 of these typhoid carriers, all of whom were women and gave histories of having had typhoid from one to 27 years before.

A large number of cases of typhoid fever have now been traced to these chronic bacilli carriers. Thus, Lentz states, in 1905, that seven physicians had then reported typhoid cases from bacilli carriers. The first reports the case of a patient who had had typhoid 3 years before, who was known to cause 2 cases of typhoid; the second reports 4 typhoid carriers, who had had typhoid as long ago as 42 years, 15 years, 13 years and 12 years, respectively. To these 4 were traced 12 cases of typhoid. The third reports a typhoid carrier who had typhoid 19 years before, who caused 6 cases of typhoid. The fourth reports a carrier who had had typhoid 11½ years before, but to whom no cases had been traced; the fifth had a patient who had had ty-

phoid 17 years before and had caused 27 cases; the sixth had a patient who had had typhoid 10 years before and had caused one other case, and the seventh reported a bacilli carrier who had had the disease 17 years before. To this last individual 2 cases were due.

Out of 400 recorded typhoid patients Lentz found that 6 retained the bacilli at the end of periods ranging from 3½ to 13 months. Klinger examined the feces of 1,500 healthy persons who had never knowingly had typhoid and found bacilli in 11.

When the bacilli were in the stools of typhoid carriers, Lentz found that he could not get rid of them by any treatment. Their retention is due, he thinks, to faulty metabolism and concomitant chronic disease. Faulty care during convalescence may also be a cause.

He notes the predominance of women who are carriers over men, and especially married women who have borne children.

In most cases, the bacilli are present in great numbers. Lentz suggests that the gall bladder may not be the only source, but that the appendix and the deeper folds of the intestine may also be involved.

In conclusion, he suggests the following procedures for controlling these carriers. These, as we note later, can hardly be carried out except in special cases.

1. Disinfection of stools.
2. Disinfection of privies.
3. Police notification.
4. Bacteriologic control of stools.
5. Prevention of any occupation in which the carrier is in a position to infect others.

### INVESTIGATIONS ON TYPHOID CARRIERS AT THE RESEARCH LABORATORY DEPARTMENT OF HEALTH.

*History.*—On March 20, 1907, a cook was brought to the laboratory to have the feces and urine examined. The history as developed by Soper revealed the fact that during the past eight years she had been employed in eight families and in seven of these typhoid fever had broken out within a few weeks or months of her arrival. In all twenty-six cases and one death occurred. Just before her removal to the Department of Health two cases had developed in the family where she resided and one patient died. Bacteriologic examination revealed the fact that fully 30 per cent. of all the bacteria voided with the feces were typhoid bacilli. The urine was negative. Careful cultural and agglutination tests showed that they differed in no respect from bacilli obtained from acute cases. The repeated outbreaks occurring after her entrance in families were in themselves proof that the virulence of the bacilli had remained intact. A curious feature of the case is that the woman denies that she ever had typhoid fever.

*Treatment.*—This woman has now been isolated for sixteen months. Weekly examinations of the stools have usually revealed large numbers of bacilli, but there have been several intervals when for one or two weeks no bacilli could be detected. Treatment by intestinal antiseptics has proved unavailing. Hexamethylenamin in doses gradually increasing from 100 up to 150 grains a day, has been given for a number of weeks with no apparent benefit. Attention to diet and mild laxatives has caused the greatest reduction, but not their disappearance. This suggests that the chief development of the bacilli is in the intestines, although the source of the infection is probably the gall bladder.

The case of this woman brings up many interesting problems. Has the city a right to deprive her of her liberty for perhaps her whole life? The alternative is to turn loose on the public a woman who is known to have infected at least twenty-eight persons.

This case excited so much interest that I decided to

\* Read in the Joint Meeting of the Section on Practice of Medicine and the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, at Chicago, June, 1908.



have tested a large number of typhoid convalescents. Eight months ago there was a typhoid epidemic at the Trenton (N. J.) State Insane Asylum. Through the courtesy of those in charge we were able during the past two months to examine the stools from 52 persons who had had typhoid at that time: 2 of these were found to pass numerous typical typhoid bacilli. Their stools were examined four times. One case revealed the bacilli only once, in the other they were present every time.

The stools of 16 persons, who had suffered from typhoid fever in the Long Island State Asylum, were sent us by Dr. Agnew. Two of these persons were found to pass abundant typical typhoid bacilli; they had been well for six months. Repeated examinations have shown the constant presence of bacilli. One of these cases was so mild that the patient was only suspected to have typhoid fever because of the other cases of that disease.

We have, therefore, found typhoid bacilli in the stools of 6 per cent. of the cases examined. During the autumn we examined the feces from a large number of persons convalescent from typhoid fever just as they left the hospital and found bacilli persisted in the feces of about 5 per cent. It was impossible to trace the cases further.

The bacteriologic tests were carried out by Dr. Goodwin and the Misses Noble and Pratt, bacteriologists in the Research Laboratory.

These examinations indicate that the same conditions exist in this country as in Europe, namely, that fully 2 per cent. of persons who have had typhoid fever are typhoid bacilli carriers. A few of these pass infected urine, but most infected feces. Besides these there are numerous typhoid carriers who never had typhoid fever, but through contact with infection became bacilli carriers. Probably at least one in every five hundred adults who have never knowingly had typhoid fever is a typhoid bacilli carrier.

As the majority of typhoid cases occur before the age of 30, the average life of typhoid carriers is fully 25 years, so that we have the somewhat appalling fact that there are at least half as many recovered typhoid cases who are typhoid carriers as there are typhoid cases in any year and that, besides these, there are the typhoid carriers, such as the cook, who have never had typhoid fever.

What can we do under these circumstances? It seems to me that any attempt to isolate and treat on bacteriologic examinations, as Lentz suggests, is impracticable. When we consider that the presence of the bacilli in the feces of these persons is often only occasional, that numerous contact cases having never had typhoid fever would not come under suspicion, and finally, the impracticability of isolating for life so many persons, we are forced to consider isolation utterly impracticable, except as in the case of the cook already described, where conditions increase the danger to such a point that an attempt at some direct prevention becomes an essential.

We must, therefore, as before, turn to the more general methods of preventing infection, such as safeguarding our food and water, not only chiefly when typhoid fever is present, but at all times, for we now know that in every community, whether it be large or small, unsuspected typhoid bacilli carriers may always be present.

## DISCUSSION.

DR. HENRY ALBERT, Iowa City, Iowa: A small epidemic of typhoid fever, traceable to a bacillus carrier, occurred in Cedar Falls, Iowa, last fall. It was an epidemic of thirteen cases of typhoid, occurring at about the same time in three families that lived in the same neighborhood. The water supply was first investigated and it was found that these families were using the ordinary supply of the city, the same as that used by a majority of the people. The water supply as the medium of infection having been ruled out, the milk supply was next investigated and it was found that the families in which the cases of typhoid occurred all obtained their milk from one source, and that no other family in the city was supplied from this source. We then investigated more in detail as to the possibility of the contamination of the milk and found that the owner of the cow, who also did the milking, had had typhoid about fifteen months previously, but had not had a sign or symptom of typhoid since, or for more than a year. A bacteriologic examination of the urine and feces of this man was made and typhoid bacilli found in the urine in considerable number. There was no evidence of an inflammatory condition of the kidneys or bladder. We felt reasonably certain that the epidemic was caused by this bacillus carrier. Hexamethylenamin in the form of urotropin was given and in a few weeks the urine was free from the typhoid bacilli. I feel certain that other epidemics I have observed in the past were caused by individuals of this kind.

DR. WILLIAM LITTERER, Nashville, Tenn.: The subject of typhoid carriers is an exceedingly important one. I have in mind a patient who had typhoid fever one year ago. The patient subsequently developed a post-typhoid necrosis of the rib which was operated on by Dr. W. A. Bryan of Nashville. A sinus appeared and a large amount of pus exuded from this wound, something like four or five ounces a day. This condition existed for three months, the patient growing weaker, rapidly losing flesh, and vague pains developed throughout the body. The surgeon requested that I isolate the organisms in said pus and make a vaccine according to the method of Wright. This I did and much to my surprise I found pure culture of the *Bacillus typhosus* in enormous numbers. I take this to be unique inasmuch as no other organism, such as the pyogenic cocci or other bacteria could be found in this exuding sinus of over three months' standing. I made a comparative estimate of the number of typhoid bacilli in this pus and found that an ordinary platinum loop full contained nearly a half million of bacilli. This case could be rightfully considered as one of a typical typhoid carrier and an especially dangerous one if the discharges from the sinus were not destroyed. Two months' injection with the autogenous typhoid vaccine produced very gratifying results. The patient is much stronger, gaining steadily in weight and there is an absence of the vague pains throughout body. The sinus has almost healed, only about half a dram of pus exuding in the twenty-four hours. Recently I made another bacteriologic examination and found only a few typhoid bacilli and some specimens of *Staphylococcus pyogenes aureus*. If the patient ceases to improve I intend to make a staphylococci vaccine and inject this, with the typhoid vaccine. Dr. Park has called attention to the fact that many of these "carriers" have an infected gall bladder, and it has been suggested by some that, in order to cure this condition, a surgical operation would be necessary. It might be possible to try vaccine therapy in curing these conditions.

DR. M. J. ROSENAU, Washington, D. C.: I can not take Dr. Park's place, but feel sure that if he were here he would say that "typhoid Mary" refuses to submit to surgical interference. She is perhaps justified in this conclusion, because the gall bladder is not the only source of the typhoid bacilli that appear in the feces. Surgical interference therefore may not always correct the condition. Sometimes the feces of these carriers contain such large numbers of typhoid bacilli as almost to displace the colon bacillus; it seems that the typhoid bacillus may take up a natural habitat somewhere in the intestinal tract independent of the gall bladder. We have not been able to find a chronic bacillus carrier of this type in Washington.



## THE TREATMENT OF TYPHOID FEVER.\*

THOMAS McCRAE, M.D., F.R.C.P. (LOND.).

Associate Professor of Medicine and Clinical Therapeutics, Johns Hopkins University.  
BALTIMORE.

There is no intention in this paper to endeavor to discuss all the phases of the treatment of typhoid fever, but those will be considered about which there is the greatest difference of opinion or which deserve special emphasis. In the consideration of the handling of a patient with typhoid fever we must always have the individual in mind and care for him rather than treat a disease. No one method suits every patient any more than clothing made to one measurement fits every man. The man can exist whether the clothing suits his figure or not, but he is not garbed to the best advantage. In the same way one method of treatment may bring a certain patient through the illness, but not in the easiest or best way. It seems to me that the importance of drilling this fact into our students should be more realized by those of us who are teaching therapeutics—and every clinical teacher must consciously or unconsciously be teaching something about the care of the patient—for there would be less of rule-of-thumb methods if individuality in treatment was the rule in the minds of each one of us.

## DIET.

Much controversy has been waged over diet. Most of us have our own ideas and are not easily convinced that any others can be better. No matter what views are advanced some one will disagree vigorously, which is by no means a disadvantage. This divergence of opinion is not surprising when we consider what a protean disease this is and as much so in the ways in which it is handled as in its manifestations. Many patients will go through an ordinary mild attack with any reasonable kind of food, but I feel that in the attack of ordinary severity and in all severe attacks, the simpler the diet the better for the patient. Milk and albumin water are satisfactory, easily obtained and prepared; and cheap. We should always be careful to make certain that we are not giving contaminated milk. For the account of a good object-lesson as to the importance of this precaution a paper by Edsall<sup>1</sup> may be consulted. To these may be added the various modifications of milk, of which whey is specially useful, bouillon, strained gruel, ice cream, tea and coffee, and sometimes cocoa; this list really gives considerable choice. Emphasis should be laid on the value of whey in the dietary. In the conditions in which milk disagrees whey may be given with great advantage. The importance of carefully watching the stools and being guided by them as to changes in the diet should be remembered. In all cases special emphasis should be laid on the giving of large amounts of water. Let one hundred ounces (3,000 c.c.) of urine a day be the minimum to be desired, and often it is better that larger amounts than this should be passed. Consider the experience of the Lakeside Hospital in Cleveland,<sup>2</sup> where it was found to be a saving in the time of the nurses to have one nurse especially detailed to do nothing else than give water

to the typhoid fever patients. There does not seem any evidence for the opinion held in some quarters that there is the possibility of harming the kidneys. The work of Sellmann and Hofmann<sup>3</sup> speaks against this. The voiding of large quantities of urine does not seem to cause the patients any disturbance. There does not seem to be any danger of giving the circulation too much work to do in handling this fluid. One should use judgment if the myocardium is weak, but in a large series of cases no evidence of overloading of the heart was found.

There are certain intestinal conditions in which there seems no question of the advantage of the simple diet. These are especially meteorism and perforation. With any tendency to tympanites, it is wise to give the simplest diet and not too much of it; when tympanites is present the diet should be reduced. Therefore, does it not seem that on the simple diet there is less chance of its appearance? I am of the opinion that liquid diet and large amounts of water are the surest preventives of meteorism. Certainly when this treatment is carried out the occurrence of meteorism is reduced to a minimum, and the best treatment of meteorism is its prevention. If perforation occurs and operation is done early, it is a great disadvantage to have the intestines distended or full of material. We can count on a certain percentage of perforations in any large series of cases, but we can not tell at the outset which ones are to perforate.

Under the heading of diet reference must be made to the so-called predigested foods, which are so extensively used. Is their use justified or to be recommended? Many of the profession by their actions answer in the affirmative and the question comes as to how much justification there is for this belief. I would advise all those who have any doubts on this subject and those who believe in the value of these foods to read with an open mind the report<sup>4</sup> of the Council of Pharmacy and Chemistry of the American Medical Association on them. The main objections to their use may be thus summed up:

1. They contain comparatively little nutriment.
2. They may be directly injurious from the presence of peptones or albumoses, which are of uncertain composition and may be toxic or become so.
3. The presence of alcohol in them may be harmful.
4. They are expensive.

Clinically they certainly appear in some cases to upset the stomach and cause diarrhea and distention. To give amounts of these foods which would go even a small way toward nourishing the patient, means the administration of considerable amounts of alcohol. If alcohol is to be given, it is better to give it as such and not as the constituent of one of these foods.

That any one who knows their composition can persist in considering that they have some mysterious nutritive virtue is hard to believe; and yet how else can we explain the blind belief in their value, especially when we consider that they are "drug-store" foods and may have had some time to "ripen" before being used? Their cost is a serious objection, especially when so little is obtained in return.

## CARE OF THE BOWELS.

An initial purge is advised by many authorities; but is anything gained by it? It is asserted that

\* Read in the Joint Meeting of the Section on Practice of Medicine and the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, at Chicago, June, 1908.

1. New York Med. Jour., 1905, lxxxi, 578.

2. Cushing and Clarke: Am. Jour. Med. Sc., 1905, cxxix, 187.

3. Am. Jour. Med. Sc., 1905, cxxix, 195.

4. The Jour. A. M. A., 1907, xlviii, 1612.



there is an advantage in emptying the bowels. The patients who are not purged seem to do just as well—in fact, better. A study which I made of five hundred cases, in which this point was specially noted, showed that diarrhea, not only at the onset, but during the course, occurred in a much larger number of those who were given an initial purge than in those whose bowels were left alone. If the patient's intestinal tract is not disturbed and a simple diet with much water given, it is surprising how infrequently diarrhea occurs.

Constipation is to be preferred and as a rule a movement every second day is often enough. If the bowels do not move themselves an enema may be given. This may be the ordinary one of soap and water, or oil and glycerin may be given. It is sometimes well to give an oil enema high in the bowel through a long tube, which, if necessary, may be followed by a simple enema. The comfort of the patient must be consulted; some patients are easier if the bowels are moved every day.

#### THE USE OF OPIUM.

In the majority of indications usually given for the use of opium I would oppose the views laid down in many of the books. The conditions for which it is generally employed are: First, restlessness and sleeplessness; second, diarrhea; third, hemorrhage, and fourth, abdominal pain.

1. *Restlessness and Insomnia.*—Here in small doses its use is sometimes advisable, but if indicated it often seems better to give small doses of morphin hypodermically.

2. *Diarrhea.*—Here, as is usually the case in diarrhea in general, opium should be the last drug to be used, instead of the first, as is too often the case. The cause should be searched for first, for too often this is left to act and opium is given to prevent the result. An initial purge, improper feeding, the giving of beef tea or predigested foods, the use of infected milk—any of these may be the cause. The diet should be cut down to albumin water, or if milk is given it should be boiled, and sedatives, such as bismuth, may be given. If opium is needed it should be given as the starch and laudanum enema. Given by mouth, opium favors distention and conceals the most valuable symptom of perforation, abdominal pain.

3. *Hemorrhage.*—Here the standard treatment is to give opium, especially in the form of the lead and opium pill. To this treatment, although sanctioned by tradition and authority, I would take exception. The advantage is claimed for it that peristalsis is lessened. Have we any proof that this is an advantage? It may lessen the chance of a clot being dislodged, but when we think how rarely a clot is found at autopsy in patients who have died after hemorrhage, the importance of this does not seem great. Against the use of opium there are several points. It increases the chances of distention, in itself a serious matter. In the case of gastric ulcer, distention increases the chance of perforation and the same is probably true of the bowels. Then in a considerable number of cases hemorrhage and perforation occur together. Give opium for the hemorrhage and we know the end. It comes painlessly, but surely. Any one who has been called in consultation to decide as to the possibility of perforation in a patient who has had large doses of opium, knows how hopeless it is to give any opinion. Then, too, the giving of large amounts of opium seems to have an injurious effect on the general condition of the patient.

4. *Abdominal Pain.*—Under no circumstances should opium be given, for this is our chief aid in the recognition of perforation. The men who treat many patients with typhoid fever and say that they never have perforation probably do one of two things, perhaps both (possibly it would be better to say they do one and leave the other undone); they give opium or do not have autopsies.

The first thing in the treatment of abdominal pain is to determine the cause. Evidently if it be due to a distended bladder, meteorism or impacted feces, we are not going to help matters, but rather make them worse, by giving opium. If the cause can be found the indications are clear; if it can not be found we must not give a drug which prevents our determining the cause, certainly in the more serious conditions. When the cause is not determined—and these cases are not very rare—simple measures, such as the application of stupes or small doses of bromid of potassium or codein may be enough. If the pain is not relieved by these, it may be necessary to give a small dose of morphin hypodermically (gr.  $\frac{1}{8}$ ), which is always to be preferred to opium. In this dosage it is not likely to mask abdominal symptoms.

#### HEMORRHAGE.

There seems no doubt that the use of the calcium salts, preferably the lactate, is helpful. In hospitals, or elsewhere when possible, it is well to take the coagulation time of the blood when the patient comes under observation. If this be prolonged it is well to give the calcium lactate as a prophylactic measure. Too large doses should not be given; probably twenty grains a day is enough. In case of hemorrhage the drug should be begun at once and thirty grains a day may be given. When it is important to obtain a rapid action the calcium lactate may be given subcutaneously in a 1 per cent. solution. The use of astringent drugs, such as lead acetate, or the giving of ergot, does not seem to be of any use and the latter is perhaps harmful. Quiet is essential and if the patient is restless this may be secured by a small dose of morphin (gr.  $\frac{1}{8}$ ) hypodermically. It is well to limit the amount of food by mouth, reducing the diet to albumin water or sometimes to water alone.

To keep the patient quiet, to limit the intake, to apply a light ice-bag to the abdomen, to give the calcium salts, not to give opium, and not to try to do too much, seem the main points in the treatment of this complication, which after all is not usually as dangerous as has been thought.

#### PERFORATION.

How many of the five thousand<sup>5</sup> patients every year in the United States in whom perforation occurs are saved and how many should be saved? If those two figures do not correspond, where is the blame? To determine how many should be saved is difficult, but it is a question whether we are sufficiently awake to the frequency of perforation, or to the importance of its early recognition and treatment. There is no doubt of the much greater difficulty in diagnosis and treatment when patients are treated at their homes than when they are in a hospital. Still, even here it would seem that much more might be done. To make an early diagnosis of perforation, preparations must be made beforehand. As a rule the diagnosis does not force itself on the care-

5. This is, of course, only a general figure. The actual number is probably much greater.



less observer. The lesson of the importance of prompt cooperation between the medical and surgical sides has been learned in many hospitals, but there are still some in which more attention might be given to this. The early recognition of this complication is as much a matter of treatment as anything else.

#### DISTENTION OF THE STOMACH.

While we are all aware of distention of the intestines, it is not so generally recognized that distention of the stomach is by no means rare. It may give considerable distress and affect both the respiration and the action of the heart. The passage of a stomach-tube gives immediate relief and no hesitation need be felt in doing it. The tube can be passed without raising the patient's head. It is well to cut down the diet to albumin water and to repeat the passage of the stomach-tube as often as necessary.

#### ALCOHOL.

The indications for the use of alcohol are much disputed and some of our extreme friends hold that its use is never justified. Certainly its routine use is not to be advised. I consider that the best indication for its use is toxemia. In some way or other the toxic patient can use alcohol, whether we consider it a stimulant or a food. When it is being given care should be taken to use a good variety, just as we make sure that the milk is good. The amount must be decided by the needs of the patient. Generally, when it is indicated, good doses are advisable, from six to twelve ounces in the twenty-four hours; two or three ounces in the same period are usually not enough. The statement is still repeated at times that the patient who is being given tub baths needs alcohol. This is by no means the case—quite the contrary. The patient who is receiving the tub treatment, as a rule, requires less alcohol, as toxemia is so much diminished. Alcohol does not require to be given merely because the patient is having baths.

#### HEXAMETHYLENAMIN.

When we remember the frequency of bacilluria and the very common presence of typhoid bacilli in the gall bladder, it seems wise to suggest the administration of hexamethylenamin (urotropin) to every patient. The work of S. J. Crowe,<sup>6</sup> who has shown that when this drug is given in sufficiently large amounts (75 gr. per diem) it appears in the bile in quantities sufficient to have a bactericidal action, proves the value of this. He also found that hexamethylenamin was present in the cerebrospinal fluid, synovial fluid, saliva, pleural effusion and blood. How much "killing out" of typhoid bacilli we can do by this means is as yet undetermined, but certainly these findings are suggestive.

The question arises as to the safety of giving such an amount of this drug (75 gr. per diem) to patients as a routine. There are reported instances<sup>7</sup> of hematuria following its administration. These are comparatively few, but further observations are necessary before positive statements can be made. With the number of patients of all kinds who are taking this drug it should not be long before we have definite statistics from a large number of observations. Painful micturition sometimes occurs, but it is not serious and disappears rapidly after stopping the drug.

Certainly in view of the fact that smaller doses (gr.

30 to 40 per diem) apparently prevent bacilluria, we should not hesitate to give these to every patient.

#### SEROTHERAPY.

It does not seem possible at the present time to speak with certainty as to the value of any of the various serums which have been used. The results claimed by Chantemesse are excellent, but have not been sufficiently verified by other observers.

#### PREVENTIVE INOCULATION.

While this has proved of some value in military medicine, especially when troops were to be sent to infected localities, yet the results have not been strikingly successful. That it can be of much value in ordinary practice seems doubtful, especially when we remember that it is not wise to employ it during the time of an epidemic, owing to the temporary increase in susceptibility following the inoculation. The "man in the street" is not likely to be willing to undergo it at other times.

#### THE PREVENTION OF INFECTION.

It is to this that we must devote more care than we have in the past. We quite understand what a man means if he says that he has attended ten patients who were seriously ill and brought them all through safely. But if he announced that he had attended ten patients without a single case of infection from them and no danger of infection in the future, we should wonder at first what he meant. Yet the second statement means more to the community and represents a great deal more thorough and commendable treatment than the first. It often requires care and brains and hard work to pull a patient through the attack, but it needs more of all three to ensure that he does not pass his infection on to some one else.

The work of recent years has brought to our notice certain methods of transmission which may be emphasized. One is the importance of contact infection. How much this means through the country may be guessed at perhaps by the number of cases which occur in our hospitals. "Accidents occur in the best-regulated families," but altogether too many "accidents" of this kind occur in our best-regulated hospitals. In reference to this point, an excellent study is that by D. L. Edsall,<sup>8</sup> which should be read by all those interested in the subject. The report of the Commission for the Study of Typhoid Fever in the Spanish-American War (Reed, Vaughan and Shakespeare), did much to bring out the importance of contact infection.

Another method is what may be termed intermediate contact, in which the bacilli are carried by flies. How difficult this is to prevent perhaps the country practitioner can tell better than his city confrère. Unfortunately we all know it. Then there are the so-called "carriers," who go about with a supply of typhoid bacilli which are being constantly distributed.

#### HOSPITAL TREATMENT.

When we turn to the question of the prevention of infection and the carrying out of the proper measures, we realize the tremendous difficulties involved. Until recently the custom in Britain of sending patients with typhoid fever to special hospitals seemed rather unnecessary, but we have learned how wise such a plan is. There seems no question of the necessity of our introducing very much greater care and more stringent regulations in handling the patient with typhoid fever.

6. Johns Hopkins Hosp. Bull., 1908, xix, 109.

7. Coleman: Med. News, New York, 1903, lxxxiii, 293.

8. Am. Jour. Med. Sc., 1908, cxxxv, 469.



In view of the constant occurrence of instances of infection in hospitals the need of greater care requires no emphasis. The other patients, nurses, orderlies and physicians are all exposed to this risk. Precautions which we should endeavor to carry out are discussed under various headings.

*a. Isolation.*—Should a typhoid patient be isolated in a special ward? Undoubtedly whenever possible this measure should be carried out. In many hospitals in the ordinary incidence of the disease it seems almost impossible; there is neither the ward accommodation nor a sufficient number of nurses to carry it out. Yet we should endeavor to do it as far as possible. The typhoid fever patients should be kept together in one part of a large ward or as far as possible in one part of the hospital. Every effort should be made to have special nurses and orderlies waiting on these patients alone. The question of a separate kitchen and food supply is also important. The diet for the typhoid patients is so simple and the dishes they require are so few that it is not a difficult matter to keep these separate. One rule should be absolutely enforced—the nurses and orderlies who are waiting on the typhoid-fever patients should have nothing to do with the preparation of the food for the other patients. Too often a nurse goes directly from waiting on a patient with typhoid fever to prepare food for the other patients in the ward, or an orderly may be handling the ice for the water-cooler.

*b. Physicians.*—It should not be necessary to point out the necessity for care on their part, both for their own sakes and for that of the patients. It requires constant attention always to remember to wash the hands after examining a patient with typhoid fever before going on to a patient with another disease, and yet undoubtedly there is the risk of infection if this is not done. For both physicians and medical students the need of care in the examination of the urine and stools from typhoid fever patients should be kept in mind.

*c. Nurses.*—The frequent occurrence of typhoid fever among nurses suggests that the care usually taken is not sufficient. To reduce or prevent this infection is difficult. Careful instruction as to the danger, strict regulations as to disinfection, and thorough oversight to ensure that these regulations are carried out, are all important. One difficulty is that the nurses often have too much to do. This is especially apt to be the case with the night nurses. Disinfection after each handling of a typhoid-fever patient means time, and this the nurse on a heavy ward may not seem to be able to spare. Whenever possible the nurses attending to the typhoid patients should do that alone. The wearing of rubber gloves should reduce the danger of infection. They could be used for the greater part of the work done, especially that connected with the changing of clothing, handling of bed pans, urinals, etc. In giving sponge or tub baths their use is not so important.

*d. Orderlies.* It has always been a surprise in the Johns Hopkins Hospital that so few of the orderlies contracted typhoid fever. In any hospital they must always be regarded as likely means of carrying infection; being usually overworked, apt to be careless in any case and thoughtless about danger, they require constant watching. Even with stringent regulations, it is hard to be sure that orders are obeyed. There is no doubt that as much as possible of the waiting on typhoid-fever patients should be done by the nurses. Strict oversight

and great care in the handling of the ward utensils are most essential points.

*e. Ward Utensils.*—These should be rigidly isolated. The bed pans, enema nozzles and urinals should be kept for the use of the typhoid-fever patients only. The thorough disinfection of these is most important. Edsall mentions in the article already noted an apparatus devised by Dr. C. P. Noble in which the bed pans can be boiled. The urinals and nozzles should be boiled and kept in an antiseptic solution. The same rules as to isolation and disinfection should apply to the thermometers. These measures are important, not only for the protection of other patients, but also for that of the nurses and orderlies.

*f. Food.*—No one who is handling typhoid-fever patients should be allowed to have anything to do with the food supply for the other patients. In almost all hospitals this is difficult to carry out, but it should be done. If a patient with smallpox was concerned, there would be no doubt of this being carried out, but we are accustomed to typhoid fever. The easy possibility of food infection was well shown by an instance which came under my observation. A patient who had a chronic cystitis due to the typhoid bacillus, anxious to be of some help in the ward, was found to have been giving water, into which he had put pieces of ice, to other patients. Luckily no infection followed.

*g. Flies.*—Here is a problem difficult of solution. The easiest way is to keep the flies from the typhoid-fever patient. By screens the number in a ward can be kept to a minimum, and by keeping netting over the patient the chances of the flies in the ward getting at him are reduced. Even with screens it is difficult to keep the flies away when necessary things are being done. Care should be taken to prevent flies from lighting on the dejecta before these are sterilized, and the bed pans should be covered, especially as they are sometimes left standing for some time before being sterilized.

*h. Disinfection of Stools and Urine.*—The methods for this need not be discussed here. The important thing is to see that they are carried out. For this, constant oversight is necessary, especially of the orderlies.

#### PRIVATE PRACTICE.

Here the problem of prevention of infection may be much easier or almost impossible of solution. In a wealthy home, with two trained nurses, there is not very great difficulty. The rules of the hospital can be carried out rigidly. But in the homes of the poor it is quite another matter. The mother of a large family may have to nurse the patient and attend to the rest of the family. Take some of the conditions one finds. The patient is nursed by one of the family, possibly well-meaning but ignorant; flies are numerous, both about the patient and on the food; the urine and feces are perhaps thrown out on the ground in the country or in the ordinary privy, the flies being there also. Who can feel any certainty of being able to prevent infection under such circumstances?

Still, much may be done. The danger of infection should be emphasized every day, and, if possible, those waiting on the patient prevented from preparing the food for the family. Specific written directions as to the rules of isolation and disinfection should be given. These should be put under the headings: (1) for the attendants, (2) for the food utensils, (3) for the clothing, sheets, bed pans, etc., and (4) for the urine and stools. The physician should himself demonstrate how the



dejecta are to be handled. It should be possible to prevent them from being thrown out on the ground or into an open privy, whether thoroughly disinfected or not. The possibility of infection of a water supply must always be remembered. To keep flies away it is usually possible to have the room screened. If wire screens can not be obtained, cheese-cloth can be put over part of the window to hinder the entrance of flies. Netting can also be used over the patient.

#### PRECAUTIONS IN CONVALESCENCE.

It is the duty of every man who treats patients with typhoid fever to take every means in his power to be sure before the patients are discharged that they are not typhoid "carriers." This is easy as regards the urine, but very difficult as regards the stools. To every patient urotropin should be given during the course and in convalescence. By doing this we can be reasonably sure that the urine is free of bacilli, and by giving large doses (15 gr. per diem) we may do much to destroy them in the gall bladder. In doing this we should watch constantly to avoid the production of hematuria.

Certainty as to the stools being free of bacilli is difficult to attain. Even in hospitals this may seem impossible. It is a large question and perhaps will have to be a matter of inspection by the state. To hope for this may seem utopian and yet it should come. It would be done in case of plague, but that is an unfamiliar story to us; typhoid fever is an every-day matter and familiarity brings carelessness.

There is no question of the difficulties that meet us when we endeavor to make sure that no other individual stands in any danger of infection from our typhoid-fever patients. It is so easy to rest content with bringing the patient through the attack; that is something which shows and there is no applause for the prevention of cases of typhoid fever which might have been. Yet if the statistics of any community show a decreasing incidence of the disease, every practitioner in it who has done his part to bring this about can have the consciousness that to him belongs some of the credit. Must not this be the highest reward for many of the triumphs of preventive medicine?

807 St. Paul Street.

#### DISCUSSION.

DR. ALEXANDER LAMBERT, New York: Feeding experiments were carried out under my care a year ago on a number of patients. In giving a diet absolutely free of milk, in which sugar was abundant, a remarkable point was the absolute lack of meteorism: the abdomens were excavated instead of swollen, the delirium diminished rapidly, the patients were clear-headed, required no medication and lost weight to a small extent. One boy went two and a half weeks with a loss of about five pounds in weight. Dr. McCrae's stand as to diet is the stand of the famous old woman who said that she was always open to conviction, but she would like to meet any one who could convince her. I think that if Dr. McCrae will leave out the milk he will be convinced that there is a better diet and a most generous one, of rice, broth, sugar, butter and a few crackers; it will open his eyes to the possibilities of a diminution in the toxicity of typhoid fever, a diminution of the delirium and meteorism in the majority of patients.

DR. H. B. WEAVER, Asheville, N. C.: It is said that there are lies, exaggerated lies, and statistics. I should hate to give my statistics in reference to typhoid, but my experience has given me some positive ideas regarding the treatment of typhoid with what I call a mixed diet. My plan of treatment is to begin the case with a mild laxative, of calomel, not

with the German rule of heroic doses of calomel. After the alimentary canal is cleared then I begin with plenty of water on the inside, and when hyperpyrexia arrives with plenty of water on the outside. As to the diet, I give enough milk, if well borne, with plenty of chicken broth with rice cooked in it, and a few crackers now and then. This will suffice for all cases of typhoid fever. In reference to the bowels, I never give a purgative, but rely on salt solution enemas. Nature's remedy. How do we know whether the system has enough chlorid of sodium remaining to sustain the vitality? It is said that all normally healthy persons excrete from three to four drams of chlorid of sodium daily: may it not be possible that we fail to give enough chlorid of sodium to patients during these four weeks of typhoid fever? Therefore, I mix a little salt with chicken soup and broths, which the patients take with avidity. It seems to me that they relish that food and it keeps them along to convalescence. I let drugs alone, as a rule; pay no attention to the coal-tar remedies, but rely on cold water on the outside and plenty of good water on the inside, with a mixed diet. This treatment will get a majority of patients through successfully.

DR. E. P. JOSLIN, Boston: There is one point in this excellent paper to which I must take exception, and that is the recommendation for drinking excessive quantities of water and the excretion of immense quantities of urine in the twenty-four hours. Such a procedure puts a great demand on the individual. If we allow our patients eight out of the twenty-four hours for sleep, a little calculation will show that to void six quarts of urine in the remaining sixteen waking hours the bladder would have to be emptied or a glass of liquid drunk every twenty minutes.

DR. W. S. THAYER, Baltimore: The importance of early and complete cooperation between physician and surgeon is, after all, a point which relates not only to the complications of typhoid fever, and especially to suspected cases of the bowel, but to practice in general. What one might say regarding perforation in typhoid, one might also say as well with regard to appendicitis. It is important to remember that whenever in such cases there is any thought of surgical interference we should call in our friend, the surgeon, at once. The first impulse of most conscientious physicians and surgeons is to avoid operation unless it is absolutely necessary, and each new man that sees the case passes through this period. I recall vividly a case in point. When I was a resident in a hospital, about fourteen years ago, at a time when early operation for appendicitis was not so common as it is to-day, I was called early one morning to see a nurse. She had an acute appendicitis. I hesitated, however, to send for the surgeon immediately, thinking that she might be better within a few hours. Two hours later I sent for the surgeon. He thought that early operation would be wise, but did not want to hurry and put it off for a few hours more. But in a few hours our minds were made up and the patient was prepared for the operation, when my chief came in and, in turn, said, "Let's wait a little while," and put it off until the afternoon. In the afternoon all were agreed as to the advisability of immediate operation, when the surgeon-in-chief arrived. The surgeon-in-chief, by a like conservative impulse, said, "Let's wait until to-morrow morning." On the following morning when the patient came to operation there was a general peritonitis, and before it was over she had three grave operations and was at the point of death. She is still living, but her life was nearly sacrificed because four conscientious men, seeing her one after another, all wanted to wait a little while; any one, had he seen the case when I first saw it, would have advised operation within an hour or two. The physician should always summon his surgical colleague the moment he suspects the eventual necessity of an operation. Such a procedure saves many lives.

DR. LAWRENCE LITCHFIELD, Pittsburg: I heartily endorse, in the main, Dr. McCrae's paper. As to calcium lactate, I even go so far as to give it hypodermically in severe cases. I have seen three cases in which large doses given hypodermically, with normal salt solution, seemed to bring very good results. I can not pass over his objection to initial purging. What he says is very suggestive, but I have the histories of



over a thousand cases in which initial purging has been the rule and in which troublesome diarrheas have occurred very rarely. As to what has been said about not purging at all, I gave 150 consecutive patients daily morning doses of sulphate of magnesium, and the mortality was as low as any I ever had, and the hemorrhages and perforations were below the average. Of course, 150 cases are far too few to base conclusions on, but they are enough to show that a laxative is not a deadly thing in typhoid fever. If Dr. Ewing's position is correct, that the nitrogenous waste in typhoid fever is not from the toxins of the invading bacteria, but from autointoxication, largely from the digestive tract, it seems that a great deal might be said in favor, not only of the initial purge, but even of laxatives during the course of the disease. In speaking of flies, Dr. McCrae mentioned keeping them away from the patient and the food, but most important of all is to use covered bed-pans and to keep the stools away from the flies. One point as to the treatment of perforation: On account of difference in the absorptive power in different parts of the peritoneal cavity, as soon as there is a suspicion of perforation the head of the bed should be raised and kept elevated, so that there may be drainage into the pelvic cavity and not the upper part of the peritoneal cavity, which is more vulnerable. I should think it would be dangerous to roll a patient about in the search for movable areas of dulness with the effect of spreading the infection over the entire peritoneal cavity, if a leak should have occurred. As to the large amounts of water, I agree with Dr. Joslin. Of course, typhoid patients should have enough water. You remember Dr. Thayer's suggestive paper some years ago on "The Relation of Typhoid Fever to Arteriosclerosis." I think that we have all seen protracted cases of typhoid in which the radials became palpable under our very fingers. If this is true, would not the overloading of the system with so much water necessitating in extreme cases as practiced in Cleveland, the elimination of four to eight quarts during the twenty-four hours, put an unnecessary and excessive strain on the heart and favor the development of arteriosclerosis?

DR. HENRY B. FAYLL, Chicago: So far as I know there are only two subjects on which I am unreasonable. One is automobile scorches and the other lead and opium in hemorrhage. There is no question about the authority, as far as authority goes, on this question of lead and opium, particularly opium, in typhoid hemorrhage. So far as my experience leads me to a judgment, it is a fact that the locking up of the bowel after hemorrhage, with opium, to which the lead is so far as it goes an additional objection, is a pernicious practice not justified by either experience or theory. Three objections exist in my mind: First, it increases the meteorism; second, it tends to obstruct the excretions; third, it frequently locks in the colon a mass of blood which undergoes decomposition to such a degree that it is not to be compared with anything we meet clinically. It is a dreadful condition, hypothetically and, I think, practically, to be superinduced in a serious infective disease.

DR. JOHN A. WITHERSPOON, Nashville, Tenn.: I feel much like the boy who wrote the essay on snakes in Ireland and said, "There are no snakes in Ireland." There is no treatment of typhoid fever. I agree with Dr. McCrae when he says, let each case be its individual lesson to us. That is all right, but in his paper he did not, to my mind, carry out the idea with which he started. I heartily agree with Dr. Lambert when he condemns the use of milk, especially sweet milk, in typhoid. I believe that we would have very little meteorism, that we would have very little intestinal disturbance, if we properly fed our patients. Sweet milk has been, in my experience, one of the most universal disturbers both of stomach and intestines of any nourishment I have seen used in typhoid fever; therefore, I have long since ceased to use it, because every case I have demands a mode of treatment to get rid of symptoms directly produced, in my judgment, by such treatment. I believe that Dr. McCrae, who gave us an elegant way of relieving the distended stomach with the stomach tube, if he feeds his patients properly, will rarely find any necessity for using the stomach tube. You will seldom find much

gas and diarrhea if you will avoid disturbing the nutrition by improper feeding of your patients. Another point on which I could not agree with Dr. McCrae is the use of hexamethylenamin to kill the bacillus in the gall bladder and elsewhere. I do not believe that it would be possible for hexamethylenamin to destroy the bacteria or bacillus typhi in the gall bladder unless you carried the treatment to such an extent that in the preparation of subjects you would practically have to prepare the dead subjects, as we would the cadaver, to kill the *Bacillus typhosus* with it. While I have had a little experience with hexamethylenamin, it has not given me the results it seems to have given Dr. McCrae. I believe in the management of typhoid fever; there can be no objection in the earliest part of the disease to the initial purge; it has been a universal practice, and I believe does aid in the future welfare of the case. Then as few drugs should be given as possible, and proper nutrition, which, in my judgment, should be egg albumins, broths with rice, etc., in buttermilk, and things of that sort will keep down the necessity for too many drugs. The fewer drugs used in this disease the fewer will be the complications. I endorse everything else in the paper, except excessive drinking of water. I do not believe that it is sensible to deluge the stomach of a patient with water or anything else.

DR. THOMAS McCRAE, Baltimore: My experience has been that the large amounts of urine passed do not give any distress to the patients. The ordinary typhoid patient is awakened every three hours in the night to take nourishment and can void at that time. I agree with what Dr. Litchfield said about the advantage of the administration of calcium lactate hypodermically in some cases. In regard to the danger of overloading the circulation with water, I have never seen any evidence of it. What is it that leads to the changes in the arteries? Is it not the presence of toxins? The more we can reduce the toxemia, which you will grant hydrotherapy does, the more we reduce the danger to the blood vessels. Clinically I have not seen any evidence of harm to the circulation. Dr. Witherspoon implied that the patients in whom I had seen distention of the stomach were on a milk diet, but, on the contrary, the majority of them were being given predigested foods, beef tea and broths. Regarding the point about hexamethylenamin not having any effect on typhoid bacilli, it seems to me that if one point has been established it is that hexamethylenamin does kill out the bacteria in the urine. I think that this has been too definitely proved for us to have any doubt of it. In regard to the use of adrenalin in hemorrhage, I have never been able to persuade myself that it is of value either theoretically or in practical results. As to the amount of hexamethylenamin I do not think we know as yet; I mentioned 75 grains a day and perhaps we might go higher, but we have not had enough material as yet to enable us to pass final judgment. This disease has so many phases and such varied symptoms that it is natural we should have various ideas about treatment. The consoling thing is that so many of the patients recover under so many different treatments. It shows that all the truth does not rest in one method. We are all agreed, however, as to the importance of preventing infection from our patients.

---

**Hydrogen Dioxid Test for Blood in Urine.**—V. Morinelli, of Buenos Aires, states that hydrogen dioxid is a more sensitive reagent for occult blood than the guaiacum-turpentine test, and even than the spectroscope. All that is necessary is to add a few drops of a concentrated solution of hydrogen dioxid to 10 or 20 c.c. urine in a test-tube, without stirring or heating. If there is any blood or hemoglobin in the fluid, bubbles will form in a few seconds. In his communication to the *Semana Medica*, July 23, 1908, he states that dubious spots on wood or on the ground or elsewhere give the reaction when the hydrogen dioxid is dropped on the suspected spot, even when it is impossible to prepare the material for application of any other test. He says that neither albumin, glucose, mucus or the bile pigments interfere with the reaction. It is positive only when it occurs in less than a minute, without heating or stirring.



THE PRESCRIBING OF PROPRIETARIES, ES-  
PECIALLY PROPRIETARY MIXTURES.SOLOMON SOLIS COHEN, M.D.  
PHILADELPHIA.

The manufacturers of medicinal preparations that ought not to be used are adepts in the twisting of language. When the fight against the use of nostrums was renewed some fifteen or twenty years ago, they tried to confuse "nostrums," *i. e.*, secret remedies, with "proprieties," *i. e.*, preparations legally or by custom private property; and even the trustees of the American Medical Association were, for a time, thus deceived. Just as this confusion is being cleared up, it does not seem wise for those physicians and pharmacists who desire to bring about the scientific use of medicines, to introduce it again by denunciations launched indiscriminately against two or three different classes of preparations.

Hence, at a recent meeting at which this subject was discussed, I emphasized again the distinction for which I have been fighting, for these twenty years. I protested against the unfairness of describing as "nostrum-users" physicians who prescribed proprietary medicines of known composition. This, however, does not warrant the misapplication of my remarks and their perversion into apparent approval of what I have always condemned—namely, the routine use of ready-made mixtures, whether proprietary or not.

The chief objection to these, as I have repeatedly pointed out, does not consist in the fact that they are proprietary, but in the fact that they are ready-made. As I have said before, and frequently, "one mixture can no more fit the pathologic conditions in every patient, than one coat can fit the curves of every back." Even when the same ingredients are associated, which is not always wise, the proportions are usually to be varied to suit the different indications—not only of different cases, but of the same case at different times. In other words, a ready-made mixture is usually, as regards the individual patient, a misfit. Either it contains unnecessary ingredients, or it omits a necessary ingredient, or the doses of the respective ingredients are unbalanced; there is too much of one, too little of another, and proper increase or decrease of dose with the progress of the case is impracticable.

These considerations apply as forcibly to a Pharmacopœial or National Formulary mixture as to any other.

Nevertheless the U. S. Pharmacopœial and N. F. formulas for mixtures are capable of considerable scientific usefulness. They are lessons in therapeutic and pharmacœutic association. They teach by example how incompatibilities may be avoided or overcome, and how medicines may be suitably flavored and colored—a matter of some practical importance, for a palatable and slightly potion will be swallowed when a nauseous and nasty looking dose will be rejected.

For this reason the National Formulary should give original formulas and not imitate proprietary preparations, many of which are highly unscientific. The "elixir digestivum comp." is a case in point. There is no advantage in mere substitution of one unscientific preparation for another, even if the N. F. mixture be equally silly and objectionable with its exemplar.

Basham's mixture (*Liquor ferri et ammonii acetatis*) and Dover's powder (*Pulvis ipecacuanhæ et opii*) are classics. Yet it is probable that the proportions in even

these could be varied in individual cases with benefit to patients.

If, however, the U. S. P. and the N. F. would publish *skeleton formulas*, giving a range of quantities in which certain medicinal ingredients can eligibly be associated—thus indicating the necessary pharmacœutic expedients, but leaving the exact dosage to be ordered by the prescriber for the needs of the individual patient at the particular time—we should have the advantages, without the disadvantages, of such standard mixtures.

Three things would be necessary:

1. A standard (*i. e.*, average) formula, to be dispensed on name without specification of quantities.

2. The indication of an optional range of variations possible, without destroying the pharmacœutic value of the formula.

3. A brief statement of the pharmacœutic necessities of the particular mixture, as a guide to the proportioning of doses.

For example, let me take the formula of a preparation not in the Pharmacopœia or N. F., which I have employed very much in rheumatic cases during many years, and have repeatedly published. It is known in the house pharmacopœias of the Jefferson Medical College Hospital, the Philadelphia Polyclinic Hospital and the Philadelphia General Hospital as *Mistura ferri salicylata* (Salicylated iron mixture). A standard mixture is dispensed under this title which contains 0.5 gm. of natural sodium salicylate and 0.5 c.c. of tincture of ferric chlorid to the teaspoonful, estimated at 4 c.c. Sometimes in prescribing it one wishes to increase or to diminish the iron relatively to the sodium salicylate, or vice versa. We know that this can easily be done within a range of 30 per cent. In order to prevent the precipitation of iron salicylate, two pharmacœutic expedients are necessary—the use of a slightly acid ammonium citrate solution in the vehicle (approximately half, *i. e.*, 2 c.c. in the 4 c.c. dose), and the addition of the iron last, drop by drop, with continuous stirring, up to the required quantity. To permit any considerable increase in the iron there must be proportional increase in the citric acid content. It is also better made when a few drops of glycerin are used in each dose, and it can be flavored appropriately with a natural methyl salicylate. The standard formula is the result of experiment as to the best pharmacœutic proportions, and in this the active ingredients are as stated, with suitable quantities of glycerin, solution of ammonium citrate and oil of birch or oil of wintergreen. When no other direction is given this is dispensed.

It can be varied in two ways.

1. The best way is to write the quantities of active ingredients in full, and of the vehicles, flavor, etc., in blank, or with a *q. s.* Thus:

R.	gm. or c.c.	
Sodium salicylate (true).....	2 <sup>1</sup>	gr. XXX
Tincture of ferric chlorid.....	2 <sup>1</sup> / <sub>20</sub>	m. XXXvi
Oil of wintergreen..... (q. s.)		
Glycerin..... (q. s.)		or
Citric acid..... (q. s.)		
Solution of ammonium citrate (B. P.)		
.....q. s. ad 32		℥ss

2. The easiest way is to write:

R. Salicylated iron mixture with 10 per cent. increase of iron, 32 c.c.

Similarly, if the U. S. Pharmacopœia should state regarding Basham's mixture the range within which the proportions of tincture of chlorid of iron and solution



of ammonium acetate could be varied, the prescriber could so order, leaving the pharmacist to adjust the acetic acid to the requirements of the prescription.

So, too, the National Formulary could provide that, for example, its elixir of iron, quinin and strychnin phosphate should contain the present standard quantities of these three ingredients when the physician makes no specifications of quantities; and, when specified, the exact quantity of any one or all of them that the prescriber writes for. Thus a modified prescription might read:

R. Elix. ferri (gr. i), quin. (gr. ss) et strych. phos. (gr. 1/120)

[These quantities to dose.] ʒiv

Sig.: One teaspoonful in water, t. d. p. c.

Or any other variation desired could be indicated similarly.

This would be more work for the prescriber as well as for the dispenser, but it would check the tendency to routine, and thus the resort to proprietaries; for thereby we get away from the ready-made formula which is the real ethical objection to proprietary mixtures, otherwise unobjectionable; and which affects N. F. preparations equally. If, however, N. F. preparations become adjustable, while proprietaries remain rigid, the superiority of the former is at once evident.

There are many other objections to the use of proprietary mixtures, the principal three of which may be summarized as follow:

1. They are not subject to standard regulation and may arbitrarily be varied.

This is less pertinent now that the pure food and drug act requires a guarantee from the manufacturer, but is still valid to a degree.

2. They profess to some degree of secret excellence, some mysterious method of collocation, or perhaps of flavoring. Such pretences are usually false, and not to be encouraged when true.

3. Perhaps the most serious objection—and from the viewpoint of pure science it oversteps all others—is that proprietorship makes unbiased discussion and honest reports difficult. This applies not only to mixtures but to “controlled” drugs in general. Paid communications are so notorious and every manufacturer or vendor of a controlled medicine does so much to put forward the good side of the remedy and to keep in the background all facts against it, that even sincere and scientific reports are often regarded with undeserved suspicion and many clinicians are absolutely deterred from praising or even mentioning useful articles, because of such control. Abolition of proprietorship would advance science, and while it would drive out many useless preparations now much-vaunted, it would increase the use made of worthy ones and make it feasible to discuss them as impartially as we do quinin or mercury.

In addition, it is possible that controlled medicines may not conform to published descriptions or formulas. This, however, takes them into the category of criminal frauds, and has no connection with proprietorship or any other question we are here discussing. The dispensing of chalk for quinin by a thievish manufacturer or retailer does not affect the legitimacy of the prescription of quinin; and the similar predatory sale or dispensing of thyroid extract or brickdust for kidney substance does not affect the legitimacy of the use of kidney substance.

There is another kind of proprietorship, however, that I accept. It is a worthy one, and the only worthy one. When it is known that a certain official or un-

official drug varies much in quality as found in the market, and that certain manufacturers or dispensers put forth a trustworthy product, then I do not hesitate to specify the personal or firm name of such a manufacturer or dispenser. I know, for example, that A. and B. and C. are careful to get the best digitalis, or ergot, or belladonna and to prepare it properly. I know that X. and Y. and Z. get the cheapest stuff they can; or sail as close as possible in every way to the limits of the law; or are generally undependable. I do not hesitate to specify A's or B's or C's digitalis or ergot or belladonna, in order to avoid getting X's or Y's or Z's.

This is not a mere possibility or fancy picture; it is a sad reality. Many patients have been suffered to die through the administration of X's or Y's or Z's inferior digitalis; while ergot and cactus are notoriously variable, and some physicians even discard cactus altogether because of the great difficulty of getting a preparation that can be depended on. The same remarks apply to dispensing pharmacists. I know that E. and F. and G. are careful alike in purchasing and in compounding, to get the best and do the best. I know that P. and D. and Q. are careful to get the cheapest drugs, or are slovenly in putting up prescriptions. I tell patients to go to E. or F. or G. and to keep away from P. and D. and Q. This, and this only, is the proprietorship—proprietorship in individual good name of person, firm or corporation, that I defend and specify; and any application of any alleged remarks of mine in any other sense, is false and misleading.

There is another form of proprietorship in which I am forced unwillingly to acquiesce, although I do not like it. It is the monopoly of certain non-secret products given by patent and trademark. This is wrong; but so long as our United States laws remain as they are, the wrong can not be remedied.

If we who are striving for the correction of old errors are not careful to keep the question clear, we can not expect that those whose interest it is to confuse matters will refrain from doing all they can to “darken counsel by words void of meaning.”

Let me, therefore, summarize:

1. Ready-made mixtures of rigid formula, secret or known, proprietary or public, are objectionable.

2. The National Formulary and the U. S. Pharmacopeia should make all formulas of mixtures optionally elastic.

3. Such proprietorship as is expressed in the name of an individual pharmacist or dispensing or manufacturing firm or corporation known to be generally careful and trustworthy, or to have devoted special attention to certain official or unofficial preparations of fully known character, is legitimate; and the names of such persons, firms or corporations may, with the highest ethical propriety, be specified in prescriptions.

4. Preparations tainted with *secrecy of any kind* should be avoided absolutely.

5. Known preparations that can be obtained of one manufacturer only and which are physically and chemically what they purport to be, may be prescribed without impropriety, however much we may and do deprecate that fault in our laws which permits such monopoly in medicinal agents. *The law should be so altered as to abolish this form of proprietorship in medicines.*

In the foregoing discussion and summary, I have simply repeated, in somewhat different form, propositions that I have long maintained and the theoretic



grounds of which were set forth in a previous paper,<sup>1</sup> read at the Boston session of the American Medical Association. I have been moved to repeat myself by the importance of the subject; by the unfortunate tendency of some new converts to go to extremes that tend to bring back all the old confusion; and by the misleading use to which a garbled extract from my own plea for conservatism has been put.

The forces of right and of science must not suffer themselves to be divided. The American Medical Association through *THE JOURNAL* and through the Council on Pharmacy and Chemistry, has well nigh accomplished what seemed at one time to be a hopeless task. No one will claim that the Council is infallible; all must admit its ability, its sincerity, its integrity, and its desire to be just. It is pursuing the right course and we can afford to await developments. Above all we must hold up its hands. We must likewise avoid disarranging its plan of campaign by ill-devised sorties at the wrong time and place and against the wrong persons.

### A NEW BLOODLESS METHOD OF AMPUTATING THE ANUS AND RECTUM.

F. W. DUDLEY, M.D.

Associate Professor of Surgery, P. I. Medical School; Attending Surgeon St. Paul's Hospital.

MANILA, P. I.

The following operation which I have devised has been used many times with excellent results. It is applicable to all cases of prolapse of the anus and rectum in which amputation is advisable. It is of value in (1) prolapse of the anus and rectum combined with ulcer, when the bowel is thickened or indurated; (2) irreducible gangrenous or sloughing prolapse; (3) organic stricture; (4) adhesions preventing reduction; (5) neoplasms involving the entire thickness of the intestinal wall, and (6) in procidentia due to organic stricture, in which the stricture has reached the lowest point of the prolapse, the whole may be excised, and thus the stricture and procidentia cured at the same time. It is not intended that this operation take the place of sigmoid-ectomy or colopexy.

#### PREPARATION OF THE PATIENT.

In this, as in other operations on the rectum and anus, time spent in the proper preparation of the patient will add much to the success of the operation and to the patient's comfort subsequent to the operation. A few days' rest on the part of the patient is advisable before such an operation, when possible. He should remain on a very simple and moderate diet, the bowels being kept quite free, and he should drink freely of water. Thirty-six hours before operation two ounces of castor oil should be given. The lower bowel should be well washed out the night before and no enema given on the morning of operation.

#### TECHNIC OF THE OPERATION.

The patient is placed in the lithotomy position, with the buttocks well elevated. The sphincter is dilated and the bowel pulled well down by means of three forceps which are applied to the intestine. A little manipulation will enable one to work down all the redundant bowel. The rectum is packed with a long strip of gauze,

about 6 cm. (2½ in.) in width. The elevation of the buttocks allows the small intestine to gravitate back in the pelvis, and when the prolapse consists of more than three inches of bowel or there exists an archocoele this step is important. If the small intestine be between the two cylinders of the prolapsed bowel it can easily be palpated between the thumb and finger and pushed up.

The protruded bowel is again well washed with soap and water, mercuric chlorid, 1 to 2,000, and sterile water. Two long Kocher or Ochsner mouse-toothed forceps are applied to the anterior wall of the prolapsed bowel in its long axis, one blade in the rectum and the other above, from the folded margin up to within 3 mm. (⅛ in.) of the skin surface, including both cylinders of the gut. These forceps are applied parallel about 1 cm. (⅜ in.) apart. Both cylinders of the bowel (all the tissue grasped by the forceps) are divided between them up to within 2 mm. (1/16 in.) of the skin margin. A catgut suture is then placed just beyond the toe of the right pair of forceps.

A hemorrhoidal clamp is applied beyond the toe of the pair of forceps to the left, the toe of the clamp pointing to the operator's left and grasping from 1.5 to 2 cm. (½ to ¾ in.) of the circumference of both folds of intestine, close to but not including the skin. The forceps are removed and the portion of bowel embraced in the clamp is cut away by shears about 3 mm. (⅛ in.) from the clamp and the remaining tissue is seared by an electric soldering iron or other cautery, after first protecting the anus and surrounding skin with a shield made of asbestos cardboard or sheet lead. The tissue embraced between the blades of the clamp is seized by the thumb and index finger of the left hand, the clamp removed and the two layers of intestine, now seared and adherent, are sewn together by a lock stitch, using No. 2 chronic catgut. The suture should be sufficiently long to continue without interruption all the way round the margin of the anus, and the end after the first knot left long. A long straight round needle should be used. The assistant holds the suture taut while the operator again applies the clamp and cautery, after which the suturing is again resumed and the process continued until the entire circumference of the bowel has been traversed, the two ends of the catgut then being tied.

No particular attention is paid to the vessels of the mesentery. The sutures may be applied before the removal of the clamp and immediately tightened on its removal, or on the removal of the clamp instead of seizing the tissues with the thumb and forefinger they may be caught with one or two mouse-toothed hemostatic forceps and the sutures applied and the forceps removed. I prefer the first mentioned method. The entire operation can be completed in from fifteen to twenty minutes or less.

If the prolapsed bowel is more than three inches in length care should be taken not to include a knuckle of the small intestine in applying the clamp. To avoid this accident, in addition to the measures spoken of in the foregoing, each bite of the cylinders of intestine should be examined between the thumb and index finger before it is grasped by the clamp. The presence of small intestine or omentum is easily detected and one meets with no trouble in crowding it upward with the examining fingers if the patient is in the proper position. In these cases several hemostatic forceps will need to be applied in turn when making the first or longitudinal incision. After the operation is completed the gauze is removed from the rectum.

1. Cohen, S. S.: "The Limits of Proprietorship in *Materia Medica*," *THE JOURNAL*, 1907, xlviii, p. 195.



The dressing consists of sterilized vaselin and a few squares of gauze held in place with a T bandage. No tube or other dressing is placed in the rectum. As a rule no pain is experienced; if there is any, one hypodermic injection of 14 mg. (1/5 gr.) morphin given as soon as the patient complains will be all that is required.

In these operations, as in hemorrhoid operations, burning the skin should be avoided. Such burns are extremely painful and the patient will often complain bitterly of them long after he is entirely well from the operation.

#### AFTER-TREATMENT.

The after-treatment consists of a limited quantity of liquid or light diet for seven days. An attempt was formerly made to confine the bowels by means of opium until the eighth day, when they were moved without pain. In several cases the bowels moved voluntarily on the second and third days without pain or subsequent trouble resulting therefrom. The bowels are now moved in all these cases on the third day, two ounces of castor oil being given. The patient is allowed up and about thereafter and the bowels made to move daily.

It is practically impossible to infect the peritoneal cavity by this method, not an inconsiderable advantage when operating in this region. There is no narrowing of the anal orifice. In cases in which this seems desirable three or four longitudinal scars, 3 mm. (1/8 in.) in width, of the mucous membrane of the gut, after the operation is completed, will accomplish this. In these cases the wound usually is thoroughly healed about the tenth day and the patients are discharged from the hospital fourteen days after operation.

### THE RELATIVE MERITS OF THE OPERATIONS FOR HEMORRHOIDS.\*

J. D. SINGLEY, A.M., M.D.

Surgeon to the Pittsburg Hospital; Associate Professor of Surgery and Clinical Surgery, University of Pittsburg; Director of Magee Pathological Institute, Mercy Hospital, PITTSBURG, PA.

Is there a mortality attached to any of the classical operations for hemorrhoids? Undoubtedly there is. A word of protest against the rather common statement, by surgeons at least, that the mortality of a given operation is "practically *nil*." However small, there is a definite mortality for any surgical procedure to be weighed in the balance with the risk to life if no operation is done.

With special reference to the mortality and the subsequent condition of the patient, I wish to direct attention to a consideration of the relative merits and demerits of the three well-recognized types of operation for hemorrhoids: (1) the ligature method, (2) the Whitehead operation, and (3) the clamp and cautery operation. They are too well known to require description.

#### THE LIGATURE METHOD.

The pathologic condition about the lower end of the rectum in hemorrhoids—dilated, elongated, and tortuous veins, often filled with simple or infective thrombi—and the impossibility of securing an operative field even approximately free from bacteria, afford excellent grounds for anticipating an occasional serious post-operative complication which may and occasionally

does result in death. The puncture of a needle or a snip of the scissors can readily carry the *Bacillus coli communis* (whose function as an infective agent in all parts of the body is being recognized more and more) or other pathogenic bacteria into a vein and produce an infectious thrombophlebitis with subsequent embolism and death. Granted a clean field, the same process may be set up, for the thrombi in the hemorrhoidal veins are frequently already infected, presumably with the *B. coli communis*; and, granted that the thrombi are simple non-infected clots, such an embolism may result seriously.

That these dangers are not purely theoretic ones I am convinced from having observed one fatal case of pyemia and a number of cases of simple embolism following this apparently simple operation in the hands of capable and clean operators. In the cases in which simple embolism has been observed the emboli fortunately have lodged in the veins of the leg, but they may just as readily find a more vital spot.

There is certainly a definite, though low, mortality for this operation in the best hands, and it should be discarded in favor of other procedures, provided they promise less risk to life.

#### THE WHITEHEAD OPERATION.

This is a most attractive method from the standpoint of the operator. It appeals to him as a more complete and exact surgical procedure in that it removes by nice dissection the entire pile-bearing area and leaves a neatly closed wound. There can be no doubt, however, but that the same possibilities for danger exist in this operation as have been pointed out for the ligature method with the same definite mortality as an immediate result.

The common objection to the operation is based on the severity of the hemorrhage in patients already more or less debilitated by loss of blood. Improperly performed, this is a valid objection, but properly carried out it does not hold. Severe hemorrhage is produced by dissecting up the mucous membrane containing the piles about the entire circumference of the rectum before applying the sutures. If the dissection is carried up beyond the level of the hemorrhoids at but one point and the mucous membrane is divided and immediately sutured to the skin edge, thus controlling hemorrhage at that point, and if this be carried out step by step completely around the rectum the loss of blood will be slight.

The ultimate results of this operation are excellent, as a rule, but they are by no means uniformly so. In a certain number of cases the patients develop stricture of the anus of greater or less severity, a most distressing condition. This results from the contraction of an annular cicatrix which it is impossible to avoid, for complete primary union practically never occurs. On the other hand, some of the patients have incontinence of feces from interference with the nerve supply of the sphincter. In either case the patient has made a poor exchange for his hemorrhoids.

The real objections, then, to this operation, which should far outweigh its operative nicety, are (1) the danger of simple or infective embolism, (2) the risk of stricture, and (3) the risk of incontinence.

#### THE CLAMP AND CAUTERY OPERATION.

If the details of this operation, as advocated by Ochsner, are strictly adhered to, it is, in my opinion, free from the objections pointed out for the ligature and

\*Read before the Pittsburg Academy of Medicine, May 12, 1908.



Whitehead operations. The danger of infection is reduced to a minimum, since there is no wound of the mucous membrane, except that produced by the cautery, which destroys bacteria and at the same time seals lymphatics and blood vessels. The hemorrhoidal masses should all be caught and brought down before any of them are cauterized. If this is not done it is almost impossible, while bringing down other masses, to avoid tearing open a previously cauterized stump, thus inviting both hemorrhage and infection. The clamp should always be applied in the long axis of the bowel so that the resulting cicatrices are in its long axis instead of transverse. If applied transversely and there are many hemorrhoids we produce an annular cicatrix and the same conditions result as in the Whitehead operation with the same liability to stricture.

For the purpose of preventing hemorrhage and infection it is advisable to avoid cutting off the hemorrhoid after applying the clamp. If cut, an avenue of infection is opened up and some vessel thus divided may be overlooked in cauterizing. The entire mass should, instead, be slowly burned away with the cautery at a dull red heat. The hemorrhoids should be gently handled at all times lest a portion of clot be loosened up and find its way into the circulation. The bowels should be confined for three or four days following operation. When they are moved there is almost certain to be some slight tearing of cicatrices, but by this time Nature has had an opportunity to wall off the area securely with inflammatory exudate and thus protect against serious infection.

That any of these operations are efficient in removing the pathology present in hemorrhoids can not be disputed, and each of them finds favor with operators of unquestioned ability. While the clamp and cautery is probably the least attractive from a strictly operative standpoint, the arguments advanced in its favor and the results obtained with it appeal to me as indicating it to be the operation of choice in almost every case.

## RANULA AND OTHER DISEASES OF THE SALIVARY GLANDULAR SYSTEM.\*

THOMAS L. GILMER, M.D., D.D.S.  
CHICAGO.

Ranula is a soft cystic tumor in the floor of the mouth, unilateral at first, but later, as the cyst enlarges, perhaps passing beyond the median line. The name "ranula" is only descriptive of appearance, having no significance otherwise.

Formerly ranula was, and is at present by some, supposed to be a cyst containing pent-up salivary gland secretions from stenosis of Wharton's or Rivini's ducts, as a result of inflammation in some part of the duct or its meatus; or from occlusion of the duct by an accumulation of salivary calculus.

Bland Sutton says: "There is at the present time a strong tendency to restrict the name 'ranula' to cysts arising in connection with ducts of the three sets of salivary glands opening into the mouth, and to designate them as submaxillary, sublingual and parotid ranulae according to the gland affected." Continuing, he says: "In the majority of cases ranulae are probably retention cysts due to obstruction of a duct. They are common in connection with the submaxillary and sub-

lingual glands." Again, he says: "Occasionally the obstruction is caused by a calculus impacted in the orifice of a duct, but cases come under observation in which the duct is not completely obstructed, yet the fluid is retained." "It is reasonable to believe that ranulae sometimes arise independently of obstruction to the main duct, and as in the case of so-called pancreatic ranulae, observation supports the view that there is in all probability a pathologic cause apart from mere obstruction concerned in their production."

Garretson says: "Ranula is the analogue of a sebaceous tumor, being simply a cyst of retention, a collection, the result of the closure of a tube of outlet."

Marshall says: "Ranula is a term applied to retention cysts of the ducts of the submaxillary and sublingual glands (Wharton's and Rivini's ducts)." Again, he says: "A ranula is a collection of salivary fluid in the excretory duct of the salivary gland."

The International Text-Book of Surgery says, "A cyst due to distention of Wharton's duct is called a ranula."

Lippincott's Medical dictionary defines ranula as "a fluctuating semitransparent tumor under the tongue, resulting from accumulated saliva and mucus in the ducts of the sublingual gland or from the independent development of a cyst in the sublingual region."

Stengle says: "Ranulae are formed by dilatation of the ducts of the small mucous glands." Also: "At times Ranula may be a cystic dilatation of a duct of the sublingual salivary gland or that of a submaxillary gland."

Eisendrath says: "Acute ranula appears suddenly while eating; cause, occlusion of Wharton's or duct of sublingual gland. Chronic, it is a cystic dilatation of the sublingual gland and is a retention cyst."

Von Bergmann says: "The sublingual salivary gland probably serves as the point of origin of the majority of these ranulae."

The following is culled from Hippel:<sup>1</sup> "Before first half of 1800 all tumors of the floor of the mouth were called ranulae." Hippel also says that Diemerbroeck was the first to offer the theory that ranula was due to retention of saliva in Wharton's duct through narrowing or closure of the duct. Dupuytren thought of the possibility of ranula being mucous gland cysts.

De Closmadene found that stenosis of Wharton's duct by a foreign body never produced ranula. Experiments by Claude Bernard, Ranvier and others of the day proved de Closmadene's statement to be correct.

Panli and Tellaux named a condition of distended Wharton's duct which broke into the surrounding tissues thus constituting not a ranula but a ptyalocoele. Neumann discovered ciliated epithelium, lining the wall of ranula and as the Bochdeleek duct was the only ciliated epithelium-lined gland in the floor of the mouth, then it must be the starting point of ranula.

The nature of ranulae which have no cilia on their walls has been worked out by Imbert and Jeanbran, Vean, Thomas and Guibe. They think that such ranulae are embryonal remains of epithelial origin, either from mucous membrane of the duct, or parts of the sublingual salivary glands cut off from the main gland.

Suzanne and Hippel showed ranula to be of sublingual glandular origin, a primary interstitial chronic inflammation, the connective tissue formed compressing the ducts in the gland, a cyst being the result. The pressure causes atrophy of glandular tissue and a confluence of the lobules, usually into a multilocular cyst.

\* Read in the Section on Stomatology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Arch. f. Klin. Chir. Bd. 55.



Kroiss demonstrated a connection between such a cyst and the sublingual gland. This origin best explains the development of the cyst backward and downward through the fibers of the mylohyoid muscle.

Morestin found parts of the sublingual gland normally in between the fibers of the muscle, also parts of it penetrating through the muscle. This, he believes, could easily explain the development of ranula under the chin. One case of ranula of this nature came under my observation at St. Luke's Hospital, Chicago, through the courtesy of Dr. John C. Hollister. The cyst could easily be observed both in the mouth and submentally.

Hippel sums up his conclusions thus:

1. Ranula is a retention cyst of the sublingual gland, also rarely of the incisive glands.
2. Ranulae have their beginnings in the small ducts of the glands.
3. The exciting cause is a chronic interstitial inflammation of the gland, which leads to a stenosis of the smaller ducts.
4. It enlarges by retained secretions, later by proliferation, degeneration and desquamation of the epithelium of the ducts and by transudation from new-formed capillaries.
5. Secondarily the gland lobules distal to the stenosis die of pressure atrophy.
6. The submental and acute ranulae are only variants of the usual ranula.
7. A radical operation must include removal of the cyst and the entire sublingual gland (for its cure).
8. In infrequent and exceptional cases cysts of the lingual duct or its ramifications present the clinical aspects of ranulae.

I have seen a number of ranulae, and formerly was of the opinion that they had their origin in Wharton's duct, or in the ducts of Rivini, but having found no cases of ranula on the floor of the mouth which prevented the passage of a probe throughout the entire length of Wharton's duct, and not having seen a case in which the sublingual or submaxillary gland enlarged or became painful on taking food, these observations led me to believe that the theory pretty generally held, that ranula is due to dilatation of Wharton's duct from stenosis or from plugging of the duct by foreign substances is fallacious. Again, I saw one case as a result of stenosis of Stenson's duct without the formation of a retention cyst, but with the formation of a ptyaloele, indicating that saliva will find exit in all cases, though there be complete stenosis of the duct. Also, I have seen numerous cases of stone in Wharton's duct, many times larger than the normal lumen of the duct, which seemingly in no wise inhibited the flow of the submaxillary gland fluid. The result of these observations led me to the conclusion that tumors of the nature of ranula in the floor of the mouth are either cystic degeneration of parts of the sublingual gland separated from the main organ, cysts originating in the gland itself, or cysts originating in the mucous glands in the floor of the mouth. The conclusions of Hippel regarding the origin of ranula are very convincing. I have seen but few cysts originating in Blandin-Nuhn gland, and these bear but slight resemblance to the larger cysts on the floor of the mouth. Those coming under my observation have been quite small and, from their situation under the tip of the tongue, resemble the tumor known as ranula, not in locality, but only in the fact that they are cysts lying under a thin layer of mucous membrane.

Specific infectious parotitis is the most common disease of the salivary glands, but is one which does not specially interest the stomatologist and therefore will not be presented.

Following operations on or injury or disease of the urinary tract or genital organs, acute inflammation of the parotid may follow which simulates infectious epidemic parotitis. This condition, however, is most commonly met in adults, and the tendency to suppuration is much greater than in the specific disease. So also there is an acute inflammation of the parotid of a similar but of even a more virulent nature generally resulting in suppuration, which is a metastatic involvement of the gland due to septic infective fevers. Parotitis is sometimes seen as a result of mercurial poisoning.

When operating on very sensitive dentine I have seen a few cases of functional disturbances, in the nature of a colic, due to spasm of the duct of Stenson, which gave rise to temporary non-inflammatory distention of the parotid, due to the damming up of the saliva in the gland, the saliva being rapidly secreted through the irritation caused by the excavation of the hypersensitive tooth structure and not voided owing to the spasm in the duct, causing much pain and distention of gland. After a comparatively short period, subsequent to the operation, the spasm subsides and with it the pain, likewise the enlargement.

I have seen two cases of acute inflammation of the parotid which could not be traced to any specific cause. The gland in both of these cases suddenly became swollen, painful and tender to pressure. Stenson's duct was patulous, the meatus of the duct was normal, and no stones or other obstruction could be detected. There was a moderate amount of the salivary fluid voided, but no pus could be expressed through the meatus. The gland was not more painful when the patient partook of food than at other times. The temperature was a trifle above normal. Both patients were women, the age of one being thirty-three years, the other fifty-two. A year previous to the attack in the elder woman there had been an appendicectomy; otherwise there had been no injury or surgical operations or ill health in either case. Under hot applications and saline cathartics the condition subsided in a few days. Eight years have elapsed since the attack in one case and four years in the other with no subsequent attacks. I regret that no microscopic examination of the secretions from the gland was made in either case. I am of the opinion that the condition was due to a catarrhal infection of the gland reaching the organ from the mouth, though the duct did not appear to participate in the inflammation.

Chronic inflammation resulting in enlargement and hardening of the glands is, with the exception of epidemic infectious parotitis, the most common disease of the salivary glands. I have seen a few such cases involving the submaxillary gland, but never any involving the parotid or sublingual. Cases have been reported, however, in which both of these glands were involved. This inflammatory condition is supposed to be an infection communicated to the gland from the mouth, ascending through the duct to the gland. The enlargement of the gland comes on very slowly and is not painful, therefore the patient will probably not consult a physician until its size causes some disfigurement. E. von Bergmann believes that most, if not all, salivary gland inflammations originate from infection passing to the gland from the mouth.



Two typical cases of chronic inflammation of the salivary glands are reported by Dr. Frederick Kroiss.<sup>2</sup> In these cases the enlargement of the glands was slow, as it always is when chronicity is observed, as before mentioned. Pus was voided from the duct in one case; in the other it was evacuated by incision three weeks after it came under Dr. Kroiss's observation. In both of these cases the gland was removed and macroscopic observation showed it to be twice as large as normal, connective tissue much increased, consistency very much increased. No abscess was to be seen with the naked eye. Near the periphery lay a small yellowish white, easily crushed concretion, imbedded in the tissue. Microscopic examination showed the capsule and septae eight times increased. The single gland lobules were widely separated and the connective tissue poor in nuclei. The parenchyma was replaced by fat; the small ducts of the gland were surrounded and infiltrated by leucocytes. Atrophy of the parenchyma was seen mostly near the main branches of the ducts, less at the periphery. The tissue in which the concretion lay showed no changes different from the rest. The ductus maximus was very much enlarged; near the caruncle were many patches of swollen cells, but in other spots no epithelium remained. The mass which the ducts contained was composed of the desquamated cells, combined with the secretions, together with many polymorphonuclear leucocytes. The main duct was throughout its length surrounded by a round-cell infiltration, even to the furthest ramifications, and filled with a slimy pus. The cell tubules were small, in many places wanting, their places being taken by connective tissue.

I have seen several cases of chronic inflammation of the submaxillary glands which tally very closely with these cases of Kroiss, but have also seen a few cases which in the later stages of the disease were similar, but the early history of preceding enlargement and induration of the gland was absent. It is possible that the enlargement of the gland had not been great and on this account had been unnoticed by the patient. I am of the opinion, however, that inflammation of the submaxillary gland may be due to an inflammation in the duct set up by rough stones in the duct, the inflammation having been communicated to the gland from the infected and inflamed area in the duct through continuity of tissue, or through pyogenic organisms ascending to the gland through the duct from its inflamed area. Two cases are here given to illustrate.

*Patient.*—A woman aged 33, first consulted me August, 1902. She had had periodically painful swelling of the left submaxillary gland for ten years.

*Examination.*—The condition present when I first saw her was great enlargement of the left submaxillary gland, with swelling along the line of Wharton's duct, the inflammation of the duct having extended to the floor of the mouth and tongue on the affected side, seriously interfering with swallowing.

*Course of Disease.*—On the third day there was a copious flow of pus from Wharton's duct when the gland was pressed on. With the discharge of pus the pain and swelling in the mouth subsided, the gland decreased in size, but remained somewhat enlarged and hardened; it was also tender to pressure. At more or less frequent intervals between June, 1902, and March, 1903, there were mild repetitions of the former attack; pus at these times could be expressed from the meatus of the duct. During one of these attacks, in seeking a cause for the condition, in passing my finger over the line of Wharton's duct I found about half-way between the meatus and the

gland an enlargement, but was unable, owing to the swollen condition to determine positively by palpation whether the enlargement was due to a stone or whether it was an indurated enlargement of the duct. Because it was impossible at this time to introduce a sound into the duct on account of the pain inflicted, an exploring needle was passed through the overlying tissue and the wall of the duct. When the lumen of the duct was reached the needle came in contact with an obstruction, which, through the sensation communicated to the fingers, was easily recognized as a stone.

*Operation and Description of Stone.*—On March 3, 1903, the swelling having subsided, I cut down on the stone and removed it. The stone was of dark yellow color, fourteen mm. in length, five mm. in its greatest diameter and three mm. in its least diameter. It weighed dry eleven grains. Its surface was rough, with short, spinous processes all over it. These processes were imbedded in the wall of the duct, and its removal was made difficult thereby. Following the removal of the stone, the gland and duct became normal in size and consistency and remained so during the five years that have elapsed.

*Subsequent History.*—Four years later the opposite gland became enlarged and painful, and pus could be expressed from the meatus of the duct. A sound was easily passed in this duct. In about the same relative position as before I found another stone. It was removed and proved to be of the same nature as the first, but smaller. Nearly one year has elapsed since its removal, and at this time both gland and duct are in seemingly healthy condition.

By some these two cases would be classified under the head of chronic inflammation of the salivary glands, the stone found in the duct being considered only an incident in the progress of the disease, which supposedly originated in the gland as the result of disease in this organ. If this reasoning be correct, then in time there will be further manifestation of disease in both of these glands. In one of the cases reported by Kroiss there was, following the incision and evacuation of the pus, a normal condition of the gland and duct for a period of four years; then the gland again became involved in a similar attack. It was then removed with the findings indicated. The similarity between Kroiss's case and mine, even to the subsequent involvement of the opposite gland, is readily observed, except that there was no stone in the duct in his case, but a concretion was found in the gland. Indeed in most of the cases I have seen reported in which the gland was extirpated for the cure of this condition, concretions were found either in the gland or in its ductus maximus. A period of five years has elapsed with immunity for symptoms since removal of the first stone in my case; therefore it seems reasonable to conclude that the immediate cause of the gland involvement was the irritation of the rough stone. Certainly one would not have been justified in removal of the gland, as subsequent results have proven.

By some, stones in the ducts of the salivary glands are supposed to result from the calcium of the salivary fluid being deposited on foreign substances, including bacteria, which have entered the duct from the mouth, supplying a nidus about which the lime is built. The following quotation is made in reference to the origin of these lime depositions from Hektoen's English edition of Durek's General Pathologic Histology:

"Calcification often develops in dead portions of tissue or in masses of inspissated secretion. In this wise concretions are formed in the excretory ducts of salivary glands and of the pancreas, consisting of desquamated epithelium, amalgamated into a solid mass by the inspissated secretion."

2. Beitr. f. klin. Chir., xlvii, 470-530, 1905.



By this we may also account for stone-formation in the body of the gland as well as in the ductus maximus, and conclude that the concretions formed in the gland are merely incident to the disease which is destroying the parenchyma and stroma of the gland. It is well known that lime is deposited very rapidly and in great quantities on the lower incisor teeth and the buccal surface of the upper molars in some mouths. This shows that the saliva is highly charged with calcium salts in the mouths of such persons. If a foreign body enters the duct of Wharton, a nidus is afforded about which the lime will probably be deposited more or less rapidly according as the fluid contains more or less lime. There are doubtless two sources from which stones in the ducts may have their origin; that is, the deposition on foreign bodies in the duct, and depositions in the gland itself, the stones thus formed having been extruded from the gland after formation. There is one class of stone which always evidently has its origin in the gland. Reference is had to those cases in which large numbers of very small calcifications are extruded from the meatus of the duct. One such patient, a little girl ten years of age, came to my clinic some years ago. The meager history obtainable indicated that the left submaxillary gland periodically enlarged and following these enlargements small concretions were passed into the mouth. When I saw the child the gland was enlarged and slightly tender to pressure. On stripping the duct toward its meatus a number of small spherical concretions of light yellow color, about the size of a mustard seed, were extruded. Subsequent history can not be given, since the patient did not again come under my observation. Some of the stones of the larger class which I have removed have been grayish in color, quite smooth and hard, the surface marked irregularly by shallow depressed lines. Such concretions remain indefinitely in the ducts without inconvenience, while those with rough surfaces irritate the ducts and in some instances cause suppuration. The latter are more friable and are liable to breakage on removal.

There can be no doubt that stones are found in other salivary ducts than Wharton's, for we have good authority that such is the case; but that stones must be rare in either Rivini's ducts or Stenson's ducts is quite evident, since they are so infrequently reported. Those found in my practice have invariably been in the duct of Wharton.

In 1892 Mikulicz first described a disease which was manifested by a symmetrical swelling of the salivary or lachrymal glands, or both. Later Kümmel, Hallenhoff, Osler and others have reported cases. It is a disease of the adult and known as Mikulicz's disease. The swelling of the glands is slow; the patient, having no inconvenience, may not apply for treatment until the glands become so enlarged as to be unsightly. The salivary glands may enlarge to the size of a hen's egg or larger; the lachrymals enlarge proportionally, causing considerable bulging at the outer canthus of the eye. Function being interfered with, the mouth and conjunctiva are uncomfortably dry. The salivary glands are hard, and lobulation may easily be made out. Osler reports a case of a young negress with Mikulicz's disease in which all the salivary and both lachrymal glands and the spleen were involved. The lymphatics generally were enlarged, especially in the posterior cervical triangle; some of the mucous glands in the mouth were enlarged and the tonsils were slightly swollen.

In 1905 Max von Brunner classified the thirty cases of Mikulicz's disease which had then been reported. In ten of these cases there was symmetrical involvement of the salivary and lachrymal glands, in seven cases symmetrical swelling of the lachrymal glands alone, in four cases swelling of the salivary glands alone, in six others symmetrical swelling of the lachrymal, salivary and lymph glands. The etiology of this disease is obscure.

Neoplasms and cysts involve the parotid and occasionally the other salivary glands, but it is quite improper to attempt to discuss in a paper of this kind a subject so comprehensive.

I have seen one case of tuberculosis of the sublingual gland.

*Patient.*—A woman, aged 35, presented herself at my clinic for treatment.

*Examination.*—I found on the floor of the mouth, in the position usually occupied by ranula, an enlargement elevated to the occlusal surfaces of the teeth and extending backward to the second molar and beyond the median line. Submentally there was considerable enlargement. On palpation the sensation communicated to the finger indicated more the feeling of a sebaceous cyst than a mucous cyst.

*Treatment.*—Before I had seen the case the swelling had been twice incised, but with no beneficial results. For the purpose of discovering the nature of the contents of the tumor, I passed a grooved explorer into the enlargement in the mouth and found no fluid, but a soft, dark, grayish material of fetid odor. Microscopic examination discovered tubercle bacilli in great numbers.

*Diagnosis.*—Tuberculous disintegration of the sublingual gland. The remains of the gland with large quantities of the doughy, dark-colored disintegrated material were removed.

I have seen one case of diverticulum of Stenson's duct.

*Patient.*—Male, aged 57, had observed for a number of years a growth which slowly increased in size at a point corresponding with the meatus of Stenson's duct.

*Examination.*—When I first saw it it was a pendulous pouch the size of a small cherry. When compressed between the thumb and finger it was emptied of a considerable quantity of saliva.

*Treatment.*—It in no way interfered with the function of the duct, but because of the inconvenience caused by its presence and its increasing size, and realizing that it might become inflamed through irritation by the teeth, I deemed it best to remove it.

*Result.*—At this time, four years later, it has the appearance of a perfectly normal meatus.

In conclusion I wish to give Dr. H. A. Potts credit for valuable assistance rendered in making the German translations from which I have gained much information on the subjects presented.

31 Washington St.

#### DISCUSSION.

DR. FREDERICK B. MOOREHEAD, Chicago: "Ranula" means the belly of a frog; anything, then, in the mouth that looks like the belly of a frog is ranula. From the pathologic, or even from the clinical point of view, this term is unsatisfactory. I think that Dr. Gilmer is right in saying that rarely do we find a dilatation of the duct due to salivary concretions; in fact, I have never seen one. I have seen dilatations of the glands themselves, of the infundibula of the gland—in fact a portion of the gland might become cystic or expanded—but a dilatation of the duct *per se* I have never seen. Whether it occurs or not I do not know. Etiologically there are just two classes of these cysts, those from mechanical occlusion and those from inflammatory occlusion in which there is first, infection, an interstitial inflammation, occlusion of the duct, and desquamation of the lining epithelium, and then a conglomerate mass on the inside. Strange as it may seem, those who maintain that ranula is a retention cyst of the salivary glands have yet to prove the presence of saliva in a single one of them.



Analyses of all these cysts show, not saliva, but some other substance. What are these cysts? If they are from the salivary ducts, why does the saliva entirely disappear, as shown by microscopic examination, none of the elements of normal saliva being revealed? And why do we find muens in quantities and its elements in these cysts? Are they retention cysts, or are they true cystomata?

DR. VIDA A. LATHAM, Chicago: In Dr. Gilmer's experience are not these ramula or cystic growths more common on the left than on the right side? Can he explain it from the anatomy? I reported thirty such cases for the Massachusetts State Dental Society and I think that only two were located on the right side. I do not know why. This report was published in the *Dental Cosmos*, 1906. The pressure of badly fitting plates seems to have some injurious effect. I have had four patients with this trouble in one week, and each one was relieved as soon as I could reduce the stenosis and remove the plate. A glandular secretion, together with the mucous or salivary secretion, forms a kind of colloid secretion. It isropy and thick and of different color; it does not look like muens, but more like the colloid secretion in thyroid tumors. The dilatation causes stenosis through spasm of the contractile tissue of the duct, just as pressure would cause a breaking up of a fluid. It is to be hoped that dentists and medical men will cease to employ iodine and other stimulating agents in these conditions. In one of the worst cases of this kind that I ever saw the surgeon consulted wanted to incise the cyst right away as a suppurating gland. To this the patient would not consent, so the surgeon painted the cyst with iodine. At 2 o'clock in the morning I was called to see a desperate case of dyspnea from the swelling that had occurred, which was so great that the respiratory apparatus was practically shut off. Only by inserting tubes and administering oxygen could relief be obtained. Another case of sublingual cyst was treated in a similar manner; the tongue swelled and prevented proper respiration. That kind of treatment should be abolished in these cases. Dead teeth, especially the lower first molars, also cause obscure conditions. This possibility should be borne in mind in our differential diagnoses. A patient came for operation for removal of the mandible; when we explored it was agreed that the trouble was caused by dead teeth. We opened up the molar and passed a fine wire through and on into the submaxillary gland and found that this was not a case of malignant disease, but simply one of dead teeth with necrosis and a sinus. The patient promptly recovered when the pulp canals were cleared and filled.

DR. HERBERT A. POTTS, Chicago: The condition which seems to me more nearly to merit the name "ramula" is a transparent, thin-walled, chronic tumor developing in the floor of the mouth, microscopic sections of which show either the whole or parts of the sublingual, not the submaxillary, gland plastered out over the walls of the cyst. The cyst walls are non-inflammatory and very thin, and rich in capillary supply. It is to this that the name "ramula," if it is to be continued at all, should, I think, be applied. Bernard and Recklinghausen have been unable to produce ramula by ligation of Wharton's duct. In this connection we are reminded that ligation of the ureter does not cause a cystic kidney. The large cystic kidney is not due to the sudden shutting off of the normal secretion of the gland, but to a chronic condition. The sudden shutting off of the excretion of the gland causes its atrophy. Suzanne and Hippel have shown this in a large number of cases. It has also been demonstrated by anatomic dissection that, in the normal individual portions of the sublingual gland have been found, as stated by Dr. Gilmer, in the fibers of the mylohyoid muscle, also beyond that. It is to this fact that we may ascribe the tumors appearing under the chin rather than in the mouth until they become so large that the fibers have separated and they have been visible both inside and out. These tumors may exist for a long time unobserved. They are undoubtedly chronic. The application of iodine as well as irritations of various sorts, causes a sudden effusion into the cyst from the rich supply of capillary blood vessels around it, and a palpable tumor results. In a series of, I believe, forty cases, Kimmel was able in every case to pass a probe into a patulous Wharton's duct showing no connection whatever be-

tween that and the ramula. These tumors are easily removed. They are covered, and very loosely, by the mucous membrane of the mouth. In some cases, when the patient closes his mouth, the tumor may be seen beneath the chin; when he opens his mouth it is gone and is in the mouth. In most cases, after incision of the mucous membrane, they may be shelled out with the fingers. Of course, they may become infected, and then the proposition becomes a difficult one.

In view of the fact that these tumors seem to merit the name "ramula" more than any other, I think that if the term can not be excluded from our nomenclature it should at least be confined to these. In *THE JOURNAL A. M. A.*, May 30, 1908, the term "acute ramula" is applied to an abscess which was opened and was healed within a few days. In regard to Mikulicz's disease, the etiology of which is rather obscure, a number of the cases which have been collected, about 30 in all, I believe, were found to be simultaneous with enlargement and involvement of the lymph glands and lymphatics. The blood findings in many of these cases are such as are observed not only in leukemia, but in pseudo-leukemia. The microscopic sections of local parts of the salivary glands show an increase in lymphoid material, and this increase is at the expense of the parenchyma of the gland. It is rather strange, too, that the submaxillary gland, in the substance of which it is doubtful if there is any lymphatic tissue, although there are a few lymph glands at the bifurcation of the artery which supplies the gland, also enlarges in this condition either on one side or both sides, usually on both. Mikulicz has described the symmetrical swelling of these glands, in which this gland is also involved.

DR. THOMAS L. GILMER: In answer to Dr. Latham, I have found these conditions existing on the left more frequently than on the right side, but do not know the reason.

## THROMBOSIS OF SUPERIOR LONGITUDINAL AND LATERAL SINUSES COMPLICATED BY PREGNANCY.

TREATED BY OPENING THE TORCULAR HEROPHILI.

LOUIS C. DEANE, M.D.  
SAN FRANCISCO.

The following case is reported somewhat fully, for the following reasons: First, it is an extreme case of uncomplicated infective thrombosis of the superior longitudinal and lateral sinuses arising from a chronic purulent otitis media and mastoiditis; second, during the course of the illness, which was most profound, the patient carried a five to seven months fetus, later giving birth to a healthy child, and third, one of the operative procedures, which was directly accountable for the patient's recovery, I believe to be the first on record. I make this last statement with some hesitancy, but I have been emboldened to do so on account of the various answers to communications I have had with several authorities, both in this country and in Europe; also because my attempts to find a similar case have been futile.

*History.*—Mrs. T. L., aged 18, entered Mount Zion Hospital Oct. 9, 1907. For eleven years she had had a purulent discharge from the right ear, with earache and tenderness over the mastoid at various times. Father, mother and sisters were well and she showed no evidence of previous sickness other than that from her ear. The right ear became unusually painful three days previous to her entrance, with great tenderness over the mastoid, and profuse discharge from the meatus.

*Examination.*—The mastoid was normal in appearance, sensitive to touch, and the auditory canal occluded with polypi. The patient was delirious; her temperature 102.4 F.; pulse 144. Blood count showed 11,300 leucocytes with 85 per cent. of polymorphonuclear leucocytes. Patient was five months pregnant and had a bloody and purulent vaginal discharge. Fundi of the eyes were normal. At ten o'clock in the evening the patient was taken to the operating room.



*Operation.*—There was no swelling or redness over the mastoid region, neither were there any outward indications of cerebral complications or thrombosis. The auditory canal was cleared of polypi, and an incision made over the mastoid. While separating the periosteum from the posterior superior wall of the osseous meatus a quantity of foul smelling pus, under pressure was evacuated. This came from the mastoid cells and had opened under the periosteum of the osseous meatus; it was packed off and the mastoid cells entered directly through a hard lamella of bone, when more pus of the same nature was freed. The opening was enlarged, and a quantity of granulation tissue and several small sequestra of bone were removed. The sigmoid sinus was exposed for an inch and a half past the knee into the lateral sinus. The sinus was found to contain no blood and without effort a probe was passed through an opening in its wall which was gangrenous and irregularly discolored. The opening into the antrum was next enlarged and the superior posterior wall of the osseous meatus chiseled away, much of which was found to be carious. The bone of the facial canal was unaffected. My intention was to perform a radical operation with the removal of the contents of the tympanic cavity, but after finding that the tegmina antri and tympani were intact and that the infective process had not extended in that direction I satisfied myself with a thorough curettage of the antrum and aditus, and on account of the grave condition of the patient, directed my attention to the sinus. The sinus was slit open, and some foul pus and debris liberated. A blunt curette was passed towards the bulb followed by free bleeding. The sinus was then curetted in the opposite direction for a distance of three and a quarter inches with but slight bleeding; it was then packed in both directions. The advisability of ligating the jugular at this time was considered, but on account of the free hemorrhage obtained from the inferior petrosal sinus or jugular vein and the very poor condition of the patient, it was deemed best to await further developments. Immediately following the operation the patient was exceedingly weak with temperature of 103.2 F., pulse 138 and respirations 28.

*Postoperative History.*—October 10: Temperature normal with pulse 108 and respirations 20. Patient vomited all fluids and heroin was given to relieve the pain which seemed to be localized in the ear.

October 11: Condition same. Temperature normal, vomited often, complained of severe pain in head. Wound dressed with little bleeding from the sinns. Abdominal pains.

October 12: Patient more quiet. Temperature rose for a short interval from normal to 100.2 F. Pulse from 96 to 110. Respirations normal; no vomiting; eggs and broth retained. Vaginal discharge examined, and found to contain gonococci. Blood showed 15,200 leucocytes and 84 per cent. polymorphs.

October 13: At 6 a. m. patient had a chill lasting twenty minutes; at 10 a. m., temperature was 105.4 F., pulse 160. At 12 o'clock temperature was 101.8 F., and at 2 p. m. it was normal with pulse 120 and respirations 20. Heart and lungs examined and found to be normal, fundus of eyes normal. There was no question now that the thrombosis had again become active and that infective material was being liberated into the circulation, either directly by the jugular vein or through the torcular Herophili to the lateral sinus of the opposite side.

October 14: Patient was very restless; complained of pains in the back and abdomen, but an examination failed to reveal an infection of any organ. At 5 p. m. she had a chill lasting half an hour and at 7 p. m. the temperature was 105.3 F., pulse 168, respiration 34. At 10 p. m. temperature was 100 F., and pulse 134.

*Second Operation.*—At 11 p. m. the patient was again taken to the operating room with the idea of resecting the jugular vein, but owing to the very depressed condition following her rise of temperature a hasty and simple ligation of the jugular was made at the level of the cricoid cartilage. Blood count during the day showed: Reds, 4,200,000; whites, 13,000; polymorphs, 83 per cent.; large lymphocytes, 2 per cent.; small lymphocytes, 15 per cent.; hemoglobin, 70 per cent.

October 15: Very restless and irritable, pain over the right side of head. Rectal saline infusion of 500 c.c., was used with apparent benefit. At 2 a. m. she had a chill followed by a temperature of 104.8 F., returning to normal at 6 a. m.

October 16: Patient very depressed, could not retain nourishment. At 4 p. m. she lapsed into a state of complete collapse, respirations and pulse apparently ceasing. She was revived by a high rectal saline infusion and hypodermics of nitroglycerin, strychnin and brandy, with a return to consciousness in about 20 minutes. Temperature did not rise over 100.8 F., during the day and was subnormal most of the time—97.2 F. White blood cells, 15,200; polymorphs, 82 per cent.

October 17: Nutrient enema of whiskey, peptonized milk and egg. Could not retain food on the stomach. At 12 m. she had a chill; highest temperature, 105.6 F.; pulse 168. Saline rectal infusion followed by marked improvement, and later enema of coffee and whiskey. At 11 p. m. patient had so improved that it was decided to resect the jugular above and below the previous point of ligation.

*Third Operation.*—The vein was ligated well above the entrance to the facial vein, and resected to within one inch above the clavicle. A small clot was dislodged from the upper part of the jugular after removing the ligature, but there was no evidence of the infective process having extended down to the point of ligation; this was confirmed later for the wound healed within a few days with the aid of small cigarette drain.

*Postoperative History.*—October 18: At 6 a. m. patient had a severe chill lasting 59 minutes. Saline infusion of 250 c.c. was given and later an enema of coffee and whiskey; all were retained. She became delirious, the temperature rising to 104.4 F. and pulse 162; descending to 97 F. with pulse 104.

October 19: Patient irritable and restless; heroin given. She retained on stomach peptonized milk and whiskey which was used as freely as possible. At 1 a. m. she had a chill lasting 50 minutes, temperature rising to 105.6 F., pulse 193, respiration 28. After each rise of temperature it always descended in from two to six hours to normal or subnormal, the pulse remaining comparatively high.

October 20: Patient retained some nourishment by stomach. The lungs, heart, kidneys, liver, urine, etc., were found to be normal, and fetus alive though she complained of abdominal pains. She had a chill at 4 p. m.; temperature 106.4 F., pulse 166. At 10 p. m. temperature was normal.

October 21: Patient was delirious, restless and vomited continually. At 10 a. m. the temperature was 106.4 F., which descended slowly, reaching normal at 6 p. m. A bacteriologic examination was made. The arm over the median cephalic vein was thoroughly sterilized, and the vein exposed, from which blood, uncontaminated from external sources, was extracted. After incubation it was shown to contain a pure culture of *Staphylococcus pyogenes aureus*. From the above culture a vaccine was made, according to Wright's method, for the purpose of combating her general septic condition. It was never used on account of subsequent developments.

October 22: Patient vomited continuously, was delirious much of the time and general condition very poor. At 12 m., after a chill, her temperature rose to 106.2 F., pulse 180, and respiration 36. The wound was dressed each day and the sinus irrigated and packed. The foul odor so noticeable at first had decreased, the probe and the blunt curette were used in the lateral sinus posteriorly as far as the torcular without showing a trace of blood. There was no bleeding noticeable from the direction of the bulb where the inferior petrosal sinus empties.

October 23: Patient had a chill, the temperature rising to 107.2 F., pulse 190, respiration 38. Later the temperature was 97.4 F., and pulse 104. Fetus was alive.

October 24: Patient very weak; vomited all food. Chill, temperature to 105.4 F., down to 97.2 F.

October 25: At 10 a. m. the patient's temperature rose to 107.4, pulse about 200. Lowest temperature 97.2 and pulse 98. At 3:20 p. m. the patient was removed to the operating room with the intention of opening the torcular Herophili through the occipital protuberance.



The question of meningitis, epidural abscess, cerebral and cerebellar abscess was considered. The temperature course would almost exclude a meningitis. The complete absence of pressure symptoms, such as headache, reduced pulse rate and changes in the optic nerve, with the great variation of temperature and the fact that by further exploration, the walls of the antrum, aditus, and tympanic cavities were found to be intact, seemed to exclude cerebral and epidural abscess. There were two questions remaining, a possible cerebellar abscess, which frequently exists with masked symptoms, and a simple infective sinus thrombosis. The close proximity of the cerebellum to a gangrenous and infected sinus, rendered likely an abscess of this part. One thing was certain, that the real source of infection and the chief cause of the symptoms was the dislodgement into the circulation of infective material containing staphylococci, and coming from one of the venous sinuses of the brain. The lateral sinus could be probed from the mastoid to the torcular and seemed to be free of infective material as well as blood. I was compelled to conclude that either the straight, the superior longitudinal, or the lateral sinus of the opposite side was affected. The possibility of the thrombus extending along the superior and inferior petrosal sinuses from the sigmoid to the cavernous sinus was considered, but the absence of all eye symptoms directed my attention again to the sinuses in the posterior region of the cranium. An infection through the posterior condyloid and mastoid emissary veins which communicated with the subclavian and innominate veins, seemed hardly possible.

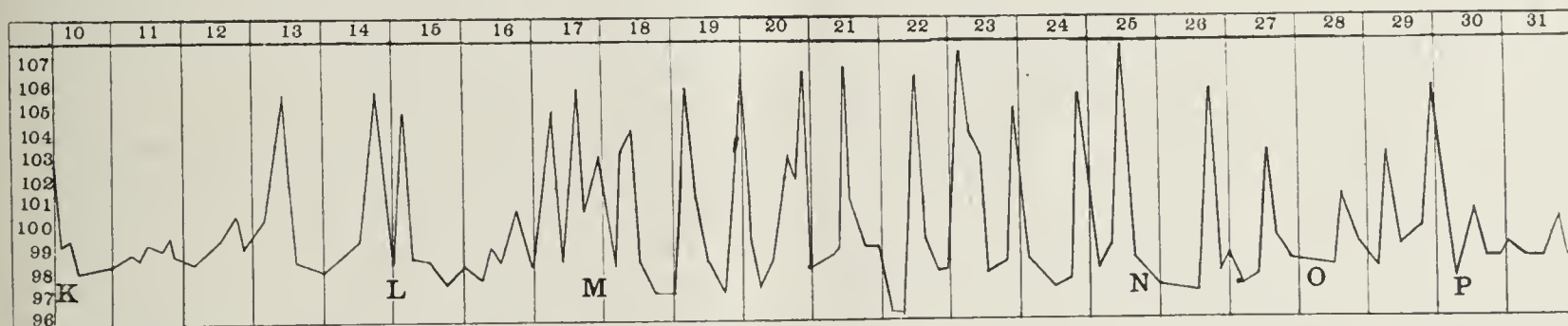
*Fourth Operation.*—Never having heard of the torcular Herophili being operated on, and knowing the great danger of opening this confluence of all the sinuses, thereby shutting off the venous circulation of the brain, I went with some trepidation to the task, realizing that my patient would die

the cranium in this region, and the hemorrhage from the bone in enlarging it. The lateral sinus was readily distinguished at its exit from the torcular, and also by the fact that at this point it was collapsed and discolored. An incision was made in it, extending into the torcular followed by only a slight oozing of blood. A curette was inserted a distance of four inches into the superior longitudinal sinus with no signs of blood, but a quantity of dark and foul smelling material was removed. The probe was then passed toward the left lateral sinus and some bleeding occurred. This encouraged me to use the curette, which was followed by a gush of venous blood that was checked by compression. A strip of gauze was inserted into the superior longitudinal sinus for a distance of two inches, and a piece of gauze was carried along the lateral sinus to its opening in the mastoid. The wound was dressed and patient returned to bed.

*Postoperative History.*—October 26: Patient was in fair condition; restless; vomited frequently. At 5:30 p. m., twenty-five hours after the operation, she had a chill lasting half an hour. At 6:30 p. m., the temperature was 105.8 F., pulse 175. Temperature descended to 97.4 F. in a few hours. A nutrient enema of whiskey one ounce, digitalis 20 minims and milk 4 ounces was given and retained.

October 27: Patient same as day before, vomiting, etc.; nutrient enemata with whiskey in large doses were given; highest temperature 103.2 F. A quantity of dark and purulent detritus with foul odor removed from the longitudinal sinuses.

October 28: Ice cap was applied. Patient vomited, but retained some peptonized milk and whiskey. During the dressing, pressure was removed from the left side of the torcular and a blunt curette gently passed into the left lateral sinus; twelve ounces of blood was extracted, which came in a



Temperature chart of Mrs. T. L.; a case of thrombosis of the superior longitudinal and lateral sinuses. Treated by opening the torcular Herophili. Complicated by pregnancy. Recovery. K, operation on mastoid and lateral sinus; L, ligation of jugular vein; M, resection of jugular; N, opening of torcular Herophili through occipital protuberance; O, extracted 12 oz. blood from left lateral sinus; P, extracted 8 oz. blood from left lateral sinus.

at any moment as she was rapidly growing weaker, and the temperature variations were becoming more marked. The superior longitudinal sinus as a rule empties more directly into the right lateral sinus, while the straight sinus empties even more directly into the left lateral sinus. As the right side of the torcular, where the lateral sinus starts, was apparently occluded, I determined to trephine directly over this region and endeavor to enter the superior longitudinal sinus through the torcular Herophili. As a preliminary procedure the cerebellum was opened at a point one and one-half inches posterior to the auditory meatus and one-half an inch below, the dura incised and a bistoury passed into the cerebellar substance in various directions without revealing any pus. I then selected a point one-half an inch to the right, and slightly below the occipital protuberance for the purpose of entering the torcular Herophili. A chisel and gouge were used to thin the bone, preparatory to the trephine. The cranium in this region is very thick, cancellous and filled with blood vessels that bleed freely; the latter were controlled by the use of sterilized paraffin. Rongeur forceps were quite inadequate in this region, but several adjacent trephines aided by the gouge and mallet gave an opening sufficiently large to work on the torcular Herophili with its several confluent sinuses. One must be in a position to check bleeding from one or more sources and still be able to continue the operation. A circular opening at least two inches in diameter, with its precipitous edges well chiseled away, seemed sufficient. A larger area was impracticable owing to the great thickness of

gush. My idea was to carry outward, if possible, any thrombotic material which might be lodged in the straight, the occipital or the left lateral sinus. The temperature that day did not rise above 101.6 F.

October 29: Patient vomited to some extent, but was not so restless; very irritable temper. Nutrient enemata and temperature again to 105.6 F.; pulse 140.

October 30: I decided to repeat the same procedure of two days before, and removed 8 ounces of blood. This was followed by a rise of temperature to 100.5 F.

October 31: Patient ate and retained eggs, fish, toast and coffee. Temperature rising for a short time to 100.4 F., with pulse 140. The latter remained high regardless of the temperature.

November 1: Highest temperature 99.2 F.; pulse 138. The temperature after this date never rose above normal, though on November 4 it descended to 96.2 F., with some depression.

This case was an uncomplicated thrombosis involving the entire right lateral sinus, and superior longitudinal sinus, with unquestionably the inferior petrosal, straight, and occipital sinuses and torcular Herophili involved in the same process.

Over fourteen inches of venous blood current were obliterated, including the right jugular vein, sigmoid, lateral and superior longitudinal sinuses. After occlusion of the right lateral and superior longitudinal



sinuses, blood was freely extracted from the left lateral, straight and occipital sinuses through the torcular Herophili which procedure marked the termination of her general sepsis.

On January 31, four months after the illness, the patient gave birth to a remarkably fine child weighing seven and one-half pounds. On March 15 the wound had entirely cicatrized over the posterior part of the cranium. A small fistulous opening remained in the mastoid which communicated directly with the tympanic cavity.

The radical operation which had previously been so rudely interrupted was now completed. The malleus and incus were removed, also the outer attic wall and the Eustachian tube obliterated. The area over the region of the sigmoid and lateral sinuses was covered by a dense mass of fibrous tissue which was left intact. The mastoid wound was entirely closed and healed by first intention. Two months later the tympanic cavity and antrum are well lined with skin and the patient discharged. Hearing in that ear is the watch at 16 cm. (6½ in.).

### THE FACTORS IN THE ESTIMATION OF BLOOD PRESSURE.\*

JOSEPH EICHBERG, M.D.  
CINCINNATI.

The first factor in the interpretation of blood pressure must be a satisfactory instrument. It should, to be of service for general work, be portable, quick of adjustment and accurate. These qualities are possessed in eminent degree by the tonometer of Recklinghausen. It does not detract from the achievement of Riva-Rocci that later modifications have improved the technic; his merit will always lie in the impetus given to the study of blood pressure as a routine feature of the general examination; the aim now must be to analyze the findings properly.

The tonometer of Recklinghausen is based on the principle, first introduced into physical science by Bourdon and later incorporated into the kymograph of Fick, that if a very shallow, curved, elongated air chamber, fixed at one end, communicate at one end of the arc with a pressure apparatus, while the other is closed, any increase of pressure will be made manifest by a flattening or elongation of the arc, thereby imparting a certain movement to the end that is free. By a very simple device this movement of the air chamber is communicated to an axis, on which, guarded by a hair-spring, there is fastened a long needle, whose tip is made to move along a graduated scale, previously standardized, and the final figures are read off from the dial.

A notable advantage in the Recklinghausen apparatus is found in the pump. A metallic air-pump, constructed somewhat on the principle of the bicycle pump, is substituted for the ordinary double rubber bulb. The pump permits of increase or decrease of pressure at the will of the examiner; the instrument is at all times under perfect control; measurements can be made with greatest accuracy and promptly verified. By an ingenious arrangement of valves, easily controlled, this increase or diminution of pressure can be made to take place slowly. The whole apparatus is manipulated, without any force,

by one hand, while the other is free to take the pulse. The pump is light, durable and only requires an occasional application of vaselin to valves and piston head.

The cuff is very broad, has a relatively small elastic chamber and a very strong band of thick canvas. It is applied by a buckle and strap, so that it can be snugly fitted to the arm. It is 12 cm. wide. The distention of the rubber pocket can never be very great, though the pressure run to considerable figures. The whole apparatus has, when packed, a weight of four and one-half pounds, and can be easily carried to the bedside of the patient.

The distinct advantage of the Recklinghausen apparatus is in its ability to measure both systolic and diastolic pressures. It will be seen that the mere determination of systolic pressure, though a step in advance, offers little help in the solution of clinical problems; the important thing is the relation of systolic and diastolic pressure. Aside from the actual pressure, measurable directly in centimeters of water, the tonometer makes it possible to observe the rhythm in time and power of the heart's contractions. It will frequently happen that the pulse seems perfectly regular at the wrist, when the ocular evidences of the slightly unequal movements of the needle will show the contrary; the pulse may seem to show an equal filling of the artery at each contraction, but the dial will record differences in this regard. Again, in many organic affections of the heart, a peculiar vibratile oscillation of the needle accompanies the excursions of the pulse, instead of the gradual rise and undulating decline, so that the tonometer offers all the advantages of a sphygmographic tracing, along with the information as to blood pressure.

Care must be taken that the examinations are not too long continued, for the interruption of the circulation in an extremity, if prolonged, will of itself cause changes in the blood pressure.

I start with this postulate: The arterial system has a capacity such that, if all arteries were perfectly limp and dilated, it could never be filled by the available amount of blood. The conditions necessary for a proper circulation are only secured by a certain permanent state of contraction common to all, or nearly all, of the arteries; a state of contraction still further increased with the functional inactivity of the parts supplied, and diminished, but never wholly relinquished, with the proper exercise of function. This brings the general conception of the circulation directly into line with what is known of the safeguarding devices with respect to the heart proper, and, as Gad has shown, with respect to the respiration, in which a state of partial but permanent inhibition always supplies a natural reserve to meet emergencies of all kinds.

This view is directly at variance with older physiologic doctrine. Thus Landois says:

The system of blood vessels, with its many ramifications and subdivisions endowed everywhere with contractility and elasticity, is not only filled with blood; it is overfilled. Hence the mass of blood produces a certain pressure, which produces a stretching of the elastic vessel wall. This, of course, applies only to conditions during life; after death the muscular tissue of the vessel walls becomes relaxed and some fluid finds its way out into the tissue.

In the same way the doctrine that frequency of pulse-beat increases the blood pressure will doubtless receive revision. Foster says:

If, while the force of the individual beats remains constant the frequency is increased or diminished, and, vice versa, if

\* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



while the frequency remains the same the force is increased or diminished, the pressure is proportionately increased or diminished. This clearly must be the case, but obviously it is possible that the beats might, while more frequent, so lose in force, or while less frequent so increase in force that no difference in the mean pressure should result. And this, indeed, is not infrequently the case. So much so, that variations in the heart beat must always be looked on as a far less important factor of blood pressure than the peripheral resistance.

Clinical experience seems to demonstrate that actually the pressure is not influenced by the pulse-rate in the way that might be imagined. Weigert,<sup>1</sup> in a study of 241 cases of acute infectious diseases, found that the lowest pressures in many of these were observed not during the height of the fever, but in the first few days of returning normal temperature; at a period when the pulse was much slower than it had been; when the individual complained of a peculiar gone or good-for-nothing feeling, and when there was always some danger from any peculiar sudden effort. At this period there frequently is an abnormally slow pulse, coupled with this minimum pressure.

Conversely, I have recently had the opportunity of observing a case of paroxysmal tachycardia in a young man of 18, exceptionally tall and fairly well developed, whose heart, on January 14, when he presented himself, beat so fast and irregularly that the pulse could not be counted. The blood pressure in cm. of water, measured by the tonometer, was 122, diastolic 100. The patient was put to bed on light diet and took triple bromids with mild laxatives for two days, when the blood pressure was 128, diastolic 100, the pulse-rate being 72; January 24, the patient being now up and about and again attending a technical school, the pulse-rate was 84, the blood pressure was 134, the diastolic 96; April 25, the pulse-rate was 102, the pressure 132, the diastolic 104. The pressure was practically the same at every stage, regardless of pulse frequency.

There is as yet no normal standard of blood pressure, and it is difficult to see how any uniform basis for comparison shall be found. Different observers have employed different instruments; from this fact alone there would naturally arise some discrepancy; but even with the same instrument the figures have not been even approximately uniform. Tables hitherto given have been based on observations of maximum or systolic pressure only, because it was impossible to get the diastolic pressure with the method employed. The Erlanger instrument is suitable only for hospital or office use; the tonometer of Recklinghausen is the only instrument thus far devised that conveniently gives us both of the data with certainty and promptness.

The accompanying table gives the figures as stated by different observers:

Landois, for larger mammalia and probably for man, 140-160 mm.  
Faivre, direct measurement, 110-160 mm.  
Albert, direct measurement, 100-160 mm.  
Kuhe-Wiegandt, in uremic patient, 150 mm., direct measurement.  
Basch, in temporals, 90-120 mm.; in radials, 110-160 mm.  
Federn, 80-90 mm.  
Bruce, 100-130 mm.  
Tschlenoff, in radial, 70-100 mm.; in tibial, 60-70 mm.  
Huerthle, 100 mm.  
Frey, in digital arteries, 100-110; in radials, 150-160 mm.  
Eckert, in temporal, 175 mm.  
Hensen, in 25 healthy men, aged 17-30, 137 mm.; in 30 women, aged 17-30, 132 mm.; normal range, 100-160 mm.  
Gumprecht, in men, 140 mm.; in women, 120 mm.  
Weiss, in men, 120 mm.; in women, 100 mm.  
Schüle, 80-130 mm.  
Neisser, 90-100 possible 160 mm.  
Jellinek, in 500 soldiers, 100-160 mm., may be 180 mm.  
Neu, 80-130 mm. (regards 130 as abnormal, most frequent 95-115 mm.).

Erlanger, systolic, 110 mm.; diastolic, 65 mm.  
Graupner, 115-125 mm.  
Sawada, 90-120 mm.  
Schilling, 90-120 mm.  
Janeway, 110-125 mm.  
Sahli-Gassel, 135 mm., high limit of health.  
Eichberg, in members of class in medical school, systolic, 86-120 mm.—diastolic, 56-88 mm.

No single reading should be considered a basis of final judgment. It is necessary to see the patient a number of times and to make the observations under diverse conditions, if possible, before estimating the blood pressure as an element of diagnosis. Error has arisen from neglect of this injunction, which has been especially insisted on by Sahli, Krehl and others.

To obtain a fair idea of the blood pressure normal to the individual, observations should be made with the patient fasting and again just after a meal; with the patient reclining and seated or standing; with the patient at rest and after a sudden muscular effort. This will give data for estimation of the actual work of the heart, and also an idea of its recuperative power, a feature of more significance in an estimate of the condition of the circulation than the mere value in figures. It may be assumed that, while an approximate standard exists, taken as an average of many observations as to what should constitute the normal pressure, this varies with each individual, and that it does so with the same individual at different times. The term "amplitude" is suggested by Klemperer for the difference between the systolic and diastolic pressure. Variations in amplitude in the same individual constitute a most important part of the study.

The amplitude increases for organic disease of the kidney, arteriosclerosis and aortic insufficiency. It diminishes for other organic diseases of the heart, affecting the valves or myocardium. It is interesting to note that in a healthy circulation the amplitude increases with moderate exercise, while every deficiency of the circulation manifests itself by a reduction of the amplitude, even when the systolic pressure is increased; this fact enables us to differentiate certain of the nervous disturbances of the heart from those due to organic mischief. In the case of the athlete with damaged heart, the initial amplitude was 114 c.c. in the recumbent position; in the sitting position, 108; after walking upstairs, 94; ten minutes later, 68. In one healthy young man the initial amplitude was 32; after walking, 48; in another test, initial amplitude was 36, after climbing stairs 46; on another occasion 30, after effort 48. According to Gerhardt, the systolic pressure in broken compensation is high, but the amplitude becomes small as the heart grows weak and again becomes greater as more powerful contractions are resumed.

The effect of exercise on the blood tension is a matter of daily personal experience. Any unusual effort makes us conscious of the beating of the heart. This implies an increase of work on the part of the heart, and an increase of arterial tension. The increase of tension is not directly proportioned to the work performed. Thus Masing<sup>2</sup> has shown that the labor of lifting 10 kg. produces a rise disproportionately greater than the labor of lifting 5 kg.

The fact that such an increase occurs makes it necessary to consider the previous conditions of the patient at the time of the observation. But the very fact of such increase as a normal reaction furnishes an important diagnostic aid. The healthy individual, after measured exercise, will present the increase of pressure.

1. Samml. klin. Vortr. (Volkmann's), No. 459

2. Deutsch. Arch. f. klin. Med., November, 1902, lxxlv, 253.



usually with increase of pulse-rate, the increase being more marked in the systolic than the diastolic pressure; but soon after the completion of the work, if not too greatly prolonged or too severe, the tension returns to the normal. For example, in a healthy young man, with an initial systolic blood pressure of 140 c.e., the pressure rose after walking up two flights of stairs to 170 c.e., but within five minutes was back again to 140 c.e. A striking contrast to this was offered in the case of a former circus athlete, now aged 53, who had a marked mitral insufficiency with arrhythmia and arteriosclerosis and a pulse of 96. The initial pressures here were, with the patient lying down, systolic 236 c.e., diastolic 122 c.e.; with the patient sitting, 240-132; after walking up two flights of stairs, 216-122; ten minutes later, 190-122. Here the tension was not only lower immediately after the exercise than before, having fallen from 240 c.e. to 216 c.e., but it continued to decline when the patient was again at rest, and after fifteen minutes was still 50 c.e. lower than at first. A reaction of this kind always indicates a damaged myocardium.

Even in the presence of recognizable valvular lesion, the effect of such a test will, if the heart muscle be competent, give instant information. A man, aged 34, with an old mitral insufficiency, gave, while resting, systolic 168, diastolic 122; after exercise, systolic 188, diastolic 122; after five minutes, systolic 166; next day, while resting, systolic 158, diastolic 122, thus showing adequate compensation.

It is possible by practice gradually to increase the amount of work that can be performed, while still permitting the prompt return of the circulation to the state of normal tension, and this constitutes a proper system of training, as that term is generally understood. The injurious effects of training will inevitably appear sooner or later if such training carries the work beyond the point where a quick return to the normal tension is possible. The true limit of the training capacity of the individual is thus to be found in the interrogation of the arterial tension. Naturally the work that can be imposed on a damaged circulation and yet remain within its training capacity will always be less than that imposed upon a normal individual; in the selection of the test to be employed care and discrimination must always be exercised. Cases of advanced organic disease, of aneurism, of convalescence from exhausting acute disease, may be altogether unsuitable for its performance.

When the effort is prolonged but moderate, the pressure rises, but soon adjusts itself to a mean higher level, in which any slight additional effort produces no effect. Thus in the case of the young man just mentioned with a normal pressure of 140 c.e. the systolic pressure after walking one mile was 154 to 112 diastolic. Walking up two flights of stairs then made no difference, the pressure remaining at 154-112.

The quantity and viscosity of the blood necessarily influence the blood pressure. Moderate blood-letting up to 2.8 per cent. of body weight is not attended by any noteworthy decline of pressure. Blood-letting up to 4 or 6 per cent. of the body weight reduces the blood pressure to zero. The blood pressure is increased by any addition to the volume of the circulating fluid, as by injection of defibrinated blood, or normal salt solution, either directly into the veins or into the subcutaneous tissue, respectively. After copious meals there is also an increase of blood pressure, attributable in part to addition to the volume of circulating fluid. There is as

yet no satisfactory means of determining the viscosity of the blood. Boveri<sup>3</sup> found that hypertension from adrenalin or tobacco was always accompanied by a notable increase of erythrocytes. Paul Arnold<sup>4</sup> also notes that chronic increase of the blood pressure, as a rule, leads to increase of red corpuscles and hemoglobin. Boveri remarked on the distinct parallelism between the viscosity of the blood and the number of erythrocytes, so that a polycythemia would usually indicate an increased viscosity.

The most important factor in the control of blood pressure is the nervous system. It had been known that almost every phenomenon connected with life, whether it be a physical or mental phenomenon, produced, temporarily at least, a modification of pressure over a larger or small portion of the vascular area. Taking the physiology of the nervous control for granted, it is of interest to note that recent experiments have added much interesting light. Curschmann<sup>5</sup> finds that the effect of painful faradic currents applied in such a way as to avoid motor points of irritation, in normal individuals, is generally to increase the blood pressure; in persons with organic or functional hypertension the increase is disproportionately greater. In organic analgesia the experiment produces no modification of pressure, nor is there any change in hysterical analgesia until the hysteria is relieved—thus seemingly proving that there is an actual sensory lesion in hysteria. Klemperer,<sup>6</sup> while admitting the influence of physical work in increasing the blood pressure, says that the amount of this increase is largely determined by psychic factors. Masing<sup>7</sup> determined that the increase of blood pressure with any given effort was less according as there was less determined effort of the will. Kiessling<sup>8</sup> shows that efforts which are unusual, requiring more mental concentration, are accompanied by a greater rise of blood pressure. Direct stimulation of the cortex in curarized animals is attended by a signal rise of blood pressure.<sup>9</sup> In man an analogous result follows hypnotic suggestion (Klemperer<sup>6</sup>). Here, with the muscles perfectly limp, the suggestion of work, such as mounting stairs or drawing a tight cork from a bottle, raised the pressure from 178 c.e. to 206 c.e. It then dropped to 176, and with a further suggestion rose to 210 c.e. The mere intention of doing work, the willing to do it, increased the pressure.

Passive movements, except those causing pressure on the thorax or abdomen, may be performed for a long time without increase of pressure. Klemperer says that the least factor in the increase of pressure attending any given work is due to the necessary muscular activity; the participation of the cerebral cortex is the principal cause. This fact may well explain the advantage of passive movements in cases of heart lesion, either alone or, as at Nauheim, if coupled with effervescing baths, and gradually changed into resistance movements.

Dyspnea increases the blood pressure very materially.<sup>10</sup> This applies not only to acute suffocative conditions but to dyspnea of long standing. The amount of this increase varies greatly in different individuals, depending on the degree of the dyspnea and the power and adapta-

3. *Clin. med. ital.*, September, 1906.

4. Dissertation, Würzburg, 1907.

5. *Berl. klin. Wchnschr.*, 1907, p. 132.

6. *Ber. d. d. Verhandl. d. Kong. f. innere Med.*, 1907.

7. *Deutsch. Arch. f. klin. Med.*, 1902, lxxiv, 253.

8. Dissertation, Greifswald.

9. Weber: *Arch. f. Anat. u. Physiol.*, Supplement, 1906, p. 309.

10. Jaeger, O.: Dissertation, Leipzig, 1906.



bility of the heart. The walls of the vessels contract when the blood becomes distinctly venous in type. It is the increasing venosity of the blood, according to Landois, which causes the emptying of the arteries after death. The vasomotor center in the medulla is the direct agency in this phenomenon, the ganglionic cells being exceedingly sensitive to changes in the composition of the circulating fluid.

Contrary to what might be expected, acute infectious diseases have but little influence on the blood pressure. If we stop to reflect, the fact need cause no surprise, since the compensating mechanisms of the body are so abundantly provided that an acute condition, though it strain the limit of reserve, does not utterly exhaust it. Gerhard<sup>11</sup> shows that in febrile diseases, as the heart grows weak, the arteries contract (probably under vasomotor influence), thus preserving the pressure. A very exhaustive study has lately been made by Weigert<sup>1</sup> of Dresden. In many of the acute infections the pressure fell during the height of the fever and returned to the normal as convalescence was established. There was no proportionate decline in pressure with increasing gravity of the symptoms. The report is based on a study of 241 cases, and the pressures recorded are all systolic. In typhoid fever there was a decline at the height of the fever. In pneumonia no change was noted at any stage, not even in the crisis. In scarlet fever without complication there was no change; the same was true of diphtheria without complications. The observations of the blood pressure furnished no certain prognostic indications nor suggestions for treatment. How little could be learned from the blood pressure with regard to the gravity of the case was shown in a case of ulcerative endocarditis, with general bacteriemia, in which six days before death the pressure was 140 mm.; three days later it was 95 mm.; then, despite increasing frequency of the pulse, it rose to 115 mm., and shortly before death attained 125 mm. In another case of ulcerative endocarditis with streptococci in the blood the pressure on the second day was 136 mm.; the next day it was 122; then it rose to 155 mm. on the tenth day, and on the eleventh, the day of the patient's death, it was 145.

However, Cook and Briggs<sup>12</sup> found in typhoid cases a hypertension increasing with complications, parallel to the severity of the disease and to deepening intoxication. The occurrence of perforation, confirmed by operation, was indicated by a sudden jump in pressure before the appearance of any other symptom, the pressure rising from 106 to 141; while in another case with seeming certainty of perforation, as shown by leucocytosis, rapid pulse and sharp abdominal pain, without rise of blood pressure, the operation failed to show any sign of perforation. Similarly, Teissier and others have found in the sudden increase of pressure a precursor of hemorrhage. Crile, too, found this increase of blood pressure in cases of perforation confirmed in four cases by operation or autopsy. In making this observation frequent tests will be indispensable, and only very marked, sudden fluctuations can be of value.

The acute condition may pass without notable change in blood pressure, but the subsequent history of these cases, as recently studied by Thayer in typhoid, shows that after the lapse of several years the damage done may become manifest. Thayer's patients all showed an increase of blood pressure as compared with other indi-

viduals of the same age. Many had developed arteriosclerosis. The greatest rise was observed in the later decades.

Determination of a high or low pressure is in itself of no value. The lowest values compatible with life are found by Neu<sup>13</sup> to be from 40 to 45 mm., and these occur only with subnormal temperature in the moribund state, though Neu<sup>13</sup> has seen patients recover after the pressure had fallen as low as 50 mm. The greatest variation that has come under my personal observation was noted in the case of a shoemaker, aged 64, with arteriosclerosis, a man of temperate habits, with no recognizable lesion except a slight bronchitis, where the amplitude was 212 c.c., the systolic pressure being 394, the diastolic 182 c.c.

It is in chronic conditions that the study of blood pressure is of the greatest advantage for diagnostic and therapeutic purposes. Friedrich Müller states that the constant increase of blood pressure is the earliest symptom of a developing arteriosclerosis, and Groedel<sup>14</sup> maintains that the constant increase of blood pressure, in the absence of aortic insufficiency and of interstitial nephritis, is in itself sufficient to establish a diagnosis of arteriosclerosis. Hypertension does not necessarily exist in every case of arteriosclerosis; on the contrary, normal pressure may be present in advanced cases, but where the increased pressure is found the presence of arterial changes is indicated.

Hypertension, however, is not in itself a disease. Graupner<sup>15</sup> says that it is an accompanying or resulting symptom of many anomalies of nutrition — diabetes, gout, syphilis, chronic lead poisoning and certain kidney affections, all of which lead to changes in the splanchnic distribution. Changes may be present in the aorta, in the cerebral or brachial arteries, without any change in tension. Romberg and Hasenfeld have shown that hypertension occurs only when the arteries of the splanchnic territory are extensively involved. Sclerosis of the arteries is a very slowly progressive change. Its nature has been most exhaustively studied by Jores.<sup>16</sup> The association with nephritis has long been recognized. Groedel found in seventy-one cases of nephritis a minimum pressure of 130 mm., and more than half had a pressure of 170 mm. or more.

The general assumption has been that hypertension is in itself very dangerous, inasmuch as it leads to alteration of the vessel wall, possibly to rupture, or induces cardiac hypertrophy and subsequent dilatation, so that in every case baths, iodine compounds and nitrites should be used. This view is strongly combated by Krehl<sup>17</sup> and by Bier. They regard the high pressure as compensatory. In chronic kidney disease the high pressure causes a more rapid flow through the reduced vascular area in the kidney, and this more rapid flow allows of necessary elimination. In many cases, with a more effective action of the kidney, the pressure promptly declines. Krehl cautions against unnecessary interference with this beneficial automatic arrangement for maintaining the competency of the kidney, except in so far as regulation of the diet may reduce the proportion of waste products to a minimum, for reduction of blood pressure will retard the elimination from the kidney and increase the

13. Experimentelle und klinische Blutdruck-Untersuchungen, Heidelberg, 1902.

14. Ber. ü. d. Verhandl. d. xxi. Kong. f. innere Med.

15. Berl. klin. Wchnschr., 1907, No. 15.

16. Wesen und Entwicklung der Arteriosklerose, Wiesbaden, 1903, Bergmann.

17. Deutsch. med. Wchnschr., 1905, No. 7.

11. Samml. klin. Vortr. (Volkmann's), No. 470.

12. Johns Hopkins Hosp. Rep., xl.



patient's danger. In six cases of chronic kidney disease with hypertension reported by Graupner the blood pressure fell as soon as the function of the kidney improved; the compensatory increase of tension was no longer necessary. Similarly Krehl regards the hypertension in arteriosclerosis as part of the natural regulation with which we should not interfere. On this point, however, issue may be taken, provided a healthy heart muscle exists. If the heart be insufficient, or if its power of adaptability be greatly reduced, then it is probable that the hypertension assists the circulation. But with a normal heart the increase of tension in arteriosclerosis is due to mechanical conditions, thickening of vessel walls, reduction of caliber, loss of elasticity—all purely mechanical obstacles, whose effects can be modified by treatment.

The indication of the necessity for treatment, for attempting to reduce the hypertension, is to be found in the response of the heart to blood-pressure tests after a measured amount of work. If the heart muscle still has a certain training capacity, then it does not require the compensatory hypertension. The question is always one of adaptability of the heart.

Many agencies reduce the blood tension. Warm, effervescent baths, as used in the natural state at Nauheim, are of most signal value and thousands are benefited annually; under their influence, if judiciously employed, the blood pressure increases to a physiologic maximum and then falls, while the functional capacity of the heart increases by combining the baths with exercise. The effect of iodine in arteriosclerosis is perhaps to be explained by the control which it exercises over the polycythemia, and by its reduction of the viscosity of the blood, rather than to any influence on the anatomic change. The effect of the nitrites is universally acknowledged.

It is in the direction of prevention, however, that we should most earnestly apply our efforts. With our knowledge of the influence of the nervous activity in the causation of the hypertension, with the recognized rôle of excessive waste products in the blood in the same direction, the treatment to be instituted lies more in educating the patient to right living than in the administration of medicine. Avoidance of alcohol and tobacco, moderation in eating and drinking, proper hours of rest, and the elimination of excitement and nerve strain become the principal therapeutic measures. To cultivate repose is thus not only an obligation imposed by good breeding; it is an imperative law of physical health. The study of the blood pressure furnishes the guide as to the efficacy of the treatment, as well as to the time for its continuance. Assuredly it is not possible to agree with Romberg in this statement: "With regard to the measurement of blood pressure we thus have much more accurate information than formerly regarding one of the conditions under which the circulation is carried on. But even as no conclusions as to the efficacy of the circulation can be drawn from the height of the blood pressure, no clue as to the details of the mechanism is found in the composition of the blood pressure and its comparison with the maximum of pressure."

These factors give no measure of the relative participation of heart and blood vessels in the existing changes of the circulation, because the extent of the pulsatile oscillation is influenced not only by the heart but by the tension and elasticity of the vessels, and the

tension of the vessels is by no means in a fixed ratio to the maximum of pressure."

The following conclusions seem justified:

1. The routine interrogation of the blood pressure should constitute part of the regular examination of each case.
2. Both systolic and diastolic pressures are necessary in the solution of the problem.
3. Systolic values of more than 130 mm. call for further study.
4. The most important feature of the study of blood pressure is found in its behavior under tests with measured amount of work.
5. Increase of blood pressure is often conservative, and then calls for no interference.
6. A pressure that is at all times above normal may be the only, as it often is the earliest, evidence of arteriosclerosis.

619 Oak Street.

#### DISCUSSION.

DR. W. F. DUTTON, Pittsburg: The etiology of hypertonic contraction readily resolves itself into two great divisions, the influence of the nervous system and the composition of the blood. I am not referring to the mechanical conception which would make the arteries mere elastic tubes but to that of living tissue. I have been experimenting with methylene blue. When administered in large doses a retention of the drug in the tissues takes place, owing to a disturbance of renal function, and manifests itself by a diminished excretion of the drug in the urine and feces. After a saturation of the tissues every additional dose is followed by a lessened functional activity. This effect is most apparent in the arteries, and it causes at once a hypertonic contraction and hyperemia of the renal capillaries as well as other pathologic conditions. This method is one to determine the condition of the arteries. The tightening or relaxation of the radial arteries is of clinical importance. The conception is false that the blood-pressure is heightened inside all hypertonically contracted blood vessels only. The two factors of the vessel wall and of the contained blood must be separated. There should be an estimation of the pressure inside of the artery, no matter what the thickness of the walls may be. Nervous reflex, however, may be due to blood impurity.

I do not believe that von Recklinghausen's instrument differs greatly from others. The only thing that can be depended on in its use is the estimation of the resistance of the blood. None of these instruments is perfect. The one, however, that I believe to be the most convenient for the general practitioner's use is that of Riva-Rocci as modified by Cook. The hypertonic, or the sclerotic or atheromatous condition of the arteries is determined by the sense of touch. I believe that the more the general practitioner practices this determination of the arterial condition by the sense of touch, the more perfect he will become—and more so than by the use of these complicated instruments. Arterial sclerosis and atheroma are totally different. Continued stimulation of the arterial wall leads to structural changes, and the fact that a fibrous hyperplasia of the tunica intima takes place shows that the vessel changes are not due to mere nerve influence, but to the blood itself. The intensity of internal changes in the kidneys indicates a presence of excrementitious substances in the blood seeking an outlet. There lies, in part, an explanation of vascular, cardiac, and renal changes. Most text-books endeavor to present the subject in such a way as to make one think that atheroma, sclerosis and hypertonic contraction are one and the same thing. But the surgeon might treat a broken leg for tumor of the brain just as well as the physician might treat atheroma for sclerosis.

DR. N. S. DAVIS, Chicago: In certain arterial diseases the arterial wall still retains its power to contract; I have observed that other physicians often overlook this fact. It is a fact that not only healthy normal walls but diseased arterial walls possess this tonic power to contract. Furthermore,



many times a diseased arterial wall has a greater degree of tonicity and power to contract, or is more easily stimulated to contract, than a healthy arterial wall. When the artery is compressed the cessation of the flow of blood through it depends not entirely on the pressure of the blood inside the artery, but first on the thickness and tonicity of the arterial wall—in other words, on the rigidity of the arterial wall; and second, on the size of the lumen of the artery. Therefore, when a hemomanometer is applied to an arm and the arteries in it compressed it must be remembered that the compressibility of the artery as well as the pressure of the blood within the artery is being measured. The so-called arterial tension really means the compressibility of the artery.

DR. I. J. WOLF, Kansas City, Mo.: I am especially interested in two points that Dr. Eichberg brought out. First, mental influence is capable of producing a rise and fall in the blood pressure the same as physical labor. This is somewhat akin to what Parlow demonstrated regarding the work of the stomach: that the influence of the mind is as powerful in causing a flow of gastric juice as food itself. The other point emphasized, which I have often noticed in my clinical work, is that the increase in blood pressure is generally compensatory, and that to interfere with this compensatory increase in blood pressure is often dangerous. In such cases, when patients present themselves with a high blood pressure, the question is not so much what the blood pressure is at present, but what it has been before. If it was, for instance, 280 before and the kidneys were doing good work with such a blood pressure, it would certainly be dangerous to try to reduce it, or, if already lowered, to reduce it still further by the use of nitrites or the like. In such cases, though the blood pressure may seem dangerously high, the use of digitalis is more indicated and better able to remove untoward symptoms than the use of blood-pressure-reducing remedies. If, in addition, it is seen that through proper diet and hygiene the patient's blood pressure is not increased beyond the necessities of the case, the patient's welfare is guarded. High blood pressure does not necessarily mean a competent heart; nor does it exclude the use of digitalis.

DR. JOSEPH L. MILLER, Chicago: In many cases of hypertension it is not necessary to institute any treatment. All no doubt will agree that most frequently these cases are due to the condition of the kidneys. The question then arises whether or not a lowering of the blood pressure reduces the elimination from the kidneys. There has been a considerable amount of work done on this subject and on the relation between the lowering of the blood pressure and the elimination from the kidneys. The most accurate work on this subject has shown that, when the blood pressure was reduced from 20 to 25 mm. of mercury, for example, and a careful determination of the elimination of water and solids from the urine was made covering a number of days, there was a decided reduction in the elimination of solids through the kidneys.

DR. S. ST. JOHN WRIGHT, Akron, Ohio: Blood pressure is only one of many pressures which modern methods of living affect. The changed relations existing between patient and physician demand consideration. In these days of meters and instruments of precision, which are now in most homes, the doctor must still be a leader as was the family doctor of old. He can not afford to be without apparatus. For the neurotic and morbidly introspective patient an array of apparatus might be injurious. In such a case the trained finger of the doctor, educated by the sphygmomanometer, will give him a working knowledge of the blood pressure and reassure the patient.

DR. C. F. HOOVER, Cleveland: There are instances in which lowered arterial tension in patients with Bright's disease causes a profound depression. In cases of chronic interstitial nephritis—and this is a fact that I have verified a number of times—with the elimination of a very small amount of urine in twenty-four hours, the use of diuretic or caffeine is not followed by diuresis; in these cases there is a high arterial tension and an oliguria. But when I lower the arterial tension there is a marked diuresis. Caffeine or diuretic are without effect on the excretion of urine; but when

trinitin is administered, lowering the arterial tension, diuresis occurs promptly. Dr. Wright wants a man of modern times and not of the old school. It is the use of the blood-pressure apparatus which teaches clinicians how to estimate blood pressure by touch.

DR. JOSEPH EICHBERG, Cincinnati: It was not with a view of measuring the blood pressure alone that I presented the instrument; but I wish to call attention to its availability in the routine examination of patients. It is not in determining the absolute blood pressure that much can be learned; not from its high or low reading, but from consideration of the blood pressure in connection with the symptoms. In the study of heart disease, the determination of the heart murmur alone really means nothing. After recognizing a certain cardiac murmur a proper analysis must necessarily determine its source. And so with the determination of the blood pressure; in hypertension only a proper study can determine whether the heart, the arteries or the nervous system is at fault. The most important feature in connection with the blood pressure is the determination of the compensatory action of the heart, the adaptability of the heart after a measured amount of exercise. Having determined the blood pressure of an individual at rest and in exercise, one should then note how the heart behaves. If the heart is competent, if fully able to compensate, the high pressure is not a dangerous factor. The criticism of the instrument which I present is well deserved in the main. The instrument of von Recklinghausen has the defects inherent in all instruments of this nature, but the errors are easily controlled. It does depend on the condition and tension of the metallic spring; but this element in error can be checked at any time by comparison with a standard gauge. The instrument is portable and can be readily carried to the bedside of a patient. It enables one to obtain promptly both the diastolic and the systolic pressure. It has manifest advantage over other instruments that require the use of mercury. Erlanger's instrument can not be carried around; its place is in the office or in the hospital ward.

## UTERUS AND STOMACH.

### THEIR ANATOMIC, PHYSIOLOGIC AND PATHOLOGIC RELATIONSHIP.\*

FRED J. TAUSSIG, M.D.  
ST. LOUIS.

In no specialty do we hear so much of reflex symptoms and reflex neuroses as in gynecology. Those of gastric origin are an especially prolific source of local gynecologic treatment and, as a recent article by Reder<sup>1</sup> indicates, of operative interference also. From a purely clinical standpoint, hardly any two abdominal organs stand in closer relationship than the stomach and the uterus. Thus we have the nausea and loss of appetite during menstruation, the vomiting and craving for certain special foods during pregnancy, the various gastric disturbances accompanying the menopause and the frequent association of gastric and gynecologic diseases. This has led many writers to believe that there must be some special nervous connection between these two organs. In presenting this subject, my motive is to show once more how much is hypothesis and how little is fact in this field of study. I was also able to collect forty-four additional observations of the association of gastric and gynecologic symptoms, taken partly from the clinical records of the Washington

\* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Trivial Pathologic Conditions of the Uterus and Adnexa Considered as Causes of Severe Gastric Disturbances: *Amer. Jour. Obst.*, 1905, III, 667-74.



University Hospital and partly from the private histories of Dr. A. E. Taussig and myself.

#### ANATOMY OF THE PARTS.

According to Morris,<sup>2</sup> the sympathetic system can be divided into:

1. The two sympathetic trunks lying proximal to and parallel with a vertebral column.
2. The great prevertebral plexuses, of which there are roughly three, the cardiac, the solar and the hypogastric, each of which is subdivided.
3. The numerous terminal ganglia and plexuses situated either within or close to the walls of the various organs.
4. The trunks and rami connecting the ganglia with each other and thus contributing to the plexuses, or connecting the ganglia with other nerves, or with the organs with whose innervation they are concerned. These connecting trunks may be divided into central branches connecting the sympathetic with the cerebrospinal and central systems; associative trunks, those connecting sympathetic ganglia on the same side of the body; commissural branches, connecting ganglia on the opposite sides of the body; and terminal or peripheral branches, those which pass from the ganglia to their final distribution.

The nerve supply of the stomach comes for the greater part from the sympathetic system by way of the solar plexus. There are some contributing fibers from the vagus. The nerve supply of the uterus comes from the sympathetic system by way of the hypogastric plexus and the precervical ganglia. Both organs possess within their coats a network of sympathetic ganglia. The connection of these two organs by means of the sympathetic system with the cerebrospinal system seems certain. Just in what way and along what path this connection takes place is, however, still in doubt.

There is lacking positive evidence of any anatomic connection between sympathetic nerve fibers and the ganglionic cells of the central or spinal nervous system. There is, therefore, as yet no anatomic basis for the occurrence of a reflex impulse through the sympathetic system.

#### THEIR PHYSIOLOGY.

If there are some hazy points in the anatomy of the sympathetic, there are even more in the physiology of that system. The occurrence of certain phenomena, apparently reflex in origin, can not be denied. We have, for instance, the stimulation of uterine contractions through irritation of the breasts. The explanation of such a sympathetic reflex is a very difficult matter. Langley<sup>3</sup> has shown that these are not reflexes in the usual sense of the word. By employing the degeneration method, the fibers carrying the excitation could be found to have their trophic center neither in the ganglion itself nor in its periphery. He explains these so-called axon reflexes on the basis of an impulse traversing backward along a collateral branch of a nerve fiber to a sympathetic ganglion cell, and being thence transmitted to the suitable organ. We know that both stomach and uterus may be cut off entirely from their connection with the central and sympathetic nervous systems and still be able to functionate perfectly. Kneidinowski<sup>4</sup> has thus cut off the uterine of rabbits from all nerve supply and

brought about automatic uterine contractions by the use of various irritants. In a similar way Cannon<sup>5</sup> and Cushman<sup>6</sup> have shown by *x*-ray observations of the stomach that after section of the greater and lesser splanchnic nerves in cats, the movements of the stomach continued as before. Nevertheless it seems probable that these organs do not ordinarily functionate by means of their automatic system, but that this action takes place through the sympathetic nerve trunk.

#### MENSTRUATION.

It is not an easy matter to decide whether the phenomena of menstruation, of pregnancy and the menopause should be included in a study of physiology, for the steps from the normal to the abnormal are so gradual as to make it difficult to decide where to draw the line between proper and faulty functioning. Considering first the gastric symptoms attending menstruation. In some persons, these are not present; in others, apparently in equally good health and presenting on careful examination no evidences of gastric disease, we find at the menstrual period pronounced nausea and loss of appetite. We know that at this time there are usually decided changes in blood pressure, occasionally fever of 1 to 2 degrees and various disturbances of the nervous system.

Gastric analyses have been made in a series of cases by Elsner,<sup>7</sup> Kehr<sup>8</sup> and Kretschny.<sup>9</sup> I, also, have made three observations in this point. They are as follows:

CASE 1.—*History*.—M. M., colored, aged 19, single. Menstruated March 4-10, 1908. Stomach normal except for occasional nausea. No objective findings. Stomach examination after Ewald breakfast on March 6 (during flow) showed total acidity, 57; free hydrochloric acid, 18; no mucus. Examination on March 15 showed total acidity, 30; free hydrochloric acid, 12; no mucus.

CASE 2.—*History*.—M. H., colored, aged 27, married, menstruated Feb. 11-16, 1908. On Feb. 6, 5 days before flow, stomach analysis showed total acidity, 47.5; free hydrochloric acid, 35.5; no mucus. On Feb. 13, during flow, total acidity was 87; free hydrochloric acid, 42.

CASE 3.—*History*.—T. S., colored, aged 21, single, menstruated March 5-8, 1908. Stomach analysis, March 4, showed total acidity, 40; free hydrochloric acid, 12. On March 13, total acidity was 33; free hydrochloric acid, 8; no mucus.

Elsner<sup>7</sup> in his fourteen cases found, as a rule, some increase in the total acidity and free hydrochloric acid just before the onset of menstrual bleeding and during the flow a subacidity. Kuttner<sup>10</sup> and Kehr<sup>8</sup> found a subacidity alone. Kretschny<sup>9</sup> found delayed digestion. The total number of cases, including mine, that have been examined are less than thirty.

It is evident that on such meager data we are not justified in drawing any positive conclusions. Patients do not readily submit to such repeated stomach analyses unless they have decided stomach symptoms. Another factor making the results thus far of doubtful significance, is the inevitable inaccuracy of all methods of stomach analyses. This has again been brought out recently in an article by Drs. A. E. Taussig and Rush.<sup>11</sup>

5. The Alimentary Canal After Splanchnic and Vagus Section: Jour. Physiol., xiii, 22.

6. Movements of the Uterus: Jour. Physiol., xxxv, 1.

7. Der Einfluss der Menstruation auf die Thätigkeit des Magens: Arch. Verdauungskrankh., v, 467.

8. Die Physiol. u. Patholog. Beziehungen der weiblichen Sexualorgane zum Tractus Intestinalis: Berlin, S. Karger, 1905.

9. Menstrualmagen: Deutsch. Archiv. f. Klin. Medizin, 1877.

10. Ueber Magenblutungen und deren Beziehungen zur Menstruation: Berliner klin. Wchnschr., 1895, pp. 7-9.

11. The Clinical Importance of the Uneven Distribution of HCl in the Stomach Contents: Boston Med. and Surg. Jour., Jan. 16, 1908.

2. Human Anatomy, 1907.

3. Jour. Physiol., 1894, xvi.

4. Klinische Würdigung einiger experim. Ergebn. bez. d. Physiologie der Uteruscontraction: Archiv. f. Gyn., lxxviii, 34-51.



To consider the stomach disturbances of menstruation as reflex seems most unnecessary. Recent animal experiments (Halban,<sup>12</sup> Fraenkel,<sup>13</sup> Knauer<sup>14</sup>) point almost conclusively in favor of the view that menstruation results from ovarian secretions circulating in the blood.

A most careful study of the condition of the stomach during pregnancy and the puerperium was made by E. Kehrer.<sup>8</sup> Six hundred and fifty examinations of stomach contents after an Ewald breakfast were made in pregnant women and in no instance was any bad effect on the pregnancy noticed as a result of the introduction of the stomach tube. In the first six months of pregnancy he found the secretion of hydrochloric acid as a rule somewhat lessened. In the last few months of pregnancy, likewise, he found some diminution both in the total acidity and the amount of hydrochloric acid. The motility of the stomach during pregnancy, as a rule, was found to be unchanged. In the first few days of the puerperium there was a diminution in the secretory function of the stomach corresponding to the loss of blood during labor. When a severe hemorrhage had occurred the diminution of gastric juice was very marked. He consequently advises a somewhat restricted diet in the first week postpartum, since this would correspond to the capacity of the stomach for digesting food.

#### VOMITING OF PREGNANCY.

That exaggerated disturbance of the stomach during pregnancy known as hyperemesis was formerly supposed to be purely a nerve reflex. Now we are coming more and more to regard the nervous cases as the exception and the toxemic cases as the rule.

#### THE STOMACH AT THE CLIMACTERIC.

When we consider the stomach symptoms arising at the time of the menopause we are practically in the realm of pathology, for ordinarily disturbances at this period are so slight as hardly to deserve special mention. Where more pronounced, they are usually attended by nervous disorders. It is difficult to tell in a given case to what extent the gastric symptoms are due to this nervous condition, to what extent they result from secretory intoxications, and to what extent they are reflex neuroses. A very considerable number of my forty-four cases (23 per cent.) were in women at the time of the menopause.

#### PATHOLOGY OF THE UTERUS.

Among the pathologic conditions of the uterus that are most frequently associated with gastric disturbances should be mentioned first of all, retroversion. Of Winckler's<sup>15</sup> total of forty-one cases, ten had a retroversion. Sommer<sup>16</sup> gives gastric analysis in 11 retroversion cases. Panecki<sup>17</sup> in 15, Kehrer<sup>8</sup> in 15, Frank<sup>18</sup> in 6.

In my list, there were seven instances of retroversion with gastric symptoms. The findings of these various investigators lack uniformity. In my own list, there

were five with subacidity or total absence of hydrochloric acid and two in which the findings were approximately normal. Taking the average of the sixty-five cases thus far examined, we find that in about half of them the hydrochloric acid was unaltered in amount. When a change was noticed it was usually in the direction of diminished amount of hydrochloric acid. Many interesting cases are on record in which a correction of a malposition of the uterus resulted in a sudden and complete cessation of the stomach disturbances. Kehrer,<sup>8</sup> Gellhorn,<sup>19</sup> Eisenhart,<sup>20</sup> Hewitt<sup>21</sup> and others have reported such occurrences and believed that they could absolutely exclude the possibility of suggestion as a factor in the relief of the gastric symptoms. Winckler<sup>15</sup> and Sommer,<sup>16</sup> on the other hand, saw patients in whom, although the uterus was brought forward and kept in perfect position by means of a pessary, the gastric disturbances persisted. In fact, in one of Sommer's patients, the gastric symptoms were distinctly aggravated after the uterus was brought forward. The following case is from my own records:

**CASE 4.—History.**—Mrs. I. W., aged 38, had had two children and no miscarriage. She complained of premenstrual distress, dysmenorrhea, together with nausea, eructations and pain in the epigastrium. The symptoms dated back to her last childbirth.

**Examination.**—Examination showed a gastropptosis and retroversion of the uterus. Examination of the stomach contents made June 20, 1901, showed no abnormality in gastric secretion, but an impairment of motility.

**Operation.**—On Oct. 2, 1901, Alexander's operation for the relief of retrollexion was performed, with the hope that her stomach symptoms would likewise be improved. This was found not to be the case.

**Result.**—Although the position of the uterus was corrected by the operation and the gynecologic symptoms eliminated, her former gastric symptoms returned within a few months and were only permanently relieved by treating the stomach condition itself.

**CASE 5.—History.**—Mrs. M. S., aged 47, complained mostly of dyspeptic symptoms. No genuine gastritis was found, only a gastropptosis, and a movable retroversion.

**Treatment and Result.**—The position of the uterus was corrected and a pessary put in place, but without any influence on the gastric symptoms or on the findings on gastric analysis.

A large number of these cases of retroversion in which there are symptoms of dyspepsia will be found in women with general splanchnoptosis. Here we are certainly not justified in speaking of reflex neuroses, for both stomach and uterine symptoms arise from one common cause, the relaxation of their ligamentous attachments. The proper treatment for such a condition must, therefore, not be localized to one organ, but should concern itself in an effort to restore to the abdominal walls and pelvic floor their former strength. The following is a case in point:

**CASE 6.—History.**—Mrs. C. G., aged 47, had had three children, and owing to insufficient attention in the puerperium, developed a gastropptosis and retroversion of the uterus. That there was no special disease of the stomach was evidenced by the physical examination and by the analysis of the stomach contents which showed a total acidity of 56, free hydrochloric acid, 29; no mucus present.

**Treatment and Result.**—An effort to correct the retroversion by massage and pessary caused an aggravation of both pelvic and gastric symptoms. These symptoms were back-

12. Ovarium und Menstruation: Verhandl. d. Deutsch. Ges. f. Gyn., 1901, ix.

13. Ueber die Funktion des Corpus Luteum: Archiv. f. Gynaek., lxxviii, 438-540.

14. Ueber Ovarientransplantation: Archiv. f. Gyn., ix, part 2.

15. Ueber die Ergebnisse von Magenuntersuchungen bei Frauen: Berl. Klin. Wchnschr., 1905, pp. 1041-1044.

16. Ueber den Zusammenhang Dyspeptischer Beschwerden mit Erkrank. d. weibl. Geschlechtsapparates: Centr. f. Inn. Med., 1902, p. 217.

17. Therapeut. Monatsch., 1892, p. 79.

18. Archiv. f. Gynaek., 1894, xlv.

19. Gynecologic Diseases Without Local Symptoms: St. Louis Courier of Med., July, 1902.

20. Die Wechselbeziehungen zwischen internen und gynaekol. Erkrankungen: Stuttgart, 1895.

21. Diagnosis, Pathology and Treatment of Diseases of Women: Erlangen, 1869, p. 335.



ache, leucorrhœa, anorexia and occasional paroxysmal pain in the epigastrium. After five weeks' rest in the hospital, under a Weir-Mitchell treatment, both gastric and gynecologic symptoms were relieved, in spite of the fact that the uterus was still in marked retroversion.

It will be evident, however, that when such an infinite variety of interpretations are possible, it is wrong to emphasize these therapeutic experiences for the explanation of any pathologic relationship between uterus and stomach.

Other gynecologic diseases, such as uterine myomata, are also frequently found associated with stomach disturbances. There is not time to consider them separately nor do the observations thus far recorded justify any special deductions. I append my own records in the accompanying table. Beside the seven cases of retroversion already cited, there were thirteen other cases in which careful stomach analyses were made. It is noticeable that most of them show a subacidity and absence or diminution of free hydrochloric acid.

Besides these twenty cases, I found data concerning twenty-four other patients in whom a combination of gastric and gynecologic symptoms was found, but without complete records concerning stomach analyses. Of these additional twenty-four women, nine had relaxed abdominal walls with splanchnoptosis, six were entering the menopause, five had chronic pelvic inflammation and the remainder had varying complaints. Winckler also found hypochlorhydria more common, and in eighteen out of thirty-one cases a gastroplosis was present. A large percentage of the patients in Sommer's twenty-three cases had splanchnoptosis with malposition of the uterus. Both Winckler and Sommer obtained the best results by treating the stomach directly.

The main point to determine in this question is whether or not we are justified in classing the majority of these cases as reflex neuroses. Windscheid<sup>22</sup> urges strongly limiting the use of this term. Some limitation has already been made, for was not the phenomena of Basedow's disease

TABLE OF AUTHORS' CASES ILLUSTRATING ASSOCIATION OF UTERUS AND STOMACH.

No.	Patient.	Age.	Children.	Menses.	SYMPTOMS.		DIAGNOSIS.		Last Menses.	GASTRIC ANALYSIS.		REMARKS.
					Gynecol.	Stomach.	Gynecol.	Stomach.		Motility.	Secretion.	
1	T. S.	21	None	Regular 5-7 days, painful.	Dysmenorrhea, pain in lower abdomen.	Nausea, bloating.	Retroposition of uterus, cervix stenosis.	Gastric neurosis	Mar. 2-8.	Well digested, no fragments.	Total Acid. 33, free HCl 8.	Gastric symptoms not relieved by curettage. Analysis Mar. 15.
2	M. M.	19	None	Regular 6 days, painful.	Dysmenorrhea	Nausea after eating.	Retroversion.	Normal	Mar. 4-10	Well digested, no fragments.	T. A. 30, free HCl 12	Analysis Mar. 15.
3	M. H.	27	2 Abortions	Irregular 4 days, painful.	Pain in lower abdomen.	Pain in epigastrium after eating.	Chronic pelvic inflam.	Possibly nucleus ventriculi.	Jan. 15-20	No mucus, 200cc left.	T. A. 47.5, free HCl 35.5.	Analysis Feb. 6.
4	M. S.	47	No Pregnancy	Regular 5-7 days, some pain.	Backache, dragging in pelvis.	Anorexia, bloating, eructations, epigastric pains.	Retroversion, menopause.	Gastroplosis	.....	50cc left, little mucus.	T. A. 13, free HCl 0	Wore pessary but no relief of stomach symptoms. Analysis made when 3 1/4 months pregnant.
5	M. A.	24	One	Irregular, scanty	Pain in rectum, backache.	Fullness after eating, ructus.	Pregnancy, 3 months.	Gastritis	3 months previous.	Well digested	T. A. 10, free HCl 0	
6	M. S.	3	No Pregnancy	Regular 4-5 days, no pain.	Pain in hypogastrium.	Epigastric, distress after meals.	Atrophy of uterus, menopause.	Gastritis	1 year previous.	Well digested	T. A. 33, free HCl 15	
7	C. W.	24	One	Regular 5 days, some pain.	Pressure in pelvis.	Nausea, vomiting.	Salpingitis, retroversion.	Gastritis	Nov. 8-12	50cc left.	Acid present, free HCl 0.	Analysis Nov. 16.
8	C. M.	24	One	Regular, scanty, painful.	Backache, leucorrhœa.	Nausea, eructations.	Parometritis posterior.	Gastritis	June 6-10	25cc left, poorly digested.	Acid present, free HCl 0.	Analysis June 14.
9	B. Q.	34	One	Irregular 4 days	Pains in hypogastrium.	Vomiting, epigastric pain.	Endometritis lac perineum.	Gastric neurosis	.....	250cc left, well digested.	T. A. 90, free HCl 60	After encephalitis and perineorrhaphy gyn. symptoms gone but gastric as before.
10	S. P.	48	Twelve	Regular 3 days, slight pain.	Leucorrhœa, pain in lower abdomen.	Nausea, fullness	Endocervicitis menopause.	Gastroplosis	.....	50cc left, mucus poorly digested.	T. A. 80, free HCl 60	
11	J. W.	25	One	Too frequent, 3-4 days.	Leucorrhœa, backache.	Epigastric pain.	Salpingitis	Gastritis	Feb. 11-14	50cc left, poorly digested.	Acid present, free HCl 2.	Analysis Feb. 21.
12	C. G.	47	Three	Too frequent, 7-8 days.	Pain in lower abdomen.	Nausea, anorexia, vomiting.	Retroposition, Endometritis	Gastroplosis	Mar. 14.	45cc left, no mucus.	T. A. 56, free HCl 29	
13	E. H.	33	Two	Irregular, 1-2 days.	Dysmenorrhea	Nausea, epigastric pain.	Myoma uteri, ovarian cyst.	Gastritis	.....	25cc left, well digested.	T. A. 22.5, free HCl 0.	
14	E. S.	36	No Pregnancy	Regular 2-3 days, no pain.	Leucorrhœa, backache.	Nausea, eructations.	Dysmenorrhea menopause.	Gastritis	2 1/2 mths. before.	120cc left, poorly digested.	T. A. 10, free HCl 0	
15	M. S.	24	One	Irregular 3 days	Leucorrhœa	Fullness in epigastrium.	Retroposition	Subacute gastritis	.....	Well digested.	T. A. 22, free HCl 10	
16	I. G.	38	No Pregnancy	Irregular, scanty	Leucorrhœa	Vomiting, epigastric pain.	Menopause, fibroid uterus	Gastritis	2 months previous.	100cc left, well digested.	T. A. 72.5, free HCl 47.	Analysis made Apr. 1, hysterical.
17	W. A.	40	No Pregnancy	Profuse, painful	Dysmenorrhea, pain in r. inguinal region	Bloating, ructus, nausea.	Vaginitis	Gastric neurosis	April 1-2	100cc well digested.	T. A. 49, free HCl 38	
18	P. L.	21	No Pregnancy	.....	Leucorrhœa	Nausea, epigastric pain.	Chronic pelvic inflam.	Gastroplosis	.....	100cc left, well digested.	T. A. 55.5, free HCl 41.5.	
19	T. H.	30	Four	Regg. prolonged, not painful.	Leucorrhœa, menorrhagia.	Pyrosis, bloating	Endocervicitis retroversion.	Gastritis	.....	100cc left, no mucus.	T. A. 20, free HCl 0	
20	G. G.	33	Three	.....	.....	.....	.....	.....	.....	.....	.....	

22. Ueber genitale Reflexneurosen: Centralbl. f. Gyn., 1901, pp. 1316-1319.



formerly considered to be purely reflex, and did we not at one time cauterize the clitoris as a means of curing hysteria? Few of us now employ nasal cocaine for the relief of dysmenorrhea. We have come to consider chorea gravidarum and hyperemesis not as reflex, but primarily as toxic conditions. No doubt some think we are going too far. I believe we have not gone far enough. I think Windscheid is right in demanding four postulates for the diagnosis of a reflex neurosis. They are:

#### REFLEX NEUROSES.

1. There must be demonstrated a direct nerve path from the impulse center to the reflex center. This is a difficult matter where that path is *via* the sympathetic. But waiving this point, to say, as Tuzskai<sup>23</sup> does, that a specially close nerve connection exists between stomach and uterus is not justified by the facts. Certain viscera are tributary to the solar plexus and certain ones to the hypogastric plexus, but we know of no special fibers running from the uterus to the stomach or *vice versa*.

2. The next postulate of Windscheid is that with the abatement of the source of irritation (Reizeentrum) there should also be a disappearance of the reflex symptoms. That this has apparently taken place in a number of the cases reported is true, but in the majority of them the element of suggestion can not be eliminated. We may not have told our patient that the position of the uterus was corrected, but something in the voice and attitude of the physician often convinces her that some new (and, therefore, successful) procedure has been employed. Furthermore, the cases in which gynecologic treatment has been successful in the relief of stomach symptoms would be very apt to be published, whereas the cases of failure would never see daylight.

3. The third requirement is that the organ in which the reflex symptoms occur should not previously be diseased. In other words, how are we to tell that the diminution of free hydrochloric acid or the decreased gastric motility was not present before the onset of the genital condition? This will be capable of proof in but very few cases. That the gastric symptoms did not occur until after a childbirth or miscarriage is not enough, for pregnancy, as we know, affects not merely the uterus, but the entire organism. Moreover, occasionally a reflex gastric neurosis proves at autopsy to be an ulcer or cancer or other objective gastric disease.

4. Finally, Windscheid claims for the proof of the reflex neurosis that the two organs, that of the impulse center and of the reflex center, must not both be affected by the same general disease?

What impressed me most in my own series of cases was the frequency with which I found such a general cause, splanchnoptosis, neurasthenia, menopause, etc. I have already shown how the frequency of gastric disturbances in menstruation and pregnancy can be explained on the basis of an intoxication. And here we must remember that the organ that is most sensitive to intoxications of all sorts is probably the stomach. How many of our infectious fevers begin with nausea and vomiting. It should not surprise us, therefore, if secretory disturbances of the ovary or placenta, acting oftentimes as toxins, produce likewise primarily gastric disturbances. These can not, therefore, be called reflex symptoms since they are due to a general cause.

If we exclude, first, the cases in which physical conditions in the abdomen through relaxed walls and pelvic floor have caused gastric and uterine symptoms; second, the cases in which the condition of the blood, as in anemic or chlorotic individuals, causes altered function on the part of both the stomach and uterus; third, the cases in which there is hysteria, neurasthenia or a general neurotic temperament; and, finally, the cases of toxemia of one sort or another, what is there left to call reflex neurosis? A few cases, doubtless, will be found, but they will, I believe, be in ever diminishing number as our pathology is enriched and our methods of diagnosis made more accurate. Above all, let us hope that anatomists and physiologists will in the coming years tell us a little more about the sympathetic system. Until this time, we should not be too positive in our assertions regarding reflex neurosis and be doubly conservative in advising operative interference for the relief of such conditions.

#### DISCUSSION.

DR. J. H. CARSTENS, Detroit: Some of the most troublesome cases to deal with are the very cases in which there are stomach troubles and nervous symptoms of various kinds and, although I am radical ordinarily in operations and believe that in certain cases operation ought to be done quickly, these are the cases in which one can not be too conservative. I have the greatest trouble in convincing patients that they should not be operated on when they believe some wonderful results are possible in this kind of cases. But I know that there are very few such cases in which I can do good. It is sometimes possible to do some good in the way of fixing the uterus, or a kidney that is loose, but in the majority of cases I warn against operation. These patients are born wrong. Their whole nervous system is wrong. It is not medical or surgical treatment that they need, but physical. These cases must be built from the ground up. Months and months of systematic physical exercise are required for this work. By much time and attention in this respect one can do wonderful work in developing the muscles and ligaments so that the abdominal viscera will keep reasonably in place and give them relief.

DR. D. H. CRAIG, Boston: Two years ago I read before one of the divisions of the Massachusetts Medical Society a paper on the hysteroneuroses, so-called, with their relation to a thorough physical examination of patients. The general practitioner in an entirely impersonal way is admonished, advised and criticised at every meeting of specialists, and yet, we all realize that the general practitioner can teach us as much as we can teach him. But the criticism that I make of the general practitioner is that, largely through lack of time, he is too chary of careful physical examination of patients. He is too prone to make a diagnosis on the symptoms given by the patient, and there is no diagnosis more frequently given under such circumstances than that the condition is due to reflex influences. Five or six years ago I instituted the requirement that every patient must be examined physically from the chin down. I do not think that the examination of the organs of special sense come into these cases at all. Under that routine it was perfectly surprising to see the way in which the reflex conditions diminished and to note the appearance of actual physical foundations for what had seemed to be reflex conditions. I believe there are many reflex conditions from uterine and ovarian conditions, but many symptoms loosely classed as reflex will under close examination show a physical cause.

DR. F. J. TAUSSIG, St. Louis: I suggest that we gynecologists work hand in hand with internists, more immediately the men who are taking up the study of stomach diseases, so that we can arrive at some more definite conclusion concerning the subject. The gap still to be filled in regarding the condition of the stomach during menstruation, during the menopause and to a certain extent, during pregnancy, can be filled in only by the working of gynecologists in unison with those fitted to make careful stomach analyses.

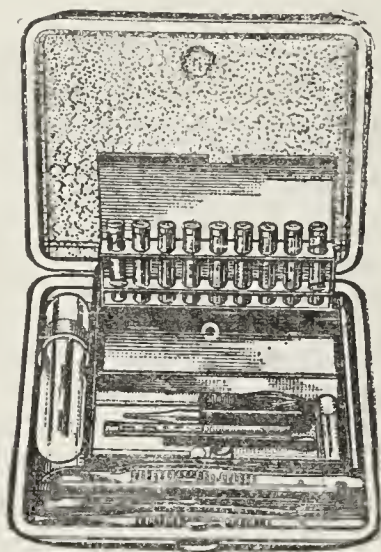
23. Ueber den Zusammenhang zwischen Uterus und Magenleiden: Monatsschr. f. Geb. u. Gyn., xli, 145.



**Clinical Notes****A POCKET EMERGENCY OPHTHALMIC TREATMENT CASE.\***WALTER L. PYLE, A.M., M.D.  
PHILADELPHIA.

Having in mind the frequent necessity for a complete pocket emergency ophthalmic treatment case, always ready to be placed in the coat pocket when answering an urgent and unexpected call, I have designed and had made the outfit herewith described. The case is made of corrugated aluminum, opening laterally and in appearance resembling a cigarette case. It is very strong and will bear considerable rough handling. The edges are reinforced with steel plates. All the corners are carefully rounded and it is sufficiently small to enable the physician to carry it, if necessary, even in the vest pocket, being  $3\frac{1}{2}$  inches long, 3 inches wide and three-quarters of an inch thick. The contents of the main portion of the case are as follows:

Nine small vials containing compressed tablets as follows: Pilocarpin, cocain, dionin, atropin, eserin, adrenalin, fluorescin, homatropin and mercuric chlorid.



The pocket emergency ophthalmic treatment case designed by Dr. Pyle.

These tablets are carried in a suitable rack, which by releasing a spring is raised in such manner as to bring the vials into a convenient position for withdrawing the desired tablet.

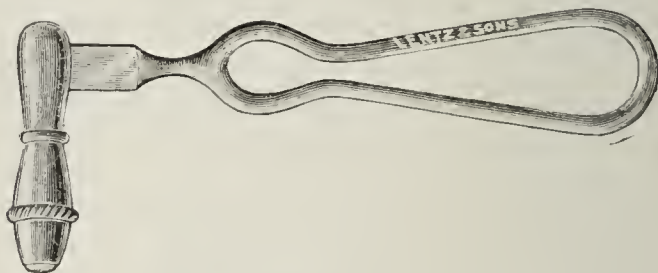
In addition to the foregoing the case also contains:

- 1 Glass pestle and mortar.
- 1 Hard rubber stick (for handling by friction the compressed tablets).
- 1 Pipette.
- 1 Camel's hair brush.
- 1 Glass-stoppered bottle of distilled water.
- 1 Combination corneal spud and thin corneal knife (Graefe).
- 1 Fine iris-forceps.
- 1 Fine iris-scissors.
- 1 Concave retinoscope.
- 1 Flint-glass condensing lens. (This lens, while testing to a 16 diopter focus, owing to its being made of flint glass, has been mounted on a 10-diopter curve, thereby reducing materially its thickness.)

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

**A NEW PERCUSSION HAMMER.**ROBERT N. WILLSON, M.D.  
PHILADELPHIA.

The accompanying illustration illustrates a percussion hammer or plessor that has been gradually evolved from a sense of need and from the inability to find what I wanted on the market. For years I have demonstrated to my own satisfaction and to that of my students the fact that by means of the proper use of the plessor and pleximeter an accuracy of outline can be attained in the examination of the lungs, heart, and other organs that is impossible with finger percussion or by any other means short of the tuning fork and stethoscope. No one plessor has been satisfactory, either with respect to balance, weight or durability. Most of the instruments on the market are fitted with friable rubber handles so long as to be clumsy, and as to invite just what should be forbidden instead of encouraged—a forcible stroke. Not one is designed to promote delicacy



A new percussion hammer.

of perception of sound, through thorough comfort in its use. It is believed that the all-metal instrument here illustrated is not only practically indestructible, but is calculated to encourage a gentle method of percussion, since a hard stroke with its short handle is next to impossible. The balance is perfect, and at the same time the head of the plessor is sufficiently heavy to produce the desired sound by its own fall. The resulting jar is almost nil to the patient, whereas the note obtained by the impact of the leather tip on either the finger or the ivory pleximeter is more resonant, more sharply defined, and more clear than that obtained by finger percussion. The sense of resistance is preserved to those who desire to make use of it by the employment of the finger as the recipient of the stroke.

1708 Locust Street.

**Special Article****PLAGUE IN CALIFORNIA AND THE ANTI-PLAGUE CAMPAIGN.**

(By Our Special Commissioner.)

In beginning this report to you, supplemental to that closed Nov. 30, 1907, and published in THE JOURNAL, Dec. 14, 1907, it may be well to outline, briefly, the conditions that existed at that time. Human plague was first noted in San Francisco in March, 1900, and existed there until Feb. 29, 1904, on which date the last verified case for some three years was noted. It appeared again May 27, 1907. Verified cases had occurred in several towns in Contra Costa County and in Oakland, Alameda and Berkeley, and it was surmised as far back as 1901 or 1902 that the ground squirrels in the counties of Alameda and Contra Costa had become infected with plague



In spite of the urgent request of the U. S. Public Health and Marine-Hospital Service officer in charge in 1903, and in spite of the equally urgent request made in 1906 by the governor of California, the secretary of the treasury would not allow the appropriation of a few thousand dollars for the purpose of determining whether or not the squirrels were infected and would serve, in consequence, to maintain a constant focus of infection. It was not until the present year that funds for this purpose were available—five years after the importance of determining the point had been fully pointed out—and the result has confirmed the supposition. Three ground squirrels infected with the plague have been found in Contra Costa County.

#### CONDITION OF SAN FRANCISCO.

It is necessary to understand the condition of the city at the time that Dr. Rupert Blue, passed assistant-surgeon, U. S. Public Health and Marine-Hospital Service, was detailed as sanitary officer in charge of plague work in San Francisco, about the middle of September, 1907. The parks and open squares of the city had been utilized for the refugee cottages erected by the relief committee and housed thousands of those who had been made homeless by the fire of April, 1906. Vacant lots had been appropriated by various groups of individuals as private camps and huts of old box-wood, sheet iron, scraps of all kinds had been erected. In all cases these shacks were built on the ground, only being raised therefrom when the conformity of the surface required blocking up some portion of the floor to make it level. Thousands of persons were thus living under the most insanitary conditions; sewer connections were uncommon in these camps, and in many instances where they existed the sewers were destroyed or blocked so that the possibly existing connection was largely theoretical.

Garbage and refuse were dumped into boxes or barrels and then into the nearest vacant lot. The location of some of the camps could be detected by the sense of smell at a distance of several blocks. The choicest sort of rat runs, and rat-abiding places were furnished beneath the floors of these shacks, and an abundant food supply was always at hand. Rats, flies and fleas were so abundant as to have excited much comment from the general run of citizens even before there was any question of the existence of plague. Stables had been hastily erected throughout the burned district and in them grain and hay were kept on poorly constructed wood floors, thus adding to the delectable possibilities for rat habitation and food. In practically every stable in the city numbers (sometimes as many as 75 to 100) of dead rats were swept out every morning.

Even with the announcement of the presence of plague, nothing to speak of was done. The incompetent board of health "blew up"; they seemed to have no idea what to do and would enact something to-day only to undo it to-morrow. The people were apathetic or antagonistic and the press absolutely antagonistic.

Dr. Rupert Blue and his executive officer, Dr. Colby Rucker, arrived about September 15 and by the end of that month had pretty well mapped out the situation and their campaign. They had the support of the newly appointed board of health and of the board of supervisors, the latter body allowing \$30,000 a month for the months of September, October and November, 1907. The financial side of the work will be referred to in detail later. Until about the middle of January, however, the work was progressing but slowly and in the face of public opposition, ignorance or intolerance and of the antagonism of the press. In January the situation changed.

#### AROUSING THE PUBLIC.

Some members of the Merchants' Association became impressed with the serious importance of existing conditions and a general public meeting on the floor of the Exchange was called. A committee of public health was formed, called the Citizens' Health Committee, and within a few days very active work was under way. The activity of the Citizens' Health Committee was directed in three general ways—the education

of the public, the raising of funds and the enforcement of sanitary ordinances.

In the work of educating the public, justly considered to be of the most vital importance, no pains were spared. A corps of some twenty-five lecturers was organized and from eight to a dozen meetings were held daily. All classes of people were gathered together and told the gravity of the situation and the necessary things to be done. Employers called their employes together and explained the matter carefully. Women's clubs, lodges, school teachers and school children; commercial bodies and labor unions; merchant prince and scavenger—to all was preached the one gospel: keep all food away from the rat and clean up the city. All but one of the daily papers were converted from the policy of denial and ridicule and published from day to day the matter which was prepared by the regularly employed press agent of the Citizens' Health Committee. One paper, *The Chronicle*, has never admitted the existence of plague and has constantly and persistently ridiculed the whole anti-plague fight.

The awakening was something wonderful to behold. Everywhere one went he could hear nothing talked of but plague and rats. A large variety of circulars were printed, mostly short and concise, giving varied information. One, for instance, was a card perforated at the top so that it could be hung on a tack or nail, and this was given to every householder; it was given to the children in the schools, with instructions to take it home to their mothers; it was given to all employes, with instruction to see that it was hung up in the kitchen. It gave short but clear information as to how to keep all food and garbage away from rats. A full rat is hard to catch, but a hungry rat falls an easy prey to the rat-catcher. Many members of the Citizens' Health Committee, very busy men, practically abandoned their own business for weeks at a time and devoted day and night to this work.

The board of supervisors cooperated in every way in their power. Special ordinances were enacted whenever requested. The building laws were amended to provide for rat-proof basements. The keeping of animals within certain restricted districts was the subject of another ordinance, and the scavengers were compelled to abide by wisely formulated regulations. So much for the general and public work; it was good work and carefully and tactfully directed and carried out. Now let me present the more intimate scientific work, done quietly but most effectively.

#### PLAN OF THE WORK.

Without entering into the minute details of an anti-plague campaign, the broad plan of the work may well be outlined and carefully considered in view of the unexpected result. Two main factors have forcibly presented themselves as being of the first importance in plague eradication:

1. The creation of a perfect system and its rigid enforcement.

2. An infinite attention to detail.

Nothing is too unimportant or too insignificant to demand attention. Before discussing the plan of campaign formulated and carried out by Dr. Blue, in charge, and his executive officer, Dr. Rucker, and in order the more definitely to emphasize the valuable results of this campaign, let me call attention to two points:

First, the chronologic table of cases of human plague:

1907.	
May	1
August	13
September	55
October	34
November	41
December	13
1908.	
January	2
None since January.	

Second, of 109 rats examined for plague in August, 1907, 4.58 per cent. were found to be plague infected. Of 12,433 rats so examined in August, 1908, only .009 per cent. were found infected.

The objects to be accomplished were the following:

1. Extirmination of rats.



2. Prevention of the entrance of rats into human habitations.
3. Early discovery of cases of plague in human beings (and in rats).
4. Prevention of the spread of the disease by human beings.
5. Destruction of infection.
6. Education of the general public.

It has already been seen that the last objective was secured and how. To secure the other desired results, the following general plan of operations was put into effect. The general headquarters, the whole, of course, under the direction of Dr. Blue, was divided into three departments: 1. Statistics; 2. personnel and accounts; 3. laboratory. The first two have been under the direction of the executive officer; the last under Dr. Stansfield, and after his resignation under Drs. Fox and McCoy.

The board of health appointed inspectors of the dead and made a rigidly enforced order that no dead body should be removed from the place of death until a proper certificate had been given by the inspector, stating that the cause of death was not plague or in any way suspicious. To provide for the proper care of human cases of plague, and also to secure due supervision of contacts and suspicious cases, an isolation hospital was built, on the cottage plan, the whole surrounded by a rat-proof fence of galvanized iron eight feet high placed on a cement base sunk three feet into the ground. In addition, an inverted trough was placed on the inside of the fence at the top so that if a rat should enter he could not escape.

There was a little delay in getting the laboratory in good working order, but by the early part of October it was ready and shortly afterward it was enlarged so that for many months it has been possible to examine every rat caught or sent in.

#### SANITARY DISTRICTS.

The city was then divided into thirteen sanitary districts, each with its headquarters office, its own sanitary inspector, clerks, telephone and specially detailed policemen. Under the sanitary officer who, in each case, was either a full or an acting assistant-surgeon of the service, were two special inspectors whose duties were mainly to look after serving citations to appear and show cause why nuisances should not be abated, look after court work, check up the abatement of nuisances, etc. In passing, it may be mentioned that all cases were so carefully followed that out of 98,763 nuisances reported only 511 arrests have been made.

Each district was further divided into as many sections as the degree of infection, density of population or other causes demanded, each such section being under a field inspector. Each field inspector had two assistants and each assistant had two foremen, each with five laborers under him. Thus it will be seen that the territory to be covered was divided so that each ordinary gang of men had but a small section to cover. The foreman was responsible to the assistant field inspector; he, in turn, was responsible to the field inspector, who was responsible to the district sanitary inspector, who was responsible to the head office. In addition to these regular workers, there were special gangs of poison men, most carefully chosen from the best of the laborers and directed by experts in the handling and placing of poisons.

Every effort was made to build up discipline and *esprit de corps*. The men were carefully examined before being engaged and each was told that promotion awaited him and that after three months' good service he would be given a certificate. Warrants were issued to the foremen and field inspectors and some of them were made special city police. All district officers were put into the uniform of the service, with a result of, it is estimated, about 40 per cent. increased efficiency. Regular schools of instruction were started and "green" men were fully trained before going to work. A minimum rat-catch was laid down and any man falling below this was discharged. Every Sunday morning all inspectors met at the headquarters and the work of the past week was gone over, suggestions invited, and the activities for the coming week outlined. This seems to have had a marked effect.

Early in the work a sanitary survey of the whole city was

made and all buildings were inspected and rated in regard to their rat-proof and non-rat-proof qualities, much as they are rated by the underwriters for fire risks. In each district headquarters a card file giving all the buildings in that district with their rating, and space to note the place and date of finding rats and whether infected or not, was of great value. In the central headquarters all this information was compiled so that the exact condition of any and every building in the city, and whether or not rats had been caught in it, could be determined.

At the request of Dr. Blue, a survey of the sewers was made (it is said, for the first time in twenty years!). This revealed a most deplorable condition. In many instances whole blocks were without sewer connection other than fictional. In others the supposed sewers were merely open creeks or redwood boxes. As a result of this survey, the city has been bonded for the purpose of putting in what will be practically a new sewer system.

Some interesting data concerning poisons have been compiled and will doubtless be published by the service in due course of time. It was found after long and careful tests that all the biologic poisons are worthless. Arsenic and phosphorus are the two chemicals which gave the best results.

Throughout the burned district were large quantities of wreckage, twisted metal, old boilers, pipes, etc., which served as harboring places for rats. Gangs of men were put to work on this and all such wreckage was gathered together and piled on bricks or stones so as to elevate it from the ground.

#### RAT-PROOFING BY ELEVATION.

Rat-proofing by elevation was first used in this campaign and was suggested in an interesting manner. Lobos Square camp, a Red Cross camp and in supposedly good sanitary condition, was one of the worst plague foci in the city. It was gone over and over, and yet cases constantly appeared. Finally it occurred to Dr. Blue to elevate all the cottages about two feet from the ground so that the cats and dogs, of which there were plenty in the neighborhood, could get under the buildings and keep the rats away. Thereafter plague disappeared from Lobos Square.

Speaking broadly of the general anti-plague campaign, the measures adopted and carried out were such as to keep all food in the shape of garbage, waste, etc., and the inevitable scraps of markets, restaurants, butcher shops and the like so that rats could not gain access to them; secondly, to catch or destroy the greatest possible number of rats, and, lastly, in so far as possible, to keep rats out of and away from all buildings in which human beings lived or were occupied.

All rats found dead were tagged and sent to the laboratory for examination and identification. All caught alive were tagged and sent to headquarters where they were chloroformed and combed in order to remove the fleas, which were subsequently counted and identified, all the fleas from each rat being placed together in a vial of alcohol. Up to Sept. 1, 1908, 113,743 rats passed through the laboratory and 243,244 had been trapped. They were of the following species in the proportions indicated:

Species.	Per Cent.
<i>Mus norvegicus</i> .....	82.44
<i>Mus rattus</i> .....	1.66
<i>Mus musculus</i> .....	15.82
<i>Mus alexandrus</i> .....	.0109

Between 900,000 and 1,000,000 rats were destroyed. About 15,000 fleas were combed from the rats and identified as follows:

Species.	Per Cent.
<i>Ceratophyllus fasciatus</i> .....	68.07
<i>Pulex cheopis</i> .....	21.36
<i>Pulex irritans</i> .....	5.57
<i>Ctenopsyllus muscili</i> .....	4.48
<i>Ctenocephalus canis</i> .....	.52

Before leaving the subject of the general work of cleaning up and general anti-plague measures, it is interesting to note that remarkable absence of flies and fleas has attracted the attention of the general public, just as the very small number of cases of infectious diseases has attracted the attention of the medical profession. The general sanitary condition of the



city has been improved to a very marked degree. The first seven months of 1907 and 1908 show the following comparison:

Cases.	1907.	1908.
Epidemic Diseases .....	188	153
Typhoid .....	59	33

Now let us consider the methods followed in the actual fighting of a plague focus. In this campaign, for the first time, the basis of the work has been the fact that plague is a disease of rats, and consequently the finding of an infected rat was regarded with quite as much import as the discovery of a case of the disease in a human being.

The rats when they reach the laboratory are first dipped in mercury bichlorid solution, then tacked by the four feet and belly up on a shingle and the thorax and abdomen laid open. They are then examined by an expert, the various glands, together with the liver and spleen, receiving particular attention. In the event that a macroscopic diagnosis of plague is made, specimens are taken for microscopic examination and inoculations are made.

As soon as a plague-infected rat is found in the laboratory that fact is imparted to the chief or his executive, who immediately notifies the sanitary inspector of the district in which the rat was found of the fact and the location of the place from which the rat was taken. This is first done by telephone, in order that there may be no delay, and is later followed by a letter so that there may be no dodging responsibility. Extra gangs of men are then sent into this vicinity and the entire block, together with the blocks in contact, are rigidly gone over and every effort made to eradicate rat-runs, possible rat-harboring places, etc. To accomplish this, in not a few instances floors and sidewalks have been torn up. Shacks have been burned. Stables have been condemned and closed. Furthermore, all persons living so that they have come in contact with fleas from such a rat are watched for eight days.

#### TREATMENT OF PLAGUE CASES.

In the event of the occurrence of a case of plague in a human being, he is at once removed to the isolation hospital. The house in which he lived is fumigated and the clothing and bedding are burned. All human contacts are kept under careful surveillance for eight days. Not only the building in which he lived, but the entire block and the adjoining blocks are subjected to another and more rigid sanitary survey. The full limit of the sanitary ordinances is enforced, and by the time that the men have finished their work it is almost certain that no rat could find food or a harboring place in that district, outside of the sewers. Even the reporting of a suspicious case brings the same immediate and rigid inspection and sanitary invasion into that district. The watchword of the campaign has been and is "Let no rat escape and regard every plague-infected rat as of quite as much a menace as a plague-infected human being."

August and September are regarded as the most dangerous months in this climate, and last winter all who were interested in the question of plague looked forward with dread to the coming of this present season. Yet there are now (September) very few fleas and there has been no case of human plague since January.

For a time the disposal of manure from the city stables was a problem owing to the fact that the state board of health ordered that no manure should be shipped from the city to points outside unless the same came from a rat-proof stable. The market gardeners of the surrounding counties had been for years in the habit of getting this stable manure to use for fertilizer and they at once made objection. But the rule was enforced and the result was to stimulate the stable men into compliance with the requirements. At the present time, of something over 5,200 stables, more than 70 per cent. have complied with every requirement and are practically rat-proof. The others are in process of adjustment.

Early in the course of the epidemic the canal commissioners ruled that no grains, or similar foodstuffs, could be shipped into the canal zone if the same came from warehouses where rats might have access to them. This had a very stimulating effect on the warehouse men and also on the steamship companies, and now most of the warehouses are rat-proofed and

facilities are provided on the docks to store grains, etc., in rat-proof granaries.

The inspection and fumigation of all craft has been continuously maintained under the direction of Dr. Hobdy, passed assistant-surgeon of the service, and his work seems to have been excellently performed.

#### FINANCING THE CAMPAIGN.

The financial side of the campaign is of no small interest. It must be remembered that the city had just suffered the most disastrous fire in history and that all of its various necessary improvements were either absolutely destroyed or else damaged to a considerable degree. Probably more than half the sewers were destroyed. All municipal buildings were total wrecks. Nearly all the schools had been burned. Jails, court-houses, etc., were wiped out. And yet funds for the plague campaign were urgently needed. The city allowed for this work \$30,000 a month for the months of September, October and November, 1907. From December, 1907, to July 1, 1908, \$11,000 per month were allowed. In July \$5,000, in August \$3,000, and from August on \$2,000.

The Citizens' Health Committee has raised and spent, very wisely under the direction of Dr. Blue, about \$150,000. Most of this has been expended for supplies, traps, garbage cans, etc., and for additional ratcatchers. Laborers were employed only through the office of the sanitary officer in charge—Dr. Blue—and they were put on the work as fast as good men could be secured and trained.

The U. S. Public Health and Marine-Hospital Service paid, up to November 25, the salaries of its own officers in charge of the work. From that date to Sept. 1, 1908, it paid the salaries of the officers and men. Since September 1 it has assumed the payment of salaries of officers and men, transportation and all supplies; in other words, the entire expense of the campaign, a most significant fact.

In my report to you of last year<sup>1</sup> occurs the following:

"The continued existence of such a disease over such an area, and for the time during which it is evident that the infection has existed here, would seem to make the infection a subject for national consideration and protection." Whether or not this report, which was placed in the hands of the supervisors, had any influence in determining their subsequent attitude, it would be impossible to say. But the fact remains that the finance committee of the supervisors very shortly thereafter assumed the position that "the invasion of an epidemic pestilence is a national affair," just as much as would be the invasion of a foreign foe. They recommended that appropriations from city funds for anti-plague work be discontinued and that the federal government be asked to assume the whole burden; this was the more forcibly urged in view of the distressing financial condition in which the city had been left by the fire. As has been mentioned, favorable action was taken on this request by the federal authorities, and now, for the first time in the history of the United States, the national government is paying the expenses of a campaign to eradicate a pestilence having gained foothold in one of the states.

#### ANTI-PLAGUE WORK OUTSIDE OF SAN FRANCISCO.

In Oakland, Alameda and Berkeley very little has been done that is more than transitory. The antagonism of the citizens is great owing to the fact that but few cases of the disease in human beings have occurred, and none very recently. Nevertheless the rat infection is there and plague rats are found from time to time.

In Contra Costa County, practically nothing is being done, and here the problem is a very large one, for the towns are small and scattered and isolated cases of plague in human beings have occurred in a number of places in the county. Furthermore, as already mentioned, the fact that the ground squirrels in that county are infected with plague, a fact suspected four or five years ago, has at last been demonstrated. How the problem of attacking the infection now existing in the ground squirrels will be approached is as yet an unknown quantity. It is probable that an effort will be made to obtain some funds for this purpose from the legislature which meets

1. THE JOURNAL A. M. A., Dec. 14, 1907, 2003.



in January next, but, judging from the apathy and antagonism in Oakland, nothing will be done.

#### SQUIRRELS PROVE A SOURCE OF INFECTION.

On Aug. 6, 1908, a boy, 10½ years old, in Los Angeles, picked up a sick squirrel near the railroad yards, which are on the outskirts of the city and near the Los Angeles River. He thought the squirrel was thirsty and took it home to give it a drink. The squirrel bit him and in due course he developed a polyadenitis, in every way typical, clinically, of plague. He was perfectly well at the time and the disease made its onset five days after his being bitten, beginning with the classic signs, headache, nausea, vomiting and high fever, with delirium. He was under medical observation after August 11, and about ten days later was seen by a plague expert sent from Dr. Blue's office in San Francisco. The body of the squirrel which bit the boy was not saved for examination, but another and somewhat tame squirrel kept by the boy was found sick and specimens were taken from it and also from the involved glands and the blood of the boy. Examination proved the presence of plague in both the boy and the squirrel.

Whether the squirrel conveying the infection to the boy was transported from some Bay County where the squirrels have had the disease for the last few years, or whether, during these passing years of idleness and slumber, the infection has passed from rodent to rodent (for there are squirrels all over the state), finally reaching the south, are questions demanding most urgently a prompt answer. What steps will be taken to ascertain the correct answer I do not know, but it would seem to be clearly "up to" the federal government to take cognizance of a situation so pregnant with possibly far-reaching trouble.

### *Therapeutics*

#### GALLSTONE COLIC.

While a large number of individuals are found, on autopsy, to have gallstones in the gall bladder, only a certain proportion of these people, perhaps much less than half, have ever had a gallstone colic. While a tendency to deposits in the gall bladder is present whenever there is imperfect action of the liver and consequently a concentrated or imperfect chemical secretion of the bile, gallstones are not likely to be formed until there has been some congestion, or previous inflammation, or at least irritation in the gall bladder itself. Gastrointestinal inflammation of mild type and duodenitis of mild type are of such frequent occurrence that probably the bile ducts readily become inflamed, either by continuity or by reflex irritations. The inflammation has to travel only a little farther to involve the gall bladder, and any infection of the gall bladder or any increased mucous secretion of the gall bladder furnishes nuclei for calculous deposits from an imperfect bile. Consequently, the predisposing causes to the formation of gallstones are rich, irritating foods, gastritis, duodenitis, intestinal indigestion and fermentation, alcohol, sedentary habits and an insufficient amount of water ingested.

The symptoms of gallstone colic are too well understood to require description, but the irritations from gallstones in the gall bladder are readily and perhaps generally undiagnosed. The irregular and infrequent or recurrent pains and distress caused by gallstones in the gall bladder and the consequent reflex disturbance of the digestion are attributed generally to dyspepsia in some form, and the stomach is actively treated. Actual inflammation of the gall bladder, unless there is a formation of pus and consequent fever, with marked local symptoms, is also, generally, overlooked. Consequently, just as appendicitis is looked for and

excluded in the lower abdomen, so cholecystitis, or irritation of the gall bladder, should be looked for and excluded in the upper abdomen before prolonged treatment of supposed other conditions is begun.

Biliary colic being present, morphin sulphate ¼ of a grain and atropin sulphate 1/150 of a grain should be given hypodermatically, at once. If the patient is able, he should be put into a hot bath in order that relaxation of the abdominal muscles may take place, as this favors the passage of the stone. If the patient is unable to go to the bathroom, or if a bathroom is not at hand, hot water fomentations should be applied to the upper abdomen, and frequently changed. It is absurd to apply any mustard or other counterirritant to the abdomen; also, dry heat is not indicated. Moist heat to produce relaxation is the object of local applications. If the pain is abated by the morphin injected and its intensity again increases, ⅛ of a grain more may be given in 1½ hours from the previous injection, and again in another 1½ hours another eighth grain may be given, if needed. The dose of atropin should not be repeated. It tends to dry up the secretions, contract the blood vessels and inhibit the action of the morphin. The first dose of atropin is given to cause some slight dulling of the peripheral nerves and thus, perhaps, aid in the action of the morphin in inhibiting the pain caused by the contracting bile duct. If at any time the pain is so intense that morphin does not stop it, inhalations of chloroform are indicated. It is much better to give inhalations of chloroform to obtain abdominal relaxation and anesthesia than to stupefy the patient, or cause coma, with morphin.

The best internal aid to the passing of the stone is the plentiful drinking of hot water. Warm olive oil, if the patient is not vomiting, may also be administered on the supposition that it may lubricate the lower end of, or regurgitate up into, the bile duct. No massage should be done or pressure exerted over the upper abdomen with the idea of assisting the passage of the stone.

As soon as the stone has passed into the duodenum or dropped back into the gall bladder the pain, of course, instantly ceases, and a patient who has received large doses of morphin then quickly relapses into a deep sleep. It is generally advisable to keep the patient awake for several hours by gently awakening him every time he drops asleep. By following this rule there will be no danger of morphin coma, or, if it should develop, it would be instantly noted and the proper treatment inaugurated. The patient should remain at rest for the remainder of the day, and in a few hours should be given a saline purgative.

If the stone does not pass, the pain may still gradually cease, or occur at intervals only. If the stone remains in the common duct of course jaundice soon develops. It then becomes a question of medical and surgical decision as to how long an impacted stone should be allowed to remain before there is a surgical interference. The absence of pain during this period is not a guarantee that the stone is not impacted, if other symptoms point to such a condition. A stone long impacted may have so injured or dulled the nerves involved that pain is no longer felt. On the other hand, it is possible that the stone may have passed, but caused sufficient irritation to produce swelling and inflammation of the duct to the point of obstruction and hence jaundice. A dose of calomel or castor oil would then be proper treatment, followed by large doses of olive oil.

Any stomach or duodenal inflammation should be relieved by daily saline laxatives, perhaps best the effec-



rescing phosphate of soda, and the administration of bismuth and soda three times a day, one hour before meals.

R. gm.  
Sodii phosphatis effervescentis.....100| or 3iv  
Sig.: One or two teaspoonfuls, in a glass of water, before breakfast.

R. gm.  
Bismuthi subnitratiss.....20| or 5ā.5v  
Sodii bicarbonatis. 5ā.....  
M. et fac chartulas 20.

Sig.: A powder three times a day, one hour before meals.

The diet for a few days should be similar to that for catarrhal jaundice, viz., free from fat. In other words, milk is not a good diet. A little dry toast, broiled lean meat, as steak or chops, hot tea and poached eggs allow sufficient change of diet for a few days. Cold drinks of any kind should not be taken, but plenty of water should be given daily. If there is constipation there should be a daily laxative, as the phosphate of soda, or any other saline. If there is jaundice, daily hot baths are advisable.

A permanent obstruction should not be allowed to go on long without surgical interference, as the longer a jaundice persists the more bloody and dangerous becomes the operation.

As it is rare for a single stone to have been formed, generally several calculi having been started at once, there will probably be other colics. A properly fitting corset or abdominal band sometimes seems to prevent the stones from washing or shaking over into the duct. Whether there are more calculi in the bladder or not, the conditions that caused the first deposition of salts, unless care is taken, will cause the formation of more stones. There is no known drug or water cure or diet that will dissolve stones already formed, although it is possible that in certain unknown conditions a calculus may disintegrate.

There seems to be no doubt, from the statistics now in evidence, that after several attacks of gallstone colic and when there is every reason to believe that there are more gallstones in the gall bladder, either from pain, indigestion symptoms or from localized symptoms which have been proved not to emanate from the stomach or intestines, even without gallstone colics, the gall bladder should be surgically explored, and if found to contain stones, removed. After a feverish attack or several feverish attacks due to a cholecystitis there is no question of the advisability of operation, but the prognosis is so much better before such inflammation has occurred or the danger from either an impacted stone, or from a cholecystitis with future adhesions, that operation should now generally be early advised. Frequently, however, such advice is refused, and some sensible medical treatment must be devised. The better all of the organs of the body functionate, the less imperfect is the bile, and, consequently, the less tendency to gallstone deposits. For such patients a rigid, sensible hygiene and a diet that causes the least indigestion should be outlined. To obtain this object the individual must be carefully studied. No one diet is the diet to prevent the formation of gallstones. Alcohol, as tending to inhibit digestion and to congest the liver, should certainly be prohibited. If the circulation is impaired it should be improved with proper cardiac tonics. If the kidney functions are not perfect, the twenty-four hour urine should be studied carefully to determine what is well excreted and what not, and the diet and drink arranged accordingly. The reaction of the liver on the kidney and the kidney on the liver can not be too carefully considered. If the circulation

is good and the kidneys are healthy, considerable amounts of distilled water should be regularly drunk. There is no lithia solvent and no spring water solvent for gallstones. A visitation of gallstone patients to a "cure" where they are subjected to rigid régime, their circulation improved, the bowels made to act sufficiently, considerable amounts of water drunk, the diet simple, and means used to increase the circulation in the skin by baths and massage and in the muscles by exercise, will surely improve every such patient, although it will not preclude recurrent attacks of gallstones until the gall bladder is empty, although, as above stated, gallstones may remain in the gall bladder for years without causing colic.

Hyperacidity of the stomach should be combated, and mineral acids should ordinarily not be given, and certainly unadulterated vinegar should be avoided. The vegetable fruit acids which oxidize to alkalis may be allowed and are perhaps beneficial. Whether much alkaline mineral water should be taken depends somewhat on the digestion and the tendency to gout and uric acid conditions, but the sooner that the profession understands that the most solvent water to drink is distilled water, the better will it be for their patients.

The repeated administration of so-called cholagogues, or drugs that are supposed to increase the flow of bile, is not good treatment. Calomel is a cholagogue only in its ability to cause a complete cleaning out of the upper part of the intestine, and is certainly often indicated, but should not be frequently repeated. Salicylic acid preparations somewhat stimulate the secretory activity of the liver, but it is hardly advisable, in the treatment of the condition under discussion, to give a drug so foreign to the system as is salicylic acid. Of course if there is intestinal fermentation and a salicylate, as salol, is indicated, it should be given. A mineral acid, as dilute hydrochloric, or dilute sulphuric, or dilute nitrohydrochloric acid, seems at times to increase the flow of bile to the duodenum, as the duodenum objects to acid and strives to neutralize rapidly any acid that reaches it. These acids, then, sometimes seem to increase the flow of the bile, but except for a short period could not be of any value in disturbances of the gall bladder.

If there is believed to be chronic congestion of the bile passages, the drinking of a glass of hot water an hour before meals is beneficial. Also ammonium chlorid is indicated in this condition, and this drug is just as valuable in subacute inflammation of the bile passages as it is in the subacute inflammation of the bronchial tubes. It may be administered for this purpose as follows:

R. gm. or c.c.  
Ammonii chloridi.....  
Acacie granulatae. 5ā..... 10| or 5ā, 3iii  
Aque menthae piperitae.....100| fl. 3iv

M. et Sig.: A teaspoonful in plenty of water, three times a day, after meals.

If the ammonium chlorid is very disagreeable to the patient, it may be administered in simple carbonated water or in vichy.

It may be well to repeat the necessity for daily thorough evacuation of the bowels, and this should be accomplished by a saline, preferably, or by an aloin, rhubarb, or cascara preparation, as seems best to suit the patient.

While any severe exercise or sudden movement may precipitate a gallstone colic, it has been frequently noted that horseback riding and perhaps automobile riding is beneficial to a patient with a sluggishly acting liver.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, SEPTEMBER 19, 1908.

## ANTIPLAGUE WORK IN CALIFORNIA.

When one reads of the fearful epidemic of plague of the fourteenth century, which carried off half the population, not only of many Asiatic nations, but also of the principal countries of Europe, that practically wiped out cities, that disrupted social conditions and shattered existing institutions—one is likely to say, contentedly, that this happened in the dark ages, that it could not occur in the enlightened twentieth century. So, doubtless, thought the people of India, where for 200 years no plague existed. But in 1896 they had a terrible awakening, and since that date India has lost by plague over five and a half millions of people. According to Asst. Surgeon-General Eager<sup>1</sup> of the U. S. Public Health and Marine-Hospital Service, there were 1,400,000 cases with 1,200,000 deaths in India last year.

The figures are appalling, and, while they apply to Asiatic countries and while the disease seems to prevail more generally, and the mortality to be greater, among Asiatics than among Europeans, history shows that the disease is no respecter of countries or of peoples. In any event, it is well to recognize the possibilities. In the preface to his exhaustive "Treatise on the Plague," W. J. Simpson says: "Plague takes its own time and opportunity for its development, and it is unwise to be lulled into a sense of security by its apparent impotency to spread in a particular country."

Without being alarmists we may rejoice, therefore, that such radical and persistent efforts have been made on the Pacific coast to eradicate the disease as is indicated by the report of THE JOURNAL'S special commissioner in this week's issue.<sup>2</sup> This is the first time that the sanitary branch of the federal government has had an opportunity to show what it could do if given a free rein. Furthermore, it is profoundly significant that the federal authorities have, both tacitly and actually, accepted the principle that "the invasion of a pestilence is a matter of national import." Any seaport is liable at any time to the invasion, not alone of an armed human foe, but of a subtle pestilence that may be a greater menace to portions of the country distant from the point of invasion than to the immediate port of entrance. Such a pestilential invasion may be justly

regarded, therefore, more as a national danger than as a local epidemic.

It would almost seem that the first flying wing of the "sanitary army" suggested in THE JOURNAL some months ago, had been organized and placed on a field footing. Certain it is that in California there are officers and men of such an army, handling a difficult and delicate situation and one of no small gravity, in a thoroughly competent and tactful manner—and getting splendid results. The sanitary work which has been done in San Francisco during the past year by Dr. Rupert Blue, and his executive officer, Dr. Colby Rucker, is of the highest order and should receive the sincerest commendation. They have accomplished much, and this in spite of open antagonism at first and almost continuous apathy. Citizens were finally roused to the existing danger, yet at no time has the community been "panicky." The energies of the roused citizens were tactfully directed into the most serviceable channels and there was apparently no money or energy wasted.

It is evident that sanitary work of this sort must be placed in the hands of trained and competent men; such are not found in every community and at a moment's notice. If this episode of plague in California shall show beyond question the absolute necessity for a standing sanitary army, the value of the demonstration will many times repay the cost thereof. The national rather than the communal importance of pestilential invasion, and its opposition by skilled fighters backed by the weight of the federal resources, are but emphasized in the reported occurrence of a case of plague in Los Angeles. There are rodents in every portion of the United States and the possibility of conveyance from rodent to rodent is by no means to be ignored, for we know that climate has but little to do with the occurrence or distribution of plague. Our pitifully small "sanitary army"—the U. S. Public Health and Marine-Hospital Service—seems to have on its hands the largest and most serious problem that has as yet presented itself. If it can handle the fight to completion as successfully as it seems to have conducted the opening campaign in San Francisco, it will have thoroughly established for itself a permanent place in the government of the people for the people, and will have as absolutely protected the citizens of our country from calamity as could an unlimited standing army or a countless navy. Plague in San Francisco or Los Angeles is as much a menace to Chicago or Boston as to the cities of the Pacific coast.

## PROPRIETARIES, PLANOS AND PROBITY.

A correspondent, in calling attention to one of a series of resolutions we quoted last week,<sup>1</sup> comments as follows: "Had this resolution been passed by the American Medical Association and been endorsed and published by THE JOURNAL, I am inclined to think

1. The Present Pandemic of Plague: Pamphlet prepared and published under the direction of the Surgeon-General of the U. S. Public Health and Marine-Hospital Service.

2. Special article, page 1010.

1. Miscellany Department, THE JOURNAL A. M. A., Sept. 5, 1908, p. 858.



that frenzied protests would have arisen in certain quarters about the attempt of the Association to throttle "independent medical journalism." The resolution referred to by our correspondent reads as follows:

RESOLVED. That this act should be so drawn that periodicals continuing to publish advertisements, determined by such commission to be fraudulent, should be subject to fine and exclusion from the mails of the United States until such misleading and fraudulent advertisements be excluded.

As this resolution was adopted by the National Association of Piano Dealers, we may expect to hear no protests except from the manufacturers of fake pianos. We may assume, however, that those organs which such manufacturers control will come out with spirited editorials denouncing the attempts of the "piano trust" to put the "independent piano manufacturers" out of business. Such periodicals will "view with alarm" the deep-laid plot to cripple "independent piano journalism." Casuistry is much the same wherever found; whether it relates to pianos or proprietaries.

Apropos of commercial probity, a recent article by a New York lawyer, Everett W. Abbot,<sup>2</sup> is worthy of study. Mr. Abbot, in commenting on certain tendencies in the law which have been handed down to us and yet which are unjust, calls attention to the phrase *Caveat emptor*, "Let the buyer beware." "This maxim," he says, "which relieves the seller from the burden of much misrepresentation, has had an untold influence in sapping the morals of the Anglo-Saxon race. A more stringent attitude of the courts, a firmer resolve to compel him who makes representations to live up to them, if it had been fully adopted and sternly carried out in the past, would have had a tremendous uplifting effect to-day on the honesty of the people."

Such things as these—magazine articles, action on the part of manufacturing bodies, etc., are straws which indicate the direction taken by the breeze of business morality that is sweeping the country. The indications are encouraging that not much longer will the fight for decency and truth in advertising be confined to the proprietary medicine world. The position of splendid isolation which has hitherto been held by the comparatively few publications that have insisted on truthfulness in their advertising, no less than in their editorial pages, will, we hope, soon be a thing of the past.

#### IS TRYPANOSOMIASIS PREVENTABLE?

Since early in the nineteenth century trypanosomiasis has been known as the West African lethargy, or sleeping sickness. Slaves who were imported to the West Indies and to Brazil suffered from it. It is considered to have been endemic originally in a small area near the West African coast, between 15 minutes north and 15 minutes south of the equator, and to have spread

thence a thousand miles up the Congo to Stanley Falls, and to the Uganda protectorate. It has now appeared in many other regions, from the Sudanese basin of the Bahr-el-Ghazal in the north, nearly to the southern cape; from the western Congo states to German East Africa. It is a gruesome commentary on the white man's eagerness to assume the burden of regenerating his black brother that the disease seems to have been enormously extended by reason of the "rapid transit" procedures instituted by the former.

Diseases akin to trypanosomiasis, but principally afflicting animals, are found in India (surra, of which the *Trypanosoma evansi* seems to be the causative agent); in the Philippines (where there is also a surra, perhaps identical with that of India); in the Transvaal (a comparatively harmless variety), and in South America (the *mal de caderas*—*T. equinum*). It seems now to be established beyond doubt that the infectious factor in human trypanosomiasis is the *T. nepreri* or *T. gambiense* (discovered by Nepren in 1898), a flagellate protozoon found in the blood and cerebrospinal fluid. To the latter fact are no doubt due the lethargy and other symptoms referable to the nervous system. The parasite is found also in horses, cattle and other animals. Koch discovered it in the blood of the crocodile inhabiting the shores of Lake Victoria Nyanza. It is transmitted from animal to man and from man to man by the tsetse fly (*Glossina palpalis*), a voracious blood-sucking insect; it is not yet certain whether or not this insect is the only intermediary. The protozoon may live in its proboscis forty-eight hours after its imbibition, according to one observer, from five to six days according to another, after which time there is no danger of infection from the bite. Minchin<sup>1</sup> found that the parasite is simply inoculated mechanically into the sufferer, the process here differing from that in malaria, in which the mosquito is a true host, in whose alimentary canal the plasmodium undergoes a complicated developmental cycle before infection can be effected. It is generally the natives who suffer from trypanosomiasis; but the white man is by no means immune. Many Europeans in Africa have been victims, and some have died after returning to Europe.

The preventive methods to be pursued are fairly well understood. Last April the second International Congress of Sleeping Sickness met in London. The British government, whose interests in Africa—the Anglo-Egyptian Sudan, British East Africa, the Central African Protectorate, Rhodesia and other regions—are so great and vital, was of course represented; as was also the French colonial ministry in behalf of the French Congo; Koch appeared for Germany; Portugal sent her delegates; Belgium, Spain, Italy, the Congo Free State, all had their deputies. The British government has

2. The Lawyer's Ignorance of the Law: The Outlook, Sept. 5, 1908, p. 19.

1. Ricketts, R. T.: Infection, Immunity and Serum Therapy, p. 487.

2. THE JOURNAL A. M. A., May 30, 1908, p. 1803.



decided to establish a national sleeping sickness bureau, with headquarters in London, and Germany has combined with her for the prevention of the disease in Uganda and German East Africa. Publications of two kinds are to be issued: scientific works for the use of those engaged in research or in the medical administration of the infected districts; and less technical literature for the use of government officials, missionaries and other earnest workers. A map will be made of tropical Africa, showing the distribution of the disease and of the various species of blood-sucking insects which might possibly convey it. Europeans intending to visit Africa are being abundantly informed what must be done for self-preservation, and for the safeguarding of the natives whom they may control. In the field is "a veritable army" of altruistic workers. In the centers of infection are established hospitals, laboratories, animal experiment stations and libraries for reference and consultation; reports are constantly being mailed or telegraphed to cooperating and directing headquarters. The expedition dispatched by the Liverpool School of Tropical Medicine has found the tsetse fly in various Rhodesian districts, particularly along the banks of rivers; and it has been advised that special medical officers should travel constantly in the search for cases. It is sought to move the villages inland and away from the river banks—a matter of little inconvenience to the natives, since their huts are easily built, and they are not dependent on the river for food. Each colonial government has charged its police to collect the patients, wherever possible, in central lazarets, from which healthy natives are to be kept away. In Katanga alone (the extreme southeastern province of the Congo Free State) about twenty such stations are now scattered, whereas a year ago nothing was done in this region for sufferers from sleeping sickness. And these posts are now being augmented as fast as colonial physicians can be sent out. Steam vessels are plying the Congo solely to carry patients to these lazarets, some of which shortly after their opening had to accommodate 600 patients. The natives add to the difficulty of this work. Averse to segregation, the negro in the prodromal stage, will not admit he is sick, and will object to surveillance and treatment. All the Congo hospitals are guarded by troops to prevent the escape of convalescents. Everywhere the colossal task is being pushed most zealously, and in this campaign, which has been conceived on gigantic lines, nothing is left undone to save life and to prevent infection.

#### BLACK ART IN THE TWENTIETH CENTURY.

C. H. Carson, of Kansas City, Mo., with whose unsavory career readers of *THE JOURNAL* are familiar,<sup>1</sup> was found guilty in the criminal court of Jackson County on Thursday, September 10, of practicing med-

icine without a license. Judge Porterfield, the trial judge, assessed the maximum fine of \$500 against him. Under the Missouri medical practice act, this offense is only a misdemeanor and consequently can only be punished by fine. This verdict marks the close of a case which has attracted much attention, owing to the long career of the defendant and the ridiculous methods employed by him in treating his "patients."

Much of the credit for the result achieved is due to Mr. George Creel,<sup>2</sup> editor of the *Kansas City Independent*, who has led the fight. Carson was arrested in November, 1906, and through various pretexts the case was delayed until February of the present year. In its issue for Feb. 15, 1908, just before the first hearing of the case, the *Independent* said regarding Carson:

"He knows nothing about medicine, can not even spell or pronounce half the ills he blatantly guarantees to cure. . . . And his methods of treatment! Tissue paper slips, very much like cigarette papers, that he claims to 'vitalize' by holding between his hands. These slips are then given to the patient with directions to pin on the 'nightie' between the shoulder blades 'over the great nerve center of the human body.' Think of it! On the stand under oath he first asserted that he had different treatments for different diseases, but pinned down by merciless questions he could not tell the difference between certain diseases, and finally admitted that he had about the same treatment for everything. For appendicitis, to be sure, he did a little more. In very bad cases, for instance, he would lay his magnetic right hand over the appendix. But the tissue paper slips were his chief reliance—the vitalized home treatment."

It seems almost beyond belief that in this day of public schools and general education a palpable humbug could possibly find any followers. Yet there are, to-day, hundreds of fakers preying on the sick and credulous, whose claims are as ridiculous as those attributed to Carson. We were about to add that such things ought to be impossible in a land where the daily papers are read by every one. Unfortunately, it is the daily papers that make such a career not only possible, but profitable, since it is a certain class of papers which, through passion for advertising and greed for dividends, furnish ridiculous charlatans the publicity they crave. We regret to say that we now have on file articles in praise of "Doctor" Carson of two and three columns length, clipped from the *Kansas City Post*, the *Topeka Daily Capitol* and the *Kansas City Journal*, all so cleverly written as to lead the ignorant or credulous reader to believe that Carson was a great, learned and philanthropic physician.

The suppression of the Reinhardt brothers in Wisconsin and the conviction of Hibbard in Illinois indicate that the speediest way of eradicating quackery and dishonesty is by prosecution under the criminal code for obtaining money under false pretenses. We hope to see this Missouri "healer" called on to prove his claims of wonderful cures in the court room, and to show why he

1. *THE JOURNAL*, Sept. 1, 1906, p. 690.

2. *THE JOURNAL*, Feb. 2, 1907, p. 422.



should not be sent to the penitentiary for defrauding his "patients" through false claims as to his knowledge of disease and his ability to cure. It should be firmly impressed on the public that dishonesty in the treatment of the sick is governed by exactly the same principles as dishonesty in any other business. Decent and reputable physicians are opposed to quacks and irregulars because the methods of the latter are essentially dishonest and fraudulent. Newspapers or magazines which, by accepting advertisements containing impossible claims, allow the faker to delude and swindle the ignorant or credulous patient are just as much parties to the crime of obtaining money under false pretenses as though they carried advertisements of green goods or gold brick men, or aided thieves or pickpockets.

#### THE DOCTOR IN POLITICS.

The part which physicians should take in political activity—or, indeed, whether or not they should take any part—has been the subject of much discussion during the past two or three years. A new plea has been added recently to those already uttered, and this from a source outside the medical profession. The governor of California has addressed a letter to the council of the medical society of that state, asking that some physicians place themselves in line for election to the two branches of the legislature, in order that they may advise with him on matters pertaining to medical legislation.<sup>1</sup> So far as we are aware, this is the first time a request has come officially from the governor of a state to its medical society, urging that representatives of the medical profession take a place in and work with the law-making body. For this reason the action of California's executive is truly encouraging. One wonders, however, how it will work out, for physicians are not only proverbially poor politicians, but they are, almost invariably, loath to enter into the strife and struggle for political preferment. That we neglect one of our civic duties by not taking an active interest in politics, *THE JOURNAL* has repeatedly pointed out. The matter has become largely a question of initiative. Shall medical men first so educate the people to the need of sanitary and health laws, and to the altruistic objectives of medical science that they will demand representation by our members in the legislatures? That this demand would be made, did the public realize the neglect of life and health—and the economic cost of such neglect—exhibited by the ordinary lay legislator, there can be little doubt. This request from the governor of California seems to indicate that the day is almost here when the demand will be made.

#### MEMBERSHIP IN THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

Notwithstanding all that has appeared in the medical and lay papers on the subject, it may be questioned whether physicians and the general public fully realize the importance and privileges of membership in the In-

ternational Congress on Tuberculosis. The scientific sessions of the congress are to be held in Washington during the week of September 28 to October 3; the exhibit is to be open from September 21 to October 12. The transactions of the congress will constitute an authoritative presentation of our knowledge of tuberculosis brought down to date. No such complete information on this subject is to be obtained elsewhere, and the four or more volumes which are to be published and sold to non-members for fifteen dollars will be a valuable addition to every physician's library. The mere fact that membership in the congress at a cost of five dollars entitles one to these valuable volumes should in itself be no small inducement. Although the success of the congress was long since assured, it should be a matter of national pride to make this success unequalled by past congresses. While numbers are not the principal test of such success, nevertheless the present membership of the congress (about 4,000) should be doubled, indeed trebled, in order to demonstrate that America is fully awake to the greatest task which preventive medicine can offer to the present generation. Information concerning the exhibit and the scientific proceedings, which has appeared and will be announced further in the columns of *THE JOURNAL*, indicates the thoroughly international character and extraordinary interest of the congress. More detailed information as well as membership blanks can be secured by application to the secretary-general of the congress, Dr. John S. Fulton, Colorado Building, Washington, D. C.

### Medical News

#### DISTRICT OF COLUMBIA.

**Personal.** Dr. Watson H. Muffit, assistant resident physician of the Casualty Hospital, has resigned. His successor has not yet been appointed.—Dr. William C. Woodward has returned from a trip to the Canadian Northwest.

**Lunchrooms Cleaner.**—Health inspectors who for the past month have been inspecting lunchrooms, hotels and other places where foodstuffs are prepared have submitted their report to the effect that the eating houses are now in excellent condition. The inspections will continue from time to time, and wherever the health regulations have been disregarded warrants will be obtained.

**Health Report.**—According to the health and mortality record for the week ended September 5, there were 106 deaths and 111 births. Typhoid fever showed a slight decrease, there being 36 new cases reported and 30 patients discharged, bringing the total number of cases under treatment at the close of the week to 201. Five cases of diphtheria, 2 of scarlet fever and 8 of whooping cough were reported.

#### ILLINOIS.

**Personal.**—Dr. Henry R. Harrower has closed his laboratory in Kankakee and moved to Chicago. Dr. Alonzo B. Middleton and family, Pontiac, sailed for Europe August 29. Dr. George Mitchell, of the Illinois Hospital for the Incurable Insane, South Bartonville, has gone to Europe and is delegate to the International Congress for the Relief of the Insane, to be held in Vienna, October 7 to 11.

**Home Cure for Consumption.**—The Lake County Anti-Tuberculosis Association has been organized at Waukegan, with Dr. John C. Foley, president, and Dr. W. H. Waterson, manager. The association expects to erect a building capable of accommodating twenty patients, on the edge of Waukegan and near the lake, to cost about \$10,000. In addition to its tuberculosis colony, the association intends to conduct an educational campaign among the people of the county.

1. California State Jour. Med., August, 1908, p. 253.



## Chicago.

**Personal.**—Dr. and Mrs. William N. Senn have returned from Europe.—Dr. Alexander H. Ferguson sailed, September 9, to attend the meeting of the International Surgical Congress in Brussels.

**Contagious Diseases.**—During the week ended September 12, 228 cases of contagious diseases were reported to the department of health, distributed as follows: Scarlet fever, 79; diphtheria, 54; tuberculosis, 28; whooping cough, 16; pneumonia, 8; measles, 6; chickenpox, 3, and other diseases, 4. This is a reduction of 7 cases of diphtheria and an increase of one case of scarlet fever as compared with the preceding week.

**Mortality.**—During the week ended September 12, 556 deaths were reported, 14 fewer than in the corresponding week of 1907, and 3 in excess of the number reported in the preceding week. At no time in the city's history has so low a typhoid mortality been reported in September. Chief among death causes are the following: Acute intestinal diseases, 144; consumption, 66; nephritis, 36; heart diseases and violence (including suicide), each, 30; nervous diseases and pneumonia, each, 24; cancer, 22; diphtheria, 12; scarlet fever, 10; typhoid fever, 5, and whooping cough, 4.

## IOWA.

**Sanatorium Opened.**—The State Sanatorium for the Treatment of Tuberculosis, at Oakdale, which was opened in February last, now has under treatment 71 patients.

**Medical Association Meeting.**—The twelfth annual meeting of the Upper Des Moines Medical Association was held at Spirit Lake recently, when the following officers were elected: President, Dr. William E. Bradley, Estherville; vice-president, Dr. Jay M. Crowley, Ellsworth, Minn.; and secretary, Dr. Charles S. Shultz, Spirit Lake.

**Personal.**—Dr. Thomas F. Beveridge has been elected president; Dr. Elbridge H. King, vice-president; Dr. Benjamin E. Eversmeyer, secretary; and L. G. Burnett, treasurer, of the Hershey Memorial Hospital board of directors, Muscatine.—Dr. Adele Fuchs, Des Moines, has returned from Europe.

## MARYLAND.

**Temporary Administration Building.**—The Municipal Hospital Commission of Baltimore has provided for the erection of a temporary administration building at Sydenham Hospital, to cost about \$5,000, and to be so constructed that it may be used for a ward later on, after the permanent administration building has been erected.

**Welcome to Delegates.**—The foreign delegates to the International Congress on Tuberculosis will be welcomed at Baltimore October 5. Dr. Thomas B. Futcher is chairman of the entertainment committee, and the program includes a reception at the city health department, an automobile tour of the city, inspection of Johns Hopkins Hospital and Medical School, where luncheon will be served, a trip to Endowed Sanatorium for Consumptives, an entertainment by Dr. and Mrs. H. Barton Jacobs at their country home, and a public lecture at McCoy Hall by Professor Louis Laundouzy, of Paris.

## Baltimore.

**Personal.**—Dr. Nathan E. B. Iglehart was operated on, September 9, at Johns Hopkins Hospital.—Dr. J. G. Schmetzer has returned after a trip through southern Europe.

## NEW JERSEY.

**Vital Statistics.**—During the month ended August 15, 3,209 deaths were reported in the state. Of these 1,084 were under one year of age, 274 between 1 and 5 years, and 686 individuals were 60 years old and over. The principal death cause for the month was infantile diarrhea, which caused 727 deaths, 38 more than for the corresponding month of 1907, and 88 more than for August, 1906. A marked decrease was noted in deaths from infectious diseases, which were far below the average. Among the chief death causes, aside from those already stated, were: Tuberculosis, 326; diseases of the nervous system, 285; diseases of the circulatory system, 252; diseases of the digestive system (excluding infantile diarrhea), 249; nephritis, 189; cancer, 132; diseases of the respiratory system (excluding pneumonia and tuberculosis), 109; pneumonia, 86; suicide, 42; cerebrospinal meningitis, 35; diphtheria, 25; scarlet fever, 21; typhoid fever, 20; whooping-cough, 17; measles, 10; and malarial fever, 7.

## NEW YORK.

**Another Tuberculosis Exhibit.**—The State Charities Aid Association gave a tuberculosis exhibit at the Richmond County Fair which attracted much attention. Charts, diagrams and pictures were exhibited which were designed to give instruction in the prevention of the disease. The models of outdoor porches of inexpensive construction were inspected by many hundreds of visitors.

**Studying the Problem of Insane Asylums.**—Mr. Albert W. Ferris, president of the State Commission in Lunacy, has just returned from a long European trip, during which he has devoted his time to the study of hospital construction and equipment, securing information which will be useful in the erection of the new hospitals for the insane and in the erection of the projected psychiatric reception hospital in New York. It is imperative that the state should have new hospitals to relieve the present overcrowding and to meet the alarming increase of cases of lunacy.

## Buffalo.

**Tag Day.**—The returns from tag day for the benefit of the District Nursing Association netted between \$10,000 and \$15,000.

**Personal.**—Drs. Roswell Park and Edward McGuire have taken a trip to Norway.—Drs. Matthew D. Mann and Max Breuer are on a three weeks' hunting trip to New Brunswick.—Dr. Earl P. Lothrop has returned from a three weeks' trip to Paris.—Health Commissioner Wende is still ill and confined to his home.—Dr. Charles Howard, chairman of the State Prisons Commission, is still confined to his bed in the hospital, but is out of danger.

## New York City.

**Personal.**—Dr. George E. Brewer sailed for Europe September 8.—Dr. Louis F. Bishop returned from Europe September 9.—Dr. Samuel M. Brickner has resumed practice in New York City after a year spent at Saranac Lake, N. Y., in a successful endeavor to overcome pulmonary tuberculosis.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ended August 29, 464 cases of tuberculosis, with 141 deaths; 140 cases of diphtheria, with 15 deaths; 144 cases of typhoid fever, with 14 deaths; 30 cases of whooping cough, with 3 deaths; 6 cases of cerebrospinal meningitis, with 9 deaths; 71 cases of measles, with 3 deaths; 85 cases of scarlet fever, with 4 deaths, and 3 cases of varicella, a total of 943 cases and 189 deaths.—There were reported to the sanitary bureau for the week ended September 5, 466 cases of tuberculosis, with 155 deaths; 175 cases of diphtheria, with 22 deaths; 57 cases of measles, with 5 deaths; 85 cases of scarlet fever, with 9 deaths; 138 cases of typhoid, with 11 deaths; 7 cases of whooping cough, with 5 deaths; 5 cases of cerebrospinal meningitis, with 1 death, and 8 cases of varicella, a total of 941 cases and 208 deaths.

**Art and Tuberculosis Prevention.**—The committee on the prevention of tuberculosis of the Charity Organization Society is distributing broadcast through the poorer districts of New York City a colored picture of Venice. On the margins of the picture are the following warnings against consumption:

A cough may lead to consumption. If you have a cold that hangs on, if you even faintly suspect that your lungs are not strong, do not try to cure your self. Go to a doctor, or to the nearest tuberculosis clinic, The New York Dispensary, 137 Center Street, where you will be treated free of charge, if unable to pay. Hours, 11 a. m. to 12:30 p. m. week days.

Sunlight, fresh air, good food, temperate habits are the best means of preventing tuberculosis. Keep your windows open day and night, summer and winter.

Don't spit on the sidewalks or on the floors or hallways of your homes or schools. It spreads disease. It is also dangerous.

Tuberculosis is not hereditary, but is acquired, and generally preventable. When you must spit, spit in the gutters, or into a spittoon half filled with water.

Compliments of The Committee on the Prevention of Tuberculosis of the Charity Organization Society, 105 East Twenty-second Street, New York City.

## NORTH CAROLINA.

**Medical Colleges Open.**—The medical department of the University of North Carolina, Raleigh, opened for its seventh annual session September 7. The only change in the faculty is the appointment of W. H. Braddy, Jessama, as assistant demonstrator of clinical pathology.—The opening exercises of the North Carolina Medical College, Charlotte, were held September 9, Rev. William Duncan making the principal address.

**Personal.**—Dr. Lionel H. Love, Wilmington, has gone abroad on account of ill health.—The following are the medical members of the state Democratic executive committee: Drs. Robert S. Young, Concord; Philemon J. Macon, Warrenton;



and Isaac E. Green, Weldon.—At the recent Democratic convention for the First Congressional District, Dr. Thomas S. McMullan, Hartford, was elected temporary chairman, and Dr. Andrew L. Pendleton, Elizabeth City, permanent chairman. — At the recent session of the trustees of Wake Forest College, Dr. Edgar E. Stewart, New York City, was elected professor of medicine. — Dr. Cyrus Thompson, Jacksonville, was unanimously nominated for secretary of state at the recent Republican state convention in Charlotte. — Dr. Edwin H. Bowling, Durham, has tendered his resignation as a member of the board of aldermen.

**The Case of the Leper.**—There has been much interest in the state over the case of John R. Early of Lynn, who served in the Army in the Philippine service in 1900 and 1901. A few weeks ago he was ordered to Washington for special examination by the pension department. This resulted in the discovery that he was afflicted with leprosy, and the District of Columbia authorities quarantined him in the outskirts of Washington. The North Carolina State Board of Health was advised of the matter and notified to send and care for the patient, but referred the matter to the attorney-general for opinion. Meantime the young wife and infant of Early had been brought to the house where he was quarantined. The attorney-general has now decided that the State Board of Health has no authority to send out of the state for any citizen, and hence can not send for Early, and points out the impracticability of the United States authorities returning him to North Carolina, and suggests that as Early contracted the disease in line of duty, the State Board of Health has nothing to do with the case while the patient is in care of United States officials. He also called the attention of the board to the fact that in case Mrs. Early with the infant should return to North Carolina she would naturally become a pauper, subject for custody and quarantine at the hands of the board. After the formal filing of this opinion the board, through its president, Dr. George G. Thomas, Wilmington, so advised the officials of the District of Columbia.

#### OHIO.

**Typhoid in Penitentiary.**—Typhoid fever is said to be epidemic in the Ohio State Penitentiary, Columbus: 15 patients are said to be suffering from the disease, a number of whom are in a critical condition.

**Eichberg Memorial.**—At a memorial meeting of the Cincinnati Academy of Medicine, held August 24, a resolution was adopted providing for the appointment of a committee to solicit funds to endow a professorship of physiology in the University of Cincinnati to be known as the Eichberg professorship. The following committee was appointed: Drs. Nathaniel P. Dandridge, Edwin W. Mitchell, Alfred Friedlander, Simon P. Kramer, Max V. E. Koehler and Christian R. Holmes.

**Personal.**—Dr. Robert J. Jones, Greenfield, has returned from Europe. — Dr. James T. Hanson, superintendent of the Athens State Hospital, has resigned. — Dr. W. Watson Conger, Toledo, has been commissioned first lieutenant and assistant surgeon, O. N. G. — Dr. Robert C. Longfellow has been appointed professor of biology and laboratory pathology in St. John's College, Toledo. — Dr. Herbert M. Platter, Columbus, city medical inspector, has resigned to accept the position of inspector of maternity and lying-in hospitals and boarding houses under the State Board of Health.

**The Unfortunate.**—Dr. Frank W. Hendley, major and surgeon First Infantry, O. N. G., fell from his horse at Fort Benjamin Harrison, near Indianapolis, September 4, injuring his right leg. — Dr. Lark Moon, Columbus, is said to have been committed to the Columbus State Hospital, September 4. — Dr. James E. Torrence, Hamilton, has recovered from his recent illness of six months' duration and has resumed practice. — Dr. Frank D. Bain, Kenton, dislocated his right shoulder and sustained other serious injuries in an automobile accident, August 22. — Dr. John Q. Southard, Marysville, is said to be ill at his home with cerebral hemorrhage.

#### PENNSYLVANIA.

**Typhoid Fever.**—On August 27 100 cases of typhoid fever were said to be present in Reading, and in four days preceding that date 28 cases were reported. The health authorities have issued notice that all milk and water be boiled before using. — Shamrock, near Rockwood, reports an epidemic of typhoid fever.

**Contract for State Hospital Let.**—The contract for a six-story ward building for the State Hospital for the Criminal Insane at Fairview has been awarded. The building will be

the first of a group to be built by the state at Fairview, and the cost is to be \$116,980. The hospital buildings when completed will have cost \$2,000,000.

**Medical College Acquired by University.**—The trustees of the University of Pittsburg have purchased the Western Pennsylvania Medical College for \$100,000. The transfer of the property is to date from July 1. A new course in sanitary science is to be initiated by the university at the opening of the fall term.

**Personal.**—Dr. William M. Beach, Pittsburg, who was operated on for the removal of gallstones, May 28, has recovered and resumed practice. — Dr. S. N. Dague, Washington, has been appointed company physician for the Midland mine. — Drs. F. W. Davis, Jeannette H. Sherman and Mary L. Evans, members of the staff of the State Hospital for the Insane, Norristown, resigned September 4. Dr. Evans expects to take an extended trip abroad.

#### Philadelphia.

**Foreign Delegates to be Entertained.**—The foreign delegates on their way to Washington to attend the International Congress on Tuberculosis, will be entertained by the citizens of this city at a banquet to be given at the Bellevue Stratford Hotel, September 25.

**Personal.**—Dr. S. F. Gilpin has been appointed to the neurologic staff of the Jefferson Medical College and the Jefferson Medical College Hospital. — Drs. John G. Clark, John B. Deaver, Edward Shumway and William W. Keen have returned from Europe. — Dr. Mihran K. Kassabian sailed for Europe September 15. He will visit Cesarea, Asia Minor, his birthplace, and return in November. — Dr. Andrew A. Cairns has been reinstated as chief medical inspector of the bureau of health. Dr. Charles A. Croff, who took Dr. Cairns' position during his recent illness, will be appointed supervising medical inspector. — Dr. B. Franklin Royer is ill with typhoid fever in Jefferson Hospital.

**Health Report.**—The total number of deaths reported to the health bureau for the week ended September 12 was 445. This is an increase of 53 over the preceding week and a decrease of 12 from the corresponding week of last year. The principal causes of death were: Typhoid fever, 12; pertussis, 2; diphtheria, 12; consumption, 52; heart disease, 43; cancer, 28; apoplexy, 15; arterial sclerosis, 14; acute respiratory disease, 21; enteritis, 51; hepatic cirrhosis, 6; appendicitis, 5; Bright's disease, 35; premature birth, 9; congenital debility, 6; senility, 4; suicide, 1; accidents, 16, and marasmus, 12. The mortality list included 250 males and 195 females. — There were 149 cases of contagious disease reported, with 25 deaths, as compared with 173 cases and 19 deaths reported in the previous week.

#### GENERAL.

**Smallpox and Cholera in the Philippines.**—The chief quarantine officer reports that during the week ended June 27, 6 cases of smallpox, with 4 deaths, were reported in Manila, and that in the following week 11 cases of smallpox, with 6 deaths, were reported in the city. — Cholera continues to increase in the province of Pangasinan and has spread in the province of La Union, Nueva Ecija and Tarlac. The situation in the province of Capiz has improved, as only 10 cases and 8 deaths were reported during the week ended July 4. — During the same week there were reported a total of 614 cases of cholera and 331 deaths from the provinces north of Manila.

**International Conference on Tuberculosis.**—The International Conference on Tuberculosis is an organization made up of representatives of national associations for the study of tuberculosis from all parts of the world. It was first suggested by von Schroetter in 1898, but the first conference was held in Berlin in 1902. Since then the conference has met yearly and holds its seventh session in Philadelphia this year. The initial business meeting occurs September 24 at 2 p. m. September 25 and 26 are devoted to a scientific program, which we published August 22. According to the printed program, the subject of tuberculosis and legal rights will be discussed on Friday, September 25, instead of Saturday, September 26, as previously announced. The Hospital Association of Philadelphia has sent out cards of invitation to the lecture of Professor Pannwitz, September 23, and the Pennsylvania Society for the Prevention of Tuberculosis and the Henry Phipps Institute have sent out similar invitations for the lectures of Professor Calmette and Dr. Williams, respectively. These lectures are part of the educational program of the International Congress on Tuberculosis, which meets in Washington, September 21 to October 12.



## CANADA.

**Communicable Diseases.**—Ten soldiers at the military camp, Petawawa, are said to be ill with typhoid fever at the Cottage Hospital, Pembroke.—All the schools of Christiana, B. C., have been closed owing to a serious epidemic of smallpox.

**Hospital News.**—Although the townsite of Prince Rupert, B. C., the western terminus of the Grand Trunk Pacific Railway is as yet unsurveyed, a modern hospital has been installed there under the charge of Dr. Ewing. It has accommodation for 75 patients, has an operating-room with hot and cold water, electric light, etc.

**Personal.** Dr. Robert T. Blanchard, Winnipeg, Man., has returned from Europe.—Dr. James F. W. Ross, Toronto, has returned after a motor tour of Europe.—Dr. T. Slater Johnson has been reappointed demonstrator in the biologic department of McGill University, Montreal, after an absence of three years in Africa and Asia.—Dr. Robert C. Young, Ridgetown, Ont., has disposed of his practice and expects to make a tour of Europe.

**Reform in the Medical Inspection of Schools in Montreal.**—A drastic reform in the medical inspection of the schools is being made in Montreal. At the present time inspectors have only been looking after the schools for a few months during the year. Commencing with September, however, the city will be divided into twelve districts, twelve physicians will be given permanent and constant work, and each physician will be held responsible for the health of his district.

**Impure Milk and Infant Mortality in Vancouver.**—Dr. Fred T. Underhill, the medical health officer of Vancouver, denies that the infant mortality in Vancouver is heavy as the result of an impure milk supply. He states that Vancouver has a remarkably small infant mortality. In 1906 the total number of deaths from all causes up to 10 years of age was 127. From stomach and intestinal diseases the number was 33, equivalent to a mortality of 0.74 per 1,000. In 1907 the total death rate from all causes under 10 years of age was 239. From diseases of the digestive system under 10 years of age the number was 63, or 1.211 per 1,000.

## FOREIGN.

**Guinard Prize Goes to Malvoz.** Dr. Guinard, of Ghent, Belgium, founded an important prize to be awarded at five-year intervals for the best medical work or discovery promoting the welfare of the laboring classes. The prize for the current five years was recently awarded to Malvoz, director of the state bacteriologic laboratory, for his works on ankylostomiasis and tuberculousis.

**The Marienbad Centennial.** This famous watering place in Bohemia celebrated last month its centennial, and the local medical society issued a special souvenir number of the *Prager medizinische Wochenschrift*. It contains articles describing experiences with the Marienbad waters in various kidney and cardiovascular affections, etc., besides a number of other communications, one reporting a remarkable case of dual personality.

**Regulation of Sale of Oysters at Paris.** The board of health has induced the police to require that all oysters must have the shells brushed comparatively clean, and that clean drinking water, salted, must be used to keep them wet. The salt used for preserving fish must not be taken for the purpose. It is forbidden to wash the oysters taken out of the shells, but they must be kept protected from contamination of all kinds.

**Hygiene in the Panama Canal Zone.** C. M. Garcia of Veracruz pays enthusiastic tribute to the work of Gorgas in the Canal Zone in a recent communication in the *Cronica Medica Mexicana*, September 1. He reviews the brilliant work in the rehabilitation of Finlay's theory, the sacrifice of Lazear, the triumphs of Reed, Carroll and Agramonte in Cuba, of Marchoux, Simond and Salimbeni in Brazil, the teachings of Guiterras in the famous Las Animas Hospital and in the Columbia encampment, the substantial work of Kean in Havana, of White in New Orleans, of Liceaga in the Mexican Gulf coast, and of Oswaldo Cruz in Rio de Janeiro. Gorgas and the brilliant pleiad of his assistants have saved the Canal Zone, he exclaims, "and when the canal is finished, as it soon will be, let no one be so ungrateful as to forget that this stupendous work could never have been completed without the combined efforts of all these enlightened and devoted spirits."

## LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Sept. 5, 1908.

## Diphtheria from Cats.

Dr. Fraser, health officer of Portsmouth, reports 423 cases of diphtheria during last year, many of which he traced to cats. He found that it is not unusual for the cat to be described as having had a "bad cold" before children were taken ill with diphtheria. In the animals he found the Klebs-Loeffler bacillus.

## Fatal Gnat Bites.

This summer the gnat bites in some of the North London districts have been remarkably severe. A well-known practitioner, Dr. Andrew of Hendon, succumbed to an attack of erysipelas following a gnat bite. By an extraordinary coincidence the last patient he attended was also bitten by a gnat and died of blood poisoning in a few days. In most of the severe cases the face was bitten.

## Study of Tropical Diseases in Jamaica.

Arrangements are being made by the Liverpool School of Tropical Medicine for another expedition to investigate tropical diseases in Jamaica and the insects that are responsible for carrying it. It is intended to send Mr. Newstead, lecturer in economic entomology and parasitology, in the first week in November. He may be accompanied by a medical research investigator, whose duties will be to investigate indigenous diseases.

## Increase of Lunacy.

The report of the commissioners in lunacy, just issued, shows that on January 1 last there were in England and Wales 126,048 persons (35.67 per 10,000 of the population) certified as insane—2,096 in excess of the previous year. In the past half-century a notable increase in insanity has been recorded. On Jan. 1, 1859, the number of certified insane was 36,762, on which the latest figures are an increase of 243 per cent. During the interval the increase of population has been only 79.6 per cent. A steady increase in the number of certified insane is shown by the report.

## Mussels and Typhoid Fever.

Dr. George F. Buchan, assistant health officer of Birmingham, after four years of investigation in the pathologic department of the university, has come to the conclusion that there are good grounds for believing that mussels convey typhoid fever. Seventy-four cases of typhoid fever have occurred in Birmingham in which the patient had eaten mussels within four weeks of the onset. Dr. Buchan's experiments show that mussels readily imbibe the typhoid bacillus from specifically polluted water. The danger of laying mussels where they may be bathed by sewage-contaminated water is, therefore, manifest. Only one link is now required in the chain of evidence—the discovery, during the time of year when typhoid fever is prevalent, of the typhoid bacillus in the body of the mussel.

## VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, AUSTRIA, Aug. 31, 1908.

## Properties of the Carlsbad Springs.

The Carlsbad springs are threatened by the neighborhood of mines, chiefly of kaolin. Several times the quantity of water issuing in twenty-four hours has been affected by the sinking of new shafts or the opening of new communications. Precautions have now been taken to prevent any encroachments by the mines and any other changes likely to affect the springs. It was found that the main affluent pipe of the "sprudel" spring had been for many years nearly blocked up by a deposit of lime, and that many other mains were also incrustated. These deposits have been removed. It has been ascertained that the temperature and chemical composition of the water have not changed for about fifty-five years in spite of the altered conditions of the springs.

## Centenary of Oppolzer's Birth.

A few days ago the centenary of the birth of Professor Oppolzer was celebrated by the medical faculty in Vienna, and a bust of the clinician was unveiled in the presence of many of his former pupils and friends. Oppolzer was famous for his therapeutic intuition and keenness of clinical observation, which enabled him to make a wonderfully correct diagnosis and prognosis. When revolutionary nihilism in therapeutics was at its height—it was thought that the organic patho-



logic changes in the body could not be influenced at all—Oppolzer's knowledge of materia medica made him an object of constant admiration and a benefactor to his patients. Before he died in 1871 he had the satisfaction of seeing the adoption of his belief that there is something in judicious therapy and the repudiation of nihilism in medicine.

#### The Public Interest in Radium Research.

In the northern part of Austria, the Austrian government owns the largest radium-producing mines in the world. Recently the Vienna Academy of Science received from the minister of the interior 4.5 gr. of pure bromid of radium for use in research. An anonymous donation of \$100,000 has been made for the purpose of erecting in Vienna a radium institute, at which students from all countries may study the chemical, physical, medical and physiologic action of this wonderful element. The government has promised to provide the required material and funds to meet the running expenses. A site has been already selected, and the existence of the institute is assured. Experiments are now being carried on at Joachimsthal, where the radium ore is found, and in Vienna, to ascertain whether or not water charged with emanations from radium has any medical properties. The results of the research are promising, for the ingestion of such water has been found to be followed by definite improvement in rheumatic and arthritic cases.

#### PARIS LETTER.

(From Our Regular Correspondent.)

PARIS, FRANCE, Aug. 27, 1908.

#### Reform in Medical Education.

For some time the defects of the present system of medical instruction in France have been the subject of general discussion. In April, 1907, the ministry of public instruction appointed a committee to recommend changes in the medical curriculum. This commission finished its work on March 21, 1908. The criticisms made on the present system, however, bear less on the organization of the curriculum than on the method of recruiting the professors.

#### OPINION OF DR. ROUX, DIRECTOR OF THE PASTEUR INSTITUTE.

According to Dr. Roux, who was a member of the commission just mentioned, but in the minority, to change programs without changing the spirit of those who teach, is to accomplish little. At present the professors are chosen from among the assistant professors, the *agrégés*, and the *agrégés* win their positions by public competitive examinations. It is altogether unusual for a professor to be chosen outside the body of *agrégés*. The system, therefore, closes the door of the official professorships against all those who have not succeeded at the competitive examinations. Dr. Roux suggests the suppression of the post of *agrégé* and the substitution of something like the German privat-docent system. Those who wish to teach would apply to the faculty, who would grant the authorization under certain guarantees. The candidate would not have to take an examination or compete with others, but would submit his credentials, his references, his work on the subject, and would state that he had at his disposal suitable apparatus and means for teaching. Any one who was thus authorized by the faculty to teach would not be a member of the official faculty, and would receive no salary, but would be paid by his pupils. A sifting process would thus take place among these trial professors, for pupils would not be disposed to pay a teacher from whom they learned nothing.

#### ADVANTAGES AND DISADVANTAGES OF THE COMPETITIVE EXAMINATION SYSTEM.

A characteristic feature of the French educational system is that all positions on the faculties, as well as those on the hospital staffs, are awarded by *concours*, that is, according to the outcome of public competitive examinations. Although much has been said against it, the *concours* still remains the best means of avoiding, or, at least, of restraining, the evils of favoritism. One of the most serious criticisms made against the competition for the post of *agrégé* is that the judges often try, irrespective of the showings, to pass as many as possible of their own pupils. Favoritism, however, is somewhat checked by the publicity of the *concours*.

Another advantage of the *concours* is that the candidate's preparation trains him in public speaking, and in clear and precise exposition of a subject within a given length of time. Indeed, to the continual demands of the preparation for various *concours* must be attributed that mastery of clearness and perfection of style which all concede to the French systems of education.

The danger, also, lies right here. There are too many pub-

lic competitive examinations, and perfection of style plays far too great a part in the competitions. Again and again I have heard professors say to candidates preparing for a *concours*: "Practice debating and lecturing, where you can learn to speak and to give to the various divisions of your subject the importance which they deserve. To know is good, but to show that you know is better."

Consequently our young medical men devote themselves for years to discussions, to public speaking, and to that wearisome, fruitless toil which Taine called the "mechanical cram." Sometimes they continue to appear at *concours* until the age of 35; there are members of hospital staffs who have been appointed only at their fifteenth competitive examination! This baneful, empty drudgery, which has only the competitive examination in view, finally cripples the mental powers, causes style to be preferred to substance, and puts an empty, resounding verbosity in the place of science. Professor Debove remarked at the last Congress of Medicine that the abuse of literature was one of the clogs to the progress of medicine, and that many systems which have had their day of success would never have held public attention if their authors had not possessed a literary style which too often masked inconsistency of doctrine.

The purely verbal character of instruction and the tendency to believe that one has made a discovery because he has invented a new term or a well-turned formula, are fostered still more by the fact that the teacher, having attained his post as *agrégé* or his professorship, after long years of exhausting and sterile labor, often aged and discouraged thereby, has neither the inclination nor the strength for independent research. As the salaries are very modest, and sometimes altogether insufficient, the professors try to eke out their incomes by private practice, and finally devote themselves to practice to the neglect not only of scientific research, but of their teaching duties. Hence, the remuneration of the professor by his pupils presents great advantages, since it would cause a young instructor to devote himself to his educational work. Many consider this the first reform to be accomplished.

Another reform demanded is the reduction of the amount of didactic instruction, which predominates even in subjects that can be properly taught only at the bedside. The institution of hospital internes has stood the test of time in France. Dr. Roux makes an exception of the hospital internes when he declares that the young physicians are ill-prepared for the practice of medicine. Many of the hospital internes, he says, are excellent physicians, not because they have passed the *concours* for the hospital internship, but because they have received, during the four years of their hospital service, a practical medical education. Ought not this practical education to be granted to all medical students?

In short, as Dr. Huchard has well said: "In a country which has given birth to the three greatest medical revolutionaries of the nineteenth century, Laennec, Claude Bernard and Pasteur, who opened up three worlds to science: auscultation, physiology and microorganisms, French science to-day still makes an imposing appearance; and if we can only go forward, reform what has become superannuated, suppress a great number of useless *concours* which paralyze our scientific activity for fifteen or twenty years and bring the finally attained professorship fifteen years too late, we shall soon resume the place which belongs to us, and retain among us more of the foreign physicians who now pass on elsewhere."

#### BERLIN LETTER.

(From Our Regular Correspondent.)

BERLIN, Aug. 29, 1908.

#### The Question of Medical Specialties.

In this age of individualization, in which in every field of scientific and practical effort the most extreme division of labor has taken place, it is not to be wondered at that, even in medicine, the specialties are developing more and more, and that at the present time the field formerly cultivated by the general practitioner has been split up into a large group of specialties.

In America, proportionately, the number of specialties is still more extensively developed than with us. But even in Germany the specialties in medicine already can be counted by dozens, and the proportion of specialists to general practitioners is continually enlarging. According to a statistical investigation instituted in March, 1904, by the Prussian ministry of public instruction (*Kultusministerium*) there were in Prussia, aside from the university instructors, about 2,800 special physicians; thus there were for 100 physicians 15.7 specialists. In 34 of the larger cities in Prussia the number of specialists, in proportion to the total number of physicians,



varied from 2.04 to 39.86 per cent. In some university cities the percentage of specialists, including the university teachers, amounted to over 40 per cent. Statistics obtained by a private investigation show how greatly the number of specialists has increased in some large cities. According to these figures the percentage of specialists increased from 1885 to 1905 as follows: In Stuttgart from 12.2 to 45.4; in Dresden from 8.0 to 41.6; in Frankfurt-on-the-Main from 7.5 to 41.6; in Munich from 9.2 to 40, and in Leipzig from 10.4 to 37.0. This increase in specialists extends not only to single cities, but is observed throughout the entire country, so that specialists at the present time are located not merely in the large cities as formerly, but even in cities of 10,000 and even fewer inhabitants. To what extent the number of specialties has increased is to be seen also from the imperial medical calendar. There are specialists for each of the various metabolic disorders, for pulmonary tuberculosis, for medical treatment of rupture, for ulcers of the leg, etc. If we seek for the reasons for the choice of a specialty we meet especially with three: first, a pronounced preference and fitness for a particular specialty; second, the hope of earning a better living in a special field than among the great mass of practicing physicians, and, finally, the greater freedom of specialists from the cares of the general practitioner.

That the disproportionate increase of specialists has a serious significance, both for the economic interests of practicing physicians as well as of the specialists themselves and also of their patients, has been repeatedly claimed in medical journals and can scarcely be doubted. The field of labor of the general practitioner, the sources of his income and the sources for the perfecting of his scientific skill are continually being narrowed. In the better situated families, now-a-days, the general practitioner is scarcely consulted any more, but the people go directly to the different specialists and the family physician, formerly generally employed, either very often does not exist at the present day or his task is simply in case of sickness to select the individual specialist. He is, as the saying goes "merely an address book for specialists." It is also clear, on the other hand, that the income of the specialists is injured by their excessive multiplication and that their reputation suffers, as specialists frequently announce themselves as such without adequate special training. These are the so-called "six weeks' specialists." Finally, there is a disadvantage to the patients from these conditions because, by the lack of a family physician the malady is too often not attacked at its root, or they do not reach the appropriate specialists, or they are compelled to suffer from the overactivity of specialists, which has been often enough complained of. For all these reasons the attempt has been repeatedly made to hinder the excessive growth of this specializing, but an effective remedy has not yet been found; every one of the proposed remedies has its drawbacks.

The establishment of a special examination for specialists has not met the approval of the majority of German physicians, particularly because they feared that by this means the value of the specialist in the eyes of the public would be still further enhanced, and that the general practitioners would be regarded as second-class physicians. The demand for evidence of more extensive preparatory training meets with greater approval. In what way this evidence will be demanded and furnished is not easy to say; various methods have been proposed to this end. The writer of a recent article in the *Deutsche medizinische Wochenschrift* treated the matter very thoroughly and proposed as a remedy that specialists should be forbidden to advertise their titles to the public. He referred particularly to England and France, where frequently the specialty is not displayed on the street signs nor inserted in the directory, and, as I am informed, this custom also prevails in many of the American states.

Some weeks ago the Prussian minister of public instruction announced that the Scientific Commission for Medical Affairs (*Wissenschaftliche Deputation für das Medizinalwesen*) had at his request made the following suggestions: The right of the physician to advertise himself as a specialist for certain departments of practical medicine or to designate himself by any other title of the same significance must be exercised under certain definite restrictions. Special training after receiving the medical degree should be required to justify one in advertising himself as a specialist or with any other equivalent title. The special training should consist in scientific post-graduate education and practical employment during a period which has been shown by experience to be sufficient for independent practice in the selected department. As a rule, three years may be considered as necessary. The special education must be received in the university medical institutes or acad-

emies for practical medicine, special departments of large hospitals or as assistant to recognized specialists. A list of the approved institutes and specialists for this purpose will be prepared and published yearly by the proper authorities. The duration and success of the specialistic employment shall be proved by a certificate from the instructing physician. The minister stated that he would prefer to refrain from a legal regulation of the question, and he directed the "medical councils" to take the conclusions of the Scientific Commission as the basis for their action. Some action on the question may be expected.

#### Care of Cripples.

For a number of years provision has been made in Germany for the deaf and dumb and the blind by the erection of public and private institutions for them, but no such provision has been made for cripples, in the stricter sense. Efforts toward such provision are now being made with two objects in view: first, to help the unfortunates themselves and to secure for them in a certain degree the enjoyment of life, while raising them from the ranks of the beggars, and, secondly, to make them useful members of society and thus relieve the public and private benevolent institutions of their care. One of the last things accomplished by the late Prof. Hoffa was to place himself at the head of an association founded here in Berlin for the care of cripples, and his energy and enthusiasm greatly advanced the work. The association has erected an institute for the treatment and care of cripples in Berlin, in which crippled children are not only cared for, but are to be developed into useful human beings.

The association has been collecting for the first time statistics in regard to cripples to estimate the need for the further erection of sanatoria and of institutions in which the cripples are merely received and instructed in various forms of handicraft (basket weaving, etc.); of the latter there are about thirty so far in Germany. In Germany, excluding Bavaria, Baden and Hesse, for which the returns are not yet complete, there have been recorded about 75,000 cripples of school age, that is, 1.48 per 1,000 inhabitants. About one-half of these cripples are in such a condition that they can not support themselves. For these, numbering about 45,000, there are available at present only 3,000 beds in the various institutions. Fully 10 per cent. of the cripples of school age have received no instruction. In Germany there are, besides, about 5,500 children who are crippled and feeble-minded, and of these only 820 at the present time enjoy the instruction which is necessary for them. The economic importance of systematic provision for cripples is shown in an address which the medical director of the Berlin sanatorium for cripples delivered at its opening. In Berlin there are 2,600 cripples under 14 years according to the census. If we assume that 600 of these are sufficiently self-supporting, without medical aid, there would remain only 2,000 who would become a burden to their relatives or to the public poor authorities, and if we reckon only one mark a day for the care or assistance of each cripple grown to manhood without care and technical training, the community of the citizens of Berlin would need to supply 730,000 marks (\$176,200). But if it were possible to make about 93 per cent. of the 2,000 cripples self-supporting, they would earn for Berlin about 1,500,000 marks yearly, so that they would not only entail no drain on the poor fund, but they would increase the wealth of the nation by useful labor.

### Correspondence

#### Coal-Tar and Chronic Eczema.

KANSAS CITY, Mo., Sept. 11, 1908.

To the Editor:—In THE JOURNAL, Aug. 8, 1908, I had a clinical note on the above subject. I have just learned that articles along the same line, written by Dr. Brocq, of Paris, had previously been published in the *Annales de Therapeutique, Dermatologique et Syphiligraphique* and in the *Journal de Médecine et de Chirurgie pratique*. While I had never seen nor heard of either of his articles, the suggestion which led me to commence the use of the substance was received in a private letter from Dr. Cowen, a medical friend residing abroad, and from subsequent developments it appears probable that he derived his suggestion from Dr. Brocq's publication. I feel that I have innocently done Dr. Brocq a deep injustice and I desire that he be given full and entire credit for first bringing this remedy before the profession.

R. L. SUTTON.



## Pharmacology

### BEEF, WINE AND IRON.

#### A National Formulary Preparation of Doubtful Value.

Criticisms of National Formulary preparations are much to be desired as there have been introduced into that, now authoritative, book on the supposed demand of physicians, many preparations which pharmaceutically and therapeutically are open to grave objections. Among these is Beef, Wine and Iron, which at first thought seems to answer the requirement for a nutriment, stimulant and tonic.

Attention has recently been called by Mr. J. P. Street<sup>1</sup> to the fact that intelligent physicians have long known that the nutritive value of meat extractives was practically *nil*. Mr. Street made analyses of a large number of samples of the Beef, Wine and Iron preparation as sold by druggists either branded with their own name, or with that of some wholesale manufacturer. Of 92 samples only 22 satisfied the National Formulary requirement of 0.007 gm. of nitrogen per fluidram. In the 92 samples the iron varied from 0.025 to 0.355 per cent. with an average of 0.114 per cent., which is considerably less than the required amount.

He details experiments from which he concludes that the process of the National Formulary is unsatisfactory: when the procedure directed was closely adhered to the finished preparation contained only about one-tenth as much iron as the formula indicates. He demonstrated that nine-tenths of the iron used is precipitated during the manufacture and is removed by filtration. Mr. Street makes the following very pertinent comment on the preparation:

"It is rather difficult to understand the reasons for the admission of a preparation of such doubtful efficacy into the formulary. For all practical purposes, in most cases it is nothing more than sherry wine of more or less questionable quality, to which has been added small quantities of meat extract and either tincture or citrate of iron. Meat extract is recognized as possessing but slight nutritive value, and the amount used in the preparation of beef, wine and iron would have but little value even as a tonic or stimulant. On the other hand, the iron in these preparations might be of value as a tonic during convalescence and in certain blood disorders, but it could be obtained much more cheaply and could be used much more intelligently in other forms and under a physician's direction. The use of such materials by an invalid on his own responsibility likewise exposes him to the danger of acquiring, unconsciously, the habit of alcoholism."

The popularity of this preparation among the laity rests largely on the name, and on the idea that it is possible to extract from meat its nutritive properties and administer them in a concentrated form; much as we can give a considerable amount of a crude drug such as belladonna in a minute dose of the alkaloid, atropin. That this idea is still entertained by many is shown by the misleading labels placed on many brands of "Beef, Wine and Iron." Mr. Street calls attention to this and says:

"Many of the labels on the samples bear other false and misleading statements, such as 'one-half ounce contains the strength of one ounce of beef,' and 'one tablespoonful contains the equivalent of 1½ ounces of lean meat.'"

While physicians seldom prescribe this preparation, its sale to the public is largely pushed by druggists and others whose interest in it is purely commercial. Its removal from the National Formulary is earnestly to be desired and physicians should see to it that the public is informed as to its very limited value and they should attempt to offset the psychic attraction which its name possesses.

#### Fairchild Brothers & Foster and the Council's Report on Diastase Ferments.

We have received a communication from Fairchild Brothers & Foster, in which they say that the recent report of the subcommittee on valuation of diastase ferments misconceives the point of the objection they have made to this report. They have

not only in the past advocated and proposed a uniform method of valuation based on the parts of starch converted to colorless reaction in ten minutes, but they now further formally request that all pharmaceutical products of diastase (simple or compound) be submitted to valuation by the particular method of applying the test, proposed by the subcommittee and adopted by the Council on Pharmacy and Chemistry. They point out that their "reply" (to the proof of the subcommittee's report) did not involve an objection to, or criticism of, this subcommittee's test or the results thereof, but was simply directed against the impression conveyed, as they insist, in the "remarks" advanced and again in the "supplementary report."

It may be that in the remarks supplementary to the report of the Council, a wrong impression was conveyed regarding the status of Fairchild Brothers & Foster's product, Holadin. It was not the intent of the report to question the statements of Fairchild Brothers & Foster regarding their products, nor was it intended to convey the impression that the firm misrepresented the digestive value of their product as claimed by the test for valuation previously submitted by them to the Council.

It will be remembered that the main object of the examination on which this report was based was to test the various digestive products on the market by the same method and tests, so that the actual value of each could be demonstrated.

## Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

### Dr. McCormack's South Dakota Tour.

Dr. J. N. McCormack has just completed a tour of two weeks through South Dakota. His meetings have been well attended and unusually interesting, as may be gathered from the South Dakota press. The *Aberdeen Daily American* says:

Very interesting was the lecture delivered yesterday evening by Dr. J. N. McCormack, lecturer of the American Medical Association, under the auspices of the Aberdeen District Medical Society. A good sized audience of professional and business men and women listened attentively to the lecture, which was a treat. The aim of the lecturer was to show the awful loss of life that is going on every year in this country, which is entirely unnecessary, and to enthruse his audience to begin a systematic organization which will have for its purpose the elimination and eradication of preventable diseases.

At Watertown the audience was most enthusiastic, and as a result it was decided to organize a local health league. The *Watertown Opinion* says:

As a result of the lecture delivered in the Grand Opera House last evening by Dr. J. N. McCormack of Kentucky, Watertown will in a short time have a health league. By resolution, the people present decided on this course. At the conclusion of the interesting and instructive address by the eminent man of medicine, several local speakers briefly spoke of the efforts of the doctor and of the benefits which are to be derived from a health league. Among the speakers were nearly all of the ministers of the city.

The *Brookings Press* says:

A great deal of interest was taken in the lecture by Dr. J. N. McCormack, who told of the conditions which he had found in different communities and of methods which are being advocated for making communities more sanitary and for bringing the medical profession and laymen more closely together in eradicating diseases.

At Sioux Falls Dr. McCormack took up local health matters and described the condition in which he found the Sioux Falls slaughter-houses on the afternoon preceding the lecture. The *Sioux Falls Daily Press* says:

After the lecture, Dr. McCormack, in speaking to a *Press* reporter, said: "I have visited many of the worst places in the country and Sioux Falls surpasses all of them. I only describe the things as I see them, and the slaughter-houses



here are by far the worst of any I have yet visited." At the close of the address, Mayor W. T. Doolittle, who presided over the meeting, called on various persons to express themselves on the subjects as presented by the doctor. The city health officer, Dr. Keller, expressed himself as agreeing with everything that Dr. McCormack had said. Bishop Hare spoke in high commendation of the warfare waged by the speaker against unhealthful conditions and offered resolutions thanking Dr. McCormack for his lecture and assuring him of cooperation insofar as local conditions could be remedied. These resolutions were accepted without a dissenting voice.

Editorially, the *Daily Press*, under the heading, "What is Going Into Our Months," comments on Dr. McCormack's lecture and calls on the citizens of Sioux Falls, as well as the honest dealers in food supplies, to insist on rigid sanitary inspection in order "that the public may know what places it is safe to patronize and that a premium may be placed on cleanliness."

The Sioux Falls *Argus-Leader*, besides containing an account of the lecture, discusses, in its editorial columns, the importance and necessity of a national department of public health. The editorial says:

It is important that we should keep up the Navy and Army and that we should protect the health of the cattle and pigs, and keep rust out of the wheat and the pine beetle out of the trees, but it is little less than a slander on our people that the health of the people, the lives of human beings, should be neglected as they have been since our government was organized. . . . In his lecture Dr. McCormack produced facts which were undeniable and which are in reality a shame on the American people. The Department of Agriculture has expended forty million dollars in the last ten years to solve the problem of diseases to plant and animal life on the farm. It is now proposed to expend two hundred and fifty millions more to exterminate diseases in stock and plant life. No one objects to this expenditure. It is the best investment the American people have ever made; but if it is wise to spend millions to save the lives of horses and cattle and sheep . . . it certainly ought to be worth while to spend a few millions every year to protect the lives of the American people, to educate them in the important problems of sanitation, to save the babies and to prolong the lives of the adults. In the opinion of this paper Dr. McCormack made out his case.

At Yankton a large and enthusiastic audience listened to his address. The *Yankton Herald* says:

Seldom is it that a Yankton audience is impressed as at last night's gathering and most would call the lecture a most opportune talk on subjects that are too seldom brought before the public.

At Mitchell, according to the *Daily Republican*, the highly pleased audience at the city hall was composed of representative citizens of the city. Mayor A. E. Hitchcock presided and introduced the speaker. At the close of the address the mayor suggested that the physicians and women's clubs of the city organize a local health league, which recommendation was enthusiastically adopted.

Dr. McCormack's tour in South Dakota has only added additional proof that the public will gladly and willingly cooperate with the medical profession to secure better sanitary conditions as soon as it is generally understood what is needed and how better conditions can be brought about.

#### POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR,  
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

##### Second Month.

General Subject for the Month: *Infection, Immunity and Serum Therapy.*

FIRST WEEKLY MEETING.

##### INFECTION.

[This subject to be divided among three members as indicated.]

Infectious Agents.—1. Living (pathogenic parasites). A. Macroparasites (pediculi, etc.). B. Microparasites: (1)

Bacteria (fission fungi). (2) Fungi of complex organization (aspergillum). (3) Protozoa (plasmodium malariae). H. Non-living (toxins). A. Animal toxins (snake venom). B. Vegetable toxins: (1) Non-bacterial (abrin, ricin). (2) Bacterial: a. Soluble bacterial toxins (diphtheria). b. Intracellular bacterial toxins.

Sources of Infectious Agents.—a. Occurrence in healthy beings: on skin and mucous membranes, in saliva, intestinal excreta, urine, bile, etc., "bacillus carriers." b. Transmission by animals: 1. Suffering from transferable diseases, anthrax, tuberculosis. 2. Mechanical carriers of germs, flies. 3. Intermediate hosts, mosquitoes. c. Aerial infection, exanthemata, tuberculosis, etc.; dust infection, droplet infection. d. Water-borne infection, typhoid, dysentery, etc. e. Soil and infection. f. Food and infection.

Routes of Infection.—Skin, conjunctiva, mucous membrane of respiratory and digestive tracts, genital tract, selective invasion as cholera vibrio in intestine.

Dissemination of Pathogenic Germs.—Local, as tetanus bacillus, toxins being absorbed; direct extension, erysipelas; blood metastases, pyemia; lymphatic metastases, infected wounds mechanical extension, aspiration pneumonia.

Elimination of Infectious Germs.—Direct, in abscesses, conjunctivitis, diphtheria, etc. Indirect, through blood into urine, bile, milk, etc.

Latency of Microbic Infections.—Diphtheria bacilli in throat, typhoid bacilli in gall bladder or periostitis, recurring attacks of malaria and rheumatism, bacteria in immunized persons and animals.

Mixed and Secondary Infections.—Variations in intensity of primary and secondary invaders.

Products of Infectious Agents.—Toxins, bacterio-toxins, bacterial hemolysins, phytotoxins. Endotoxins. Bacterio-proteins.

General Resistance to Infectious Agents.—Degrees of virulence of pathogenic bacteria.

Symptoms Due to Infectious Germs.—Period of Incubation. Local effects, serous, fibrinous, suppurative, diphtheritic, hemorrhagic, necrotic and proliferative changes. Leucocytosis; effects on red corpuscles, hemolysins, hemagglutinins; changes in blood-making organs, spleen and bone marrow. Parenchymatous degeneration in heart, kidney, liver, spleen. Changes in nervous system. Fever, due to different substances in blood, crises and recurring fevers. Effects on metabolism; due to changes in intake, chemical and in amount; to changes in output, as albumin through diseased kidney, loss in diarrhea, etc.; changes in chemical processes in body. Formation of antibodies; antitoxins, amboceptors, agglutinins, precipitins and opsonins.

##### Reference Books for the Second Month.

Ricketts: *Infection, Immunity and Serum Therapy.*

Sternberg: *Immunity: Protective Inoculations in Infectious Diseases, and Serum Therapy.*

Ehrlich: *Collected Studies on Immunity.*

Metchnikoff: *Immunity in Infectious Diseases.*

Bolduan: *Immune Sera.*

Allen: *Opsonic Methods of Treatment.*

Cabot: *Serum Diagnosis of Diseases.*

Vaughan and Novy: *Cellular Toxins.*

Jowett: *Notes on Blood Serum Therapy.*

Osler: *Modern Medicine, Vol. II.*



## Queries and Minor Notes

### ARTICLES ON THE OCULAR TUBERCULIN REACTION.

*To the Editor:*—I wish references to the best articles on the tuberculin reaction observed in the ophthalmic test, covering the technic, results, deductions, etc. A. P.

ANSWER.—We are constantly receiving questions similar to the above. We remind our readers that we issue with every volume, that is, twice yearly, a very exhaustive index to the current medical literature, which is intended to enable the reader to answer just such questions as this for himself. All the items here given—and they form only a small number of those available, nearly all the references to foreign journals being passed over—were obtained by referring to the aforesaid index. This is a task with which it seems scarcely fair to burden this office.

The following original articles, which have appeared recently in THE JOURNAL, cover much of the ground specified:

Baldwin, E. R.: Ophthalmic Tuberculin Diagnostic Test, Dec. 14, 1907, xlix, 1969.

Smithies, F., and Walker, R. E.: Calmette's Ophthalmic Reaction to Tuberculin, Jan. 25, 1908, l, 259.

Rosenau, M. J., and Anderson, J. S.: The Ocular Reaction to Tuberculin, a Warning, March 21, 1908, l, 961.

Tice, F.: Ocular Reaction to Tuberculin, June 13, 1908, l, 1982.

Clark, C. P.: Conjunctival Tuberculin Reaction, June 20, 1908, l, 206.

Parker, H. C.: The Calmette Ocular Tuberculin Reaction, June 27, 1908, l, 2121 (with a summary of literature).

Satterlee, G. R.: A Serious Result of the Ocular Tuberculin Test, June 27, 1908, l, 2133.

The following are some of the more important recent communications on the ocular tuberculin test in other periodicals:

Barney, C. N., and Brooke, R.: Ocular Reaction to Tuberculin, *Med. Rec.*, July 18, 1908; abstracted in THE JOURNAL, Aug. 1, 1908, li, 438.

Bass, C. C.: Ocular Tuberculin Reaction in Diagnosis of Tuberculosis, *New Orleans Med. and Surg. Jour.*, March, 1908, abstracted in THE JOURNAL, May 16, 1908, l, 1653.

Calmette, A.: Sociologic Importance of the Ocular Diagnosis of Tuberculosis, *Bull. de l'Acad. de méd. de Paris*, Jan. 14, 1908 (an important article), abstracted in THE JOURNAL, Feb. 29, 1908, l, 733.

de Lapersonne, F.: Is the Ocular Reaction to Tuberculin Free from Danger for the Eye? *Presse méd.*, Dec. 7, 1907; abstracted in THE JOURNAL, Jan. 18, 1908, l, 244.

Dietschy, R.: Cytologic Findings on Conjunctival Tuberculin Reaction, *München. med. Wchnschr.*, June 16, 1908; abst. in THE JOURNAL, July 18, 1908, li, 265.

Downes, H.: Tuberculin Ocular Reaction, *Brit. Med. Journal*, Dec. 7, 1907; abst. in THE JOURNAL, Jan. 4, 1908, l, 76.

Eyre, J. W. H., Wedd, B. H., and Herz, A. F.: Tuberculin Ocular Reaction of Calmette, *Lancet*, London, Dec. 21, 1907, gives a wide review of continental work on the subject; abst. in THE JOURNAL, Jan. 18, 1908, l, 242.

Floyd, C., and Hawes, J. B.: Ocular Tuberculin Reaction, *Jour. Med. Research*, February, 1908; abst. in THE JOURNAL, April 4, 1908, l, 1149.

Hamman, L.: Use and Value of Tuberculin in Diagnosis of Pulmonary Tuberculosis, *Arch. Int. Med.*, June, 1908; abst. in THE JOURNAL, July 25, 1908, l, 348.

Lecky, H. C.: Calmette's Ocular Reaction, *Brit. Med. Jour.*, March 28, 1908; abst. in THE JOURNAL, April 25, 1908, l, 1381. (The same issue of the *British Medical Journal* contains articles on the same subject by H. E. R. Stevens and H. de C. Woodcock.)

MacLennan, W.: Ocular Tuberculin Reaction, *Brit. Med. Jour.*, Dec. 7, 1907; abst. in THE JOURNAL, Jan. 4, 1908, l, 77.

Moro, E.: Tuberculin Inunction as a Substitute for the Ocular Reaction, *New York Med. Jour.*, June 27, 1908; abst. in THE JOURNAL, July 11, 1908, li, 166. (The same *New York Medical Journal* contains also articles on the ocular reaction by A. L. Benedict and H. H. Pelton.)

Napier, A.: A Suggestion of Caution, *Glasgow Med. Jour.*, January, 1908; abst. in THE JOURNAL, Feb. 15, 1908, l, 567.

Van Durme, P., and Stocké, E.: Tardy Ocular Lesions After Diagnostic Instillation of Tuberculin, *Presse méd.*, March 14, 1908.

Wolff-Eisner, A.: Ocular and Cutaneous Diagnosis of Tuberculosis, *Beitr. z. Klin. d. Tuberk.*, ix, No. 1 (a review to date); abst. in THE JOURNAL, March 7, 1908, l, 806.

Wolff-Eisner, A., and Teichmann, F.: Importance for Prognosis of Ocular and Cutaneous Reaction of Tuberculin, *Berl. klin. Wchnschr.*, Jan. 13, 1908; abst. in THE JOURNAL, Feb. 22, 1908, l, 650.

Webster, J. S., and Kilpatrick, J. A.: One Hundred and Twenty-one Cases Tested with Calmette's Tuberculin, *Brit. Med. Jour.*, Dec. 7, 1907; abst. in THE JOURNAL, Jan. 4, 1908, l, 77.

Weber, F. P.: Calmette's Ocular Reaction for Tuberculosis (a cautionary article), *Brit. Med. Jour.*, Feb. 15, 1908; abst. in THE JOURNAL, March 14, 1908, l, 920.

Zaniboni, B.: Ocular Reaction to Tuberculin, *Policlinico*, Rome, Jan. 5, 1908; abst. in THE JOURNAL, Feb. 8, 1908, l, 492. (The abstract covers also an important article by G. Seratini in the *Gior. d. r. Accad. di Med.*, Turin, November, 1907.)

The original papers by Calmette and Wolff-Eisner were published, respectively, in the *Comptes rendus de l'Académie des sciences*, June 17, 1907, and the *Berliner klinische Wochenschrift*, 1907, xlv, 700.

The announcement is just made of the publication of the Ophthalmic and Cutaneous Diagnosis of Tuberculosis by Dr. Wolff-Eisner, Berlin. London: John Bale, Sons and Danielsson, Ltd. Price 7s 6d, net.

### ESPERANTO IN MEDICINE.

M. P. Corret, secretary of the Redaction of the *Lingvo Internacio*, Paris, France, is preparing a thesis on "The Utility and Possibility of the Adoption of an Auxiliary International Language by the Medical Profession." M. Corret is therefore desirous of obtaining information on examples of misunderstanding at international congresses, due to diversity of languages, the acceptance of Esperanto as an official language by medical congresses and societies, the presentation to international congresses of communications in Esperanto, the difficulties of bibliographic research in foreign works, medical works containing mention of or extracts in Esperanto, etc. The more varied the sources of information, the more valuable will be the thesis, and the more effective in its bearing on the adoption of Esperanto. The author will give the name and nationality of every informant. Esperantist physicians may send their communications in Esperanto direct to Monsieur P. Corret, 12 Rue de la Vergennes, Versailles, (S.-et-O.), France. Non-esperantists willing to help may send their information in English to Dr. Grace E. Papot, 1038 Jackson Boulevard, Chicago, who will forward a translation to M. Corret.

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending, Sept. 12, 1908:

Dulin, C. T., M. R. C., ordered to active duty in the service of the United States.

Trenholtz, C. A., cont.-surgeon, leave extended one month.

Reasoner, M. A., first lieutenant, leave of absence extended four days.

Craig, C. F., captain, detailed member of competitive examining board at Fort Leavenworth, Kans., vice Captain Bloomergh, hereby relieved.

Gosman, G. H. R., captain, relieved from duty at Fort Morgan, Ala., and ordered to Fort Barrancas, Fla., for station and duty.

Shepherd, J. M., M. R. C., granted thirty days' leave of absence.

Patterson, R. U., captain, granted leave of absence to visit the United States, to take effect on date of arrival in United States of the transport *Kilpatrick*, and ending Oct. 15, 1908.

Bartlett, C. J., captain, granted leave of absence to visit the United States, to take effect on date of arrival in the United States of the transport *Kilpatrick*, and ending Sept. 15, 1908.

Koyle, F. T., M. R. C., ordered to active duty in the service of the United States.

Boards of officers of the Medical Corps, as hereinafter constituted, are appointed to meet at the places designated for the purpose of conducting the examination of applicants for appointment as first lieutenants in the Medical Reserve Corps of the Army:

Richard, Charles, lieutenant-col.; Wilson, W. H., major; Wolfe, E. P., captain, at New York City.

McCaw, W. D., major; Huggins, J. B., captain; Barber, J. R., first lieutenant, at Washington, D. C.

Fisher, H. C., major; De Loffre, S. M., captain; Owen, L. J., captain, at Columbus Barracks, Ohio.

Bradley, A. E., major; Winn, R. N., captain, at Jefferson Barracks, Missouri.

Davis, W. B., lieutenant-col., at Omaha.

Munson, E. L., major, at Fort Leavenworth, Kans.

Farr, C. W., captain, at Fort McKinley, Me.

Heysinger, J. D., captain, at Key West Barracks, Fla.

Chamberlain, W. P., major, at New Orleans, La.

Peed, G. P., captain, at Fort Ontario, N. Y.

Reynolds, F. P., major, at St. Paul, Minn.

Kulp, J. S., major, at Fort Meade, S. D.

Lewis, W. F., major, at Fort Sill, Okla.

Schreiner, E. R., major, at A. G. H., Presidio, San Francisco.

Keefer, F. R., major, at Presidio, Monterey, Cal.

Stark, A. N., major, at Vancouver Barracks, Washington.

McCulloch, C. C., Jr., major, at Ancon, Canal Zone, Panama.

The boards will be governed by such instructions as they may receive from the Surgeon General of the Army, to whom the reports of the boards will be rendered direct.

Eber, A. H., M. R. C., relieved from further duty in the Philippine Islands, and on expiration of his present leave of absence, ordered to Fort DeSoto, Fla.

Hanson, L. H., first lieutenant, ordered to Fort Sam Houston, Texas, for station and duty.

Miller, A. L., M. R. C., granted twenty days' leave of absence.

Keefer, F. R., major, will proceed from Presidio of Monterey, to San Francisco, on or before Sept. 10, 1908, reporting on arrival to the adjutant general, Department of California, for assignment to duty as acting chief surgeon of the department, during the absence of Col. Geo. H. Torney, chief surgeon.



Richard, Charles, lieut. col.; Carter, W. F., major; Shaw, H. A., major; Winter, F. A., major; Wilson, W. H., major, ordered to Fort Myer, Va., Sept. 16, 1908, for the purpose of undergoing the physical examination and testing their skill and endurance in horsemanship.

Hussey, S. W., dental surg., granted fifteen days' leave of absence.

### Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Sept. 12, 1908:

Heneberger, L. G., medical director, commissioned medical director from Sept. 2, 1908.

Percy, H. T., medical inspector, commissioned medical inspector from Sept. 2, 1908.

Wise, J. C., medical director, detached from command of the naval medical school hospital, Washington, D. C., and ordered to duty as a member of the naval examining and naval medical examining boards, Washington, D. C.

Boyd, J. C., medical director, ordered to additional duty in command of the naval medical school hospital, Washington, D. C.

Wheeler, W. M., surgeon, ordered to the Navy Yard, New York, September 12.

Mink, O. J., passed asst.-surgeon, detached from the naval recruiting station, Chicago, and ordered to the naval medical school, Washington, D. C.

Rodman, S. S., passed asst.-surgeon, unexpired portion of leave revoked; ordered to the naval recruiting station, Chicago.

Hessez, P. T., passed asst.-surgeon, detached from the *Chicago*; unexpired portion of leave revoked and ordered to duty at the naval hospital, Las Animas, Colo.

Hathaway, G. S., asst.-surgeon, ordered to duty in connection with fitting out of the *Wyoming*, and to duty on board that vessel when commissioned.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health, and Marine-Hospital Service during the week ended September 11, 1908:

#### SMALLPOX—UNITED STATES.

Alabama: Mobile, Aug. 23-29, 1 case.

California: San Francisco, Aug. 23-29, 2 cases.

Indiana: Indianapolis, Aug. 24-30, 3 cases.

Iowa: Sioux City, Aug. 25-31, 3 cases.

Montana: Butte, Aug. 26-Sept. 1, 1 case.

Ohio: Zanesville, Aug. 1-31, 1 case.

Wisconsin: La Crosse, Aug. 23-29, 6 cases; Milwaukee, 2 cases.

#### SMALLPOX—FOREIGN.

Arabia: Aden, Aug. 4-10, 2 deaths.

Borneo: Sandakan, June 15-30, 1 death.

Brazil: Rio de Janeiro, July 26-Aug. 2, 519 cases, 231 deaths; Santos, July 20-26, 1 death; Pernambuco, July 16-30, 29 deaths.

Canada: Halifax, Aug. 23-29, 1 case.

Ceylon: Colombo, July 18-25, 14 cases, 2 deaths.

China: Amoy, July 15-21, present.

Ecuador: Guayaquil, July 25-Aug. 8, 8 deaths.

Egypt: Cairo, Aug. 6-12, 2 cases, 1 death.

India: Bombay, July 27-Aug. 4, 8 deaths; Calcutta, July 19-25, 5 deaths.

Indo-China: Cholon, July 19-25, 1 case, 1 death; Saigon, 2 cases, 1 death.

Italy: General, Aug. 10-16, 115 cases; Genoa, July 1-31, 3 cases; Messina, July 19-25, present; Naples, Aug. 2-15, 9 cases, 2 deaths.

Java: Batavia, July 19-25, 3 cases.

Mexico: Mexico City, July 19-25, 25 deaths.

Norway: Christiania, Aug. 9-15, 22 cases.

Philippine Islands: Manila, July 12-18, 15 cases, 5 deaths.

Portugal: Lisbon, Aug. 9-15, 4 cases.

Russia: Riga, Aug. 9-15, 2 cases; Warsaw, 4 deaths.

Spain: Barcelona, Aug. 4-10, 1 death.

Turkey in Asia: Bagdad, July 19-25, 20 cases, 4 deaths.

#### CHOLERA.

China: Hankau, July 19-25, 8 cases, 5 deaths; present among Europeans, and July 27, epidemic among natives; Hongkong, 4 cases, 3 deaths.

Japan: Moji, Aug. 8, 2 cases, one case from Yamaguchi; Yokohama, Aug. 17, 3 cases, 1 death, on British steamer in quarantine.

India: Calcutta, July 19-25, 9 deaths; Madras, July 24-31, 13 deaths.

Indo-China: Cholon, July 19-25, 9 cases, 9 deaths.

Philippine Islands: Manila, July 12-18, 1 case, 1 death; provinces, general, 1,445 cases, 788 deaths.

Russia: Rostov, July 26-Aug. 14, 87 cases, 37 deaths; government districts, St. Petersburg, Sept. 9, 15 cases; Astrakhan, Aug. 1-7, 92 cases, 38 deaths; Saratov, 152 cases, 74 deaths; Samara, 4 cases, 3 deaths; Don, territory, 14 cases, 10 deaths.

#### YELLOW FEVER.

Cuba: Antilla, Sept. 8, 1 case, 1 death.

Santiago: Santiago Province, Firmeza, Aug. 22, 1 case; Santiago, from Mayari, Sept. 7, 1 case.

Ecuador: Guayaquil, July 25-Aug. 1, 1 death.

Mexico: Laguna del Carmen, Aug. 29, 2 cases; Vera Cruz, Sept. 7, 1 case.

#### PLAGUE—UNITED STATES.

California: Los Angeles, Aug. 11, 1 case.

#### PLAGUE—FOREIGN.

Azores: Terceira, July 1-Aug. 11, 29 cases, 15 deaths.

Brazil: Rio de Janeiro, July 26-Aug. 11, 1 case.

British East Africa: Port Florence, July 5-11, 21 cases, 18 deaths.

Chile: Antofagasta, July 19-26, 3 cases; Iquique, July 23-29, 3 cases, 3 deaths.

China: Amoy, July 21, epidemic; Hongkong, July 19-25, 17 cases, 14 deaths.

Indo-China: Cholon, July 12-25, 19 cases, 19 deaths; Saigon, July 18-25, 1 case, 1 death.

Ecuador: Guayaquil, July 25-Aug. 1, 2 deaths.

India: General, July 21-Aug. 6, 621 cases, 461 deaths; Bombay, July 29-Aug. 4, 31 deaths; Calcutta, July 19-25, 22 deaths; Rangoon, July 21-27, 32 deaths; Formosa, July 26-Aug. 1, 1 case, 1 death.

Pern: General, July 21-Aug. 3, 40 cases, 21 deaths.

Siam: Bangkok, July 14-20, 3 cases.

Venezuela: La Guaira, Aug. 5, present.

## Medical Education and State Boards of Registration

### COMING EXAMINATIONS.

New York State Board of Medical Examiners, Albany, September 22-25. Chief of Examinations Division, Charles F. Wheelock, Albany.

GEORGIA Homeopathic Board of Medical Examiners, 153 Whitehall street, Atlanta, October 1. Secretary, Dr. R. E. Hinman, 153 Whitehall street, Atlanta.

LOUISIANA State Board of Medical Examiners, New Orleans, October 1-2. Secretary, Dr. Felix A. Larue, 211 Camp street, New Orleans.

RHODE ISLAND State Board of Health, State House, Providence, October 1-2. Secretary, Dr. Gardner T. Swarts, 315 State House, Providence.

ARIZONA Board of Medical Examiners, Phoenix, October 5-6. Secretary, Dr. Ancil Martin, Phoenix.

UTAH State Board of Medical Examiners, Salt Lake City, October 5-6. Secretary, Dr. R. W. Fisher, Salt Lake City.

IDaho State Board of Medical Examiners, Boise, October 6. Secretary, Dr. W. F. Howard, Pocatello.

MONTANA State Board of Medical Examiners, Senate Chamber, the Capitol, Helena, October 6. Secretary, Dr. W. C. Riddell, Helena.

COLORADO State Board of Medical Examiners, State Capitol, Denver, October 6. Secretary, Dr. S. D. VanMeter, 1723 Tremont Place, Denver.

NORTH DAKOTA State Board of Medical Examiners, Grand Forks, October 6-8. Secretary, Dr. H. M. Wheeler, Grand Forks.

MINNESOTA State Board of Medical Examiners, the Old Capitol, St. Paul, October 6-9. Secretary, Dr. W. S. Fullerton, 214 American National Bank Bldg., St. Paul.

NEW MEXICO Board of Health and Medical Examiners, Santa Fe, October 12-13. Secretary, Dr. J. A. Massie, Santa Fe.

ARKANSAS Regular Board of Medical Examiners, Little Rock, October 13. Secretary, Dr. F. T. Murphy, Brinkley.

ARKANSAS Homeopathic Board of Medical Examiners, Little Rock, October 13. Secretary, Dr. P. C. Williams, Texarkana.

GEORGIA Regular Board of Medical Examiners, Capitol Building, Atlanta, October 13. Secretary, Dr. E. R. Anthony, Griffin.

MISSISSIPPI State Board of Health, The Capitol, Jackson, October 13. Secretary, Dr. S. H. McLean, Jackson.

KANSAS State Board of Medical Registration and Examination, Topeka, October 13-15. Secretary, Dr. R. A. Light, Chanute.

MICHIGAN State Board of Registration in Medicine, Lansing, October 13-15. Secretary, Dr. B. D. Harrison, 504 Washington Arcade, Detroit.

WYOMING Board of Medical Examiners, October 14-16. Secretary, Dr. S. B. Miller, Laramie.

NEW JERSEY State Board of Medical Examiners, State House, Trenton, October 20-21. Secretary, Dr. J. W. Bennett, Long Branch.

INDIANA Board of Medical Registration and Examination, Room 120, State House, Indianapolis, October 27. Secretary, Dr. W. T. Gott, Room 120, State House, Indianapolis.

### Maryland Homeopathic June Report.

Dr. Joseph S. Garrison, secretary of the Board of Medical Examiners representing the Maryland State Homeopathic Medical Society, reports the oral and written examination held at Baltimore, June 16-17, 1908. The number of subjects examined in was 9; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 21, of whom 15 passed and 6 failed. The following colleges were represented:

#### PASSED.

College.	Year	Per.
Maryland Med. Coll.	Grad. (1905)	77.5
Atlantic Med. Coll., Baltimore, (1908)	75.1, 75.1, 75.2, 75.5, 75.7,	
78.1, 78.2, 78.2, 81.3, 83, 83.3, 85.4, 87.2.		
Hahnemann Med. Coll., Philadelphia (1893)*		

#### FAILED.

Atlantic Med. Coll., Baltimore, (1908) 54.6, 64.6, 64.6, 66.1, 72.8, 74.4.

\*Took special oral examination.

### Connecticut Eclectic July Report.

Dr. T. S. Hodge, secretary of the Connecticut Eclectic Medical Examining Board, reports one reciprocal license issued July 14, 1908, through reciprocity with Ohio, to a graduate of the Eclectic Medical Institute of Cincinnati, 1906.



## Marriages

HARRY C. LONG, M.D., Cleveland, to Miss Lillian L. Susser of Buffalo, August 28.

J. G. ORMEN, M.D., to Miss Miami Berthae Wagner, both of Baltimore, August 4.

JESSIE W. SMITH, M.D., and Frederick J. Trumper, both of Cleveland, August 25.

JACOB J. SINGER, M.D., St. Louis, Mo., to Miss Flora Loewenstein of Chicago, recently.

LOUIS G. RUPP, M.D., Concord, Wis., to Miss Jessie Humphrey of Ixonia, Wis., August 26.

M. L. WEBB, M.D., Fredericksburg, Va., to Miss Lula Dillon, at Fredericksburg, September 3.

JOSEPH COLT BLOODGOOD, M.D., Baltimore, to Miss Edith Holt of New York City, September 1.

ARTHUR PEAKE, M.D., to FRANCES M. CONNELL, M.D., both of Valley City, N. D., August 27.

BERT M. BREWSTER, M.D., Fieldon, Ill., to Miss Leila M. Chambers of Godfrey, Ill., August 17.

GEORGE C. SMITH, M.D., West Salem, Ohio, to Miss Leota Myrtle Cloes of New Sarnum, Ont., July 29.

JAMES WELCH, M.D., Collins, Miss., to Miss Josie Hunter Weathersby of Clinton, Miss., September 3.

CLARENCE D. INGRAHAM, JR., M.D., Baltimore, to Miss Aileen B. C. Dammann, at Baltimore, September 2.

THOMAS A. MASSEY, M.D., Hampton, Va., to Miss Elizabeth Hardwick, at Elizabeth City, N. C., recently.

CHARLES WARREN HERRINGTON, M.D., to Miss Beulah A. Bents, both of Madison, Wis., September 9.

ALEC NICOL THOMPSON, M.D., to Miss Margarite Corbett Seandlin, both of Brooklyn, N. Y., September 7.

J. DILWORTH STROUD, M.D., to Miss Mae Virginia Saunders, both of Ocean View, Norfolk, Va., September 7.

CAPT. WILLIAM WILKINSON RENO, Medical Corps, U. S. Army, to Miss Ruth Steere of Manila, P. I., August 14.

## Deaths

George Kinney Johnson, M.D. Cleveland University of Medicine and Surgery, 1846; a member of the American Medical Association; in 1859 mayor of Grand Rapids, Mich.; surgeon of the First Michigan Volunteer Cavalry, and later brigade surgeon and medical inspector of the Middle Military Department during and immediately after the Civil War; in 1879 president of the Michigan State Medical Society; a member of the National Association of Railway Surgeons; and surgeon-in-chief of the Grand Rapids & Indiana, Chicago & West Michigan, and Detroit, Lansing & Northern railroads; for several years president of the local board of U. S. pension examining surgeons; chief of staff and consulting surgeon to Butterworth Hospital died in his home in Grand Rapids, September 3, after an illness of one year, aged 86.

William T. Eckley, M.D. University of Iowa, College of Medicine, Iowa City, 1884; a member of the American Medical Association, Chicago Pathological Society and Chicago Medical-Legal Society; formerly professor of anatomy in the medical and dental departments of the University of Illinois, Chicago Clinical School and Chicago School of Anatomy and Physiology; who retired from professional work about two years ago; died at his home near Grand Haven, Mich., September 12, from heart disease, aged 53.

Frederick Hubbard Hooper, M.D. College of Physicians and Surgeons in the City of New York, 1857; a member of the American Medical Association; surgeon to the House of Correction and attending surgeon at the Marine Hospital, New Bedford, Mass.; in 1863 surgeon of the board of enrollment for the First Congressional district; and in 1873 appointed visiting physician to St. Joseph's Hospital; died at his home in New Bedford, August 31, after an invalidism of several years, aged 78.

Josephus Henry Gunning, M.D. New York Homeopathic Medical College and Hospital, 1867; New York Homeopathic Medical College, New York City, 1873; and later a lecturer in the latter institution; a member of the Medical Society of the State of New York; electrotherapist to the French Hospital, New York City; and president of the board of health of Scarsdale, N. Y.; died at his home in that place, August 29.

William Greer Armstrong, M.D. Medical Department of the Tulane University of Louisiana, New Orleans, 1891; a member of the American Medical Association; member of the Louisiana State Board of Health for two terms; and one of the most prominent young practitioners of Louisiana; died at his home in New Orleans, September 2, from pneumonia, after an illness of nine days, aged 38.

Staats Van Deursen Clark, M.D. College of Physicians and Surgeons in the City of New York, 1870; a member of the Medical Society of New Jersey; physician to Wells Memorial Hospital, New Brunswick, N. J.; for seven years city physician and a member of the board of freeholders; died at his home, September 6, from locomotor ataxia, after an illness of two years, aged 60.

Josiah Fisher Day, M.D. College of Physicians and Surgeons in the City of New York, 1856; surgeon of the Tenth and Twenty-ninth Maine Volunteer Infantry during the Civil War; for many years a member of the school board of Alford, Maine, and United States pension examining surgeon; died at his home in Everett, Mass., August 23, after a long illness, aged 75.

Ernest A. Crockett, M.D. Jefferson Medical College, Philadelphia, 1896; a member of the American Medical Association; ophthalmic surgeon on the staff of the Central Maine General Hospital; and a specialist on diseases of the eye, ear, nose and throat; died at his home in Lewiston, Maine, September 3, from typhoid fever, after an illness lasting two weeks, aged 37.

William Rosensohn, M.D. College of Physicians and Surgeons in the City of New York, 1900; a member of the American Medical Association; chief of the medical clinic of the Orange Memorial Hospital Dispensary; died recently at his home in East Orange, N. J., from pulmonary tuberculosis, after an illness of a year and a half, aged 30.

Robert M. Boyles, M.D. Western Reserve Medical College, Cleveland, Ohio, 1877; a veteran of the Civil War; at one time burgess of Reynoldsville and Falls Creek, Pa.; auditor and public school director of Du Bois, Pa.; died at the home of relatives in Reynoldsville, August 26, from septicemia, after an illness of four months, aged 68.

Lorenzo Hale, M.D. Albany (N. Y.) Medical College, 1868; a member of the Medical Society of the State of New York, and at one time its president; for several years editor-in-chief of the *Albany Medical Annals*; died at his home in Albany, August 31, from paralysis, after an illness of six weeks, aged 64.

Nicholas C. Sheppard, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1867; of Richmond, Va.; surgeon of Wood's Brigade, Stuart's Division, C. S. Army, during the Civil War; died in the Virginia Hospital, Richmond, September 3, after a lingering illness, aged 76.

Nathaniel James Mills, M.D. Jefferson Medical College, Philadelphia, 1855; surgeon in the Confederate service during the Civil War; postmaster of Corsicana, Texas, for one term; died at his home in that city, August 3, from senile debility, after an illness of about two years, aged 74.

William Y. Bliss, M.D. University of Vermont College of Medicine, Burlington, 1879; of Tully, N. Y.; twice coroner's physician of Onondaga County; died at the home of his brother in Burlington, Vt., September 5, from nephritis, after an illness of several years, aged 60.

Robert Henry Blaisdell, M.D. Indiana Eclectic Medical College, Indianapolis, 1885; a member of the American Medical Association; and secretary and director of the public schools of Sheridan, Mich.; died at his home, August 30, after an illness of some months, aged 58.

Moses E. Seale, M.D. Maryland Medical College, Baltimore, 1905; a member of the State Medical Association of Texas; formerly of Burlington; who recently moved to Lampasas; was shot and instantly killed in an affray at Burlington, August 31, aged 36.

U. LeRoy Washburn, M.D. Bellevue Hospital Medical College, New York City, 1890; for 30 years a practitioner of medicine; a member of the visiting staff of the Harlem Hospital; died at his home in New York City, September 23, after an illness of 20 weeks, aged 59.

Ezra H. Cummings, M.D. Baltimore Medical College, 1903; of Clarksburg, W. Va.; a member of the West Virginia State Medical Association; died in a hospital in that city, September 3, from typhoid fever, after an illness of three weeks, aged 34.



**Louis McMurtry Coke, M.D.** Hospital College of Medicine, Medical Department, Central University of Kentucky, Louisville, 1908; of Utica, Ky.; died in Alamogordo, N. M., June 6, from tuberculosis, after an illness of five months, aged 27.

**Daniel J. Chittenden, M.D.** New York University Medical College, New York City, 1859; formerly of Cameron Mills, N. Y.; a member of the Medical Society of the State of New York; died at home in Union, N. Y., September 4, aged 75.

**Milton M. Hess, M.D.** Central College of Physicians and Surgeons, Indianapolis, 1891; for many years a practitioner of Shelby County, Ind.; died at his home in Freeport, September 1, from cardiac dropsy, after a long illness, aged 70.

**LeGrand D. Sherman, M.D.** Castleton (Vt.) Medical College, 1854; died September 8, at his home in Tyro, Kan., from the effects of a gunshot wound of the head, said to have been self-inflicted with suicidal intent, aged 73.

**Felix H. Coyle, M.D.** College of Physicians and Surgeons, Baltimore, 1886; of New York City; died in Harlem Hospital, July 10, it is said, from the effects of prolonged exposure to the sun for the relief of rheumatism.

**Millard Fillmore Warner, M.D.** New York University Medical College, New York City, 1877; at one time a member of the state senate; died at his home in Cleveland, Ohio, August 29, after a short illness, aged 59.

**Benjamin E. Shirk, M.D.** Rush Medical College, Chicago; for nearly 40 years a practitioner of Marshalltown, Iowa; died at his home, January 18, from senile debility, after an illness of two weeks, aged 82.

**Russell R. Smith, M.D.** Cincinnati College of Medicine and Surgery, 1871; of East Liberty, Ohio; a member of the American Medical Association; died August 30, in a hospital in Columbus, aged 64.

**B. Dorsey Winchester, M.D.** University of Louisville, Medical Department, 1906; died suddenly near the home of his wife's parents, at Tompkinsville, Ky., September 6, from heart disease, aged 23.

**Charles Leibecke, M.D.** Germany, 1861; a veteran of the Civil War; and afterward United States gauger; died suddenly at his home in Aurora, Ind., May 15, from cerebral hemorrhage, aged 62.

**Jason Lee Taylor, M.D.** Southern Medical College, Atlanta, Ga., 1884; died at his home in St. Petersburg, Fla., May 29, from congestion of the liver, after an illness of eight days, aged 45.

**Patrick Michael Bracelin, M.D.** University of Iowa College of Medicine, Iowa City, 1875; died at his home in Davenport, Iowa, September 3, after an illness of eight months, aged 68.

**A. U. Holland** (Registration, Franklin County, Pa., 1881); for 40 years a practitioner of medicine at Fayetteville, Pa.; died at his home from hemiplegia, September 5, aged 77.

**Charles C. Frost** (Examination, Mass., 1894); for nearly 30 years a practitioner of Lowell, Mass.; died at his home, September 4, after an invalidism of several years, aged 90.

**William D. Neel, M.D.** University of Louisville (Ky.) Medical Department, 1879; of Chicago; died at a hotel in Gloucester, Mass., September 1, after a long illness, aged 58.

**J. I. Baker, M.D.** Cincinnati College of Medicine and Surgery, 1877; for 35 years a practitioner of Rock Creek, Ohio; died recently after an illness of two weeks, aged 81.

**John J. Everhard, M.D.** Rush Medical College, Chicago, 1857; of Seneca, Kan.; died at the home of his daughter in Duluth, Minn., August 30, from senile debility, aged 78.

**LeGrand Wheeler** (License, Mich., years of practice, 1900); for 50 years a resident of Muskegon County, Mich.; died at his home in Wolf Lake, August 30, aged 76.

**Jonathan Kemp Haynes, M.D.** Albany (N. Y.) Medical College, 1858; for many years a practitioner of Hoosick, N. Y.; died in that place August 27, aged 84.

**Maxey G. Lee, M.D.** University of Maryland School of Medicine, Baltimore, 1888; died recently at his home in Hartsville, S. C., from cirrhosis of the liver.

**Daniel T. Black, M.D.** Physio-Medical College, Cincinnati, 1878; died at his home in Fort Jefferson, Ohio, September 1, after a long illness.

**Henry A. Dawley, M.D.** Detroit College of Medicine, 1892; of Lansing, Mich., formerly of Williamston, Mich.; died recently.

**William B. Boyd, M.D.** Atlanta (Ga.) Medical College, 1861; died suddenly at his home in Mineral, Va., June 15, aged 70.

**Ethan Allen** (License, Ind.); died recently at his home in Laporte, Ind., from uremia, aged 75.

## Medicolegal

### Testimony by Patient Not Waiver of Privilege.

The Supreme Court of Minnesota holds, in the personal injury case of *Hillary vs. Minneapolis Street Railway Co.*, that, under the provisions of subdivision 4 of section 4660 of the Revised Laws of Minnesota of 1905, unless the privilege is waived, a physician can not testify as to any information acquired by him in attending his patient. The privilege is not waived by the mere fact that the patient testifies concerning his condition while receiving treatment.

### Physician Declining to Testify as Expert on Insanity—Fees for Experts.

The Supreme Court of Missouri, Division No. 2, says, in the case of *State vs. Bell*, that, while non-expert witnesses may give their opinions as to the sanity or insanity of a person after stating the facts on which they predicate their opinions, it is conceded by all courts that an expert may give his opinion as to the sanity or insanity of a given person on a hypothetical statement of the facts; but the competency of the witness as an expert must be first satisfactorily shown to the court. It has sometimes been said that the opinion of the witness as to his own qualification is irrelevant and carries no weight with it, but the court takes it that this was said of witnesses who professed to be experts without any evidence that they had the qualifications as such. But when a witness declined, as a physician did here, to testify as an expert, and the only evidence tending to show that he was an expert on insanity was that he was a physician of some twenty-five years' practice, without any showing that he ever had any occasion to treat patients for insanity or had any experience in that particular branch of his profession, and he himself declined to testify as an expert, the court thinks that his answer to a hypothetical question should have been excluded on the ground that he had not been shown to be an expert and therefore was not competent to speak on that subject.

Another physician was asked in this case whether a certain incurable disease, after running six or eight months or a year, would cause paralysis. When this question was propounded to the witness, he answered that that was a specialized question, and he expected to receive remuneration if he was required to give expert testimony. The trial court sustained the witness in his refusal to answer until he had first received his fee for his opinion as an expert. But in so ruling the Supreme Court thinks that the lower court erred.

Whether a physician called to testify as an expert may be compelled to state his opinion on a hypothetical or other question involving his professional knowledge without compensation other than the witness fees allowed all other witnesses by law the Supreme Court says has been a much mooted question.

In *Burnett vs. Freeman*, 125 Mo. App., 683, the authorities on both sides of the proposition were carefully collated by Judge Ellison, and the conclusion was reached by the Court of Appeals that a witness called to testify as an expert, whether a physician or an expert in any other branch of knowledge, could be compelled to state his opinion on a hypothetical or other question involving his professional knowledge without further compensation than that allowed by law to other witnesses. Said the court: "It is the duty he owes to the state in aid of its orderly existence and in return for which he enjoys its protection and the administration of its laws in his behalf; not least of which would be the compulsion of other experts, whether they be the man who practices a profession, the artisan, the artist, the tradesman, or other person to come to his aid when needed in litigation in which he might unfortunately be involved." "It should be remembered that the duty the expert owes to the state, as a performance of citizenship, rather than a rendering of service to an individual, pertains to an obligation to give the court



the benefit of the knowledge he has in store at the time he is called on. He can not be required to especially fit himself for lines of inquiry. He should not be expected to make examinations, perform professional service, and the like, for that is not the office of a witness. He could not be compelled to do that any more than an ordinary person, with no knowledge of the facts pertaining to a case, should be required to go and post himself so as to become a witness."

After a full consideration of the various cases and the very satisfactory opinion of the Court of Appeals, the Supreme Court thinks that the Court of Appeals reached the proper conclusion on this question and supported it by satisfactory reasoning. *Ex parte Dement*, 53 Ala., 389; *Summers vs. State*, 5 Tex. App., 377; *State vs. Teipner*, 36 Minn., 537.

#### Liability of Osteopaths for Malpractice.

The Kansas City Court of Appeals says that the case of *Robertson vs. Wenger* and another was an action for malpractice. The petition charged that the defendants held themselves out as healers of physical injuries, ailments and diseases, their treatment being commonly known as that of osteopathy; that at the date mentioned the defendants undertook to treat the plaintiff for injuries he had theretofore suffered by a fall; and that while so treating the plaintiff it was their duty to use reasonable care and skill; that the defendants failed in their duty, in that they negligently treated the plaintiff for a dislocation of the hip joint, when in fact no such dislocation existed, and the defendants in treating the plaintiff for said supposed dislocation of the hip joint did so violently, unskillfully and negligently manipulate, handle and deal with the plaintiff's body that they fractured and broke the plaintiff's left femur or thigh bone in two places, one place being at or near the juncture of the neck and shaft of the femur, and the other in the shaft proper of the femur about three inches below the great trochanter; and that the defendants after breaking the femur did so negligently and unskillfully treat said fractured parts that they were viciously and faultily healed and joined together, that is to say that they were not joined and united in apposition, but were permitted to heal in a misshapen and malformed manner. The answer of the defendants admitted that they were osteopathic physicians, but denied all the other allegations of the petition. The evidence of the plaintiff tended to prove the allegations of his petition, and that of the defendants to controvert that of the plaintiff.

The error complained of on this appeal was the action of the trial court in giving in behalf of the defendants an instruction which was as follows: "The jury are instructed that in this case the defendants, Drs. Wenger and Wood, are not charged by the plaintiff with being unskillful or with a lack of professional skill and knowledge, or as not being properly trained and qualified physicians, but that in the examination or diagnosis and treatment of plaintiff's injuries they (defendants) did not use ordinary skill, but negligently and unskillfully treated plaintiff. Hence, if you believe and find from the evidence that in the examination and treatment of plaintiff's injuries defendants used such reasonable care and diligence as is customarily used by physicians of ordinary skill under similar circumstances, the plaintiff can not recover herein, and your verdict must be for defendants." The objection to the instruction was that it removed from the consideration of the jury the question of the defendants' unskillfulness and want of knowledge. The contention of the defendants was that the question of the defendants' skill and knowledge was not made an issue by the pleadings.

It is held that "a petition charging a surgeon with malpractice, which alleges that he undertook to reduce and set a bone and to attend, cure and heal the same, and also alleges that he promised carefully and skillfully to perform said service, but that he carelessly, negligently and unskillfully failed to set, locate and reduce the dislocation and bind up, dress and secure the same, taken altogether, does not set out an express promise to cure, but only such an undertaking as the law implies, which is to employ reasonable skill and diligence." *Vanhooser vs. Berghoff*, 90 Mo. 487. "In accepting a patient the physician says that he possesses and will exer-

cise reasonable skill and judgment to discover the trouble of the patient, and whether it is curable." And, "if the failure of a physician to discover and cure the trouble of his patient is because the physician does not possess reasonable skill, or because he does not exercise such skill, he is not entitled to any pay for his services." *Logan vs. Field*, 192 Mo. 54. The allegations of the petition that the defendants held themselves out to the world as healers of diseases and physical injuries and their undertaking to heal the plaintiff was sufficient to raise the implied obligation that they possessed the skill and knowledge necessary for the purpose. The plaintiff's instruction No. 1 seemed to comply with the plaintiff's theory of the case, and was a proper application of the law to the facts of the case; but it did not necessarily follow that the one given for the defendants was erroneous and misleading, although the court told the jury that the defendants' skill and knowledge were not put in issue by the pleadings, as the jury were at the same time told that the defendants' liability depended on the question of their exercise of reasonable care and skill in the treatment of the defendants' injuries. When we say that a physician is obligated by his undertaking to use skill, it is necessarily and unavoidably implied that he must have such skill, otherwise he could not exercise it.

This court was not in a position to know whether there was any evidence tending to show that the defendants did not possess the requisite professional skill and knowledge, but that could make no difference, as proof of the failure to exercise such skill and knowledge to the satisfaction of the jury would have entitled the plaintiff to recover, and, if he failed to make such proof, the inference would be that they possessed and exercised such skill and knowledge. In other words, the defendants could not have successfully controverted the plaintiff's evidence without having shown such to be the case.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Boston Medical and Surgical Journal.

September 3.

- 1 The Country Doctor's Relations with the Metropolitan Institutions and Specialists. G. Osgood, Rockland, Mass.
- 2 \*Study of One Hundred and Thirty-six Cases of Diarrhea Occurring on the Boston Floating Hospital During the Summer of 1907. W. P. Lucas, Boston.
- 3 Deceptive Conditions in the Hip Joint. R. Hammond, Providence, R. I.
- 4 Erythema Multiforme with Visceral Lesions. J. N. Hall, Denver.

2. **Diarrhea on the Boston Floating Hospital.** Lucas selects for consideration 136 out of 147 cases of diarrhea occurring among 187 patients admitted to the Boston Floating Hospital between July 2 and Sept. 14, 1907. The 136 cases were chosen as representing the severest type of uncomplicated summer diarrhea. He describes the wards, the milk supply, the prominent symptoms of the conditions, and the general method of treatment, and cites a number of illustrative cases. He concludes as follows:

1. The best of our present methods of treatment in these cases is starvation, carefully watched, followed by any one of the weak mixtures, low in fat.
2. The guide to starting milk in any form is the general picture the child presents rather than the temperature or any one symptom.
3. Saline infusion is one of the most valuable aids in carrying out the starvation treatment and supplying the liquid quotient.
4. The benefit of colon irrigation is overestimated, though useful in moderation; once in twenty-four hours being sufficient.
5. Lavage is a very important factor when the infection has reached or attacked the stomach.
6. Stimulation is of little value in extreme cases.

#### New York Medical Journal.

September 5.

- 5 Cancer of the Rectum. J. P. Tuttle, New York.
- 6 \*Essentials of Voice Production. G. Hudson-Makuen, Philadelphia.
- 7 \*Tuberculin as an Adjunct to the Home Treatment of Pulmonary Tuberculosis. J. A. Miller, New York.
- 8 Conjunctival Tuberculin Test. G. Mannheimer, New York.
- 9 Calmette Reaction as a Diagnostic Aid. C. P. Oberndorf, New York.
- 10 Tuberculo-ophthalmic Reaction. F. L. Christian, Elmira, N. Y.
- 11 Preliminary Report on the Effect of Repeated Injections of Tuberculin on Lymphatic Organs. S. G. Dixon, Harrisburg, Pa.



**6. Voice Production.**—Hudson-Makuen defines voice as a moving column of breath set in vibration by its own impact with the vocal cords and reinforced by its diffusion through the various resonance chambers into the surrounding atmosphere. The best methods of doing this he regards as the essentials of voice production. The methods differ slightly for speech and song. To the speaker the vocal effort is secondary to the articulatory effort; to the singer the vocal effort is paramount. The difference is most marked in the use of the larger muscles of respiration. In singing, the diaphragm is held in strong contraction during a greater period of time, and the respirations are more prolonged; while in speaking, the diaphragm and other muscles are constantly changing with the varying degrees of inflection, accentuation and emphasis. Speech, the author asserts, is something more than voice production: It is the product of the combined coördinate action of the two vocal mechanisms with a third, the articulatory mechanism, and complete harmony of action is necessary. He divides speech mechanisms into central and peripheral; the central being located in the brain and spinal cord. The cerebral centers are in the left hemisphere and he designates them as follows:

The auditory center in which are stored memories for spoken words; the visual center, in which are stored memories for written and printed words; Broca's center, in which are stored memories for motor speech impulses; and the graphic center, in which are stored memories for the movements of the hand in writing. Hudson-Makuen discusses the development of speech in a child and states that the chief receptive avenue for speech is through the hearing, and that when the organs of hearing are defective speech will be correspondingly impaired. No two individuals hear speech sounds exactly alike or develop exactly the same kind of speech habits. An important period in the development of a child is when it commences voluntarily to use intelligent speech instead of the meaningless babble of the infant. The higher intellectual faculties begin to assume control, as it were. Defective speech, he believes, suggests defective mentality.

**7. Tuberculin in Home Treatment of Tuberculosis.**—Miller discusses the use of tuberculin as an adjunct to the home treatment of pulmonary tuberculosis, and reports the results in 94 cases. In the selection of cases, in no early or favorable cases in which sanitarium or other climatic treatment was possible were the patients kept in New York. With two exceptions no patients with fever were treated. Tuberculin treatment was urged only for patients who were not progressing favorably without it. As a result the patients treated have been long-standing cases, gradually drifting into more or less chronic invalidism. Three preparations of tuberculin were used: 1. Koch's original tuberculin (O T); 2. bacillus emulsion (B E); 3. Denys' bouillon filtrate (B F). So far as possible, all constitutional reactions to the tuberculin were avoided and the so-called clinical method of determining the proper dosage was employed and proved satisfactory. Miller reports the results in these cases in some detail and concludes practically as follows:

Even four years' experience is hardly sufficient to warrant any absolute conclusions as to the therapeutic value of tuberculin. The results of any method of treatment in tuberculosis are influenced by innumerable factors which may very easily mislead the most conscientious observer. Statistics are probably of little real value under such circumstances, less so perhaps than the gradual accumulation of clinical impressions from continued study. As far as statistics go it would seem that any form of treatment must have considerable efficacy which is able to show the improvement in condition, with such a degree of permanency in such a class of cases, and under such conditions as are here reported. The series has included several patients in whom the results of the tuberculin appeared truly remarkable; in some others there has been distinct disappointment, especially in a few who seemed at first to do exceedingly well, and then relapsed later, a condition which is customary in tuberculosis, but which one would hope not to find when any degree of immunity had been established. It can not be too strongly emphasized that if

good results are to be obtained by therapeutic use of tuberculin, the greatest patience and care must be exercised in every particular. The dilutions should be made only by some one who is skilled in such work. Any evidence of intolerance must be carefully noticed, and the progression of dosage correspondingly regulated; and lastly, and perhaps most important, the duration of treatment must be extended over a considerable time, preferably from six months to a year. The sum of impressions and results leads to the opinion that we have in tuberculin an active and useful aid in the treatment of pulmonary tuberculosis, which, while not truly specific, is probably a distinct step in that direction. We are, therefore, encouraged to continue its use in suitable cases, and shall do so until some better specific agent is available.

#### Medical Record, New York.

September 5.

- 12 \*Influence of Overweight and Underweight on Vitality. B. Symonds, New York.
- 13 Case of Congenital Umbilical Hernia. W. E. Magruder, Baltimore.
- 14 Case of Brain Tumor with Autopsy. M. J. Karpas, New York.
- 15 Obstruction of the Bowels, Simulating Appendicitis. J. McF. Gaston, Atlanta, Ga.
- 16 Sigmoiditis. M. L. Bodkin, Brooklyn, N. Y.
- 17 \*Narcotic Method of Treating Morphinism. C. J. Douglas, Dorchester, Mass.
- 18 Effective Treatment of Membranous Colitis. D. Wark, New York.
- 19 Tube for Self-Insufflation of Vapor into Middle Ear. P. R. Wood, Marshalltown, Ia.

**12. Overweight and Underweight.**—Symonds discusses overweight and underweight in relation to vitality, the causes of death in these cases, and the differences between the effect of overweight and of underweight. The effect of overweight is influenced by two fundamental factors: 1, the percentage of overweight; 2, age of the individual. The mortality increases markedly as the weight rises above 20 per cent. in excess, and to a still greater degree when the weight passes 30 per cent. in excess. This holds true for all types and all ages above 30 years. Beyond this period the mortality of overweights rises rapidly with the age and with the weight. In women the standard must be made a little higher than that of men, but with this allowance the effect of overweight among women is found to be just as bad as among men. As to underweight the effect is slight when the weight is not more than 20 per cent. below standard. The association of dyspepsia with underweight is a serious matter with those below 25 years of age, and has long been recognized as serious with a tuberculous family history especially in the younger individuals. In women an allowance has also to be made as in overweight. Discussing causes of death of those suffering from overweight and underweight, he states that overweights suffer more than underweights in the class of acute general diseases. Overweight seems to secure a marked degree of immunity from tuberculosis. Organic diseases of the heart show a decided excess among overweights and as great a deficiency among underweights. Diabetics are scarce among underweights, but numerous among overweights. Pneumonia is almost twice as fatal among underweights as among overweights. Bright's disease, both acute and chronic, is nearly twice as prevalent among overweights as in general experience. No overweight, whether man or woman, died of old age or senility according to Symonds' experience. He is convinced that the same percentage of overweights is more serious than if it were underweights, but in those below 25 years a moderate degree of overweight is more favorable than an underweight. The conditions are reversed above 30 years of age.

**17. Narcotic Treatment of Morphinism.**—Douglas holds that it is the pain and suffering caused by the withdrawal of morphin that is the main factor of difficulty in the treatment of morphinism. He considers the condition comparable to a surgical operation, and his plan is to abolish the pain caused by morphin withdrawal, on the same principle that surgical pain is abolished—that is, by keeping the patient either asleep or so thoroughly narcotized during the painful hours that follow complete withdrawal of morphin that he experiences no suffering. The abolition of pain is the kernel of the whole problem. Nearly every hypnotic or narcotic remedy in the materia



medica may be required to meet individual cases. He warns, however, against relying exclusively on hyoscin, which is a very uncertain and often dangerous drug. Each morphin patient must be studied and treated individually. He believes all cases of crises supposed to have been effected by the sudden withdrawal of morphin without the aid of remedies to subdue the suffering, to be cases in which the patient has contrived to use morphin clandestinely.

**American Journal of Physiology, Boston.**

*July.*

- 20 \*Influence of Internal Hemorrhage on Chemical Changes in the Organism, Especially Protein Catabolism. F. S. Weingarten and P. B. Crohn, New York.
- 21 Physiologic and Pharmacologic Studies of the Preter. D. R. Lucas, New York.
- 22 Further Evidence of the Presence of Vasodilator Fibers to the Submaxillary Gland in the Cervical Sympathetic of the Cat. F. C. McLean, Chicago.
- 23 \*Available Alkali in the Ash of Human and Cow's Milk in Its Relation to Infant Nutrition. J. H. Kastle, Washington, D. C.

20. **Hemorrhage.**—Weingarten and Crohn find no special changes in the digestion, assimilation, or metabolism, after hemorrhage artificially induced in healthy dogs. In a general way, the total excretions of nitrogen, sulphur and phosphorus were slightly increased after internal hemorrhages. The authors make the following practical application of their work: It would seem that with an organism in healthy condition a hemorrhage which did not endanger life, e. g., from 1 to 2 per cent. of body weight, would do little or no harm, especially if intraperitoneal. Repeated losses of blood would cause increasing damage, but relatively less if intra-abdominal instead of external. It is only after great cumulative losses or after an overwhelming single hemorrhage that the system does not recover promptly, if at all. In the case, then, of such losses of blood as occur from a ruptured ectopic pregnancy or ruptured spleen or liver, with the hemorrhage stopping without surgical interference, the blood, *per se*, may be not only devoid of harm, but of special use in the body. Such use would be influenced, however, by possible infections and adhesions. If surgical intervention were contemplated in such cases, the surgeon would have to consider these possibilities and the probable effects. With the patient placed so that the blood would gravitate toward the diaphragm, i. e., with feet raised, the blood would collect where absorption would be very rapid, where infection would best be met, and where, if adhesions should form, they would do a minimum of harm, i. e., between the subphrenic organs and away from the intestines and pelvic viscera. The more rapid the absorption, the less the likelihood of adhesions. The authors fully appreciate the fact, however, that observations of this kind pertaining primarily to the dog can not be applied automatically to man. Very thorough and very discriminating study of human beings must be conducted before such conclusions can be accepted for practical guidance.

23. **Alkali in Milk.**—Kastle finds that while cow's milk contains from 2.5 to 3.5 per cent. as much mineral matter as human milk, the ash of the two milks contains approximately the same amount of available alkali. The salient points of difference between the two kinds of milk seem to be: 1. Human milk contains relatively more of its mineral matter in utilizable form than cow's milk; 2. it can supply the organism of the child with relatively larger amounts of available alkali in proportion to the proteid than cow's milk; 3. it contains much less proteid; and 4. it contains a more readily absorbable variety of fat. An infant fed on cow's milk receives, therefore, an excessive amount of proteid, and the amount of alkali is insufficient for the proper digestion and metabolism of the proteid and fat. Acidosis arises from the excessive proteid metabolism and from the formation of acids from the fat and, if the fat is allowed to rise above 3.75 per cent., intestinal disturbances occur. There is excessive excretion of salts along with the products of proteid metabolism in the urine, and mineral matter is also withdrawn through the bowels in consequence of the difficult absorbability of the fats, so that the organism becomes progressively poorer in mineral

matter. The utility of certain practices in infant feeding, such as the feeding of skimmed milk and buttermilk, the addition of alkaline substances to the milk, the use of sodium citrate and orange juice, is explained by these considerations. These methods either reduce the amount of fat or add mineral matter.

**American Journal of Obstetrics, York, Pa.**

*August.*

- 24 \*Development of the Technic of Modern Gynecologic Operations. A. Martin, Berlin, Germany.
- 25 \*Is Pubiotomy a Justifiable Operation? J. W. Williams, Baltimore.
- 26 \*Choice Between the Intrapelvic and Abdominal Methods of Delivery in the Lesser (Non Absolute) Degrees of Mechanical Obstruction. E. Reynolds, Boston.
- 27 \*Pressure Conditions Within the Abdomen. R. R. Smith, Grand Rapids, Mich.
- 28 Foreign Bodies Left in the Abdominal Cavity After Operation. P. Findley, Omaha, Neb.
- 29 External Antepartum Examination. W. W. Reed, Boulder, Colo.
- 30 Interesting Obstetrical Cases. T. C. Smith, Washington, D. C.
- 31 Obstetrical Drawers. J. G. Drennan, St. Thomas, Ont.

24, 25, 26. Abstracted in THE JOURNAL, July 4, 1908, pages 70 and 71.

27. **Pressure Conditions Within the Abdomen.**—Smith asserts that investigation into the question of pressure conditions within the abdomen has not been so extensive as its importance demands. Though the subject seems to be of only theoretical interest to gynecologists and obstetricians it is necessary, in considering various abdominal and pelvic conditions, that our ideas concerning it should be clear—particularly in uterine displacements. He discusses the anatomy of the abdomen in relation to atmospheric and internal pressure, and goes into detail concerning the factors which raise or lower the atmospheric pressure within the abdominal cavity, illustrating his meaning by diagrams. He concludes by stating that atmospheric pressure within and without the abdomen is almost exactly balanced, variations at any point being caused by factors to be enumerated. There is no special universal positive pressure, which has so frequently been assumed. Physiologic increase or decrease of volume is attended by insignificant or no changes in pressure—the balance is practically maintained. A marked increase of volume from pathologic conditions often takes place without disturbing the balance; this varies in different individuals. Hydrostatic pressure at any point within the abdomen varies with the position of the body and the depth of superimposed organs. Negative pressure at the uppermost points is possible under certain conditions when the walls of such uppermost points are rigid. In the upper abdomen in the upright position a negative pressure may exist, which has more or less to do with the support of the viscera. Respiration causes small waves of pressure. Coughing, sneezing, defecation, labor and many movements of the body cause marked increase in intra-abdominal pressure by contraction of the muscles in the abdominal walls. Such pressure is transmitted in all directions and without diminution to every part of the contents and interior of the abdomen. These facts, he declares, should be applied to the problems of gynecology and obstetrics with greater accuracy than in the past.

**Annals of Surgery, Philadelphia.**

*August.*

- 32 Tetany Following Thyroidectomy Cured by Subcutaneous Injection of Parathyroid Emulsion. J. H. Brauham, Baltimore.
- 33 \*Sinus of First Branchial Cleft. C. P. Flint, New York.
- 34 Technic of Early Operation for Removal of Tuberculous Cervical Lymph Nodes. C. N. Dowd, New York.
- 35 Desmoid Tumors of the Abdominal Wall. H. B. Stone, Charlottesville, Va.
- 36 Syphilis of the Liver. A. MacLaren, St. Paul, Minn.
- 37 Primary Carcinoma of the Appendix. L. J. Hammond, Philadelphia.
- 38 Hernia of the Appendix, Complicated with Appendicitis. D. W. Bashan, Wichita, Kan.
- 39 Enormous Endotheliomatous Cyst of the Great Omentum. E. M. Hasbrouck, Washington, D. C.
- 40 \*Inconsistencies of the Ganzel Pack. H. A. Royster, Raleigh, N. C.
- 41 Prevesical Abscess. E. H. Eising, New York.
- 42 \*Symptomless Hematuria. F. R. Hagner, Washington, D. C.
- 43 \*Cystic Degeneration of the Kidney. C. M. Nicholson, St. Louis.
- 44 Venous Thrombosis and Hydrocele of the Inguinal Canal. J. Ransohoff, Cincinnati, Ohio.
- 45 Comparative Value of Various Measures for Relief of Prostatic Enlargement. A. Schachner, Louisville, Ky.



- 46 Surgery of the Prostate. S. Alexander, New York.  
47 \*Musculospiral (Radial) Paralysis Due to Dislocations of the Head of the Radius. D. Stetten, New York.  
48 Congenital Defect in the Ulna. F. D. Patterson, Philadelphia.  
49 Surgical Treatment of Bunyon. C. H. Mayo, Rochester, Minn.  
50 New Motor for Bone Surgery. W. S. Bryant, New York.

33. **Sinus of First Branchial Cleft.**—Flint reports an interesting case of this rare condition, showing that lateral fistula in the neck, of congenital origin, does not always originate in the second branchial cleft. The points of particular interest in the case are: First, lateral sinus of the neck from the first cleft; second, presence of thyroid tissue; third, the relation to the structures of the second arch, the sinus being behind and underneath the upper portion of the sternomastoid muscle.

40. Abstracted in THE JOURNAL, Jan. 25, 1908, p. 311.

42. **Hematuria.**—Hagner reports three cases of symptomless hematuria in which hemorrhage ceased after catheterization of the ureters. The patients were males, aged 45, 53 and 56 respectively; two appeared slightly anemic. In all three patients the blood came from the right ureter, and in all the ureteral catheter was passed without meeting with any obstruction. In the article Hagner offers no explanation of the condition.

43. **Cystic Degeneration of Kidney.**—Nicholson reports a case, discusses the nature of the condition, and arrives at the following conclusions: 1. In the cells lining the cysts, the entire row are alike, and apparently in the same stage of secretion, that is, the nuclei are poor in chromatin and show a vesicular condition. In the normal convoluted tubules this condition is present in a few cells only, while many are rich in chromatin and show filaments or striations known as "ergastoplasm." This condition of the normal convoluted tubules is met with in active secreting cells. While the condition of the cells lining the cyst would correspond to a stage in secreting activity, it is not probable that the entire row lining the cyst would show the same stage in secretion because we have no proof that secretion occurs in cells simultaneously. Therefore, in his opinion, the cells lining the cysts are less active in secreting power than normal epithelium. 2. The various theories of the origin of cystic kidneys have been discussed previously in this article. From the study of the microscopic sections he finds that the smallest cysts are lined with the same epithelium as that lining the convoluted tubules. Therefore, one must conclude that the cysts originate in the convoluted tubules by dilatation and proliferation of lining epithelium. In the case reported he states that the cysts did not arise in the glomeruli, the blood vessels, or the connective tissue.

47. **Musculospiral Paralysis.**—Stetten discusses musculospiral paralysis, especially that form due to dislocation of the head of the radius, which he asserts is a distinct type of nerve injury, and quite as definite and characteristic as any other form of injury to this nerve. He states that in every case of anterior dislocation of the head of the radius the two divisions of the musculospiral nerve are in danger, and it is a fortunate accident if they escape. In actual occurrence this injury is rare, but compared to the frequency of joint injury itself, it is not unusual. It is most likely to occur when the dislocation accompanies ulnar fracture and when the direction of the dislocation is forward and slightly outward. The nerve is almost invariably injured below its point of division into the posterior interosseus and radial nerves; one or both branches may be caught by the dislocated head of the bone. The symptoms are practically those of the typical musculospiral paralysis, and may vary greatly in degree or extent, depending on whether one or both nerves be injured, and how badly. The prognosis, Stetten says, is good under appropriate treatment, which is practically the same as that for dislocation, simple reduction, if possible, and generally resection of the head of the radius in old cases, with nerve suture if necessary. Should the nerve be uninjured in a dislocation of the radial head, Stetten warns that its proximity to the bone should be borne in mind when the reduction is done, and care should be exercised not to injure the nerve by pressure, hyperextension, or careless operative technique.

## Southern Medical Journal, Nashville, Tenn.

August.

- 51 Hernia into the Duodenojejunal Fossa with Report of a Case Causing Complete Obstruction. J. A. Crisler, Memphis.  
52 Recent Advances in the Technique of Thoracotomy and Pericardiectomy for Wounds of the Heart. R. Matas, New Orleans.  
53 A Medicolegal Case, Involving X-Ray Testimony and Its Bearing on a Recent Proposal to Regulate Medical Expert Testimony. E. R. Corson, Savannah, Ga.  
54 What We Should Know About Malarial Disease. W. Krauss, Memphis, Tenn.  
55 Removal of the Third and Faucial Tonsils. H. Wood, Nashville, Tenn.  
56 Treatment of Pelvic Inflammatory Disease. G. R. Holden, Jacksonville, Fla.  
57 \*Neurasthenia. C. M. Nice, Birmingham, Ala.  
58 Jaundice and Its Significance. S. Harris, Mobile, Ala.

57. **Neurasthenia.**—Nice states that whatever the direct causes may be, the indirect can best be classified as hereditary and acquired. The principal acquired causes are overwork, worry and mental strain. Among the predisposed, ambition, financial trouble, love and bereavements are strong factors. Infectious and chronic diseases are occasional causes, and of these influenza with its long period of convalescence is the most common. Gross structural changes are also causative factors, as, for instance, carcinoma, ulcer and visceral displacements, abdominal or pelvic. Under certain conditions, trauma, poor hygiene, effort to live up to false ideals, and higher education may be causes. In considering the symptoms, he states that in early life the preliminary picture of neurasthenia is often seen in an easily excited, irritable spoiled child. Sometimes a feeble child has been over-indulged by its parents, and as a result is led to attach too much importance to all personal feelings and grows up to adult life under adverse influences and nervous surroundings. For a time there may be a cessation of nerve explosions and all may go well until, years later, under stress of overstudy, overwork, or illness the patient presents the typical picture of neurasthenia. The individual may be moody and irritable or good natured, but invariably concentrates the mind on the real or fancied bodily ailments. In the cerebral form, loss of memory is a common symptom and insomnia is almost always present. Vertigo and dizziness are usually common and the face frequently flushes. The cerebral vessels often seem to fill to the point of bursting and the patient must fan to get breath. Headache is often intense and there is a sensation of constriction around or of pressure within the head. These symptoms may vary in severity; they may be referred also to the organs of special sense. In spinal neurasthenia the symptoms are of a parietic and irritative character, the most frequent complaint being of weakness and weariness of the back. Nice refers to Kelly's statement that backaches are more frequently due to neurasthenia than to pelvic or kidney diseases. The condition may grow into a real motor deficiency and the patient may become practically bedridden. There may be disturbances of coordination and the reflexes may be exaggerated. The gastric type is common and is known by such names as nervous dyspepsia, gastrosis, and neurasthenia-gastrica (Ewald), and the symptoms are familiar to every practitioner. The symptoms of the sexual form are also well known.

In the cardiovascular group the symptoms are most distressing as the patient has a sensation of suffocation and impending death, which is especially hard to overcome. This condition is frequently associated with the gastric form. Nice emphasizes the importance of careful physical examination, and declares that the disease should not be diagnosed by exclusion as is so often done. He believes that prophylactic treatment should be commenced before birth and continued throughout life. The treatment, he says, combines all the methods included in the definition of therapeutics, with drugs last and to be considered least. There is no specific treatment and the individual patient must be carefully studied as each case is a law unto itself. He emphasizes the importance of hygiene and cheerful surroundings, and simple, wholesome diet. A daily program should be outlined and the patient compelled to carry it out. Drugs may be necessary at first for the headaches, insomnia and constipation, and electricity may be useful. He refers to the value of psychotherapy in the hands



of an experienced clinician. Marriages among neurotics should be discouraged.

**Old Dominion Journal of Medicine and Surgery, Richmond, Va.**  
*August.*

- 59 \*Difficulties and Dangers in Surgical Operations on the Biliary Tract. M. H. Richardson, Boston.  
60 Psychotherapy. H. W. Cook, Minneapolis.  
61 Case of Acute Fibrinous Bronchitis. D. D. Talley, Richmond, Va.  
62 Migraine. H. H. Levy, Richmond, Va.  
63 \*Headache of Intracranial Disease. W. B. Cornell, Baltimore.  
64 Eyestrain as a Cause of Headache. H. O. Reik, Baltimore.  
65 Headaches of Renal Disease. M. M. Pearson, Bristol, Va.  
66 Headaches Due to Toxic Conditions. C. J. Andrews, Norfolk, Va.  
67 Headaches Due to Nasal Sinus Infections. B. R. Kennon, Norfolk, Va.

59. **Difficulties and Dangers of Biliary Surgery.**—Richardson states that he has no means of knowing just what impression the medical profession as a whole has formed of gall-bladder surgery, except that many men undertake it without adequate training. Many beginners in surgery, seeing the ease with which skilled operators perform difficult operations on the biliary tract, attempt to perform similar operations, though in many cases they are unaware of the obstacles which may arise in complicated cases, or the dependence of speed and ease of operating on years of painful repetition. He asserts that it is a fault of writers and teachers of the present to omit vivid portrayal of the errors and disasters of surgery, and calls attention to the fact that medical journals are filled with reports of successful cases as if defeats and poor results were unknown. Gall-bladder surgery demands special knowledge and experience; and the first and most indispensable bit of knowledge is that lesions of the biliary tract can not be either diagnosed or prognosticated in their fullest extent. He enumerates conditions which may simulate the picture of gallstone disease and declares that no man should prepare to operate on gallstones unless he realizes that his diagnosis may be wrong, and is prepared to operate on whatever condition is found when the abdomen is opened. Nothing seems easier and safer than removal of a gallstone or two from the gall bladder, after say, a hysterectomy, when an experienced hand has located them. But even the simplest gall-bladder operation has dangers which far exceed those based on the operator's experience, if that is meager. And the case that is easiest, least complicated, and, perhaps, most important, may be the very one to go wrong. Patients die after the simplest cholecystostomies; the outcome in cholecystectomies can never be foretold; even in the most ordinary cases choledochotomies imperil life. In making a diagnosis the history is important, but the physician must be able to "size up" the patient more or less accurately, and must also be able to judge whether pain is severe or trivial, feigned or real. Richardson describes in some detail the difficulties attending the location of stones, including some personal experiences. Some of the methods of treating the gall bladder Richardson believes to be dangerous. Drainage through the cystic duct, he states, is unsatisfactory and hazardous; he prefers excising the gall bladder with the diseased portion of the duct. He discusses the danger of hemorrhage, and states that a danger seldom referred to is that of tying the hepatic duct or common duct with the cystic. Among the dangers liable to be encountered in the after-treatment he enumerates hemorrhage, the burrowing of bile, and deep local sepsis, with occasionally peritonitis—all dependent on or influenced by drainage and its management. Illustrative cases are cited.

63. **Headache of Intracranial Origin.**—Cornell states that headache may be due to either functional or organic intracranial disease. To the former group belong neurasthenia, psychasthenia, and hysteria—the so-called psychoneuroses. In these conditions the headache may assume any form, but is seldom acute. In neurasthenia and psychasthenia the pain is often indefinite in character, usually dull, but constant and frequently combined with various cephalic paresthesias. In hysteria, on the other hand, the pain may be severe, boring, gnawing, and narrowly localized. Whatever the form, it never resembles the pain of neuralgia or migraine, nor does it definitely correspond to certain nerve distribution. In regard to headache due to organic causes, he states that this form

stands out in sharp contrast to other types, so far as severity is concerned. He discusses the various lesions which may cause this form of headache. In syphilis the most violent forms occur when the meninges are involved. The pain is worst at night, when it may become paroxysmal. Syphilitic endarteritis in itself may cause pain. The differential diagnosis of intracranial disease frequently presents great difficulty. The treatment of the headache of organic origin is largely that of the cause. Practically all varieties due to intracranial disease are made worse by mental effort, emotion, taking food, and the imbibition of alcohol. The treatment of headaches of the functional group furnishes opportunity for the exercise of therapeutic skill. Many patients are overdressed and would do better on a placebo, while psychotherapy will effect a cure in many instances. Much depends on the proper handling of the case in a general way without paying too much attention to the headache itself.

**Interstate Medical Journal, St. Louis.**

*August.*

- 68 \*Foreign Bodies in the Abdominal Cavity. H. S. Crossen, St. Louis.  
69 Examinations of the Feces as a Routine Procedure. J. S. Myer, St. Louis.  
70 \*Progressive Hemiplegia of the Left Side Due to Gliosis and Vascular Lesions of the Right Cerebrum. F. R. Fry and M. B. Clopton, St. Louis.  
71 \*Dermatitis Following Use of Walnut Juice Hair Dye. W. A. Hardaway, St. Louis.  
72 Bichat: His Life, Researches and Character. A. C. Eycleshymer, St. Louis.

68. **Foreign Bodies in Abdominal Cavity.** Crossen discusses the leaving of foreign bodies in the abdomen after laparotomy, and deals with sponges and instruments separately. Sponges and pads he considers under the heads of how the accident occurs, its consequences, and how it may be made impossible. In regard to the last point he refers to the method of using no detached pads or sponges, either large or small, but one continuous piece, as described in detail in the *Interstate Medical Journal*, September, 1907 (abstracted in *THE JOURNAL*, Oct. 26, 1907, p. 1474). He particularly cautions against cutting a gauze strip sponge in the course of operation. He has now given this method a year and a half's routine trial with complete satisfaction. All reliance on counting, tapes or tags, etc., is avoided. He discusses the width of the strips, the cost, and gives detailed instructions for nurses how to prepare the strips for operation. He concludes with medicolegal considerations, detailing the famous suit against Professor Kosiowski in 1897.

70. **Progressive Hemiplegia.** Fry and Clopton report a case of progressive left hemiplegia due to gliosis and vascular lesions of the right cerebrum. Operation was discouraged by the authors, as it was felt to offer but slight chance of benefit, but was performed at the desire of the relatives. Death ensued twenty-four hours later without any improvement in the hemiplegia. The pathologic findings are reported, and the authors consider that this case well illustrates the fact that marked subjective sensory phenomena, i. e., paresthesias of various descriptions, often appear in the absence of objective sensory signs. The subjective often antedate for a long (?) time the appearance of the objective signs in the same areas or territories. They have observed this fact, i. e., the later appearance of the objective signs, in lesions of the brain, of the cord and of the peripheral nerves, and have referred to it in previous papers.

71. **Dermatitis from Walnut Juice.** Hardaway calls attention to the fact that he has encountered many cases of dermatitis consequent on the use of walnut juice as a hair dye. Sometimes the preparation is home-made, sometimes bought from an apothecary. The amount of inflammatory reaction varies in different persons. Sometimes the attack is acute, involves the face, neck and ears, and presents such an amount of accompanying edema that the eyes are closed and the features unrecognizable. The subjective symptoms are burning and prickling sensations and intolerable tension. In some persons the condition is merely one of subacute inflammation, renewed from time to time by the reapplication of the dye, and limited to the ears and the skin at the margin of the scalp.



In persons of an "eczematous habit," the dye has apparently evoked a veritable eczema, which has extended to the arms and trunk. The hairy scalp itself is not particularly involved, since, as is well known, this region is naturally very insensitive.

#### Illinois Medical Journal, Springfield.

August.

- 73 \*Arteriosclerosis. T. J. Pflner, Jacksonville.
- 74 \*Some Points Concerning the Treatment of Diabetes Mellitus, with Special Reference to the Oatmeal Diet. J. B. Herrick, Chicago.
- 75 \*Baths and Exercises in Treatment of Heart Disease. R. H. Babcock, Chicago.
- 76 \*Principles of Treatment in Cardiovascular Conditions. J. L. Miller, Chicago.
- 77 Energy Value of Foods. W. S. Hall, Chicago.
- 78 Etiology and Pathology of Multiple Sclerosis, with Report of Two Cases with Autopsy. P. Bassoe, Chicago.
- 79 Signs and Symptoms of Multiple Sclerosis. W. Healy, Chicago.
- 80 Eye Manifestations of Disseminated Sclerosis. H. Gradle, Chicago.
- 81 \*Diagnosis of Insular Sclerosis. S. Brown, Chicago.
- 82 Course, Prognosis and Treatment of Multiple Sclerosis. G. W. Hall, Chicago.
- 83 Commoner Forms of Eyeball Injuries. F. Allport, Chicago.
- 84 \*Public Health Laws in Illinois. H. B. Hemmenway, Evanston, Ill.

73, 74, 76. Abstracted in THE JOURNAL, June 6, 1908, pp. 1931, 1932.

75. Abstracted in THE JOURNAL, June 13, 1908, p. 2016.

81. **Insular Sclerosis.**—Brown discusses the diagnosis in the early stages from hysteria, brain tumor and tabes, and considers it advantageous to divide cases according to their mode of onset, as follows:

First.—Those of sudden onset: (a) Paralysis or spasm of various distribution, including and perhaps limited to the ocular muscles, causing diplopia. These may not be accompanied by sensory changes or these latter may predominate. They usually attain their highest point and begin to recede within from a few hours to a few days and may either wholly or partially disappear to recur from time to time at shorter and shorter intervals, in which recovery tends to become less and less complete. (b) There may be epileptiform attacks, with foaming at the mouth and tongue biting or apoplectiform strokes with hemiplegia which usually completely disappears in a few days. (c) Sudden temporary disturbances of vision other than diplopia, with or without vertigo.

Second.—Acute or subacute onset: With the exception of the epileptiform and apoplectiform seizures, any or all of the above symptoms may require from a few days to several weeks to reach their highest point and then slowly recede to recur after a varying period.

Third.—Those with chronic onset: The most common type is some form of progressive spastic paraplegia, in which perhaps for some years there may be no sensory symptoms or sphincter involvement.

Progressive weakness may be limited to only one leg at first. Visual defects in which fundus changes are sooner or later manifest, belong in the second and third divisions. When a given symptom points strongly to disease of the nervous system, but can not be classified with other well-known diseases, insular sclerosis and brain tumor should be kept prominently in mind, as they may give rise to a wide range of symptoms even more diverse than the variety of structures which are the seat of the pathologic process, would seem to justify.

84. **Public Health Laws.**—Hemmenway discusses the existing public health laws in Illinois and suggests the following scheme for new legislation to supersede the present system:

1. The state law should compel the appointment of a commissioner of health for every incorporated city or village, and for every county in the state, providing that the commissioner of the county seat shall be the county commissioner of health. The qualifications for such commissioners should be professional only, and previous residence outside of the county, or even state, should be no bar. As far as possible such offices should be permanent. Ultimately it will be necessary that only those who have passed a special examination in sanitary science should be eligible to such appointment.

2. The governor, with the advice and consent of the senate, should appoint a state commissioner of health for a period of four years. Such appointment should be made from a list of three physicians recommended for that position by the incorporated state medical societies; and it should be the duty of each such society to make such recommendations annually to provide for emergency appointments.

3. Examinations for license to practice medicine, surgery or midwifery should be conducted by a board of physicians appointed by the governor from lists recommended by the incorporated state medical societies; and the same board should control the registration of nurses and the license of embalmers. No examiner should be connected with the teaching force of any college.

4. The "board" idea must be abandoned. Some one must be made responsible. The commissioner of health should be empowered to appoint a competent chemist, a bacteriologist, a veterinarian and other necessary assistants, and the enforcement of the

pure food law should be under the supervision of the commissioner of health. One chemist or bacteriologist may do work for all portions of the department. The outbreak of scarlet fever in 1907 was an illustration of the unsatisfactory results of the present system. It should have received the immediate and harmonious investigation of the pure food, veterinary, medical and bacteriologic branches. As it was, each probably fearing that he might encroach on the fields of others, no portion of the investigation was thoroughly made.

5. Violations of the various practice acts should be [dealt with] by either the department of justice or by the department of health, not by the license boards. All county and city commissioners should be subject to the jurisdiction of the state commissioner and should render weekly reports to the state office.

He urges greater precautions to guard against bacterial infection of milk and more complete vital statistics.

#### Long Island Medical Journal, Brooklyn, N. Y.

August.

- 85 \*Ocular Symptoms of Brain Tumors. J. H. Ohly, Brooklyn, N. Y.
- 86 Treatment of Trachoma. J. C. Hanceek, Brooklyn, N. Y.
- 87 Medical Examiners in Lunacy: Their Responsibility. S. D. Wilgriss, Brooklyn, N. Y.
- 88 New Technic in Perineorrhaphy. C. Jewett, Brooklyn, N. Y.
- 89 Typhoid Fever. R. Durham, Brooklyn, N. Y.

85. **Ocular Symptoms of Brain Tumor.**—Ohly states that almost every form of tumor may be found in the brain. The more common forms are: glioma, tubercle, sarcoma, syphilitic gumma. Somewhat less frequent are: carcinoma, fibroma, lipoma and cysts. The gliomas vary in size from that of a hazelnut to that of a hen's egg. Sarcomas are generally larger. In from 80 to 90 per cent. of brain tumors, optic neuritis or choked disc is present. This is not a localizing symptom. Tumors of the occipital lobe, cerebellum, pons and medulla produce an intense double-sided choked disc, which is an early symptom. Transitory blindness is not infrequent in the early stages of tumors; permanent blindness in one or both eyes may be an early or late sign and is not dependent on local optic nerve involvement. Tumors of any portion of the optic tract may produce hemianopsia if situated more centrally than the chiasm. Those at the chiasm generally produce bitemporal hemianopsia. Tumors located in the optic thalamus or between it and the chiasm give Wernicke's hemianopic pupillary reaction. Those located in the optic radiations or visual centers will give an absence of this symptom. Tumors at the base of the brain produce ocular palsies by direct pressure, and this is an early symptom. When localized in other portions of the brain the palsies are produced by indirect pressure. The ocular symptoms may often change from time to time, due to varied pressure and increased tissue-involvement from the growth. The first aim, Ohly states, is to diagnose the presence of the tumor, and here the ocular symptoms are of utmost importance: having done so it must be the physician's endeavor to locate the site of the lesion. For this, the ocular symptoms are also valuable, especially when the growth affects the optic tract.

#### St. Paul Medical Journal.

August.

- 90 Prevention of Maternal Infection. E. B. Cragin, New York.
- 91 Some Renal Anomalies. L. L. McArthur, Chicago.
- 92 Metabolism of Fat in Infants. J. P. Sedgewick, Minneapolis.
- 93 \*Necessity of Making a Careful Rectal Examination, with the Aid of Proper Instruments in All Diseases of the Rectum. C. D. Harrington, Minneapolis.
- 94 Gastric and Duodenal Ulcers. J. W. Andrews, Mankato, Minn.

93. **Examination in Diseases of the Rectum.**—Harrington calls attention in this paper to the fact that until recently little attention has been paid in medical schools to diseases of the rectum or to the proper way to make an examination. He describes in detail his method of examining a patient and states that one of the most difficult lesions to locate is a blind internal fistula. The character of the stools, history of the patient, etc., must not be overlooked. He declares that if physicians would give more attention to this branch of medicine the advertising rectal specialists would be driven out of business.

#### Therapeutic Gazette, Detroit.

August 15.

- 95 Treatment of Leukemia by the Roentgen Rays. H. K. Hancock, Philadelphia.
- 96 Treatment of Hay Fever. R. Grace, New York.
- 97 Diagnosis and Treatment of Cerebrospinal Syphilis. G. E. Price, Philadelphia.



- 98 \*Difficulties and Dangers Attending the Use of the Metric System in Prescribing. E. Q. Thornton, Philadelphia.  
99 Rational Treatment of Blepharitis. A. Bray, Philadelphia.  
100 Status of the Anesthetist. W. H. Long, Louisville, Ky.

98. **The Metric System.**—Thornton discusses the merits and demerits of the metric system and states that if we are going to use it in prescribing we must learn it, and must teach the doses in that system and discard the old. We must think in the metric system, and not attempt to transpose from one system to the other.

**West Virginia Medical Journal, Wheeling.**

August.

- 101 Some Achievements of Modern Surgery. F. LeM. Hupp, Wheeling.  
102 Ocular Reaction in Tuberculosis. W. L. Weadon, Mt. Carbon.  
103 The Other Fellow. F. T. Haught, Morgantown.  
104 \*Puerperal Fever. J. R. Cook, Fairmont.

104. **Puerperal Fever.**—Cook advises surgical treatment of these cases. If the patient has been ill for three or four days before the surgeon sees her, Cook advises anesthetizing her, curetting out the uterus, and packing it thoroughly, and then opening the cul-de-sac of Douglas and allowing the accumulated fluid to escape from the abdomen. In each case in which he has used this method a large amount of serosanguineous fluid escaped and the patient seemed to be much relieved. He inserts wick drains in the cul-de-sac and leaves them in place for from five to eight days; the uterine packing is removed at the end of twenty-four hours and an antiseptic douche is given night and morning thereafter for as long a time as may be necessary.

**Ohio State Medical Journal, Columbus.**

August.

- 105 Fibroid Degeneration of the Appendix. R. T. Morris, New York.  
106 \*Liquid Carbonic Acid Snow in Dermatology. M. L. Heidingsfeld, Cincinnati.  
107 What to Prescribe After Static Findings. J. E. Cogan, Cleveland.  
108 The Faucial Tonsils. S. H. Large, Cleveland.  
109 \*Diagnostic Significance of Acute Abdominal Pain. C. D. Kurz, New Philadelphia.  
110 Anisometropia. W. E. Bruer, Cleveland.

106. **Carbon Dioxid Snow in Dermatology.**—Heidingsfeld reports the successful application of liquid carbonic acid gas, which can be bought in large iron cylinders at \$2.00 a gallon, in various skin diseases, e. g., lupus-vulgaris, warts, epithelioma, nevus, tattoo marks, etc. He describes the technic of collecting the gas, which condenses into snow, in a space formed with chamois leather. It is then molded into any desired form for local application.

109. Abstracted in THE JOURNAL, Sept. 23, 1907, p. 1138.

**Pennsylvania Medical Journal, Athens.**

August.

- 111 \*The Medical Status of the Roentgen Ray. G. C. Johnston, Pittsburg.  
112 \*Results in the Treatment of Sarcoma. W. S. Newcomet, Philadelphia.  
113 \*Conservative Treatment of Sarcoma. W. W. Babcock, Philadelphia.  
114 Orbital Abscess Secondary to Nasal Disease. W. Reber, Philadelphia.  
115 Hemochromatosis with Cirrhosis of the Liver. G. E. Holtzapple, Troy.  
116 Physiologic Albuminuria. C. R. Phillips, Harrisburg.  
117 The Great Black Plague. E. N. Ritter, Williamsport.  
118 Rhinodema with Polyp Formation. W. A. Hitschler, Philadelphia.  
119 Treatment of Recent Injuries to the Eye by Penetrating Pieces of Steel. J. B. Corser, Scranton.  
120 Diaphoresis in Treatment of Internal Ocular Affections. H. F. Hansell, Philadelphia.  
121 Tuberculosis of the Larynx. G. R. S. Corson, Pottsville.  
122 Congenital Dacryocystitis. W. Zentmayer, Philadelphia.  
123 Turbinotomy and Its Results. G. A. Dillinger, Pittsburg.

111, 112, 113. Abstracted in THE JOURNAL, Nov. 2, 1907, pages 1549, 1550.

**Dominion Medical Monthly, Toronto.**

August.

- 124 \*Value of the Reflexes in Diagnosis. J. S. R. Russell, London.  
125 \*Surgical Rights of the People. J. C. Munro, Boston.  
126 Immunity to Disease. A. H. Caulfield, Toronto.  
127 Treatment of Diffuse Suppurative Peritonitis Without Drainage. C. F. Moore, Toronto.

124. This article also appears in the *Montreal Medical Journal*.

125. This article appeared in the *Boston Medical and Surgical Journal*, Aug. 20, 1908, and was abstracted in THE JOURNAL, September 3, page 864.

**Montreal Medical Journal.**

August.

- 128 \*A Winter Cruise to the Orient. C. A. Wood, Montreal.  
129 Differential Diagnosis Treatment and Some Forms of Mental Disease. J. G. Fitzgerald, Montreal.  
130 Value of the Reflexes in Diagnosis. J. S. R. Russell, London, Eng.  
131 Use of Lenses Specially Adapted for the Estimation of Bifocal Vision. F. T. Tooke, Montreal.

**Journal of Ophthalmology and Oto-Laryngology, Chicago.**

August.

- 132 \*Technic of Tonsillectomy and Adenoidectomy. F. G. Stubbs, Chicago.

132. **Tonsillectomy and Adenoidectomy.**—Stubbs gives in detail his method of performing these operations. He advises against local anesthesia for children and states that when a general anesthetic is used ether is preferable, as it allows longer intervals in which to work with the mask removed, and is also safer. He directs attention to the fact that children with enlarged lymphatic glands do not stand chloroform well, and says that almost all deaths during this operation are due to chloroform.

**The Ophthalmic Record, Chicago.**

July.

- 133 New Trial Case. T. M. Stewart, Cincinnati, Ohio.  
134 Exophthalmos of Three Years' Duration Cured by Removal of the Middle Turbinate Body. R. H. Johnston, Baltimore.  
135 Etiologic Factors in Interstitial Keratitis. S. D. Risley, Philadelphia.  
136 Case of Congenital Aniridia; also one of Kerato-Comus. G. Robinson, Philadelphia.

August.

- 137 Complete Peripheral Capsulotomy. F. Valk, New York.  
138 Protective Influence Exerted by the Iris in Perforated Wounds of the Cornea. F. T. Tooke, Montreal, Canada.  
139 \*The Value of Morphin Derivatives in Ocular Therapeutics. L. W. Fox, Philadelphia.  
140 Glioma of the Retina, Enucleation and Recovery. G. L. Schneider, Elgin, Ill.  
141 Operation for Removal of Style in the Nasal Duct. S. B. Muncaster, Washington, D. C.  
142 Two Anomalous Winking Cases. J. N. Rhoads, Philadelphia.

139. This article also appeared in the *Virginia Medical Semi-Monthly*, June 26, 1908.

**Buffalo Medical Journal.**

August.

- 143 Originality and Priority in Modern Cystoscopes. B. Lewis, St. Louis.  
144 Obstetric Surgery. D. G. Wilcox, Buffalo.  
145 Chronic Inflammation of the Vesiculæ Seminales. J. A. MacLeod, Buffalo.

**Iowa Medical Journal, Des Moines.**

August.

- 146 Duties and Responsibilities of a State Society. W. L. Blerling, Iowa City.  
147 Ocular Tuberculin Test of Calmette. N. Bannister, Ottumwa.  
148 Medical Aspect of the Duodenum. E. Grimes, Des Moines.  
149 Surgical Aspects of the Duodenum. W. Jepson, Sioux City, S. D.  
150 Tuberculous Meningitis. G. S. Browning, Sioux City.

**Colorado Medicine, Denver.**

August.

- 151 Cleft Palate. T. E. Carnody, Denver.  
152 Ocular Tuberculosis. E. Jackson, Denver.  
153 Extruterine Pregnancy. F. N. Cochems, Salda.  
154 Infection of the Fallopian Tubes. J. W. Rambo, Portland, Colo.  
155 Sudden Death During Pregnancy or Puerperium. C. H. McClanahan, Colorado Springs.  
156 Case of Fracture at the Base of the Skull with Prolonged Unconsciousness—Recovery. W. J. Lefossignol, Rifle.  
157 Laryngeal Tuberculosis. E. W. Fox, Trinidad.

**Albany Medical Annals, Albany.**

August.

- 158 The Inherent Spirit of Medicine. A. S. M. Chisholm, Bennington, Vt.  
159 Chronic Alcoholism. E. M. Somers, Ogdensburg, N. Y.  
160 Importance of Making the Patient Cough During Auscultation of the Lungs. A. T. Laird, Albany, N. Y.  
161 The Guest, or Personal Experience of a Patient in a Hospital for Insane. Told by Himself.



## FOREIGN.

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial feeds are omitted unless of exceptional general interest.

## The Lancet, London.

August 22.

- 1 \*Granular Kidney. W. B. Warrington.
- 2 Gigantic Retroperitoneal Tumor, Intimately Connected with the Kidney, which Simulated Ascites from Tuberculous Peritonitis. C. A. Morton.
- 3 Alleged Discovery of Syphilis in Prehistoric Egyptians. G. E. Smith.
- 4 Digest of Eighty-six Cases of Epidemic Cerebrospinal Meningitis in Motherwell in 1907. E. Watt.
- 5 Thirty-five Consecutive Cases of Extrauterine Pregnancy Dealt With by Abdominal Section Without a Death. J. Oliver.
- 6 Generalized Edema of the Fetus. W. W. King.
- 7 Case of Double Abdominal Hydrocele. O. Richards.
- 8 Case of Congenital Hypertrophic Stenosis of the Pylorus Treated Medically. N. B. Clowes.

1. **Granular Kidney.**—Warrington states that the cardinal symptoms on which a diagnosis of granular kidney is based are: 1, cardiovascular changes; 2, eye changes; 3, manifestations of chronic or acute renal toxemia, and 4, the condition of the urine. He discusses these at some length and asserts that the cardiovascular changes are of primary importance. Ophthalmoscopic examination will often make a diagnosis possible in obscure cases. A few points must be remembered: 1. None of the appearances, except the arterial changes, are absolutely distinctive of renal disease, but in rare cases may be exactly simulated by, say, the changes in cerebral tumor. 2. The most characteristic feature is the appearance of small glistening, woolly-whitish patches often arranged in a striate fashion round the macular region. These are degenerative in nature, are permanent, and may require careful searching for with a dilated pupil, and the direct method. 3. Other changes are larger white patches, irregularly distributed on either side of the disc; probably exudations. Hemorrhages and papillitis are not uncommon. All these may disappear. 4. They may occur at any age. 5. The prognostic significance of the degenerative patches is grave. So protean are the manifestations of granular kidney, he declares, that the examination of the eye may be the one thing which will make a puzzling case clear, and, as in the optic neuritis of cerebral disease, vision may be not at all, or only slightly affected. The more chronic states of toxemia may lead to errors in diagnosis. The anemia, wasting and cachexia of advanced granular kidney must be borne in mind.

From the point of treatment there are several groups of cases: 1, the compensated kidney in which the excretion of urinary products is not greatly interfered with; 2, the acute exacerbations in which the treatment resembles that of acute nephritis; 3, the cases of cardiac failure; 4, the more chronic symptoms of renal toxemia; 5, the hopeless cases in which the desires and tastes of the patient should be catered to so far as possible. In the compensated cases the treatment should be chiefly prophylactic. Alcohol is undesirable; condiments are likely to be harmful, and the heart is especially sensitive to tea and coffee stimulation. According to von Noorden, quoted by Warrington, the average daily nitrogen should not fall below 12 grams, which requires about 85 grams of proteid. Physical treatment is important and a warm, dry climate is beneficial. Cardiac symptoms must be treated as they arise. For high tension Warrington advises baths and free action of the bowels. For more urgent symptoms sodium nitrite and nitroglycerin are useful. Cardiac failure must be treated in the usual way. When there are signs of renal toxemia, elimination by the bowels and skin must be promoted. Warm baths or vapor baths frequently relieve toxemia and the intense and distressing headache. Hot rectal injections of saline solution are recommended by some observers, while others advise administration of digitalis. Warrington thinks it advisable to give morphin in these cases; he considers it invaluable for relief of the painful, restless nights, especially when there is cardiac dyspnea. Chloral, he says, may be given by rectum. Occasionally lumbar puncture is successful in cutting short the convulsions.

## British Medical Journal, London.

August 22.

- 9 Are Yeast Extracts Justifiable as Substitutes for Extract of Meat? A. Gamgee.
- 10 Clinical Experiences with Spinal Analgesia. A. E. Barker.
- 11 Some Lessons from Ancient Fractures. F. W. Jones.
- 12 Hyperpyrexia. J. Smith.
- 13 Antral Disease in Relation to Special and General Surgery. H. Tilley and A. S. Underwood.
- 14 Teething and Its Alleged Troubles. L. Guthrie, H. A. T. Fairbank and J. G. Turner.
- 15 Acute Pyorrhea Alveolaris Treated by a Specific Vaccine. K. W. Goadby.
- 16 \*Mortality in Dusty Trades in Sheffield. H. Scurfield.
- 17 Etiology and Prevention of Pneumonokoniosis. T. Oliver.
- 18 Pathology of Grinders' Phthisis. A. E. Barnes.
- 19 Dust Removal in the Grinding Trades. C. Johnston and S. R. Bennett.
- 20 Notification of Industrial Diseases. A. Scott.
- 21 Industrial Dermatitis. F. Shuttlebotham.
- 22 Tar and Asphalt Workers' Epithelioma and Chimney-Sweeps' Cancer. T. Oliver.
- 23 An International Committee on Industrial Disease. L. Carozzi.
- 24 Physiology of Purin Metabolism. J. B. Leathes, C. Watson, E. I. Spriggs, Sir L. Brunton, T. H. Milroy and I. W. Hall.
- 25 Influence of Oxygen Inhalations on Athletes. L. Hill.

16. **Mortality in Dusty Trades.**—Scurfield states that the dusty trades of Sheffield produce their chief effect by increasing the fatality of tuberculosis and other diseases of the respiratory tract. About 120 males die every year in Sheffield from tuberculosis, who would not die if the conditions for work in Sheffield were as good as in the rest of the country. The higher death rate is chiefly among males. In Sheffield the death rate of grinders from phthisis is more than six times and the death rate from other respiratory diseases nearly three times that of the average male; while the death rate of cutlers from phthisis is nearly three times and from other respiratory diseases nearly four times that of the average male. Scurfield calls attention to the difference in the conditions in Sheffield and in Solingen, Germany, where similar trades are carried on.

## Medical Press and Circular, London.

August 19.

- 26 Dementia Præcox. J. Turner.
- 27 Diabetic Regimen. A. Jaquet.
- 28 Bacterial Aspects of Cerebrospinal Fever. J. A. Hislop.
- 29 Physical Deterioration in Children. J. J. Cox.
- 30 Oral Use of Serum. D. M. Paton.

## Clinical Journal, London.

August 12.

- 31 Case of Homonymous Hemianopia with Unusual Sensory Symptoms. H. H. Tooth.

August 19.

- 32 Puerperal Fever. V. Bonney.
- 33 Surgical Treatment of Imperfectly Descended Testicle. E. M. Corner.

## Journal of Tropical Medicine and Hygiene, London.

August 1.

- 34 Review of the Position of Gland Palpation in Diagnosis of Human Trypanosomiasis. J. L. Todd.
- 35 \*Bacilli Carriers and Their Part in the Transmission of Infectious Diseases. F. Vay.

35. **Bacilli Carriers.**—Vay defines a bacillus carrier and the meaning of "convalescence." He then considers residual microbes, immunizing factors, and the carrying of diphtheria, typhoid, plague and cholera, the duration of convalescence and the special measures for each disease, and formulates the following conclusions:

1. The importance of bacteria carriers is not identical in all infectious diseases, their part should be examined for each disease separately.
2. Concerning plague, further investigations should be made.
3. Epidemiologic facts render it likely that the importance of bacilli carriers is not very great in cholera; theoretical speculations lead to the same result.
4. In practice it is preferable to direct attention to careful clinical medical examination and supervision.

## Annals of Tropical Medicine and Parasitology, London.

July.

- 36 \*A Peculiar Intralobular Cirrhosis of the Liver Produced by the Protozoal Parasite of Kala-Azar. L. Rogers.
- 37 \*What is "Schistosomum mansoni" Sambon 1907? A. Looss.
- 38 \*Prevention of Dengue Fever. E. H. Ross.
- 39 Life History of *Trypanosoma lewisi*. J. E. Salvin-Moore, A. Brienl and E. Hindle.
- 40 Effects of Therapeutic Agents on Trypanosomes in Respect to (a) Acquired Resistance of the Parasites to the Drug, and (b) Changes in Virulence of the Strains After Escape from the Drug. B. Moore, M. Nierenstein and J. L. Todd.
- 41 \*Observations on the Acidity and Alkalinity of the Blood in Trypanosome Infections. M. Nierenstein.
- 42 \*Contributions to the Morphology and Life History of *Piroplasma canis*. A. Brienl and E. Hindle.



43 Comparative Chemotherapeutical Study of Atoxyl and Trypanocides. M. Nierenstein.

44 Three New Species of *Culex* Collected During the Antimalarial Campaign in Mauritius in 1908. D. E. de Charmoy.

36. Kala-Azar.—Rogers summarizes his remarks as follows:

1. The most chronic cases of kala-azar not infrequently terminate their course with ascites due to cirrhosis of the liver.  
2. The cirrhosis is of a peculiar intralobular type of uniform distribution, the organ having a smooth surface.

3. It is due to the protozoal parasite of kala-azar, which may be found in the liver and other organs after death.

4. This form of cirrhosis of the liver is much commoner in Lower Bengal than a true malarial cirrhosis, with which it has probably hitherto been confused. It is, however, much less common than atrophic cirrhosis due to unknown causes.

37. *Schistosomum Mansoni*.—Looss examines in detail Sambon's discovery of a new species of blood fluke, *Schistosomum mansoni*, which Sambon stated had been hitherto confounded with *Sch. hematobium*. He summarizes his argument by stating that of the evidence brought forward by Dr. Sambon in order to justify the creation of *Sch. mansoni*, 1. the zoologic proof is absolutely insufficient; 2. the anatomo-pathologic proof does not stand any serious test, and 3. the geographical proof is based on a peculiarly one-sided interpretation of the literature. In all the evidence there is not the slightest detail which would really point to the existence of a distinct species in the West Indies and certain parts of Africa. It would be unwise on his part, Looss says, to go so far as to contend that such a species, or perhaps even several species, can not, altogether, exist. This is quite possible from the zoologic point of view; but, zoologically, there is no possible doubt, either that this species, or these species, must produce the same two shapes of eggs as does the *Sch. hematobium*, or else our present information is wholly incorrect. If, therefore, Dr. Sambon wishes to maintain that there is an independent *Sch. mansoni* in the countries above mentioned, the entire proof of its existence still remains to be given.

38. Dengue.—Ross points to the fact that with the extermination of mosquitoes in Port Said, not only has malaria disappeared, but dengue, which was formerly very prevalent, has disappeared also; and he thinks that the extermination of the domestic mosquito means the prevention of dengue.

41. The Blood in Trypanosomiasis.—Nierenstein reports his observations on the acidity and alkalinity of the blood in trypanosome infections, and concludes that: 1. It is evident, that in experimental trypanosomiasis infection (*T. brucei* and *T. equiperdum*) the acidity of the blood increases. 2. The increase of the acidity is probably due to the production of amido acids through, or by the trypanosomes, i. e., the acids might be either secreted by the parasites or produced by the action of the parasites on the proteins of the blood serum. In the latter case the amido acids would be broken up through hydrolysis from the proteins into simpler polipeptids. 3. It is possible that the increase of acidity might be of assistance in the diagnosis of a typical case of trypanosomiasis, in which the parasites have disappeared for some length of time from the blood circulation. 4. These experiments suggest that in trypanosome treatment effort should be made to neutralize the increased acidity of the blood, as this might prove of additional assistance in making the blood a less favorable medium for their development.

42. *Piroplasma Canis*.—Breinl and Hindle report observations which seem to point to the fact that the biflagellate forms of *Piroplasma canis* represent a very transient stage in its life history. This article is elaborately illustrated in colors.

#### Parasitology, London.

June.

45 Liver Abscess of Amebic Origin in a Monkey. A. Castellani.

46 Larval and Pupal Stages of *Anopheles maculipennis* Meigen. A. D. Imms.

47 Mode of Multiplication of *Piroplasma bovis* and *P. pitheci* in the Circulating Blood Compared with that of *P. canis*, with Notes on Other Species of *Piroplasma*. G. H. F. Nuttall and G. S. Graham-Smith.

48 Behavior of Spirochetes in *Acanthia lectularia*. G. H. F. Nuttall.

49 Structure and Biology of *Hamaphysalis punctata*, Cane-strini and Fanzago. G. H. F. Nuttall, W. F. Cooper and L. E. Robinson.

50 Hirudinea as Human Parasites in Palestine. E. W. G. Maserman.

51 A Gnathobdellid Leech (*Limnatis* sp?) from Angola. W. A. Harding.

52 *Cystidicola farionis*, Flscher. A Threadworm Parasitic in the Swim-Bladder of a Trout. A. E. Shipley.

53 Anatomy of *Cystidicola farionis*. R. T. Lelper.

#### Dublin Journal of Medical Science, Dublin.

August.

54 Oxaluria and Phosphaturia. W. G. Smith.

55 Ocular Reaction in Tuberculosis. R. Holmes.

56 Protozoal Diseases in Man. A. F. G. Kerr.

57 Clinical Reports of the Rotunda Hospital. E. H. Tweedy.

#### Journal of Laryngology, Rhinology and Otology, London.

August.

58 Chronic Inflammatory Edema of the Submucous Tissues of the Nose. J. S. Fraser.

59 Laryngostomy and Tracheolaryngostomy in the Cure of Severe Chronic Stenosis of the Larynx or Trachea, especially when Cicatricial. Sargnon and Barlatier.

#### Annales de l'Institut Pasteur, Paris.

July 25, XXII, No. 7, pp. 561-623.

60 Report of Commission sent to Senegal to Study Trypanosomiasis. A. Thiroux, R. Wurtz and L. Teppaz.

61 Bactericidal Action of Extract of Leucocytes of Rabbits and Guinea-pigs. (Action bactéricide de l'extrait leucocytaire des lapins et des cobayes.) C. V. Korschun.

62 Opsonins and Antiphagins in Pneumococcus Infection. N. Tchistovitch and V. Yourevitch.

63 Specific Sensitizer in Malta Fever Serum. (Sensibilisatrice spécifique dans les sérums des animaux traités par le "M. Melitensis" et dans le sérum des malades atteints de fièvre méditerranéenne.) A. Sicre.

#### Annales de Médecine et Chirurgie Infantiles, Paris.

August 1, XII, No. 15, pp. 505-540.

64 Two Cases of Congenital Paroxysmal Cyanosis with Autopsy. G. Alvarez.

#### Presse Médicale, Paris.

August 12, XVI, No. 65, pp. 513-520.

65 \*Pericarditis in Course of Poisoning from Mercury Bichlorid. A. Petit and J. Milhit.

66 \*Mineral Waters in Treatment of Syphilis. (Eaux minérales dans le traitement de la syphilis.) C. de la Carrière.

67 Probable Existence of Nerves to Excite the Glands for the Renal Secretion. (Existence probable de nerfs excito-glandulaires pour la sécrétion rénale.) H. Delaunay.

August 15, No. 66, pp. 521-528.

68 Deformity of Hip with Lumbar Scoliosis. (Déformation des hanches dans la scoliose lombaire.) P. Desfosses.

69 Ethereal Sulphates in Urine in Pathologic Conditions. (Les sulfo-éthères urinaires.) H. Labbé and G. Vitry.

70 Importance of Graphic Registration of Neuromuscular Reactions for Industrial Accident Insurance. (L'électro-diagnostic graphique.) J. Larat.

65. Pericarditis from Bichlorid Poisoning.—A young woman had a transient but severe pericarditis, without effusion or fever, after an attempt to commit suicide by ingestion of 1.3 gm. (about 20 grains) of mercury bichlorid. The pericarditis became evident about the tenth day and persisted for three weeks.

66. Mineral Waters in Treatment of Syphilis.—Carrière attributes the beneficial action of sulphur waters in syphilis to the combination of the sulphur with the insoluble mercury albuminate resulting from mercurial treatment, transforming it into a soluble mercuric sulphate. The sulphur waters act on the mercury which remains stored up and inert in the organs, and renders it soluble, thus restoring its therapeutic power even a long time after its ingestion. A course of sulphur waters, he adds, also prevents or cures symptoms of mercury poisoning, as the waters induce rapid elimination of the mercury. Syphilitics taking sulphur water can bear mercury in doses two or three times the average, even in case of very susceptible individuals. The patient is kept in a mercurial atmosphere, he says, which might be dangerous if it were not for the safety valve formed by the sulphur. Even the average doses are better utilized, and thus better results are obtained. He advises an occasional course of sulphur water for every syphilitic, even when he is apparently well. During the first stage of syphilis these courses should be taken preferably during the periods of suspension of mercurial treatment. Later it is a good precaution to combine the waters with the specific medication.

#### Revue de Chirurgie, Paris.

August 10, XXVIII, No. 8, pp. 213-339.

71 Clinical and Histologic Study of Chondroma and Osteochondroma. (Tumeurs ostéochondromateuses complexes.) V. Cornil and P. Coudray.

72 Tarsectomy Retaining the Calcaneum. M. Vallas and L. Desgouttes.

73 Advantages of and Various Technics for Utilization of Uterus in Plastic Operations for Genital Prolapse. J. Martin.



## Semaine Médicale, Paris.

August 19, XXVIII, No. 34, pp. 397-408.

- 73 \*Isotonic Solution of Quinin for Intravenous Injections. (L'isotonie des solutions de quinine pour injections intraveineuses.) P. Chapelle.

74. Isotonic Solution of Quinin for Intravenous Injections.—Chapelle reviews the literature on this subject and shows how a typographic error in the formula in an Italian journal has been reproduced and copied from one journal to another and even got into an original article by Baccelli, the originator of the method, in the *Berliner klinische Wochenschrift* in 1890. The concentration given would prove dangerous for intravenous injection. Chapelle concludes from his research that each liter of an isotonic solution of quinin hydrochlorid must contain about 75 gm. of this salt (that is, a 7.5 per cent. solution). If there is less than 75 gm. of the hydrochlorid to the liter, each lacking gram of the quinin salt must be replaced by 0.125 gm. of sodium chlorid.

## Archiv für klinische Chirurgie, Berlin.

LXXXVIII, No. 4, pp. 859-1087. Last indexed August 22, p. 713.

- 75 \*Plastic Operations on Bones. (Osteoplastik.) A. Barth.  
76 Case of Hematolymphangioma. J. Novak.  
77 \*Aseptic Operations on Intestines. (Aseptische Darmoperationen.) L. Moszkowicz.  
78 Appendicitis Following Trauma. F. Brüning.  
79 \*Free Bone Plastic Operations and Attempts at Transplantation of Joints and Stiffening Joints. (Verwendung der freien Knochenplastik nebst Versuchen über Gelenkversteifung und Gelenktransplantation.) E. Lexer.  
80 \*Operative Treatment of Fractures and Their Consequences. (Operative Behandlung der Knochenbrüche und ihrer Folgen.) S. Peltessohn. Commenced in No. 3.  
81 \*Local Anesthesia of Limb by Venous Transfusion After Expulsion of Blood. (Neuer Weg Localanästhesie an den Gliedmaßen zu erzeugen.) A. Bier.  
82 Experimental Research on Changes in Nissl's Granule with Spinal Anesthesia. (Veränderungen der Nissl'schen Granula bei der Lumbalanästhesie.) E. Wossidlo.  
83 Operative Treatment of Chronic Abscess of the Lung. Perthes.  
84 Tuberculous Tumor of Sigmoid Causing Stricture. J. Boese.

75. Plastic Operations on the Bones.—Barth reports favorable results from implantation of dead bone substance when certain conditions are observed. Among the cases are some in which the bone marrow was still capable of ossification, but lacked the necessary lime for callus formation. The local supply of lime-containing material, bone charcoal, provided the needed substance and the defect soon filled up with new bone tissue. Autoplastic operations with pieces of bone with attached periosteum, to bridge gaps in the long bones, is the sovereign and only certain method to date. Axhausen's research has supplied a basis for homoplasties, he says, and bright day has dawned for osteoplastic surgery.

77. Aseptic Operations on the Intestine.—Moszkowicz has been extensively applying Rostowzew's technic for aseptic operations on the intestines. He has modified it somewhat, and here gives an illustrated description of the instruments and technic, claiming that this method realizes the ideal of aseptic operations on the intestines.

79. Transplantation of Joints and Other Plastic Operations on the Bones.—Lexer's experience in transplanting entire joints has attracted much attention. He says that fresh, still warm, human bones give the best results in transplantation. He seldom takes the bones from the patients, as amputations on account of dry senile gangrene have hitherto supplied him with ample material. He has never had a mishap or failure in transplanting these fresh human bones, with their attached periosteum, even in defects of from 20 to 30 cm. in length. In four cases he transplanted part of the shaft and joint with good results, and in two cases an entire joint. In the two latter cases the entire knee was resected and a new knee implanted. Each patient can now use the knee a little, after seven and four months respectively, and in one case the knee can be bent passively to an angle of 45 degrees. There is no pain in standing or walking in either case. He adds that if one is economical with the amputation material, a limb otherwise thrown away will supply material for several transplantation cases.

80. Operative Treatment of Fractures and Their Consequences.—Peltessohn concludes his long article with an illus-

trated summary of 60 cases in which various technics were applied in Körte's service at Berlin.

81. The Venous Transfusion Method of Local Anesthesia.—THE JOURNAL, June 6, page 1914, referred to Bier's first communication on his method of local anesthesia by venous transfusion. The details are given here, confirming the possibility of obtaining complete anesthesia by local technic even for such operations as resection of joints, tendon transplantation, etc. The blood is carefully expelled from the limb by bandaging from the periphery upward. Then, above the field of operation, constriction is applied with a soft, narrow elastic band wound many times around the limb to cover a broad segment. This method of constriction is not painful or annoying, while it keeps the blood effectually out of the limb. A second similar elastic bandage is applied below the operating area. A subcutaneous vein between the bandages is opened, as for intravenous infusion, and the weak solution of the anesthetic is injected toward the valves of the vein. Hitherto he has used for adults from 60 to 80 c.c., for resection of the knee, and from 40 to 50 c.c., for the elbow, of a 0.5 per cent. solution of novocain, or about twice the amount of a 0.25 per cent. solution. The anesthesia follows in from two to fifteen minutes. In a typical case described, the elbow was resected in a very sensitive patient, without pain, and the ankylosed fingers were energetically exercised before sensation returned, seven minutes after removal of the constriction. The anesthetic must be dissolved in physiologic salt solution; it rapidly penetrates the walls of the vein and acts on the nerve terminals as well as on the nerve trunk. The expulsion of the blood allows a large proportion of the drug to be bound so that it is only gradually yielded up to the circulation. A large part of the solution injected also escapes outward through the surgical wound, before the constriction is finally removed. To promote this, after the operation is finished, but before the suturing is commenced, Bier removes the peripheral bandage and loosens the central bandage, very slowly, until the arteries open but the veins are still compressed—that is, until the limb begins to grow pink and the surgical wound bleeds freely. By this means most of the novocain solution left in the vessels is washed out with the blood. The central bandage is tightened again until the arteries are compressed, and the wound is then sutured before the anesthesia subsides. When he uses the largest amounts of the anesthetic he leaves the cannula in the vein, and just before finally removing the constricting band he flushes the entire vascular system of the operating area with physiologic salt solution, injected through the cannula. It runs out again through the surgical wound. He remarks in conclusion that this method of anesthesia shows how a fluid injected into a vein in a tied-off segment of a limb is brought into intimate contact with all its tissues. He adds that this technic might possibly be utilized for other purposes; it seems to be the only way in which the Müller and Peiser antiferment could be brought into close contact with all the tissues for treatment of diffuse phlegmons.

## Berliner klinische Wochenschrift.

August 17, XLV, No. 33, pp. 1517-1556.

- 85 Relations between Bacilli of Human and Bovine Tuberculosis. (Beziehungen der Bacillen der menschlichen Tuberkulose zu denen der Perlsucht des Rindes.) K. Steffenhagen.  
86 Further Research on History and Treatment of Tuberculosis. (Forschungen zur Behandlung der Tuberkulose.) E. Klebs.  
87 \*Resection of Elbow with Retention of Function. (Ellbogenresektionen mit Erhaltung der Beweglichkeit.) V. Schmieden.  
88 Abducent Paralysis after Spinal Anesthesia. (Abducentlähmung nach Lumbalanästhesie mit Tropacocain.) C. Gontermann.  
89 \*Paraffin Prothesis. V. S. Stein.  
90 Toxin and Anaphylactic Substance of Eel Serum. (Aalserrum.) R. Doerr and H. Raubitschek.  
91 Action of Peroxids on Digestive Organs. (Wirkung von Superoxyden auf die Verdauungsorgane.) Togami.  
92 \*Etiology and Treatment of Singers' Nodules. (Sängerknötchen.) E. Barth.  
93 Principles of Modern Treatment of Cripples. (Moderne Krüppelfürsorge.) Biesalski.

87. Resection of the Elbow with Retention of Movements.—Schmieden reports from Bier's clinic at Berlin 11 cases in which the elbow was resected by a technic of which he gives an illustrated description. In 6 cases the operation left a usable joint even for hard manual labor; in 4 cases the move-



ments were only slightly restricted and the results were bad in one case. The main feature of the technic is the interposition of a pedunculated muscle flap from the triceps between the raw stumps of the joint cut in the physiologic curves.

**89. Paraffin Prosthesis.**—Stein's syringe for injecting cold paraffin under pressure has won wide approval. He here gives a number of technical points which facilitate the operation. There should be no admixture of vaselin with the paraffin, and the melting point should not be above 50 C. (122 F.). He says that it is important to determine the melting point for each specimen. He does this by what he calls the "disc method." A piece of thin, soft iron wire, such as florists use, is passed around a steel rod, 6.5 mm. in diameter, and the ends twisted to form a loop with handle. This little wire loop or ring is dipped in the melted paraffin. It fills with a thin film of paraffin which rapidly hardens. This disc of film is then suspended in water which is then heated and the temperature of the water noted at the point when the disc of paraffin begins to melt around the edges. This technic gives constantly reliable findings.

**92. Treatment of Singers' Nodules.**—Barth gives an illustrated description of the mechanism of the movements of the vocal cords and shows the causes for the formation of singers' nodules. They are due to a false method of using the throat. As the tone rises the thyroid cartilage is drawn upward, with this false technic. The correct technic causes the thyroid cartilage to be drawn down more and more, the higher the tone, and no tendency to the formation of nodules is observed. They disappear as the parts are rested, just as callous patches elsewhere regress. Treatment can be permanently effectual only when the singer or lecturer learns to use his throat mechanism correctly.

#### Deutsches Archiv für klinische Medizin, Leipsic.

July, XCIII, Nos. 5-6, pp. 459-614. Last indexed, August 1, p. 446.

- 94 \*Three Cases of Adams-Stokes' Symptom Complex and Disturbance in Conduction of Impulse. A. Heineke, A. Müller and H. v. Hösslin.  
95 \*Retrogression of Adams-Stokes' Symptom-Complex. (Rückbildung des Adams-Stokes'schen Symptomenkomplexes.) D. Gerhardt.  
96 Graphic Registration of Tympanitic and Non-tympanitic Percussion Resonance. (Graphische Studien über den tympanitischen und den nichttympanitischen Perkussionschall.) R. May and L. Lindemann.  
97 Fermentative Power of Polypus Secretion in Case of Extensive Polyposis of Colon and Rectum, and Observation of Action of Purgative. Esser.  
98 \*Measurement of Systolic and Diastolic Blood Pressure. (Messung des systolischen und diastolischen Blutdruckes.) M. John.  
99 Behavior of Pepsin and Lab in Fundus and Pylorus of Human Stomach, and Relations Between Action of Pepsin and Concentration of the Acid. (Verhalten von Pepsin und Lab im Fundus und Pylorus des menschlichen Magens, nebst einigen Bemerkungen über die Beziehungen von Pepsinwirkung und Säurekonzentration.) R. Landerer.  
100 Formation of Inclusions in Polychromatic and Basophilic Granulated Red Corpuscles. (Schleifenbildung in polychromatischen und in basophilgekörnnten roten Blutkörperchen.) E. Sluka.  
101 Research on Hyperemia with Nephritis. M. Halpern.  
102 Case of Syringomyelia with Bulbar Symptoms. (Syringomyelie mit Sektionsbefund.) L. Enders.

**94. Adams-Stokes' Syndrome.**—This communication from Müller's clinic at Munich reports three cases of the Adams-Stokes' syndrome and two of disturbances in conductivity without the above syndrome. In the first case the bundle of His showed pathologic changes corresponding to the partial disturbance in conduction. In the second case there was complete obliteration of this bundle, although the ventricle frequently contracted in connection with the auricle. This justifies the assumption that, under certain circumstances and long duration of the affection, other routes for the conduction may be developed. The third case was distinguished by the absolute arrhythmia of the pulse; it demonstrates that the Adams-Stokes' syndrome may be the result of irritation of or pathologic processes in the vagus nerve. One pulse tracing of the first case showed an interpolated auricular extrasystole.

**95. Retrogression of the Adams-Stokes' Syndrome.**—Gerhardt reports two cases in which the typical syndrome completely retrogressed while under observation. The number of blocked systoles grew less and less until finally the beat was normal. Both patients were elderly and the disturbances in

the bundle of His were evidently of arteriosclerotic origin. One patient was a woman of 65, and the attacks suggesting heart block recurred at intervals. Another patient was a man of 25, previously healthy, recovering from acute articular rheumatism. The attendant who waited on him had recently recovered from typhoid, and he contracted the disease and succumbed to hemorrhage the fifth week. During the first week of the acute rheumatism severe symptoms of heart block recurred at intervals, finally yielding to normal heart action. Autopsy revealed considerable anatomic changes in the bundle of His which sooner or later would probably have induced renewed symptoms in the conduction. The case shows how inflammation may develop in the bundle of His in the course of an acute infectious disease and may entail severe but transient attacks of Adams-Stokes' paroxysms, the disturbance in conduction gradually subsiding in the course of a few weeks until the heart action may be apparently normal, notwithstanding the persistence of lesions in the bundle of His.

**98. Study of the Blood Pressure.**—John continues the work in this line which his chief, Volhard, has been conducting for many years. He has recorded the blood pressure before and after various therapeutic measures, such as electric baths, or before and after use of alcohol and nicotin. Variations in the blood pressure seem to be most pronounced with arteriosclerosis. He tabulates his findings under various headings, and remarks that it is interesting to note how failing compensation can be restored approximately to normal by rest in bed and appropriate diet alone, dyspnea and edema disappearing without a drop of digitalis merely by limiting the intake of fluids. All this can be instructively traced by repeated control of the pulse pressure. The dyspnea of patients with contracted kidney can be remarkably influenced by restricting the patient for six days to 200 c.c. of milk four times a day. A sudden drop in the pulse pressure indicates digitalis or some similar remedy at once. He noticed that certain patients, convalescing from an infectious disease, on getting out of bed and standing erect showed a rise in the pulse rate from 72 to 110 or 120, or even to 144 or more. The pulse became small and the patients felt dizzy. The pulse rate declined again when they returned to bed. Other patients not suffering from an acute infection never showed an increase of more than 24 beats and this dropped by 12 or 16 beats in about five minutes. The systolic pressure showed a slight drop while the diastolic pressure increased, but only by 5, 8 or 10 mm. water. In the convalescents from acute infections the systolic pressure dropped by several centimeters while the diastolic increased by 10 or 20 mm. or more. In none of these patients of either group was there anything to indicate cardiovascular disease. He emphasizes that these findings demonstrating weakness on the part of the vascular system are important for determining when a patient can be allowed to get up after an infectious disease. It is especially important in general practice, when the patient can not be seen every day. He advises having the patient get up and stand while the pulse is noted for five or ten minutes. If the rate rises from 70 or 80 to 110 or 120, it is better to leave the patient in bed for a while longer until these pulse findings approximate normal, that is, until the pulse does not run above 100 in ten minutes, standing.

#### Deutsche medizinische Wochenschrift, Berlin.

August 13, XXXIV, No. 33, pp. 1417-1456.

- 103 \*Obstetrics, Old and New. (Alte und neue Geburtshilfe.) H. Fritsch.  
104 Trypanosome Infection and Complement Binding. C. Schilling and v. Hoesslin.  
105 Experimental Study of Pathogenesis of Local Tetanus. K. Pochhammer.  
106 Structure and Genesis of Symptomatic Xanthoma. F. Pinkus and L. Pick.  
107 Primary, Fatal Anthrax of Tonsil. (Milzbrand der Tonsillen.) Z. Noury, Pascha and Haidar, Bey.  
108 Computation of Conception, Menstruation and Duration of Pregnancy. (Schwangerschaftsberechnung.) H. Bab.

**103. Obstetrics, Old and New.**—Fritsch here reviews the trend of obstetrics in his forty years of professional practice. He remarks that the main progress in this long period, in all specialties, is traceable to the surgical tendency. Wherever great advances and good results have been achieved it has always been by the specialty's becoming surgical. Obstet-



ricians would not keep up with the procession if they shrank from taking part in this mode of progress. He even asserts that it seems as if the more surgical a medical specialty has become, the farther it has progressed. This is so in obstetrics and gynecology, as also in internal medicine, in otology and in all the other specialties. He urges that in every difficult obstetric case the patient should be sent to a hospital, remarking that if the law required that every woman should be confined in a lying-in institution the lives of hundreds of women and children would be saved every year.

#### Fortschritte der Medizin, Leipsic.

July 30, XXVI, No. 21, pp. 641-672.

109 \*Beginning of Training for Mental and Physical Health During First Year of Life. (Anfänge einer Erziehung zu geistiger und körperlicher Gesundheit während des ersten Lebensjahres.) Eschle.

109. **Training of the Infant.**—Eschle declares that the instinctive consciousness that certain actions have certain consequences develops extraordinarily early in the infant. He is convinced that the foundations for moral and physical health should be begun to be laid when the infant is three months old. During the first three months it should be accustomed to order and punctuality. In the fourth month, if the infant learns that it does not gain anything but merely darkness by undue crying, its tendency to become a tyrant in the house is nipped in the bud. The crying of a healthy child may be a means of useful exercise, and need not be necessarily suppressed, but if the crying becomes a bad habit it may have evil consequences not only for the physical development but also on the future character. The infant has no fear of darkness, but when it finds that motiveless and too long-continued crying merely causes the room to be darkened, it soon wearies of crying and the little being struggling for existence (and for the mastery of the house) learns to control its desire to cry and to tyrannize.

#### Münchener medizinische Wochenschrift.

August 11, LV, No. 32, pp. 1673-1720.

- 110 \*Puncture of the Corpus Callosum in Hydrocephalus, Epilepsy and with Tumors. (Balkenstich bei Hydrozephalien, Tumoren und bei Epilepsie.) Anton and v. Bramann.
- 111 \*Office Tests of Heart Functioning. (Wie prüfen wir in der Sprechstunde die Funktion des Herzens.) Waldvogel.
- 112 Origin of Pertussis. (Untersuchungen zur Entstehung des Keuchhustens.) C. Fraenkel.
- 113 Toxic Non-Bacterial Cutaneous Tuberculosis. (Experimentelle Untersuchungen über "tuberkulöse" Veränderungen an der Haut ohne Mitwirkung von Tuberkelbazillen (toxische Tuberkulosen) und die Bedingungen ihres Entstehens.) K. Zieler.
- 114 Much's Granular Form of Tuberculosis Virus. M. Wirths.
- 115 Specificity of Serum Diagnosis of Syphilis. (Spezifität der Komplementbindungsmethode bei der Syphilis.) Jochmann and Töpfer.
- 116 \*Treatment of Scarlet Fever. (Behandlung scharlachkranker Kinder.) K. Oppenheimer.
- 117 Treatment of Summer Diarrhea in Children. (Behandlung der Sommerdurchfälle der Kinder.) M. Goetz.
- 118 Radical Operation for Inguinal Hernia. (Radikaloperation der Leistenbrüche—Faszien-Knopfnähte.) Hackenbruch.
- 119 \*Treatment of Hydrocele. H. Mohr.
- 120 \*Extraction of Needles. (Nadelextraktion.) C. Haerberlin.
- 121 Beginning of Ocular Tuberculin Cytoreaction. (Ophthalmocytoereaktion.) J. Sabrazès and C. Lafon.

110. **Therapeutic Puncture of the Corpus Callosum.**—Anton and Bramann report four cases in which improvement followed puncture of the corpus callosum, made through the longitudinal fissure from near the vertex. The opening is made with a blunt instrument, and it is enlarged to maintain a permanent communication between the lateral ventricle and the dura. The benefit was striking, although the cases in which it has been done to date were severe. They proved, however, that it is possible to insert a curved cannula feeling its way along the falx to the lowest part, when it is pushed through the corpus callosum into the lateral ventricle. The first patient was a boy of 10 with hydrocephalus and symptoms indicating pressure and aplasia of the cerebellum. Great improvement followed the intervention. The second patient was a workman of 50 with serous meningitis and intense headache, vertigo and optic neuritis. The process was evidently arrested and the headaches and vertigo have disappeared. The third patient was a sailor of 26, with a tumor in the posterior cranial fossa, and choked disc. Since the puncture of the corpus callosum, the intense headache has sub-

sided and there has been no further vomiting, while the gait has improved. If the puncture had been made months before, vision might have been retained. This case shows the importance of this intervention while waiting for localization of the tumor to become possible. Besides hydrocephalus, with or without tumor, this intervention may prove of great benefit in hypertrophy of the brain. The brain and the skull do not always enlarge in proportion, the authors remark, and it is no mere coincidence that by far the largest proportion of enormously hypertrophied brains are found among epileptics. If the fluid in the ventricles is allowed free escape, benefit may be anticipated, as also in cases of pseudotumors. At first the authors cut a flap about 4 cm. square between the sagittal and coronary sutures, but later found that a drillhole gives sufficient access.

111. **Office Tests of Heart Functioning.**—Waldvogel examines the systolic blood pressure with the patient horizontal and again as the patient stands, and summarizes his findings with 130 patients. This simple test of the systolic blood pressure as the patient lies and stands up can never prove an exertion for the heart, while nervous influences are almost entirely excluded, and the effort is proportionately the same for all human beings. As the patient reclines the Reeklinghausen cuff is applied and the Riva-Rocci manometer is applied to the heart region. The patient holds the manometer with his free hand and the systolic pressure is noted twice. Then the patient is told to get up quietly; as he stands he holds the manometer with his free hand, on a level with his heart, and again the systolic pressure is noted twice on the arm bent at the elbow, the wrist lightly supported by the observer. Quick work is necessary, as the pressure soon fluctuates. He tabulates the findings in six tables, the first showing the cases with the same pressure in both positions, the other showing a rise or fall in the pressure, from 5 to 20 mm. or more, from the change of position. It seems evident that a drop of 10 or 20 mm. on standing is an index of a pathologic condition in the heart action, although a drop of 10 mm. is still within the normal range. The greatest difference, 35 mm., was observed in a case of contracted kidney and alcoholism.

116. **Treatment of Scarlet Fever.**—Oppenheimer warns against allowing the child to become chilled. He never exposes the child much for examination, and forbids general baths. After expectant treatment in the first stage he allows, the second or third day, tea diluted with milk, lemonade or water, but nothing else until the appetite returns as the acute toxic symptoms subside. He says that the diet is of more importance in scarlet fever than in any other infectious disease, on account of the tendency to nephritis. It is important to avoid eggs, meat and soup, avoiding even dishes containing eggs. He insists on keeping the child in bed for five or six weeks, as nephritis is liable to develop in the fourth or fifth week. In an experience of 150 scarlet fever patients treated on these principles—avoidance of baths and cold packs and of meat, soup and eggs—he has never had scarlatinal nephritis develop in any instance. He would like an institution to which scarlet fever children could be taken, allowing their mothers to accompany and wait on them, and the family physician to attend his little patient.

119. **Treatment of Hydrocele.**—Mohr reports two cases which demonstrate that injection of a solution of adrenalin after puncture and evacuation has certain advantages over other methods of injection when the effusion displays a tendency to recur. Actual healing has not occurred in either case. In two other cases he operated according to Klapp's technic with good results. This technic can be applied under local anesthesia and ambulant, while it prevents recurrence, and there can be no kinking later of the seminal passages and blood vessels.

120. **Extraction of Needles.**—Haerberlin extols the advantages of fluoroscopic examination, at various angles, of the part containing the needle.

#### Therapeutische Monatshefte, Berlin.

August, XXII, No. 8, pp. 383-438.

- 122 \*Experiences with Pyocyanase in Treatment of Diphtheria. W. Hackenheim.
- 123 Intoxication with Bismuth Subnitrate and Its Substitution with Bismuth Carbonate. E. Meyer.



- 124 \*Cardiospasm as Cause of Habitual Vomiting of Infants. (Der Kardiospasmus, eine Ursache des habituellen Erbrechens der Säuglinge.) F. Göppert.  
125 \*Diagnosis and Treatment of Pityriasis Rubra. A. Halle.  
126 \*Yoghurt. Löbel.  
127 Treatment of Nasopharyngeal Catarrh in Children. (Nasopharynxkatarrh bei Kindern.) A. Hecht.  
128 Dosage by Drops and Its Physical Bases. (Tropfendosierung und ihre physikalischen Grundlagen.) T. Lohnstein.

## Virchows Archiv, Berlin.

August, CXCH, No. 2, pp. 177-352.

- 129 Morphology of Liver Glycogen and Structure of Liver Cell. J. Arnold. Commenced in No. 1.  
130 Structure of Lobule of Liver under Influence of Splanchnic Nerve. (Ban des Leberläppchens unter dem Einfluss des Nervus splanchnicus.) W. Kolski.  
131 Experimental Study of Consequences of Stenosis or Obliteration of Common Bile Duct. (Zur Kenntnis der sog. biliären Leberzirrhose.) T. Tsunoda.  
132 The So-called Valve Hematoma. Also Study of the Vascular Supply of Valves of Human Heart. (Klappenhämatome.) F. Hammes.  
133 Heart with Three Auricles. (Ein weiterer Fall von Cor triatriatum mit eigenartig gekreuzter Mündung der Lungenvenen.) H. Stoeber.  
134 Pathology of Mucosa of Human Esophagus. (Pathologie der menschlichen Oesophagusschleimhaut.) A. Lindemann.  
135 Retrogressive Changes in Epiglottis Cartilage and Their Consequences. (Regressive Veränderungen des Epiglottisknorpels und deren Folgezustände.) Id.  
136 Ochronosis. F. Landois.  
137 Inebriety as Cause of Deaths at Basle, 1892-1896. (Trunksucht als Todesursache.) R. Pfister.  
138 A New Parasite Disease. Its Causal Organism and Its Endemic Occurrence in Various Parts of Japan. (Schistosomiasis japonica.) I. Tsuchiya.

122. Pyocyanase in Treatment of Diphtheria.—Fackenheim has applied pyocyanase as adjuvant to serum treatment in 48 cases of diphtheria, including 6 with signs of sepsis. This experience has convinced him that the local spray of pyocyanase is an important aid in severe cases. It seems to destroy the bacteria in the throat and thus prevents further formation of toxin. This action is shown in the rapid subsidence of the throat lesions, the disappearance of the bacilli and the rapid improvement in the general health. Experiments are now under way to test the efficacy of subcutaneous inoculation of the pyocyanase. It will be remembered that the pyocyanase is merely the filtrate of a three-weeks-old culture of the pyocyanus bacillus. Emmerich assumes the presence of a bacteriolytic enzyme in the fluid on account of the rapid destruction of the bacteria and of the film that forms on the surface of the culture. He uses a Berkefeld filter and reduces the filtrate in a vacuum to one-tenth its volume, as has already been described in these columns.

124. Cardiospasm as Cause of Vomiting in Infants.—Göppert describes a peculiar case of habitual vomiting in an otherwise healthy child, commencing at the fourth month. The symptoms suggested regurgitation in some respects, but he finally diagnosed cardiospasm. He introduced a sound about 4 mm. thick, passing it through the nose into the stomach, and poured the child's food into the stomach. There was no tendency to vomiting when the child was fed in this way, and it was gradually trained to physiologic feeding. In three months all disturbances had vanished. By attacking the spasm from below, filling the stomach through the sound, the child was not only able to be properly nourished, but the affection was given a turn for the better and spontaneous recovery inaugurated.

125. Pityriasis Rubra.—Halle discusses the differentiation of this affection, calling special attention to the itching, the localization, the prevalence in persons between 15 and 35 years old, the color and scaling and the oval shape of the efflorescences. A spontaneous tendency to heal is pronounced if the parts are kept dry. Baths and rinsing the parts or sweating aggravates the affection, as also hot or alcoholic drinks. He applies with a brush a mixture of equal parts of zinc oxid, Venetian talcum, glycerin and water, dusting copiously with talcum afterward, and washing off every day with olive oil. Tar and naphthol or moist dressings are liable to entail a dermatitis which may prove difficult to cure.

126. Yoghurt.—Löbel says that yoghurt—Bulgarian clotted milk—is now the fashion, and seems to be answering all rational expectations. It is not the "elixir of life" which the interviewers claim, but it certainly displays a tendency to expel a harmful intestinal flora and supplant it by a useful flora, as Löbel shows from his own and others' experience.

## Wiener klinische Wochenschrift.

August 13, XXI, No. 33, pp. 1175-1202.

- 139 Modern Views in Regard to the Speech Center. (Revision der Aphasiefrage.) M. Blassberg.  
140 Proteolytic Cellular Activity of Malignant Tumors. (Proteolytische Zelltätigkeit maligner Tumoren.) L. Hess and P. Saxl.  
141 Avoidance of Dangers of Ocular Tuberculin Reaction. (Gefahren der Ophthalmoreaktion und ihre Vermeidung.) A. Wolff-Eisner.  
142 \*Symptomatology of Heart Affections. (Zur Semiotik der Herzkrankheiten.) A. Strubell.

142. Symptomatology of Heart Affections.—Strubell's long article is an introduction to a study of functional differentiation and treatment of heart disease. He shows how the results of experimental research have thrown light on affections of the circulation. In particular he calls attention to the importance of the work of von Basch, showing that angiosclerosis is merely a change in the elasticity of the vessels. The various degrees of this are: 1. the purely functional vasomotor contraction of the abdominal vessels in the nervous—pseudoangiosclerosis; 2. the transient functional contraction on a toxic base, as in acute nicotine poisoning; 3. the still functional and reparable increase in the elasticity from toxic influences persisting through several weeks, as in acute nephritis; 4. the first durable increase in elasticity, as in subacute or chronic nicotine poisoning, with the first signs of secondary hypertrophy of the heart. The arterial pressure is increased, but may return to normal under appropriate treatment. This is the borderland between pseudo and latent angiosclerosis. These are followed by the three more pronounced types, the most severe including intermittent claudication, ready brain fag, high arterial pressure, inevitable hypertrophy of the heart and, generally, more or less degeneration of the myocardium. The functional reaction is not entirely abolished even in the severest cases. The whole trouble, he says, is the result of increased elasticity of the vessels with more or less disturbance in their capacity for reaction, which may be reduced or morbidly increased.

## Zentralblatt für Chirurgie, Leipsic.

August 15, XXXV, No. 33, pp. 993-1016.

- 143 Pathologic Non-coaptation of the Surfaces in Joints. (Pathologische Gelenkflächeninkongruenz.) G. Preiser.

## Zentralblatt für Gynäkologie, Leipsic.

August 15, XXXII, No. 33, pp. 1081-1112.

- 144 Case of Extraperitoneal Cesarean Section According to Sellheim. (Fall von extraperitonealem Kaiserschnitt nach Sellheim.) H. Luchsinger.  
145 \*Warning Symptoms of Thrombosis and Embolism. (Kritik der prämonitorischen Symptome der Thrombose und Embolie.) Nacke.  
146 \*Towel Method of Chloroform Anesthesia. (Chloroformnarkose mit überdeckter Maske.) K. Frankenstein.

145. Premonitory Symptoms of Thrombosis and Embolism.—Nacke has analyzed 5,000 maternity cases, especially 40 in which, according to the classic symptoms, thrombosis was inevitable. Only two of these women, however, developed thrombophlebitis, one on the twelfth, the other on the eighteenth day, after delivery. In the others the assumed premonitory symptoms were referable to other casual or pre-existing affections, such as rheumatism, influenza, obstipation, nephritic irritation, gallstones or slight appendicitis, chronic pelvioperitonitis, anemia and chlorosis, syphilis or other intestinal, bladder or abdominal affections. On the other hand, in every case of fatal embolism the puerperium had been entirely normal, and death occurred suddenly when the patient first got up. He concludes from this analysis that there are no certain premonitory symptoms, and that we can only aim to prevent embolism by keeping the patient in bed, on suspicion of thrombosis, until the clot has had time to become organized.

146. The Towel Method of Chloroform Anesthesia.—Frankenstein's method has already been described in these columns; he here relates further experiences with it and lauds its advantages, its simplicity, its freedom from danger, the unusually small amount of chloroform or ether and the much shorter time required. He gives illustrations of his mode of applying the once folded towel over the mask.



## Gazzetta degli Ospedali e delle Cliniche, Milan.

August 18, XXIX, No. 93, pp. 1033-1048.

- 147 Experimental Pellagra. G. Guyot.
- 148 Improved Technic for Determination of Elastic Fibers. (Ricerca delle fibre elastiche.) M. F. Felice.
- 149 \*Uric Acid Metabolism During the Subcutaneous Oxygen Treatment of Neuritis and Neuralgia. (Oscillazioni della crasi urica, con speciale riguardo al comportamento dell'acido urico, nelle affezioni nevritiche e nevralgiche in rapporto all'ipodermo-emfisiterapia ossigenata.) T. Salvetti.
- 150 Benefits from Intravenous Injection of Mercury Bichlorid in Three Cases of Acute Articular Rheumatism. (Iniezioni endovenose di sublimato corrosivo nella poliartrite reumatica.) O. Ortali.
- 151 Experiences with Maragliano's Specific Treatment of Tuberculosis. B. Chmelar.
- 152 Connection Between Malaria and Metereologic Conditions. (Recrudescenza malarica in autunno susseguente ad una alluvione.) L. Nelli.
- 153 Sciatica from Compression by Echinococcus Cyst. P. Marogna.

149. Uric Acid Metabolism During Oxygen Injections.—Salvetti has been studying twenty patients with neuralgia or neuritis taking a course of treatment with subcutaneous injections of oxygen according to Bernabei's method. The results confirm the local and general tonic effect of this treatment and the increased elimination of waste matters. His experience reaffirms the assumption that neuralgia and neuritis are the result of the action of toxins, the organism being flooded with waste from sluggish biochemical metabolic processes. Bernabei's technic was mentioned in *THE JOURNAL*, May 23, 1903, page 1474, and later results with it, May 9, 1908, page 1576. The patients with uncomplicated neuralgia, especially sciatica, were given from 8 to 15 injections of an average of 225 c.c. (nearly 8 ounces) of oxygen. The injections are made at the most painful points of the nerve. The region swells and the gas gradually disappears from the local tissues in from two to twenty-four hours.

## Hospitalstidende, Copenhagen.

July 15, LI, No. 29, pp. 849-872.

- 154 \*Operative Treatment of Inveterate Inversion of the Uterus. P. Guildal.
- 155 \*Production of Uric Acid. (Urinsyrens Dannelse hos Menesket.) I. P. Chrom. Commenced in No. 28.

July 22, No. 30, pp. 873-904.

- 156 \*Determination of Tubercle Bacilli in Urine. (Om en rationel Fremgangsmaade til Paavisning af Tuberkelbaciller i Urinen.) V. Ellermann and A. Erlandsen.

August 5, No. 32, pp. 929-960.

- 157 Case of Alveolar Echinococcus Cyst. O. Möller.
- 158 Roentgen-Ray Diagnosis of Pulmonary Tuberculosis. J. F. Fischer and F. Tobiesen. Commenced in No. 31.

154. Inveterate Inversion of the Uterus.—Guildal remarks that only three cases have been encountered among the 4,064 gynecologic patients at the Copenhagen Deaconess Hospital. The first patient had complete inversion, resisting attempts at reduction under ether or chloroform, repeated eleven times, and the uterus was finally amputated. In a later case the inversion was reduced by a conservative posterior hysterotomy restoring approximately normal conditions. After an incision in the anterior vaginal vault and palpation of the inverted organ, the rear wall of the uterus was then incised. This allowed the organ to be readily reinverted, as every point of the incision moves in a plane at right angles to the longitudinal axis of the uterus, each describing an arc from behind outward and forward as the organ is reinverted. The incision in the uterus was then sutured in two tiers and the organ restored to place, through the incision in the vaginal vault. If necessary, a second incision can be made, at right angles to the first. A wick was introduced to drain the suture in the uterine wall. The patient has been in good health since this operation, attending to arduous household duties without disturbance. The inversion was only about the size of half an egg (hen's) at first, but it caused repeated hemorrhages and great debility with syncope when any attempt at reduction was made, the patient requiring hospital care for nearly two years. Menstruation continued approximately normal with frequent hemorrhages in the intervals. There has been nothing to suggest that the uterus has become fastened in retroflexion since, which is a possible drawback of the posterior technic. Some surgeons think that the dangers from an ensuing pregnancy are so great that they advise sterilization of

the woman at the same time, but Bonté, Dahlgren and Born have witnessed entirely normal pregnancies since an operation of the kind. In any event, the course of a subsequent pregnancy should be supervised with unusual care. If many adhesions are found with inverted uterus, Guildal regards abdominal hysterectomy as the only procedure. There were no adhesions in either of his cases; the patients were primiparae and the inversion occurred spontaneously soon after forceps delivery in two of the cases.

155. Production of Uric Acid.—Chrom in this long biologic study presents the results of much research which, he thinks, demonstrates among other things that the amount of uric acid eliminated in the urine is determined by the amount of substances which generate the ethereal sulphates.

156. Improved Technic for Detection of Tubercle Bacilli in Urine.—Ellermann and Erlandsen reported last April an improved technic which they said shows up the tubercle bacilli in sputum from ten to twenty times more effectually than other methods. It was described in *THE JOURNAL*, June 27, 1908, page 2157. They now describe a modification of this technic for application to urine, which, they assert, is an equal advance over previous methods. The urine is drawn with a catheter and allowed to settle, when the supernatant fluid is decanted and from 10 to 15 c.c. of the sediment are centrifugated. In case of unusual proportions of urates they are removed by heating before centrifugating. After centrifugating the supernatant fluid is decanted, and, after noting the amount of the sediment, the latter is mixed with four times its bulk of a 0.25 per cent. solution of sodium carbonate and kept in the incubator for twenty-four hours at 37 C. (99 F.). If the reaction afterward is still acid it may be necessary to add a little more sodium carbonate and allow the digestion to continue somewhat longer. The upper layer of the supernatant fluid is then decanted and the rest again centrifugated. To the sediment left then, after pouring off the supernatant fluid, is added four times its volume of a 0.25 per cent. solution of sodium hydrate, stirred with a glass rod till dissolved. The whole is then heated to boiling on the water bath. On cooling it is once more cautiously centrifugated, and the sediment then obtained is used for the microscopic slide. This "double method" is required only when negative results are obtained from microscopic examination of the sediment from the first centrifugation. This method gives from ten to fifteen times better results than centrifugation alone, revealing bacilli too scanty for detection by other means. They say that a negative result with their technic is almost certain proof of the absence of tuberculosis.

## Books Received

STATE HOSPITALS BULLETIN, STATE OF NEW YORK. Published by Authority of the State Commission in Lunacy. New Series. Vol. 1, No. 1, May, 1908. Paper. Pp. 88. Vol. 1, No. 2, July, 1908. Paper. Pp. 276. Utica, N. Y.: State Hospitals Press.

FOURTH ANNUAL REPORT OF THE HENRY PHIPPS INSTITUTE. Feb. 1, 1906, to Feb. 1, 1907. Edited by Joseph Walsh, A.M., M.D. Paper. Pp. 430, with illustrations. Philadelphia: Published by the Henry Phipps Institute, 1908.

GLANDULAR ENLARGEMENT. By Arthur Edmunds, M.B., M.S., B.Sc., Lond., F.R.C.S. Eng., Surgeon to the Great Northern Central Hospital. Cloth. Pp. 230, with illustrations. Price, \$4.50. London: Oxford University Press, 1908.

DISEASES OF THE SPINAL CORD. By R. T. Williamson, M.D. (London). F.R.C.P. Assistant Physician, Royal Infirmary. Cloth. Pp. 432, with illustrations. Price, \$5.50. London: Oxford University Press, 1908.

THE LAW IN GENERAL MEDICAL PRACTICE. By Stanley B. Atkinson, M.A., M.B., B.Sc., Justice of the Peace for the County of London. Cloth. Pp. 239. Price, \$1.50. London: Oxford University Press, 1908.

TWENTY-NINTH ANNUAL MEETING OF THE KANSAS PHARMACEUTICAL ASSOCIATION. Held at Wichita, Kas., May, 1908. Paper. Pp. 104. Topeka: F. M. Stevens & Sons.

THE STRUGGLE AGAINST TUBERCULOSIS IN SWEDEN, 1908. Edited by Sture Carlsson, M.D. Paper. Pp. 200, with illustrations. Stockholm: Centraltryckeriet, 1908.

PROCEEDINGS OF THE SOUTH CAROLINA STATE BOARD OF MEDICAL EXAMINERS. Columbia, S. C., June, 1908. Paper. Pp. 13. Columbia: The R. L. Bryan Co.

THE PRESENT PANDEMIC OF PLAGUE. By Assistant Surgeon-General J. M. Eager. Paper. Pp. 30. Washington: Government Printing Office 1908.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOLUME LI

CHICAGO, ILLINOIS, SEPTEMBER 26, 1908.

Number 13

## Addresses

### INFANT MORTALITY.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON DISEASES OF CHILDREN, AT THE FIFTY-NINTH ANNUAL SESSION, AMERICAN MEDICAL ASSOCIATION, 1908.

EDWIN E. GRAHAM, M.D.

Professor of Diseases of Children in Jefferson Medical College.  
PHILADELPHIA.

The modern tendency in medicine is to concentrate each individual's efforts within comparatively narrow limits; if possible, to add some new facts or theories to present knowledge. The sum total of all the additions and advances has revolutionized medical knowledge in the last twenty years. Countless intelligent and zealous physicians working along different lines and in special departments of medicine have made it difficult, if not impossible, for any one to keep fully abreast of the times in all branches of medical science.

Perhaps this tendency in modern medical study has led to the neglect of certain broad principles of hygiene, diet, fresh air, bathing and general methods of living; these, being every one's business, have become no one's business.

John Gardner, surgeon, London, wrote in 1838 an interesting pamphlet on "Why So Large a Number of Children Perish." He appreciated certain physiologic differences between a child and an adult, and under "Dentition" wrote:

The true nature of the effect of this natural process on the health and life of children is much misapprehended. In a healthy body, the teeth are always cut without suffering, and not far wide of the ninth month. The passage of the teeth through the gums produces a slight excitement, which is not a deviation from health.

Benjamin J. Crew, of Philadelphia, wrote in 1882 an excellent article on "The Care of Deserted Infants," which was read before the Assembly Meeting of the Philadelphia Society for Organizing Charity, in March of that year. In this article he strongly advocates a combination of "placing out" and "asylum plan" for these infants and quotes statistics which clearly prove how great is the reduction in the mortality in infants under the plan of treatment advocated.

J. Brendon Curgenvin, M.R.C.S., London, 1867, writing on "The Waste of Infant Life," states that the excess of infantile mortality occurs in laboring people. The poorer and lower classes show a mortality of 35 to 55 per cent. under the age of five years; the educated and well-to-do, only 11 per cent. He analyzes the Registrar General's report, and shows clearly the causes of this excess of 24 to 44 per cent. of deaths. Reference will be made to these statistics later.

In an article written by Dr. William Farr, over thirty years ago, he stated that the mean annual death rates

of infants under one year in some of the principal countries of Europe were as follows: Out of one thousand infants there died yearly in Sweden 141.8; in Denmark, 137.5; in England, 182.6; in France, 223.2; in the Netherlands, 237.5; in Spain, 249.6; in Italy, 273.3.

The annual death rates in one thousand children under five years, according to the same authority, were: In Norway, 40.9; in Sweden, 51.4; in Denmark, 52.7; in England, 67.6; in Belgium, 74.9; in France, 79.2; in Prussia, 82.4; in Holland, 91.2; in Austria, 104.0; in Spain, 111.7; in Italy, 113.5.

A. Brothers, B.S.M.D., in his article on "Infantile Mortality During Child-Birth, and Its Prevention," in 1896, states that in the four years, 1889 to 1892, the total number of births in New York City was 173,126, and that during this period of four years 16,888 children born at term have died within the age of one month. Ten per cent. of the children, therefore, are lost before they reach the age of one month.

Collective statistics from sixteen European cities embracing 1,439,056 children show that 10 per cent. of those born alive die within the first four weeks of life. Eröss' statistics show that the greatest number of deaths occurred on the first day of life, and that the deaths diminish day by day. According to Eröss, 54.24 per cent. of the deaths among children within four weeks after birth are due to congenital debility.

William Moore, in a paper read before the Dublin Obstetrical Society in 1859, states that the proportion of deaths throughout England, under all ordinary conditions of life, is believed to be one in six within the first year. To parallel this proportion of mortality, we must pass on to those dying between the eightieth and eighty-fifth years of life.

Dr. D. Meredith Reese, of New York, reported at the meeting of the American Medical Association in May, 1857, that nearly 50 per cent. of the total deaths in large cities occurred in children under five years of age. In New York City in the fifty years, 1804 to 1853, the whole mortality was 363,242, including still-births, and during this period 176,043 children under the age of five years died, nearly 49 per cent. of the entire number of deaths.

M. Bertillon stated before the Academy of Medicine of Paris that in a period of ten years there have been in France 9,700,000 births; of those born 1,500,000 died within the first year of life.

J. Maule Sutton, M.D., of London, in 1872, drew attention to the influence exerted on infant mortality by the social status of the parents. His figures give a mortality of 77 per thousand for children under one year of age in urban population; and a lower percentage for rural population. These same districts, excluding the upper-class births, gave a mortality of 158 per



thousand. He studied the infant mortality among the children of the farmers of Devonshire and Norfolk, two agricultural counties. The infant mortality was 95 per thousand in the farming class; the rate among the children whose parents were not farmers was 130 per thousand.

John S. Parry, M.D., of Philadelphia, in 1871, quotes Dr. A. Jacobi as saying that "of 100 infants born alive to the gentry of England (1844) there died 20; to the working classes, 50. In the aristocratic families of Germany there died in four years 5.7 per cent.; among the poor of Berlin, 34.5 per cent. In Brussels the mortality, up to the fifth year, was 6 per cent. in the families of capitalists, 33 among tradesmen and professional people and 54 among the workingmen and domestics." Quoting De Villiers, he further writes that "the mortality among the children of the workingmen of Lyons is 35 per cent., and in well-to-do families and agricultural districts it is 10 per cent."

Dr. George Reid, in 1906, in London at the National Conference on Infant Mortality, in considering social status as an etiologic factor, divides the working class into three divisions: 1. Those among whom the proportion of employed, married and widowed females between eighteen and fifty years of age reached or exceeded 12 per cent. 2. Those among whom the proportion was 6 to 12 per cent. 3. Those among whom the proportion was below 6 per cent. The decades 1881 to 1890, 1891 to 1900, and four years 1901 to 1904 were studied. The infant mortality was always highest in group 1 and lowest in group 3. The average yearly infant mortality rates of group 1 were 195, 212 and 193; group 2, 165, 175, 156; group 3, 156, 168, 149. These statistics point out in no uncertain manner the fact that the infants of women employed in industrial and manufacturing plants during the time of their married life and motherhood are born into this world with less chance of battling with the problem of living than those whose mothers are not compelled to undergo this kind of work. The wives of farmers may and often do perform hard work, but it is done more or less out of doors, and not in the vitiated and contaminated atmosphere of a mill or factory.

Helle examined into the social status of the parents of 170 infants dying in Graz during 1903 and 1904; 112 infants who died had very poor parents; 49 children had poor parents; 9 had well-to-do parents, and no deaths occurred among the children of the rich; the percentage of the four classes being 65.9, 28.8, 5.3, 0. The general infant mortality in Graz has markedly decreased in the last twenty years, while the mortality due to gastrointestinal lesions does not show a marked diminution.

In Brün, a city of 110,000 inhabitants, the health statistics for fifteen years show that the general infant mortality during this time decreased very much, while that due to gastrointestinal lesions changed very little.

In Berlin, 1903, Newman investigated 2,701 infant deaths. Where the families were in one-room dwellings he found 1,792 deaths; in two-room dwellings, 754 deaths; in three-room dwellings, 122 deaths, and in larger dwellings, 43 deaths. It seems to be an established fact that the percentage of deaths among infants of the poor largely exceeds the mortality among the infants of the rich.

The hygienic surroundings of the infant—city or country life—are factors which play an important part

in the sum total of infant mortality. In England and Wales, 77 per cent. of the whole population is urban; fifty years ago the population was equally divided between urban and rural districts. A considerable portion of this urban population lives in small towns, more closely resembling country than city life. In the year 1904, in England and Wales, 59.1 per cent. of the people lived in large towns of over 20,000 inhabitants; in 1801, only 16.7 per cent. lived in large towns.

It seems clear to me that this tendency to live more in large towns has much to do with the stationary infant mortality in England and Wales. City life means for the parents, often, long hours of work in a factory or mill; living in a small house in a small street, often poor food and not uncommonly dissipation of drink and perhaps immorality.

Epidemic diarrhea is mostly a disease of large towns and cities. It can be positively stated that geologic strata, character of soil and climate have nothing to do with infant mortality, nor is it entirely a question of poverty. Overwork, poor hygienic surroundings and poor housing seem to be two powerful factors causing infant deaths. Density of population *per se* may and does mean a good deal in causing deaths in infants. Urban England has a higher infant mortality than rural England. However, in first-class modern houses, the population may in a given area be dense, but the infant death rate may be small if other factors are present, as good hygiene, food, fresh air, healthful occupations and good social status.

If a town is distinctly industrial or manufacturing, the mortality invariably exceeds that of the town where the occupations have more of an agricultural tendency. Table 1, by Newman, shows the infant mortality in the county of Wiltshire, in which there are no large towns; it shows also that even under favorable conditions the city mortality exceeds the rural mortality; it also shows the high mortality of large towns, and the mortality of England and Wales, and rural England and Wales.

TABLE 1.—INFANT MORTALITY RATES IN WILTSHIRE AND ENGLAND AND WALES, 1900-1904.

Districts.	1900.	1901.	1902.	1903.	1904.
County of Wiltshire.....	94.0	93.7	97.23	85.63	95.99
Urban Districts (Wilts.)..	95.6	106.8	93.63	89.27	100.32
Rural Districts (Wilts.)..	115.7	83.8	99.89	82.76	92.52
England and Wales.....	154.0	151.0	133.0	132.0	145.0
Large towns in England..	172.0	168.0	145.0	144.0	160.0
Rural England and Wales..	138.0	137.0	135.0	118.0	125.0

In these two countries the highest infant mortality occurs in large towns; next, in large towns and rural districts; and the lowest mortality in rural districts.

TABLE 2.

Age.	Of 100,000 infants born, the number surviving at each age.			Annual death rates per 1,000 living in each successive interval of age.		
	Three rural counties: Herts., Wilts., Dorset.	Five mining and manufacturing counties: Staffs., Leic., Lancs., W. R. Yorks., Durham.	Three selected towns: Preston, Blackburn, Leicester.	The three rural counties.	The five mining counties.	The three towns.
At birth..	100,000	100,000	100,000	213	331	382
3 months	94,820	92,051	90,874	75	154	240
6 months	93,068	88,574	85,374	61	128	180
12 months	90,283	83,081	78,197	...	...	...

Table 2, by Newman, shows the remarkable difference in infant mortality in three agricultural counties, five mining and manufacturing counties, and three towns where textile industries and mining are largely followed.



This table covers the three years, 1889 to 1891, and shows that of 100,000 infants born in the rural counties 10,000 died; in the manufacturing counties 17,000 died, and in the manufacturing towns, 22,000. An important point to notice in this table is that the town rates are most in excess of the rural rates in the later months of the first year of life, showing clearly that the congenital conditions, atrophy and immaturity can be left out of consideration, and that the continuous ill effect of town life finally kills many children that have made a strong but useless struggle against their environment. Epidemic diarrhea plays a powerful part in this sacrifice of infant life in those towns where textile industries, manufacturing and mining flourish.

The deaths occurring during the first year of life are very unevenly distributed. This applies to all countries, and all statistics that I have been able to find prove this absolutely. The greatest percentage of deaths occurs in the first three months of life, and I believe that this percentage is increasing and not decreasing. In London during the years 1839 to 1844, 24,354 infants died during the first three months of life, an infant death rate of 68 per thousand. In the same city in the years 1898 to 1903, 56,963 infants died during the first three months of life, a death rate of 72 per thousand. According to Newman, there has been, in recent years, an increased percentage of infant deaths in England and Wales during the first three months, and a slight decrease in the percentage of deaths during the last six months of the first year. Newman asserts that infants die more from immaturity at the present time and that consequently more infants begin life with less vitality than in former periods. He also states: "Children under twelve months of age die in England to-day, in spite of all our boasted progress and in spite of an immense improvement in the social and physical life of the people, as greatly as they did seventy years ago."

The report of the Registrar General of England, for 1903, shows for England and Wales, 51.4 per cent. of infant deaths in the first three months; 19.9 per cent. in the second three months, and 28.7 per cent. in the last six months of the first year of life. In the year 1904, in Berlin, 53.6 per cent. of deaths of infants under one year occurred in the first three months. These deaths are, of course, distributed over the entire calendar year, and this observation consequently is not contradicted by the fact that the greatest number of deaths occur in the hot months. Births occur in each month with fair regularity, and the congenital conditions which contribute so largely to this mortality in the first few weeks of infant existence are consequently distributed with fair regularity throughout the year.

The added deaths from gastrointestinal disease, occurring as they do in great excess in the hot months, cause the great increase in the total infant mortality for the heated term.

The outside and home employment of mothers is a factor in infant mortality that was appreciated long since, and led Sir John Simon in 1856 to state that "infants perish under the neglect and mismanagement which their mothers' occupation implies." In Dundee a large percentage of the female population, of girls and married women, work in the jute and hemp factories. The labor is unskilled, the wages small and the hours 6 a. m. to 6 p. m. These women and girls are, as a class, subnormal in weight and general physical development; many of the children are born and raised in houses con-

taining only one or two rooms, or in large tenements, where overcrowding and, usually, uncleanness exist. In the ten years, 1893 to 1902, the infant mortality was 176 per thousand births; in 1904, out of 174 deaths, 125 were due to prematurity and immaturity, and over 49 per cent. of the deaths occurred in the first three months of life.

In England the Factory Act of 1901 states: "An occupier of a factory or workshop shall not knowingly allow a woman or girl to be employed therein within four weeks after she has given birth to a child." This is positive legislation of a far-reaching character. If the hygienic conditions of air, light and cleanliness were only adequately controlled by law in these mills or factories, and such provisions for sanitary surroundings as are needful were insisted on, much could be done to remove the injurious influences of this class of employment. Much has already been accomplished in this direction, but much still remains to be accomplished.

In Kearsley, a town of Lancashire, of 9,500 population, the infant death rate increased from 179 per thousand in 1894-1903 to 192 in 1903, and 229 in 1904; and this is due, according to J. C. Eames, M.D., medical officer of the town, to the town having "developed into more of a manufacturing district."

In Mulhouse, Mr. Dollfus, who owned a large cotton mill, established a fund to which all the married women subscribed, and he personally contributed. Each woman subscribing received from the fund sufficient for her support during the two months following her confinement. On resuming work at the end of this two months, she was granted time at mid-day to return home and care for her baby. This procedure alone reduced the infant mortality more than 50 per cent.

In 1876 there was established in England a Society for Nursing Mothers. The object of the Society is to save the child's life by preserving the health of the mother. The mothers are cared for in institutions for several weeks before confinement, being well fed and housed; but what is more important is that, during the first year of the child's life, the mother is cared for wholly or in part, as it is necessary. A physician and nurse visit her at her house and give her the assistance she may require. Each month the child is weighed, carefully examined, and if sick is always cared for. The Society has cared for over forty thousand children, and the saving of infant life has been very great.

In Paris since 1904 the Couplet dining-rooms have gone one step ahead of anything done, as far as I know, in America. They have established restaurants in the poorer districts of Paris; any woman who is nursing a baby is given free of all cost two good meals each day. They feed the mother and the mother nurses the baby.

Since all empires are built of babies, unless a change in the trend of statistics of infant mortality shall take place, our future generations will fail to develop physically and numerically along the lines which are both normal and natural. Race suicide is not a theory, but a fact. France is actually facing slow extinction; its birth rate is smaller than that of any other European nation. The trouble and expense incident to the care and rearing of children does not appeal to all women of the present day; motherhood is not always synonymous with wisdom. A high birth rate is usually, but not invariably, linked with prosperity.

The foreign-born population of the United States has apparently a larger percentage of children than the



native population, but this excess of fecundity is probably no more than that which usually is found in urban populations in poor districts, and the high infant mortality commonly found among this foreign element more than reduces its growth to the level of native-born Americans.

The Royal Commission in New South Wales, recently appointed, after much careful study and thought, decided that the main factor in the reduction of the birth rate was: "A diminution in fecundity and fertility in recent years due to the deliberate prevention of conception and destruction of embryonic life, and to pathologic causes consequent on the means used, and the practices involved therein." The remedy for this is not easy to apply; all nations are becoming more extravagant in their methods of living—automobiles and babies may be incompatible possessions—if we have one, we must often renounce the other.

Infanticide by neglect or intention undoubtedly causes the death of many hundred infants each year. Women in the poorer walks of life should be urged to nurse their children, entirely or in part, as long as possible. Part breast and part bottle feeding is much better than all bottle feeding; weaning should never be done prematurely unless by the advice of a physician. Women with illegitimate children should be kept in the hospital and made to nurse their babies until after the third month. After this age, the child is better able to withstand the perils of artificial food, and the mother, from her association with the child, has perhaps become sufficiently fond of it to make an effort to protect its life. If a child is born, and no one is with the mother at the time of its birth, the danger of death at the time of delivery is greatly increased, and the secrecy of birth may induce the mother, under certain conditions, to destroy the child's life.

The giving of opiates to children, either in the form of paregoric or of a soothing syrup, is pernicious and should always be absolutely forbidden. Overlaving, either by accident or design, is in certain portions of this and other countries, very common; an infant, of course, should never sleep in the same bed with its mother.

Infant life insurance and burial clubs cause the death by neglect of many; statistics prove that a much greater number of children insured and in burial clubs die than of those children in the same cities and towns living under exactly similar conditions. Coroners' inquests should be rigid and impartial, and if there is any question or possibility of infanticide, the case should be thoroughly investigated and proper punishment imposed on the guilty. Of 864 children dying under one week of age in Philadelphia, inquests showed, according to Parry, that 210 died from "unknown causes," 293 from "asphyxia," 94 "still-born," 62 from "exposure and neglect" and 22 from "want of medical attention." In these cases the coroner's physician believed that the majority of those which he examined were murdered.

The death rate per thousand is well known to be much higher among illegitimate than among legitimate children. An interesting fact, which is perhaps not always appreciated, is that in large cities the death rate among illegitimate infants is much greater than in country districts. In Glasgow in 1873 the death rate for illegitimate infants was 293 per thousand; for legitimate infants, 154 per thousand. In London in 1902 the death rate of illegitimate children was almost twice as great as the death rate of legitimate children. The

infant death rate of London, as a whole, exceeds the rural infant death rate by about 20 per cent. The deaths among illegitimate infants in London exceeds the rural death rate among illegitimate infants by over 50 per cent.

According to Dr. Norman Kerr, in 1894 the proportion of female inebriety in England had increased greatly in the recent years preceding 1894. He asserts that prison experience shows a distinct increase of drinking to excess among women. According to the annual death rates from alcoholism in England and Wales, per million living, from the year 1875 to 1904, the mortality due to inebriety is distinctly increasing. The average for every five years from 1875 to 1904 was: 1875 to 1879, 25 deaths per million living; 1880 to 1884, 29 deaths per million; 1885 to 1889, 36 deaths; 1890 to 1894, 50 deaths; 1895 to 1899, 58 deaths; 1900 to 1904, 71 deaths. In studying these figures it seems as if there can be no reasonable doubt that alcoholism is increasing among the women of England and Wales, although some allowance should probably be made for the more accurate diagnosis of recent years. Dr. Scott, quoted by Newman, believes that alcoholism is increasing among the women of Scotland.

Alcohol is a distinct poison to children, but the number of deaths caused by the giving of alcohol direct in any form to children is certainly very small in the United States. It has, however, been clearly shown that suffocation in bed and overlaying is twice as common on Saturday as any other night in the week; and the prevalence of drinking among the poor on that night is proverbial. An alcoholic mother rarely supplies her baby with a good breast-milk, and what is perhaps more important is the fact that the milk from such a mother may even contain alcohol. Alcoholism among women is perhaps increasing in America, but it is surely less common than in England.

Systematic nursing and medical care are wonderful aids in the prevention of infant mortality, and account largely for the difference between the infant mortality of the rich and poor. Home treatment, or perhaps better say maltreatment, of very young infants often destroys what little chance of life the infant would otherwise have had. The poor and ignorant classes often call "the doctor" too late to save the patient.

It is not an easy task to form an accurate idea of how many or what proportion of infant deaths are due to congenital causes and those diseases which, if not actually congenital, still leave the child more susceptible to their development than is the child whose parents are free from such diseases. Herbert M. Rich, in 6,866 deaths under one year of age, found 23.2 per cent. to be due to malformations, congenital debility and premature birth. Syphilis is certainly responsible for many premature and early deaths. In London and in most English cities the mortality from prematurity and atrophy is about 45 per thousand, these deaths almost all occurring in the first three months of life. Smallpox, malaria, typhoid fever and tuberculosis are all diseases that may and do exert an influence on the infant. Lead, mercury and phosphorus may exert a distinct antenatal effect, and the influence of alcohol has already been alluded to. In fact, any and all toxemias may influence the child during intrauterine life.

Gastrointestinal diseases are not only the most common diseases of infancy and childhood, but they are also responsible for more deaths than any other class of



diseases. Infantile diarrhea is especially apt to occur in the first year of life, although very common in children under two years of age. Hot weather, bad feeding and poor hygiene are the chief etiologic factors. It is often seen in epidemics, is very dangerous, and is the common cause of deaths among infants in cities in summer. Epidemics have often been traced to infected milk, although one must remember that milk may be infected at the farm, in transit or by the consumer.

Cases of this disease are rare among the rich, compared to the number one sees among the poor; they are rare in the country, compared with the number seen in the cities. The diarrheal death rate is, as a rule, highest in those countries where the infant mortality is greatest. Russia has the highest infant death rate of any European country, and Germany ranks second in the percentage of infant deaths. Taking 42 of the largest German cities, in the years 1904-5-6, there occurred 67,633 deaths of infants under one year of age; of these 28,422 were due to gastrointestinal disease.

In certain American cities it has recently been clearly proved in many instances that this enormous summer death rate, due to the diarrheal diseases, can be reduced. Clean milk must be provided for the poor at a nominal cost, and this milk must be properly modified for children of different ages and conditions. A campaign of education among the mothers of this poor class must be carried on persistently and continuously; visiting nurses must be supplied; and fresh air and improved hygiene must be insisted on. It is not asserting too much to say that a reduction of 50 per cent. in summer infant mortality may be accomplished by these means.

It is an old truth thoroughly appreciated by American physicians that breast-fed infants do well, whether they belong to the rich or the poor, but I do not believe that it is appreciated how great a difference exists in the infant mortality between breast-fed and bottle-fed infants. In the year 1903, 4,075 infants died in Munich; of these 83 per cent. were artificially fed. In Berlin since 1885 the census gives the character of the feeding of all living children. Taking the five years, 1900 to 1904, only 9 per cent. of the deaths occurred in breast-fed babies, and Budin has shown that only about 9.5 per cent. of the infant mortality in Paris occurs in breast-fed children. Of course, breast feeding is usually associated with other favorable factors, and bottle feeding often combined with many unfavorable associated conditions, but the figures are truly startling.

In war times the infant mortality often declines in manufacturing centers, in spite of the fact that the general mortality rate increases. During the siege of Paris, 1870-71, it is claimed the general mortality rate doubled, yet the infant mortality rate declined 40 per cent. Under such conditions infants do not die, and why? In times of war or great industrial depression the poor woman, having no work, stays at home and nurses her baby, and the child lives. In prosperity she works all day, gives her baby the bottle, and it dies.

It is both interesting and instructive to note that any considerable variation in the infant death rate in any locality is almost invariably linked with a corresponding change in the diarrheal death rate, the mortality from other causes changing, as a rule, comparatively little.

The factors contributing to infant mortality are so many and varied and the difficulties in controlling these harmful influences are so great that at the present day

one is forced to admit that, while the preventable death rate is very large, still among the poor there must be a large necessary death rate.

Several years ago the mayor of Huddersfield, England, offered a gift of \$5 to every child born in his town that lived to the age of twelve months. All classes, rich and poor, were included; the mortality in the Huddersfield district was immediately reduced more than 50 per cent.

In Yonkers, N. Y., a campaign was undertaken in 1894, having as its object the reduction of the infant mortality rate. The physicians of Yonkers, aided by the public press, established milk stations, and instituted and carried out a campaign of education among mothers. A sanitary inspection of the tenement district was adopted and nurses were appointed to visit the sick. The Board of Health also passed a regulation requiring in all new tenements a sufficient amount of light and air. The deaths from digestive diseases were reduced more than 50 per cent. Dr. S. E. Getty believes that, of all the means employed, the most important was the establishment of the milk dispensaries.

That a general propaganda against infant mortality has been vigorously pushed all over the United States is shown by the census, 1880 and 1890. In 1880 the general infant mortality of the United States was 246 per thousand; in 1890 it had fallen to 159 per thousand, and during the same period it is gratifying to note that the infant mortality in cities decreased from 303 to 184 per thousand. This is surely a record to be proud of.

In France, 1874 to 1893, the average infant mortality was 167 per thousand. Ten years later, in 1903, it was only 137 per thousand. In Paris it was only 101; wonderful Paris has the smallest birth rate and the lowest death rate of any large European city.

The physicians of the United States have accomplished much in the last ten years, and yet when we consider how remarkably successful have been the efforts directed to save infant life, should we not, as the representative body of the American profession, feel chagrined that we have not accomplished more? Certainly 50 per cent. of all infant deaths at the present day are preventable.

Hospitals for infants have been established all over the world, and we are establishing new ones almost daily, and yet some physicians question whether they do good or harm. Going back to the year 1871, we find that 29.82 per cent. of all the children born in Philadelphia died before the end of their first year. In the same year, in the foundling ward of the Philadelphia Hospital, 73.65 per cent. died. The death rate among the foundlings was 43.83 per cent. more than among infants of the same age of Philadelphia. These children were, as a rule, in fair health on entering the hospital. Of these infants, 74.69 per cent. died from diarrheal diseases, and only 25.31 per cent. from all other causes. At this period, the records of the foundlings' ward in the Philadelphia Hospital were about the same as the records from the foundling hospitals in other large American cities. Dr. A. Jacobi, at this date, had the courage to point out publicly the enormous mortality in the foundling institutions of New York, and as a consequence was asked to resign from the hospital staff.

What is the condition in our infant hospitals at the present day? My personal opinion is that in the modern infant hospital, where the air space is ample, and the windows are kept open day and night; where the milk is the best and the milk-room thoroughly up to



date; where the ratio of nurses to patients is not less than one to five; where the sick are promptly isolated from the well, and "mothering" is understood—that in such a hospital the physician is an optimist and not a pessimist.

Many of the infants will die, but most of them will live. If one considers that many of those who die are "weaklings" on admission, and that the greatest proportion of deaths occurs in the first three months of life, one is apt to believe that the best of the modern infant hospitals are worthy institutions and should be supported. Much depends on the character of the feeding, but here as ever, the truth that breast feeding is better than bottle feeding is well exemplified.

Of 300 infants admitted to the Dresden Children's Polyclinic in 1900 to 1901, there were 53 deaths. All the deaths, 53 in number, were among the bottle-fed babies. Among 93 breast-fed babies, during the same period, in the same hospital, there was not a death. Breast-feeding is surely a powerful measure with which to combat death.

According to the census of 1900, the infant mortality per 1,000 in the United States was in those states where registration was in force:

	Per 1,000 births.
District of Columbia.....	274.5
Rhode Island.....	197.9
Massachusetts.....	177.8
New York.....	159.8
Connecticut.....	156.8
Maine.....	144.1
New Hampshire.....	172.0
New Jersey.....	167.4
Vermont.....	122.1
Michigan.....	121.3

The census of 1900 shows the returns for infant mortality from many cities and towns of the United States. The infant mortality in some of these cities is very high, over 400 per 1,000 in Charleston, S. C. A number of them show a mortality over 300, and over 100 cities exhibited an infant mortality above 175 per 1,000.

The important point to be decided is as to the influence which has been exerted on this infant death rate in recent years. Have we been able to reduce in any appreciable degree this great and unnecessary waste of infant life? A careful study will show that a great saving of life has been accomplished in recent years, and much will surely be accomplished in the future.

In 1903 the infant mortality of France was 137. In the previous twenty years it was 167, and yet this death rate ought to be still more greatly reduced, for we know that Ireland has an infant death rate below 100. Norway in 1902 had an infant death rate of 75, and Sweden 107 per 1,000.

Of all European countries, Russia has the highest infant death rate, 270 per 1,000. Germany has the next highest mortality, averaging in recent years a little over 200. Medical science and skill have reached a very high plane in both these countries, and infant mortality has been greatly reduced during the last thirty years. It is to be hoped that the useless waste of life in these two countries will quickly be much more distinctly diminished, and it is believed they will soon show as great a reduction as has occurred in France.

There has been a great decrease in the proportion of infants dying under one year of age in the United States during the last twenty years. The infant mortality for the United States in 1880 was 246 per 1,000; in 1890 it had fallen to 159 per 1,000. During the same period the mortality in the cities of the United

States fell from 303 to 184 per 1,000. In New York City in 1891, the death rate in children under 5 years of age was 96.6 per 1,000; in 1896 it had fallen to 77.5 per 1,000, and in 1900 the mortality under 5 years of age was only 67 per 1,000.

Many figures might be quoted showing that in recent years infant mortality has distinctly lessened. In London in January, 1908, the deaths of infants under 1 year of age to 1,000 births, was 115. According to George B. Mangold, U. S. Department of Commerce and Labor, the infant mortality in New York City in 1891 was 241.9 per 1,000; in 1900 it was 191.7 per 1,000; and in 1906 it was 167.8 per 1,000. The mortality has gradually declined. In New York City the death rate of children under 5 years of age was 96 per 1,000 in 1891; in 1904, it was 54 per 1,000. In the same community the deaths from measles, scarlet fever and diphtheria have become distinctly less; and diarrheal diseases in small children have decreased 62 per cent. since 1881.

School nurses are now provided and medical inspection of schools is now well recognized and practiced in many of our large cities. According to Dr. W. M. L. Coplin: "A necessity for medical attention was detected in 27,481 children in the schools of Philadelphia in 1905, and 31,544 children in 1906." Dr. A. C. Abbott, chief of the bureau of health of Philadelphia, shows that in the years 1903-5 a distinct decrease in the infant death rate occurred. Philadelphia shows a very decided decrease in infant mortality since 1897.

Thomas A. Buckland, city chemist for St. Louis, states that there has been a decrease in infantile mortality since 1904. W. Ernest Wende, M.D., health commissioner of Buffalo, states that infant mortality is decreasing in that city. Samuel E. Allen, health officer of Cincinnati, states the proportion of deaths of children under 2 years of age to the total mortality has decreased considerably since 1886. In the year 1886 it was 32.56 per cent.; in the year 1906 it had decreased to 21.92 per cent.

Milwaukee and Minneapolis and the nine largest cities in the State of New York, according to George W. Goler, M.D., show a decrease in infant mortality.

The following have occurred to me as being important factors in lessening infant mortality:

- Abatement of nuisances.
- Milk inspection; milk dispensaries; visiting nurses.
- Free antitoxin.
- Improved sanitation.
- Good food.
- Education of girls and married women in the duties and requirements of motherhood.
- Maternity fund in all industrial establishments where married women are employed.
- Care of poor pregnant women before and after confinement.
- Laws carefully protecting all children who are cared for by private individuals, apart from their parents; rigid enforcement of these laws.
- Elementary principles of hygiene taught in all schools, public and private.
- Nursing of all babies as far as possible, by their mothers.
- Sending children to the country in summer.
- Pasteurizing milk during the hot months.
- Farming out, under proper medical supervision, of foundlings and institution infants, and the appointment of nurses to visit these infants regularly.

1713 Spruce Street.



DEVELOPMENTAL DEFORMITIES OF THE  
CRYSTALLINE LENS.\*

E. TREACHER COLLINS, F.R.C.S.

Ophthalmic Surgeon at Royal London Ophthalmic Hospital and  
Charing Cross Hospital; Lecturer on Ophthalmology at  
Charing Cross Hospital Medical School and at London  
School of Tropical Medicine; Visiting Ophthalmic  
Surgeon to Metropolitan Asylums  
Board's Ophthalmic Schools.

LONDON, ENG.

In the observation brought forward in this paper I propose to show how several forms of congenital cataract are the outcome of arrests of development in the lens at different stages in its formation.

I am, naturally, aware that to attribute a condition to an arrest of development offers only a partial explanation of its etiology, leaving the cause of the arrest still to be accounted for. I think, however, I shall be able to demonstrate that a recognition of the stage at which the arrest of development has taken place, though we do not know the actual cause of the arrest, helps to a clearer insight as to the meaning of the appearances presented by congenital cataracts, and also affords valuable hints as to the most suitable operative measures to employ in their treatment.

For descriptive purposes I propose to summarize the development of the lens into the three following stages, and then to point out how certain arrests of development occur during each stage:

1. The down growth of a fold of cuticular epiblast, which is separated in the form of a hollow vesicle from the rest of the surface epiblast by intruding mesoblast, and becomes surrounded by a hyaline capsule.

2. The lengthening out of the cells composing the posterior layer of the vesicle until they fill its entire cavity. These are the first formed lens fibers and exist as the most central part of the fully developed lens.

3. The proliferation of the cells lining the anterior capsule and their transformation at the sides of the lens into lens fibers. A transformation which is effected by their lengthening out anteriorly and posteriorly, so as to encircle the fibers developed from the posterior layer, lines of sutures resulting where their ends come in contact. This laying on of fresh fibers laterally goes on throughout life, but its rapidity is lessened as life advances by the increasing intracapsular tension tending to check the proliferative activity of the cells.

1. The arrests of development which I have to describe during the first stages have mainly to do with the capsule of the lens.

The hyaline capsule of the lens was at one time regarded as a structure of mesoblastic origin and the product of the fibro-vascular sheath which encircles the lens in fetal life. There is, however, considerable evidence to show that it is really epiblastic in origin and formed as a kind of secretion from the epithelial cells lining it.

This evidence may be considered as embryologic, anatomic, chemical, experimental and pathologic.

Kölliker and Kessler pointed out that the capsule is present before the fibro-vascular sheath makes its appearance. We find also that the anterior and lateral

parts of the capsule continue to grow and thicken with age, long after the vascular sheath has disappeared.

The anterior and lateral parts which are lined by epithelial cells throughout life are markedly thicker than the posterior, which is only lined by cells for a short time during early fetal life. The anterior capsule in the adult lens has been estimated as 0.016 mm. in thickness and the posterior as 0.008 mm.

Though classed as an elastic membrane, it is found not to resemble yellow elastic tissue of undoubted mesoblastic origin, either in its chemical composition or in its staining reactions. In these particulars it has close affinity to the basement membranes of glands, which it is very probable are also the product of epithelial cells.

Schirmer<sup>1</sup> has shown that after experimental wounds of the anterior capsule the gap first becomes closed by some rows of cells resulting from proliferation of the capsular epithelium beneath a layer of fibrin. Later a new hyaline layer makes its appearance across the space left by the retraction of the two extremities of the wounded capsule. This new hyaline layer is evidently the product of the epithelial cells on its inner surface and is formed quite independently of any cells of mesoblastic origin.

In connection with anterior polar cataracts new formations of a layer of hyaline capsule are sometimes met with beneath the opacity. A study of sections from a series of lenses with this form of cataract, which vary in the length of time which has elapsed since its formation, clearly establishes the epithelial origin of these new hyaline layers.

Anterior polar cataract most frequently occurs as a sequel of ulceration of the cornea in infancy; it may, however, be congenital. I have examined anatomically a lens with this form of opacity from an eye with congenital aniridia, in which the cornea was perfectly clear and healthy and had never been inflamed or ulcerated. In this specimen the microscopic appearances of the affected area were precisely similar to those seen in anterior polar cataracts resulting from corneal ulceration.

I have published<sup>2</sup> a description of the histologic appearances of anterior polar cataract in six eyes in which the time which had elapsed from the formation of the opacity to that at which the eye was excised ranged from six weeks to twenty-one years.

In two, in which the opacity was of only six weeks and eight weeks formation, respectively, the changes found consisted in some disintegration of the lens fibers at the anterior pole and proliferation of the cells lining the anterior capsule in that situation. As to which is the primary of these two processes there has been much discussion.

The one theory holds that the primary factor is the proliferation of capsule cells, excited into an excess of activity by the neighboring inflammatory condition of the cornea. It affords, however, no explanation of the occurrence of congenital anterior polar cataract, which, as I have already pointed out, may be present in an eye where there was no history of any inflammation having occurred, and where, after the most careful microscopic examination, not the least trace of any past inflammatory trouble can be detected.

The other theory, in support of which I have myself published some observations,<sup>3</sup> assumes the disintegra-

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908. For lack of space part of the article is omitted. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the reprint will be sent by THE JOURNAL of the American Medical Association on receipt of a two cent postage stamp.

1. Arch. f. Ophth., xxxv, 220.

2. Tr. Ophth. Soc. U. K., xii, 89.

3. Tr. Ophth. Soc. U. K., xviii, 124.



tion of the lens fibers to be the first change. This disintegration apparently results from a localized disturbance in nutrition due to contact of the lens at its most prominent part, the anterior pole, with the inflamed and swollen cornea. In an infant's eye, with its exceedingly shallow anterior chamber and very globular lens, such contact is easily affected. The disintegration thus brought about in the lens substance causes a lowering in the intracapsular pressure in the affected area, so removing the restraining influence which the intracapsular pressure exerts on the proliferating activity of the capsular epithelium and allowing of its irregular multiplication.

The fact that similar changes in the lens are excited by contact with it of a sarcomatous growth of the ciliary body favors this theory. The congenital anterior polar cataracts can be accounted for in accordance with it by imagining the apposition of the lens and cornea, which normally exists for a part of fetal life, to have been abnormally prolonged after the disappearance of the fibrovascular sheath which supplies the lens with nutriment in its early stages.

The mass of proliferated capsular epithelium, which is at first met with in an anterior polar cataract, gradually becomes converted into a condensed mass of tissue showing only a slight lamination and studded here and there with a few flattened elongated epithelial cells which have retained their nuclei. Beneath such a mass epithelial cells, continuous with those lining the capsule in the unaffected parts, gradually insinuate themselves, separating it off from the adjacent lens substance. In an anterior polar cataract of seven months formation I found a continuous layer of such cells on the posterior surface of the laminated mass, at the margins of which the hyaline capsule and its lining epithelium appeared to part company, the former passing in front and the latter behind.

In the course of time, in front of the epithelial cells which pass behind the laminated mass, a hyaline layer, similar in all respects to the lens capsule, makes its appearance. In an anterior polar cataract of eleven years formation I found the laminated mass contained between two unbroken layers of hyaline capsule, both of which were continuous with the capsule in the unaffected region at the sides, the posterior of the two being alone lined by epithelium. That this new hyaline layer of capsule is the product of the epithelial cells which have crept in beneath the laminated mass seems to me an irresistible conclusion.

Anterior polar cataract occurs most frequently in infancy long before the lens has attained its maximum dimensions and density. As age advances new lens fibers are laid on laterally, which, extending backward and forward, separate what were for a time the most peripheral fibers away from the capsule. As already stated, in anterior polar cataract, besides the proliferation of the capsule cells, there is some degeneration of the lens fibers. These are at the extreme periphery of the lens at the time the degeneration takes place; as new lens fibers are developed the disintegrated area and the laminated mass formed from the proliferated cells gradually become separated by them, so that in an anterior polar cataract of long duration two opacities are often seen, the one at the surface of the lens, the outcome of the proliferated epithelium, and the other some little depth down, due to degenerated lens fibers.

In some of the cases seen clinically with two opacities

the separation has not been complete, a thin band cementing them together, so that they presented much the appearance of a collar stud. Presumably in such cases the apposition of the ends of the lens fibers which have grown forward from the sides has not been completely effected, some granular material having remained interposed in the line of suture.

Taking it now that the evidence brought forward suffices to show that the lens capsule is the product of the epithelial cells lining it, it is obvious that the posterior part of the capsule has only a very short time in which it can be formed, for the cells which compose the posterior layer of the lens vesicle soon lengthen out into lens fibers, and then become separated from the lens capsule by the growth around them of the new lens fibers laid on laterally, the posterior capsule for the remainder of life being devoid of any cellular lining. Under these circumstances it is not surprising that defects in the development of the central part of the posterior capsule should occasionally be met with, causing it to be unduly thin or absent altogether.

Several cases have now been recorded in which a congenital gap in the posterior capsule of the lens has been found. The first of the sort so far as I am aware was in a specimen which I described and pictured in 1892.<sup>4</sup>

Two cases, in some respects very similar to this, were described by Parsons in 1902,<sup>5</sup> and he has kindly allowed me to have drawings made from his sections of them.

Having from these cases become aware of the not uncommon association of these defects, I was led to re-examine sections which I had previously prepared with persistent hyaloid artery and atypical development of the vitreous. I found that in those in which I had sections passing across the center of the posterior pole of the lens a gap in the posterior capsule was present. In those in which I had only sections passing through the side of the lens there was some rucking of the posterior capsule suggestive of the possible presence of a defect in the center.

So frequent is a congenital formation of the fibrous tissue in the vitreous met with in association with a defect in the posterior capsule of the lens that I am inclined to think that the latter is the primary condition and the former a kind of compensatory change.

These cases with a congenital defect in the posterior capsule of the lens with fibrocellular atypical vitreous filling the gap or extending forward into the lens substance are not only of considerable pathologic and embryologic interest but also of clinical importance.

In the first case I have mentioned, though clinically a gray reflex was seen at the back of the lens, the lens itself appeared clear. Except for some cortical opacities the same was true of the second case. Microscopic examination of the lenses in both these cases, however, showed extensive changes, which could not be entirely accounted for by the hardening reagents. Both these eyes were removed very early in life, at 9 months and 10 weeks, respectively. I think there can be little doubt that if they had been left some months longer the whole lens in each case would have become opaque.

I have recorded a case<sup>6</sup> in which presumably there was a similar condition behind the lens where such a change was observed to take place.

4. Roy. London Ophth. Hosp. Rep., xiii, 363.

5. Tr. Ophth. Soc. U. K., xxii, 253, 258.

6. Roy. London Ophth. Hosp. Rep. xiii, 365.



In these cases, if the lens substance in front of the atypically developed vitreous became opaque before birth, or if the patient was not presented for examination until it had become opaque, the condition would be diagnosed as one of complete congenital cataract.

If a discission operation was performed some lens matter might be liberated, exposed to the action of the aqueous and become absorbed; but the fibro-cellular tissue at the back would be unaffected by the operation and would remain as a dense opaque membrane which it would be found very difficult to tear or cut with a needle. If its removal was attempted by traction with a pair of forceps, vitreous would be certainly drawn forward with it, and some would probably escape, seeing that the membrane is attached to and really part of the vitreous. If it were to be incised with a pair of iridotomy scissors the gap formed would remain as a simple linear incision and show no tendency to gape, the membrane being such a tough and inelastic structure.

All those who have had experience of operative procedures on congenital cataracts will recognize, in the above, happenings with which they are familiar.

In two cases, shown to me by my friend, Mr. G. W. Thompson, where a tough membrane which could not be torn with a needle was encountered in connection with congenital cataract, the opaque tissue had ultimately been displaced downward out of the central part of the pupillary area. A good clear opening in the line of vision had been thus obtained through which the patient could see, and through which a clear ophthalmoscopic view of the fundus could be obtained. In both these cases a slender fibrous cord was detected passing forward through the vitreous from the center of the optic disc to the back of the displaced opaque membrane, evidently the remains of a central hyaloid artery.

These two cases afford confirmatory evidence that the tough resistant membranes met with in congenital cataracts are frequently due to a malformation of the anterior part of the vitreous. They also, I think, serve to indicate the way in which such cases had best be dealt with. In them a very satisfactory operative result had been obtained by the somewhat accidental displacement downward of the opaque tissue. I would advocate that such displacement, or couching, of the tough membrane should be deliberately carried out. I think in most cases of congenital cataract it is first desirable to perform a needling in the usual way; it serves as an exploratory procedure enabling the operator to judge the consistency of the tissue with which he has to deal; it exposes to the solvent action of the aqueous humor whatever lens matter there may be present. If, as the result of the preliminary needling operation, it is found that there is a tough substance in the pupillary area which is not an anterior polar cataract, then as a subsequent procedure I would suggest that the operation for its displacement should be performed.

In some of the cases I have mentioned with a congenital gap in the posterior capsule of the lens there has been an extension forward of mesoblastic fibrocellular tissue into the lens.

I now come to a class of cases in which through a gap in the posterior capsule of the lens there was a protrusion backward of the lens substance into the vitreous; a class of cases which are known as posterior lenticonus.

For our knowledge of the anatomic changes in posterior lenticonus we are largely indebted to Carl Hess.

An excellent little monograph, recording some fresh cases and summarizing the literature of the subject, was published by André Patry.<sup>7</sup>

The views put forward as to the cause of posterior lenticonus are classed by Patry under two headings:

1. The rupture of the posterior capsule (as he terms it) is due to an increased size of the lens.
2. The rupture and deformity of the lens are both due to traction produced by the hyaloid artery.

Through the kindness of my friend, Mr. Mayou, I have had the opportunity of examining the sections of two microphthalmic eyes<sup>8</sup> showing posterior lenticonus.

Neither of the two theories already referred to adequately explain the causation of posterior lenticonus when all the recorded cases are considered together, and I would suggest that a better explanation is to be found in regarding the gap in the posterior capsule as a defect in development rather than a rupture. The fact that Hess<sup>9</sup> has found and pictured the condition in a chicken embryo 150 hours old is, I think, strongly in support of this view. As I have pointed out, the development of the capsule at the posterior pole has to be completed exceedingly early and should it fail to form there is no means in later life by which the defect can be made good.

The gradual growth of the lens would cause such a gap to expand, and if not too much blocked up by fibrous tissue formation in the anterior part of the vitreous the lens fibers at the posterior pole would protrude through it, forming the conical projections which are met with.

In some cases the faulty development appears not to result in a complete absence of the capsule at the posterior pole, only producing an undue thinness and weakness, which on growth of the lens results in a bulging outward in that region.

Of the backward displacement of the nucleus of the lens, which is met with in these cases of posterior lenticonus, I shall have more to say later on.

The points which I have endeavored to bring out in the foregoing observations on the development of the lens capsule may be summarized as follows:

- A. The lens capsule is the product of the epithelial cells lining it.
- B. The time during which the posterior capsule of the lens has to complete its development is exceedingly short as the cells forming the posterior layer of the lens vesicle soon lengthen out into lens fibers and become separated from the capsule.
- C. Congenital gaps in the posterior capsule are met with which are bridged across by fibrous tissue formation in the anterior part of the vitreous.
- D. This fibrous tissue formation in the vitreous, which sometimes contains blood vessels from the central hyaloid artery may extend through the gap in the posterior capsule. An admixture of mesoblastic and epiblastic tissue within the lens capsule resulting.
- E. This fibrous tissue formation at the back of, or within the lens capsule, accounts for those cases of exceedingly tough, shrunken, congenital cataracts which show little tendency to absorb after discission.

7. Sur l'histologie et l'étiologie du lenticonne postérieur, Genève, 1906.

8. Reported in Tr. Ophth. Soc. U. K., xxiv, 340.

9. Pathologie und Therapie des Lensesystems. Handbuch der Gesamten Augenheilkunde, vi, 201.



F. The protrusion of lens substance through a congenital gap in the posterior capsule, or the bulging of a congenitally thin posterior capsule, offers the best explanation of cases of congenital posterior lenticonus.

2. Passing now to defects occurring during the second of the three stages into which I split up the development of the lens: that in which the nuclear fibers are formed from the cells lining the posterior part of the lens vesicle.

Before the lens vesicle has become completely closed anteriorly the cells which come to form its posterior layer show signs of elongation. After the vesicle is complete the elongation progresses, continues until its whole cavity is filled by these cells transformed into lens fibers. These lens fibers later become surrounded by others laid on at the sides and form the nucleus of the lens.

If the cells forming the posterior layer of the lens vesicle for some reason failed to lengthen out into lens fibers, then no nucleus of the lens would be formed and the laterally developed lens fibers would have nothing to encircle.

I wish to point out that there is a form of congenital cataract in which the pathologic appearances are best explained by considering such an arrest of development in the nucleus to have taken place.

The clinical appearances of these cataracts are, I think, such as allow of them being differentiated from other forms of congenital cataract, and the recognition of their nature is of some practical utility in their treatment by operative measures.

The condition is one which has been spoken of as disc-shaped cataract and four cases have been published in which anatomic examinations have been made. The first by Becker<sup>10</sup> in 1883, one by Vossius<sup>11</sup> in 1893, one by myself<sup>12</sup> in 1898, and the other by Hess<sup>12</sup> in 1905.

The appearance of the lenses in anteroposterior section has been figured in the three last, a comparison of the three figures and the descriptions given show that they presented the same chief characteristics. These are as follows: Flattening of the lens anteroposteriorly, most in the center: so that in a section a rounded mass is seen on each side connected by a band, an appearance comparable to that of a dumb-bell. In the central flattest part of the lens, a laminated mass of tissue is situated, similar to that met with in anterior polar cataract: it extends backward from the anterior to the posterior capsule, no lens substance intervening. In the rounded parts at either side of the central laminated mass there is lens substance, showing a variable amount of disturbance in the vicinity of the central part, and becoming more normal and regular in its arrangement toward the periphery.

Evidently in these lenses there is an entire absence of the nucleus. Its failure in development does not seem, however, to have checked the activity of the cells lining the anterior and lateral parts of the capsule. The laminated mass in the center is, as I have said, precisely similar in appearance to the laminated masses met with at the anterior pole of the lens in anterior polar cataract. These, as I have shown in the early part of this paper, result from the proliferation of the cells lining the anterior capsule, as the outcome probably of a de-

crease of the intracapsular pressure in their vicinity. In these lenses, in which the nucleus fails to develop, there would likewise be an abnormally low intracapsular pressure in the neighborhood of the anterior pole of the lens, and so the formation of a large anterior polar cataract is what might be expected.

The activity of the cells lining the sides of the capsule not being interfered with, a formation of the laterally developed lens fibers has taken place. These having no nucleus around which to group themselves have formed accumulations at the sides of the anterior polar mass, with irregularities and vacuolations of varying distribution.

I have seen several congenital cataracts clinically which I think there can be little doubt belonged to this class. In some the results of operation tended to confirm the diagnosis.

The appearances which seem to be characteristic of this condition are: The presence of a dense, circular, central white opacity, which, while extending to the anterior capsule, is at a distinctly deeper level than that of the surface of the iris at the pupillary margin; some irregular grayer opacity in the immediate vicinity of the central white patch, in which the latter appears to be set. With an undilated pupil this central opacity may fill the whole of its area and appear to be a much shrunken opaque lens. If, however, a sufficient dilatation of the pupil can be obtained, a peripheral clear area is discovered. If an iridectomy is performed, the edge of the lens will become visible, but it will be seen not to present its normal rotundity, appearing too thin from before backward.

When a discission operation is performed on these cataracts with a little manœuvring the white central opaque part can be separated from the rest of the lens, and will then probably drop down into the lower part of the anterior chamber, where it may remain for an indefinite time, showing no tendency to become absorbed or giving rise to any irritation. When the dense white patch has been picked off in this way a central black opening is left, as can be easily understood from a study of the anatomy of these cataracts. After discission a small amount of lens matter usually becomes liberated and absorbed, but comparatively only a very small amount to what is so affected in other cataracts.

In this class of congenital cataracts, most satisfactory results are to be produced by needling operations, especially if the nature of the condition which is being dealt with is recognized. One or two discissions usually suffice to allow of good vision.

In a child of 18 months with this form of cataract whom I operated on in January, 1906, I succeeded in each eye in tearing away the central dense white plaque which appeared to have calcareous matter in it. In each eye it has fallen into the lower part of the anterior chamber and remained there since. After its separation a good central opening through which a clear view of the fundus could be obtained was left.

3. My third stage in the development of the lens is concerned with the formation of the laterally developed lens fibers which surround the nucleus.

In the last class of cases dealt with, some dystrophic influence, acting on the lens vesicle exceedingly early in fetal life, resulted in the failure in formation of the lens fibers which develop from the cells of the posterior layer of the vesicle, but had not prevented the next stage in the formation of the lens, viz., the development of

10. Zur Anatomie der gesunden und kranken Linsen, Wiesbaden, 1883.

11. Beitr. z. Augenb., ix.

12. Handbuch der gesamten Augenheilkunde, vi, 145.



lens fibers laterally from the cells at the sides of the capsule.

It is easy to imagine the exact reverse of this taking place, i. e., a normal, or comparatively normal, development of the lens fibers from cells forming the posterior layer of the vesicle, and the occurrence of some dystrophic influence later, interfering with the development of the laterally formed lens fibers.

Such an occurrence, I would suggest, offers an adequate explanation for another variety of congenital cataract which is met with, also presenting distinctive clinical characteristics. It is that form of congenital cataract in which a small nucleus, comparatively well formed, is met with in a capsule distended with opaque milky fluid, which latter has resulted from the proliferative activity of the cells at the sides of the capsule instead of lens fibers.

Clinically this form of congenital cataract presents the appearances of a Morgagnian cataract of late life. It has a characteristic milky white, homogeneous color, and sometimes shows chalk white specks on the surface.

I have operated on several congenital cataracts of this description; when the capsule is pricked with a needle there is an escape of the milky white fluid, often containing some flocculent particles, into the anterior chamber. In two cases in which I left the opaque fluid in the anterior chamber, I found the needling operation followed in the course of twenty-four hours by increase of tension. I now always adopt the precaution of evacuating it after making an incision with a broad needle.

The lens fibers developed laterally are formed by the lengthening out, forward and backward, of cells derived from proliferation of those composing the anterior layer of the lens vesicle. They gradually come to encircle the nuclear fibers developed from the cells of the posterior layer of the lens vesicle, and so cut it off from contact with the lens capsule. The separation of the original nuclear lens fibers from the capsule gradually increases with the growth of the lens.

Some laterally formed lens fibers lengthen out most backward and others most forward, but in the normally developed lens the nucleus is situated equidistant from the anterior and posterior capsule. Displacement backward of the nucleus of the lens is met with as a congenital malformation, there being a partial or complete failure in the backward growth of the laterally developed lens fibers; complete failure is sometimes due to adhesion of the nucleus to the posterior capsule.

Patry, in his monograph of *lenticonus posterior*, in which he analyzes the histologic appearances in sixteen recorded cases, says:

The nucleus is often (8 cases) situated very near the posterior pole, sometimes in immediate contact with the posterior capsule. This position is most often in association with a rupture of the posterior capsule.

As I have already pointed out, where he speaks of rupture of the posterior capsule in connection with this condition, I should say failure of development.

Knies<sup>13</sup> has suggested as an explanation of the changes in some cases of congenital axial cataract which he met with; that adhesion of the nucleus to the anterior and posterior capsule had taken place, and that consequently it assumed a spindle-shaped formation on the expansion of the lens by the development of cortical fibers laterally.

Vossins<sup>14</sup> adopts the same explanation for a case of

this in which there was in one eye a typical anteroposterior fusiform opacity, and in the other an anterior polar opacity and a lamellar cataract with a filamentary opacity passing between the two.

There is a variety of congenital axial cataract termed by Gunn<sup>15</sup> "coralliform" for which it seems to me difficult to accept the explanation suggested by Knies for his cases. In this coralliform cataract, tube-like opacities are seen to radiate forward and outward from the center of the lens toward the capsule and end in an ampulliform manner. In the absence of any histologic proof of the nature of such opacities, I would suggest that they are probably situated in the lines of suture between the fibers.

The lines of suture between the ends of the lens fibers vary in their arrangement in different animals, and in the human lens the arrangements which are met with in different animals are met with at different levels in its substance.

In the most primitive form of lens, such as the globular lenses of some fishes, all the lens fibers extend from a central point anteriorly to a central point at the posterior pole, and the suture passing anteroposteriorly is a single straight line.

The simplest divergence from this arrangement is for the ends of the lens fibers, instead of meeting at a point to meet along a line; the line at the anterior pole being at right angles to that at the posterior. This permits of some shortening of the lens fibers, those which have to extend farthest anteriorly not having to extend so far posteriorly, and *vice versa*.

A further modification effecting the same purpose is for the line of junction of the fibers to have a triradiate arrangement, the three arms of the triradiate figure at the anterior pole being situated in the reverse direction to those at the posterior.

A more elaborate arrangement still is the formation of a star-shaped figure with primary and secondary radiations along which the ends of the fibers come into contact.

The human lens in fetal life is at first globular; the fibers which are developed from the posterior layer of the secondary vesicle, and which form the extreme nucleus in the adult lens, have their extremities all meeting anteriorly and posteriorly.

As new lens fibers are laid on at the sides the lens alters in shape; the lateral diameter increases more than the anteroposterior. A different mode of meeting of the lens fibers at the surface is then met with. At birth the simple triradiate figure at the anterior and posterior pole is seen.

With the further growth of the lens and the formation of fresh cortical layers, the simple triradiate suture becomes in them replaced by the more complicated star, which at the surface of the lens in the adult is seen to present primary and secondary radiations.

In sections of the human fetal lens or of the lens at birth, the lines of suture running anteroposteriorly between the laterally developed lens fibers can easily be seen. Where the hardening of the lens has been imperfectly carried out and the lens fibers have shrunk, some expansion of the lines of suture frequently takes place. In sections of the adult lens the lines of suture are not to be detected.

It is well known that in both congenital cataracts and in cataracts occurring in late life disturbance may take

13. Arch. f. Ophth., xxiii.

14. Beitr. z. Augenh., ix

15. Tr. Ophth. Soc. U. K., xv, 119.



place at the surface of the lens in the lines of junction between the lens fibers, resulting in a superficial tri-radiate or star-shaped opacity. What I now suggest is that disturbance in the lines of sutures, not only at the surface, but also in their course as they radiate forward and outward from the nucleus, accounts for lines of opacity in congenital cataracts which are seen to radiate in that direction.

The defects which I have described as arising during this third stage of development in the lens may be summarized as follows:

1. The formation of congenital Morgagnian cataract from failure in development of the lens fibers laid on laterally and their replacement by opaque albuminous fluid.

2. Congenital displacement backward of the nucleus of the lens, associated with a defective growth backward of laterally developed lens fibers.

3. Congenital fusiform axial cataract (of Knies and Vossius), due to adhesion of the nucleus of the lens to the anterior and posterior capsule and defective growth forward and backward of the laterally developed lens fibers.

4. Axial opacities radiating forward and outward from the nucleus and located in the lines of sutures between the lens fibers laid on laterally, which run in that direction.

In conclusion, I would, as the outcome of my clinical and anatomic studies, make the following suggestions concerning the treatment of congenital cataract.

First.—To wait until a child is 10 months old before operating. At an earlier age the cornea is so small and the anterior chamber so shallow that the necessary instrumentation can not be so satisfactorily carried out as in the more fully developed eye. Moreover, the amount of aqueous humor is so small that it does not suffice for the solution of the liberated lens substance.

Second.—In some cases in which the pupil is small and does not dilate well with atropin it is best to commence with an iridectomy.

Third.—In nearly all cases it is well to begin with a needling. For valuable information can be obtained by its means as to the thickness of the capsule and consistency of the lens should it fail to liberate much lens matter to the action of the aqueous.

Fourth.—If the cataract is a dense, white, anterior polar one, set in a ring of clear, or partially clear, lens substance, and apparently flattened from before backward (the so-called disc-shaped cataract), then an attempt should be made to separate the central white opacity with a needle and let it fall into the anterior chamber. Two needles are sometimes required to effect this.

Fifth.—If on pricking the capsule, milky-white fluid escapes into the anterior chamber (congenital Morgagnian cataract) it is well at once to evacuate this fluid, for fear of increased tension ensuing.

Sixth.—In some cases of congenital cataract the whole lens and capsule can be removed in a most satisfactory way by grasping it with forceps. Very often, however, such a procedure is followed by escape of vitreous. It is difficult to differentiate which cataracts can be safely dealt with in this manner. They generally seem to be complete cataracts with a tough capsule and lens matter of a gelatinous consistency.

Seventh.—If after a needling and some absorption of liberated lens matter, a dense, tough, white, fibrous-looking membrane remains, there is probably some atyp-

ical development of the anterior part of the vitreous. An attempt had then best be made forcibly to displace the membrane downward and backward out of the axis of vision.

## Original Articles

### OCCURRENCE OF SPONTANEOUS ARTERIAL DEGENERATION IN THE RABBIT.\*

RICHARD M. PEARCE, M.D.

From the Bender Laboratory.

ALBANY, N. Y.

As one of the earlier investigators of lesions of the vascular system occurring in the rabbit after intravenous injections of adrenalin<sup>1</sup> I have been interested in the observation of Drs. Miles and Johnstone<sup>2</sup> concerning the frequent occurrence of spontaneous arterial lesions. These investigators suggest that the vascular lesions, ascribed by many observers to the injection of adrenalin, are in reality of spontaneous origin. In support of this view they present the results of the examination of a large number of normal rabbits in which lesions similar to those produced by adrenalin occurred with equal or greater frequency.

The inevitable conclusion is either that the spontaneous lesions are common and that the individuals working with adrenalin have been careless about their controls, or that rabbits of certain localities, or those raised or kept under certain conditions, are peculiarly prone to spontaneous lesions. The first of these conclusions has been met by Dr. Joseph L. Miller,<sup>3</sup> who points out that in Jores exhaustive review of the many attempts, often on a large scale, to produce arteriosclerosis experimentally there is no mention of successful results. These experiments included the use of a variety of substances and in by far the larger number the rabbit was used. Furthermore, during the past few years many attempts have been made to produce arterial lesions by subcutaneous and intraperitoneal injections of adrenalin as controls of the intravenous administration; a procedure necessitating a very careful comparative study of the rabbit's vascular system.

The only spontaneous lesions, according to Miller, which were described previous to the work of Miles and Johnstone were the slight changes described by Fisher in poorly nourished animals, a single instance reported by Ophüls and possibly the atheroma, in two rabbits, ascribed by Croftan to injections of hypoxanthin. Miller, moreover, points out that in Loeb's series of 100 normal rabbits and Meronescu's of 300, no lesions were found and also that the subcutaneous adrenalin injection experiments of Miles and Johnstone are of no value. The weight of evidence, therefore, does not support the suggestion that spontaneous lesions are general but have been overlooked by the neglect of control observations.

In this respect, however, I must admit my negligence in not reporting control observations in my earlier communication. Control observations were made on a small number of animals with entirely negative results, but on account of the small number were not published. During the past winter, in order to determine the incidence of spontaneous lesions in the rabbits supplied to

\* Work done under a grant from the Rockefeller Institute for Medical Research.

1. Jour. Exper. Med., 1906, viii, 74, 400; Am. Jour. Med. Sciences, 1906, cxxxii, 737.

2. THE JOURNAL A. M. A., Oct. 5, 1907.

3. THE JOURNAL A. M. A., 1907, xlix, 1789.



the Bender Laboratory. I have examined 62 animals. Except for six pairs obtained from dealers in Pittsfield and Brookline, Mass., these animals were procured in the neighborhood of Albany, usually in small lots of one, two or three pairs, and in large part were animals which had been caught in the fall and domesticated but a short time. Of these, 51 may be considered presumably normal animals in that they had not been used previously for experiment of any kind, or were used only on the day of killing for blood pressure experiments or to obtain blood or fresh organs. They also represent animals which, in that they were used shortly after purchase, did not pass through a long laboratory life. They may be grouped roughly according to size into three groups of about equal number as large, small, and medium size. Vascular lesions were found in but three; these consisted, in each, of a few minute patches at the beginning of the aorta. All were large animals and presumably full grown.

Of the remaining eleven animals, one suffered from an abscess of the hip; three had received repeated injections of dog's serum; one, nephrotoxic serum; one, human blood; one, typhoid bacillus and three, chrome salts. These were all in the laboratory for several weeks or months. In this group lesions of the aorta occurred in four; in the animals receiving, respectively, injections of typhoid bacillus, dog serum, nephrotoxic serum and human blood. In two of these the lesions were diffuse involving irregularly the entire aorta and comparable to those produced by adrenalin. In the other pair a few small areas were present at the beginning of the aorta only.

This control study shows that spontaneous lesions were found in three of 51 presumably normal rabbits or in practically 6 per cent., or, if the animals used for various experimental purposes are included, in 7 of 62 animals or 11 per cent. This last view, however, is hardly fair, for as the lesions were present in four animals of the second group, or in 36 per cent., it cannot be denied that the experimental procedure may possibly have had some share in their production. Certainly the influence of typhoid toxin and alien sera can not be entirely set aside in view of our knowledge of the very general degenerative changes which these substances cause.

In this connection it may be mentioned that Israel<sup>4</sup> in his study of the relation of heart hypertrophy to experimental nephritis has described and pictured a very diffuse lesion of the aorta in a rabbit receiving injections of alcohol directly into the kidney. This observation has been quite generally ignored in the recent literature of experimental arteriosclerosis; but Israel's illustration plainly pictures a lesion of the aorta not to be distinguished from that caused by adrenalin.

It would appear, therefore, that while spontaneous arterial degeneration may occur in the rabbit, it is not as constant a condition in all localities as the investigations of Miles and Johnstone indicate. Moreover, the figures here presented offer a satisfactory control of my earlier report on the general subject of experimental arteriosclerosis due to adrenalin and the later report in which I conclude that single doses of adrenalin may cause arterial lesions, a conclusion which might appear doubtful if viewed only in the light of the experiments of Miles and Johnstone.

In my opinion the occurrence of spontaneous lesions in the rabbit does not diminish the importance of the

lesions due to adrenalin, but on the contrary, increases their importance, as an example of a lesion occasionally occurring naturally, but which may readily be produced experimentally. The rabbit thus becomes a peculiarly valuable animal for the study of vascular lesions, for the interest of the adrenalin lesion lies not so much in its arteriosclerosis-like nature as in the opportunity offered for the study of degenerative and reparative lesions of arteries.

The possibility of a variety of factors operating to cause vascular injury is suggested by the four positive findings in the second group of 11 rabbits. The contrast with the first group is very striking and would indicate that a study of the arterial system of a large number of rabbits, kept under a variety of conditions, and subjected to various experimental procedures, would yield results of great value concerning chronic vascular lesions.

Finally it may be stated that the demonstration of these spontaneous lesions in no way vitiates the importance of the experimental lesions but does demand a very careful control study of the rabbits in each locality in which experiments are made.

### THREE CASES OF CEREBELLAR TUMOR.

OPERATION IN TWO CASES; RECOVERY IN ONE.\*

WHARTON SINKLER, M.D.

PHILADELPHIA.

The subject of tumors of the cerebellum has excited much interest during the past few years and the question as to the advisability of operation is still a mooted one. It seems desirable, therefore, to add to the literature all the cases possible, so as to throw more light on the subject, and this is my excuse for reporting at this time only three cases of cerebellar disease. These all, however, exhibit some interesting and instructive features.

Opinion varies widely as to the beneficial results of operation. For example, Sachs says that out of twenty-three of his patients, not one was cured. Operation was done in seven of these cases, but without recovery. Frazier, in 1904, collected reports of one hundred and sixteen cases of operation on the cerebellum, with recovery in 15 per cent. Starr, in 1903, gave as a result of operation in fifty-eight cases of tumors of the cerebellum, recovery in sixteen; that is, he states that the tumor was removed and the patient recovered.

It seems, therefore, as if there should be some more definite understanding as to the meaning of recovery. If an author means by recovery that the growth has been removed and the patient survives a few weeks, it is a very different thing from a case in which there has been no return of symptoms for two or three years; and one cannot help feeling that writers mean different things when they give such different results.

In the cases reported by me, one patient recovered from the operation, and when seen seven months later, he was apparently in perfect health. In this case, the growth was a cyst, the contents were evacuated and the wound closed. The patient when seen had no headache, his gait was normal and his mental operations were good. His vision, however, was practically lost. In the right eye he was totally blind, and in the left there was

4. Virchows Archiv., 1881, lxxxvi, 299.

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.



only sight enough to enable him to go about and read very large type. The vision in this case failed rapidly after the operation, although the swelling of both discs subsided very rapidly.

In the second case the patient had shown no signs of brain disease until nine weeks before she came under observation. Her symptoms progressed so rapidly and vision had begun to fail to such an extent that, although there were no definite localizing symptoms to indicate a point for trephining, it was thought advisable to do a decompressive operation. Dr. Mills saw the patient with me and on account of the nature of the symptoms thought it possible that the lesion might be located in the vermis; at any rate, it seemed as likely that the tumor was situated in one hemisphere as the other. There was paralysis of the sixth nerve on the right side and this fact made us select a point over the right hemisphere for making the first trephining. No growth was found at operation, but at the autopsy which was made thirteen days later, a tuberculous tumor was found in the anterior part of the right hemisphere of the cerebellum, infringing on the medulla and making a marked depression in its right side. In the left hemisphere were two smaller tumors. The fact of there being a growth in each hemisphere would account for the bilateral symptoms presented by the patient during life. In walking, she would sometimes pitch to one side and sometimes to the other. In this case, although the swelling of the discs subsided in a remarkable manner after the operation, the vision continued to fail.

These two cases teach us that in order to save vision an operation must be done at an early date.

A point of interest in the third case is that sudden death occurred while the patient was in fairly good condition. Sudden death in brain tumor is not unusual. I have seen two or three instances of this myself. A lesson to be learned from this case is that, had an early operation been done, the patient would probably have been cured of his trouble because the tumor was found postmortem to be one which could have been readily removed. This is another example of the importance of early operations in tumors of the cerebellum. If one comes to the conclusion that an operation must be performed, it is worse than useless to delay to try the effect of drugs, or for any other reason. In the words of Macbeth: "If it were done when 'tis done, then 'twere well it were done quickly."

**CASE 1.—Patient.**—G. H., was seen in consultation with Dr. Louis Jurist on Sept. 15, 1907. The boy was 10 years old. The parents were both healthy and two brothers and two sisters were healthy. The father admitted that he had a specific urethritis, but denied any history of syphilis in himself or family.

**History.**—Fourteen months previously, in July, 1906, the boy was hit in the eye with a wooden peg. He became sick at his stomach, vomited and had severe headache for some time afterward. There was no further trouble after this. One year ago he began to complain of pain in the occipital region. This constantly grew worse, and in June, 1907, he would often vomit during the severe headaches. These violent attacks usually occurred in the early morning. Five weeks ago he had severe headache and vomiting, which lasted for three days. The eyes were examined by Dr. Schneideman, who found that both optic discs were very much swollen. The patient was admitted to the Orthopedic Hospital and Infirmary for Nervous Diseases, Sept. 28, 1907.

**Examination.**—The patient was found to be a well-nourished boy, but of pale color. In walking there was distinct incoordination and a tendency to pitch toward the left side. There was no loss of power in either arm or leg. When the mouth was opened it was drawn slightly to the right. The tongue

was protruded straight. The pupils were large and equal. The vision was very poor. The knee-jerks were normal and equal. The plantar reflex was normal; there was no Babinski phenomenon or ankle clonus. The heart and lungs were normal. The tongue was coated, but the patient's appetite was good and the digestion seemed fair. The conspicuous symptom was pain in the head. This was quite violent and was referred to the occiput. There was more or less pain all the time, but there were attacks of severe headache with vomiting. There was no tenderness over any part of the scalp.

After admission to the hospital the pain in the head lessened in severity, and it was not until October 5 that the boy had a severe headache. After this time the headaches increased in frequency, and the boy's walking became worse; he staggered considerably, deviating to the left. The station was poor and he was unable to stand with the eyes closed.

**Diagnosis.**—Dr. Charles K. Mills kindly saw the patient in consultation and agreed with me that the case was one of tumor of the cerebellum, and that it was probably in the left hemisphere. Dr. W. J. Taylor was asked to see the patient with a view to operation, and after consultation it was decided to open the skull and attempt to remove the growth.

**First Operation.**—The following notes have been furnished by Dr. W. J. Taylor: Oct. 12, 1907. Ether was given as an anesthetic and a curved incision made over the cerebellum on the left side. The skin and soft tissues down to the bone were deflected, and there was now tremendous hemorrhage, probably from the veins leading from the bone to the scalp. The patient's prostration was out of all proportion to the amount of blood lost. The hemorrhage from several of these sinuses, or veins could be controlled only by plugging the opening in the bone with bits of sterile wood, and Horsley's way was used freely all over the surface of the bone. With the chisel a small opening was made in the skull and then enlarged to about an inch and a half in diameter with the rongeur forceps. The patient's condition was now so alarming that it was deemed best to pack the wound and wait for him to recover from the shock. The dura, therefore, was not opened, although it was very tense and bulging. The patient's general condition was so bad that intravenous saline injections were given and a variety of stimulants employed hypodermically.

In spite of the great loss of blood and the shock, he recovered very satisfactorily from the effects of the operation. At Dr. Sinkler's suggestion, it was decided to wait before doing anything further to see if this decompression would relieve the patient's symptoms. He was very much relieved of his headache, but by November 2 the headache had returned, there was cerebral vomiting, and his condition was steadily growing worse.

**Second Operation.**—He was therefore again given ether and the flap of the skin over the former wound was carefully dissected away from the dura. The dura bulged very much more than at the first operation, and there was little or no hemorrhage from the scalp. The dura was incised by a curved incision, and immediately the cerebellum tissues pushed out through the slit that was made. This was rapidly enlarged, and the brain bulged at least one inch above the surrounding dura. While dissecting off the dura—for it was adherent at one or two points where it had to be stripped off with the finger—there was noticed a slight difference in appearance of the surface of one of the convolutions near the mastoid side of the wound. This change was so peculiar in its character that I had just said that here undoubtedly was a tumor, when a cyst gave way and a spurt of serous fluid was ejected with such force that it went three feet away from the wound. The column of the fluid was nearly the size of a pencil. Of course, it was impossible to collect any of this fluid for examination, but its consistence and appearance was that of an ordinary pleuritic effusion. Immediately the cerebellum collapsed, and instead of there being a protrusion there was a depression in the wound. The opening in the cyst was then slightly enlarged, and it could be seen that there was a thin-walled cyst, the wall of which could not be dissected out. There was no evidence of malignancy or induration about it. A small drain of iodoform gauze was carried down to and into the opening of the cyst and the dura was closed over it.



*Later History.*—The patient made an absolutely uninterrupted recovery; indeed, by the next morning he said that he felt perfectly well. All of his pain was gone and he did not vomit once, even from the ether. In three or four weeks he was walking about and feeling as well as usual. Seven months later he was in good health, but had been admitted to an asylum for the blind.

*Eye Examination and History.*—Oct. 1, 1907, the vision of the right eye was 6/0 —; of the left eye 6/6—. The pupils measured 4.5 cm. and reacted normally to light, forced convergence and accommodation. Ophthalmoscopic examination revealed pronounced choked discs, the height of the swelling being between 6 and 7 D. At the lower edge of the swollen disc of the left eye there was a large retinal hemorrhage. No macular changes were noted in either eye. The visual fields were concentrically contracted for form and colors. These examinations were made by Dr. Holloway, and seven days later repeated by Dr. de Schweinitz, who found an increase in the swelling of the right optic disc, the height of which was now 8 D., while the left optic disc remained about the same, namely, 7 D.; no change in the other ocular conditions previously noted, and no palsy of any exterior ocular muscle. Convergence, however, was poor, the left internus being the weaker.

The next ocular examination was made Oct. 18, 1907, or six days after the first operation, at which there had been excessive hemorrhage. At this examination Dr. Holloway found the height of the swollen disc of the right eye to be 7 D., and therefore slightly less swollen than it was on October 8. An added ophthalmoscopic appearance was the formation of a complete stellate figure in the macula, composed of milky-white striae, at the outer limits of which were several small hemorrhages, and adjacent to them a thin, diffuse hemorrhage. There was also one fresh hemorrhage on the temporal side of the swollen disc. The height of the swollen disc of the left eye was 7 D., and in the macula a number of fine, yellowish-white dots had formed, which were associated with several punctate hemorrhages. Seven days later there were practically no ophthalmoscopic changes, except that in the left eye the previously fine punctate spots had begun to form by coalescence a stellate figure.

November 2, three days after the second operation, Dr. de Schweinitz found a notable diminution in the swelling of each optic disc, that on the right side being reduced to between 3 and 4 D. in height, therefore a lessening of practically 4 D., while on the left side the disc measured between 5 and 6 D., or from 1 to 2 D. less than it had been prior to the second operation. There was marked depreciation of central vision of each eye. Again, five days later there was still further reduction of the visual acuity, so that now the right eye had only doubtful light perception, while in the left eye the vision was reduced to 4/20 and one letter of 4/15. There was still further reduction in the height of the swollen discs, which now on the right side measured about 3 D. and on the left side between 4 and 5 D.

At the next examination, on November 15, the right eye was found to be entirely blind and the vision of the left eye 5/15—. There was no light reflex of the right pupil, but the left pupil responded promptly to light. The conditions of the discs were about the same as at the last examination, and continued so, with gradual loss of vascularity and reduction in the height of the swelling, until December 6, when the vision of the right eye was, as before, entirely obliterated, and of the left eye about 6/30.

The evidence of marked postpapillitic atrophy, most pronounced on the right side, were clear, and the swelling of the discs had almost disappeared.

On Jan. 10, 1908, the right eye was entirely blind and the left eye had a vision of 6/60. There was pronounced post-papillitic atrophy on both sides.

This condition of affairs had continued until the present time, and at the last examination, on March 27, 1908, both discs now being flat and showing well-marked atrophy, the visual field of the left eye was reduced in size and color perception practically lacking. The vision of 6/60 was still retained.

Exactly how soon after the first operation the depreciation of central visual acuity began can not be stated, owing to the

fact that the boy's condition was such that no accurate tests could be made. In spite of the rapid reduction in the swelling which took place after the second operation and the evacuation of the cerebellar cyst, atrophy of the optic nerve on each side rapidly supervened. This unfortunate result in an otherwise brilliant case from the surgical standpoint has been noted in other instances in which there has been excessive hemorrhage, and it is not improbable that to such excessive hemorrhage this atrophy should be attributed, owing to a rapid deterioration of the ganglion cells. In any event, if the vision of 6/60 is retained, which now seems likely, the operation saved the boy from total blindness, which otherwise must certainly have taken place.

*CASE 2.—Patient.*—M. K., aged 16, a girl, had been employed in an overall factory for seven months and was admitted to the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases, April 21, 1908. Her family history was negative, as far as could be ascertained.

*History.*—She seemed to have enjoyed good health; there was no history of injury. The present condition developed about nine weeks previous to admission, with violent, persistent pain in the head, projectile vomiting after taking food, unsteadiness of gait and double vision. She had grown steadily worse.

*Examination.*—She was found to be a thin, poorly nourished girl, quite tall and slender. There was an internal strabismus of the right eye, the result of paralysis of the right externus; and she kept the right eye closed much of the time in order to secure single vision. The resident physician thought that there was ptosis of the right lid, but this was uncertain. At any rate, in the course of three or four days whatever ptosis there had been had entirely disappeared. The thyroid gland was somewhat enlarged, especially the right lobe. The heart's action was rapid, but there was no murmur. There was distinct impairment of resonance at the right apex. Examination of the abdomen was negative. The patient's walk was very unsteady. Sometimes she pitched to the right side and sometimes to the left, and often would fall if not supported. In standing her station was bad, with the eyes open or shut. It was a little worse with the eyes open, but did not grow decidedly worse after long standing. There was a distinct tendency to sway backward while standing, and the patient often had to be held to keep from falling. There was no change in sensation in any part of the body, and no paralysis in any muscle or group of muscles. There was a lack of facial expression, but the movements of the face were equal on both sides. The knee-jerks were completely absent; the plantar reflex was present. The patient had no cough and had a fairly good appetite. She was ordered rest in bed, soft diet, potassium iodid 10 gr. three times a day, the dose to be increased one grain three times a day; inunction of mercurial ointment daily.

*Eye Examination.*—The examination of the eyes was made by Dr. Holloway on April 24. He made the following report: "O. D., 6/6; O. S., 6/6; pupils equal—larger than average. They react to light and to indirect accommodation and convergence. Media are clear. The patient has a bilateral optic neuritis, more extensive on the right side. The veins are much fuller on the right. There is no exudate in the macular region and there are no pronounced hemorrhages. The height of the right disc is 4 — 4½ D.; left disc 3½ — 4 D.; fundus, 1 — D. The patient has a paresis of the right external rectus. On rotation of the eyes to the left, the left eye attains full limits, but excursion is not well maintained. On rotation to the right, the right eye goes to within ¼ inch of the left canthus. There is a slight convergent squint in the left eye. On lateral rotation there are nystagmoid movements at the outer limit, slight when rotated toward the right, more pronounced when rotated toward the left; no nystagmoid movements on vertical rotation." Four days later, April 28, Dr. de Schweinitz made an examination of the eyes and reported: "Right eye vision, 6/9 — 6/6; left eye vision, 6/6 — 6/6. Right eye, optic neuritis, surface + 4 diopters. Veins very full and uneven. Full vascularity of discs. Left eye beginning neuritis; surface + 2 diopters. Veins not large. Center of disc not filled in." The patient seemed to improve somewhat for several days. The vomiting ceased and also the



pain in the head. This was probably due to the fact that she was kept extremely quiet. On May 1, Dr. Holloway made another examination of the eyes and found the fields distinctly contracted. Vision, right eye, 6/9 and four letters on 6/6. Vision, left eye, 6/9, and one letter on 6/6. Height of disc about the same, but process in the left eye seemed more pronounced.

The patient's symptoms all seemed to be growing worse. There was return of vomiting and some pain in the head and vision was failing distinctly. I asked Dr. Charles K. Mills to see the patient with me and he agreed fully in the diagnosis of the cerebellar tumor. There were no positive localizing symptoms, but we decided that in order to save the vision, if possible, a decompressive operation should be performed.

*Operation.*—In view of the fact that the sixth nerve palsy was on the right side, we thought best to trephine first over the right hemisphere. Dr. G. G. Davis performed the operation. An opening  $1\frac{1}{2}$  inches in diameter was made in the skull and the dura was opened. The cerebellum showed more than normal tension and it was softer than usual. An exploratory puncture was made with a probe in two directions, but no fluid was obtained and no sense of either growth or cyst was felt. There was considerable amount of hemorrhage, but not excessive. The patient was under the anesthetic for two hours and a quarter.

*Postoperative History.*—The patient made a good recovery from the anesthetic and seemed in good condition the next day. There was no change in vision, although it could not be carefully tested. On May 8, three days after the operation, Dr. Holloway made an examination of the eyes and found vision O. D. 6/15 and two letters on 6/12; O. S. 6/9 and two letters on 6/6; no free hemorrhages and no reduction in the swelling of the discs. On May 12, seven days after the operation, Dr. de Schweinitz made an examination of the eyes and reported: "Right eye, apex of disc not more than + 2 D.; edges still veiled but visible. Left eye, all edges clear and surface of disc not more than 1 D. Outer half shows beginning atrophy and change. Vision 6/60 in each eye." The patient maintained that she could see no more. Dr. de Schweinitz said: "There has been an astonishing subsidence of the choked disc. In point of fact, it has nearly disappeared on left side and only about a diopter and a half remains on the right side. I am sorry to say, however, that direct vision has materially depreciated, so that now there is only about 6/60 or 1/10 of normal vision as compared with 2/3 before the operation. I hope that this is more apparent than real, and that the patient's very depressed condition may have accounted for some of her inability to read letters." The patient grew rapidly worse from this time. On May 15 her temperature varied from 100 to 102; respiration was 30 to 40. Her mind was cloudy; there was twitching of hands and arms, but more continuous twitching on the left side. There was some hypostatic congestion of the lungs, which had been steadily increasing. May 17 patient died, twelve days after the operation.

*Autopsy.*—This was made by Dr. H. B. Wilmer, the resident physician, who kindly gave me the notes. There was absence of rigor mortis; considerable wasting of the muscles; slight distention of the abdomen. The skullcap was removed in the usual manner; the dura seemed slightly thickened, with marked congestion of the vessels. The brain substance seemed of normal consistency. On inspection of the base of the brain there was seen a dense grayish membrane covering the base and extending up the sides of the cerebellum. There also seemed an increase in the amount of cerebrospinal fluid. This was not measured, as a great deal was lost in the process of removing the brain from the cranial cavity. All the nerve tracts at the base of the brain were intact. The vessels of the cortex were markedly congested and stood out prominently. Apart from this the gross appearance of the cortex was normal. The pia at base of the brain and over the anterior surface of the pons, extending to the optic chiasm was somewhat milky in appearance. About the optic chiasm there was a moderate amount of yellowish-gray fibrous exudate. The sixth nerves did not appear abnormal at exit. The cerebellum showed on exterior of the right side the site of operation. There was a cavity with ragged edges large enough to insert the end of the little finger, with some blood clots around the edges. On cross-section on the left

side in about the central portion of the hemisphere were seen two rounded gray masses, well defined and quite different from the surrounding brain tissue. The anterior tumor was separated from the second by normal brain tissue and was 15 mm. in diameter and 5 mm. in depth. The posterior tumor was larger, being 8 mm. in diameter and 8 mm. in depth. In the cerebellar substance of the right hemisphere another tumor was found, 18 mm. in diameter and 12 mm. in depth, bordering on the median line and extending forward so as to cause marked pressure on the medulla, where there was observed a small depression just above the decussation of the pyramids. The growth did not extend outside the cerebellar substance. On microscopic examination the growths were found to be tuberculous. At the right apex there was found tuberculous consolidation and a considerable amount of cheesy matter could be expressed from the lung tissue.

*CASE 3.—Patient.*—P. H., aged 26, married, was seen in consultation with Dr. William Turner VanPelt at the Episcopal Hospital, March 29, 1905. He had previously been under the care of Dr. Burton Chance, who has reported the case at length from the ophthalmologic point of view.<sup>1</sup>

*History.*—When about 15 years of age the patient had an attack of insolation, from which he recovered without ill effects. He was a printer of cotton stuffs. He denied venereal disease and stated that he had always been temperate. About Easter, 1904, he was suddenly seized with a violent attack of headache, which lasted four days. In July he sailed for England, his native country. During the voyage he had violent vomiting, which was supposed to be due to seasickness. After landing, however, he had severe headaches and violent attacks of vomiting which were projectile in character. Then for a considerable period he had headaches on alternate days, the attacks usually occurring after awakening in the morning. After September 1 the attacks were infrequent. He returned home in October, and during the voyage he was very sick and had violent spells of vomiting. After landing he suffered intensely with pains in the head in the occipital and frontal regions. About the middle of November the right side of the face became crooked and continued so for about a week. About this time it was noticed that the external rectus of the left eye was paralyzed, and a day or two later diplopia set in. This was followed by dimness of vision and photophobia. Except on the days of the headaches, when the arms and legs felt numb, he was able to take the usual amount of exercise. The headaches gradually subsided and he felt quite well. On Dec. 22, 1904, the patient was first seen by Dr. Chance. At that time there was nothing remarkable in gait or station. The tendon reflexes were apparently undisturbed. Mental condition was clear. The patient's chief complaints were referred to the eyes. The acuity of vision of the right eye was reduced to 6/15 and the left eye to 6/22.5. The accommodation power was abolished. The optic axes were markedly convergent; the left external rectus failed to effect parallelism. There was no nystagmus. The optic discs were swollen to + 5 D. The retina was everywhere edematous. The arteries were constricted and reduced to threads, while the veins were great broad tortuous currents. On the swollen nerve head were several flame-shaped hemorrhage extravasations. The patient was admitted on December 27 to the Germantown Hospital. He was confined to bed and a course of alteratives, diaphoretics and salines was instituted. At the end of ten days the diplopia disappeared and the edema of the retina and venous engorgement became remarkably reduced. At no time was there vomiting, headache, disturbance of locomotion, or change in station. The acuity of vision remained unchanged and the optic papillæ remained as prominent as at the earlier examinations. The patient was discharged from the hospital on January 23 and remained in fairly good condition until February 26, when he suffered from intense right-sided headaches. Two days later there was convulsive seizures involving the arms, with stiffness in the back of the neck, occipital pains with vomiting. The patient was admitted to the Episcopal Hospital on March 2, 1905.

*Examination.*—He was found to be weak and debilitated, but without any actual loss of power in the extremities. The blood

1. Tr. Coll. Phys., Philadelphia, 1905.



count was perfectly normal. There was no albumin or sugar in the urine. The vision of the right eye was 20/70; left eye, 20/200. The posterior rotation of the left eye was somewhat impaired by the paresis of the external rectus. All movements of right eye showed no impairment of the extraocular muscles. In neither eye were there nystagmoid movements. The pupils reacted normally to light, convergence and consensually. The fields of vision were contracted. The ophthalmologic examination showed great swelling of the retina, the projection of the optic discs to 6 D. splotches of degeneration and small linear hemorrhages and enlargement of the optic disc. There was spasticity of the muscles of the neck with retraction of the head.

*Course of Disease.*—Mercurial inunctions were ordered daily and light diet only was allowed. At once marked improvement in the health took place and continued for ten days. There were no attacks of vomiting and he was greatly relieved of the headache. After two weeks the diet was enlarged and potassium iodid in increasing doses was prescribed. After this time there was a return of the headaches, with much violence. The pain was usually located in the occiput, rotating to the left frontal region. The head was retracted. Vomiting was frequent. When seen by me the patient complained of violent pain in the occiput; there was stiffness of the muscles of the neck, with a tendency to retraction of the head. The patient could walk unassisted, but the gait was very unsteady and he staggered with a distinct tendency to fall to the left side. The patella reflexes were abolished. A diagnosis of tumor of the cerebellum, probably on the left side, was made, and an opera-

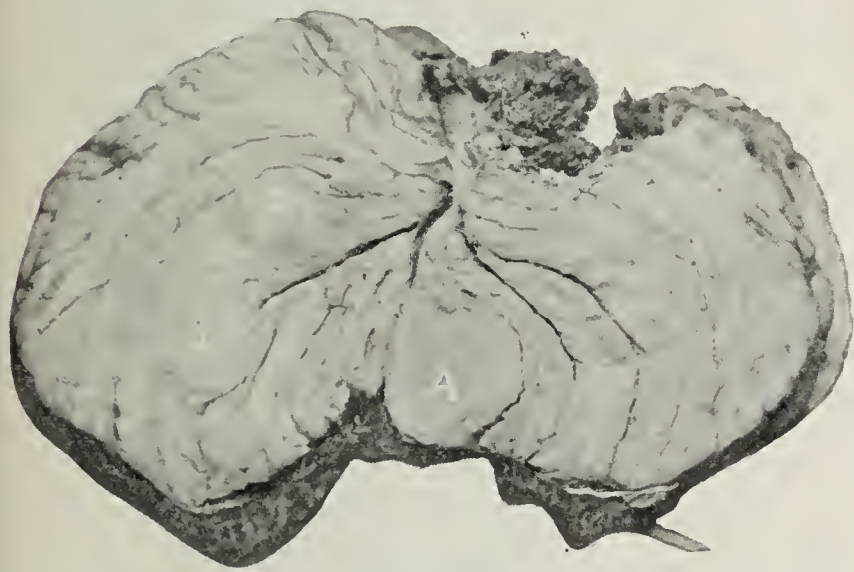


Fig. 1. Case 2.—Showing two tuberculous tumors in left hemisphere of cerebellum and one in right. A indicates tumors.

tion was urgently advised. However, it was deemed wise to continue medical treatment for a few days longer, and the operation was therefore postponed. On April 7, while in fairly good condition, the patient was seized with violent delirium, from which he fell into a comatose state and died suddenly four hours later.

*Autopsy.*—A tumor was found situated in the outer portion of the left lobe of the cerebellum, to which it was loosely attached. It was not at all infiltrating, but had made a depression in the left cerebellar lobe 2.5 cm. in depth. The tumor was very firm, almost globular, with a somewhat irregular surface, and did not appear to have been adherent to the dura. It was 0.4 cm. in width and 5.5 cm. in thickness from above downward. When cut it appeared friable and resembled a fibrosarcoma. It had caused some pressure on the fourth ventricle and thereby moderate internal hydrocephalus of the cerebrum, although the aqueduct of Sylvius was not much dilated and the fourth ventricle not at all. The third and lateral ventricles of the brain were moderately distended, especially the posterior horn of the left lateral ventricle, the floor of which was forced upward by the pressure of the tumor on the under surface of the left occipital lobe. None of the cranial nerves were implicated in the tumor. The microscopic examination showed that the tumor was a fibrosarcoma. This report was made by Dr. W. G. Spiller, who remarked that he had "never seen a tumor of the cerebellum which offered more favorable conditions for operation than did this tumor,

situated as it was on the lateral portion of the left cerebellar lobe and not infiltrating the cerebellum in the least."

1606 Walnut Street.

#### DISCUSSION.

DR. CHARLES K. MILLS, Philadelphia: I saw one of these cases with Dr. Sinkler. It is quite an interesting point in symptomatology that this patient who had on each side of his brain in each lateral lobe of the cerebellum, a small tumor, did not present the laterality so often observed in lateral lobe growths, nor did he present the peculiar compensatory attitude of the head or body which is observed in these unilateral cerebellar growths. This record is a small but important addition to our knowledge of the symptomatology of bilateral lesions of the cerebellum. The growth on one side seemed to compensate for that on the other in the production of the symptomatology, at least so far as any trending to one side or any one-sided attitude was concerned.

DR. JOHN J. THOMAS, Boston: I saw a number of years ago a case in which operation had been refused, and in which on autopsy we found a tumor on each side of the brain at the cerebellar-pontile angle; and there the unilateral symptoms pointing to one side seemed to be counteracted by the presence of another tumor on the opposite side. My own experience lately has confirmed what Dr. Mills and Dr. Sinkler have said, that if we are going to have any effect on the vision from operation, it must be done very early.

DR. ARCHIBALD CHURCH, Chicago: Out of seven of my cases in which operations have been done, four patients have made what might be called perfect recovery. In the first case in which Dr. McArthur operated for me, and which was seen by Dr. Jones in St. Luke's Hospital just after the operation, we found a hemorrhagic cyst, and there was a clear history of cerebellar hemorrhage. This patient recovered and worked as a laborer practically for years, but has disappeared. I did not favor operation in the second case. The patient was afterward operated on in St. Louis by Dr. Mudd under the direction of Dr. Fry. The tumor was removed and the man lived over two years. During much of this time he served as proprietor and editor of a newspaper. The third patient came to me from Wisconsin, a clergyman, who presented symptoms of cerebellar tumor. Dr. Brower and Dr. Bassoe confirmed my diagnosis. The patient was operated on by Dr. Bevan, who found a large tumor of the cerebellum, but did not remove it. A couple of weeks later, on my urging him to do so, he reopened the wound and removed the tumor. The man has been conducting the services of a country parish ever since. The fourth case was that of a boy who received an injury on the head by swinging against the corner of a house in a rope swing, striking the back of his head. Some weeks afterward he complained of headache. When he came to me he had double choked disc and other manifestations of cerebellar tumor. An operation was done by Dr. Van Hook, an apparently gliomatous cyst being uncovered and scraped out. Unfortunately, the scrapings were lost, so that the confirmation of the pathologic condition was not made. The boy is still alive, entirely blind, but with no recurrence.

The other three patients died directly. But four recoveries out of seven give one reason to hope that the prognosis is not so bad in properly selected cases when operation is done early, as the larger statistics might indicate.

DR. JULIUS GRINKER, Chicago: I had an experience with a cerebellar tumor which I think is unique. A patient had been complaining of nervous symptoms for a year, had been sent from one physician to another, had been examined for ophthalmoscopic findings, and no abnormalities had been found. Her last physician was an ophthalmologist, who found the eyegrounds normal. He referred the patient to me. She was considered hysterical. When she first came to me I found no symptoms of tumor. She had been visiting me for a period of four weeks, when one day she entered my office presenting the typical cerebellar gait, complaining of vertigo and nausea; she barely opened the door, when she staggered and almost fell to the floor. She said: "I am so dizzy; I just got dizzy crossing the street-car tracks." I examined her fundus and found a typical choked disc. My diagnosis was cerebellar tumor. Two weeks later she was operated on, when a large irremovable cerebellar tumor was found. The patient did not



recover. Here was a patient who probably suffered from cerebellar tumor for over a year without discoverable symptoms.

Another interesting case that I might mention here is one of a tumor at the cerebello-pontile angle, diagnosed as a case of neurasthenia by a very good neurologist, until his brother, also a doctor, brought the patient to me and told me that he suspected tumor. At that time some new symptoms had developed, deafness, tinnitus aurium, difficulty in vision, patient almost blind, and I diagnosed it as a case of tumor in the left cerebello-pontile angle. Several surgeons tried to find it, but did not succeed. The patient was taken to Baltimore and Dr. Harvey Cushing found a small fibroma in the left cerebello-pontile angle. In the meantime, the boy had become blind. This case emphasizes the importance of diagnosing and localizing tumor when blindness is not complete; when the latter has occurred operation can not preserve vision. The boy made a perfect recovery, but his vision will never return. How different the result might have been if operation had been performed before blindness had occurred!

## THE MEATO-MASTOID OPERATION IN CHRONIC MASTOIDITIS.

THE TECHNIC, RATIONALE AND INDICATIONS.\*

WILLIAM LINCOLN BALLENGER, M.D.  
CHICAGO.

To Heath belongs the credit of attracting wide attention to a mode of operative technic which promises to supplant the radical operation in a considerable number of cases. The operations devised by Wolfe, Stacke, Körner and Heath are not identical, though they are in general similar.

I have called the operation as performed by me, the meato-mastoid operation, as it consists (a) in the removal of the posterior wall of the bony meatus as deep as the annulus tympanicus, and (b) the complete exenteration of the mastoid cells. The remnants of the membrana tympani and the ossicles are not disturbed (Fig. 1).

The technic is indicated in column two of the Comparative Table of Technic.

### SPECIAL POINTS OF TECHNIC WHICH LARGELY INFLUENCE THE SUCCESS OF THE MEATO-MASTOID OPERATION.

The points to which attention is called, are: (1) The complete exenteration of the pneumatic cells in the temporal bone. (2) Shall the walls of the bony wound be left rough, or shall they be made smooth? (3) The plastic meatal skin flaps. (4) The drainage dressing.

(1) *The Exenteration of the Pneumatic Cells of the Temporal Bone.*—I have more than once heard the statement that no operator can positively say that he has removed all the pneumatic spaces of the temporal bone. While this is perhaps literally true, practically it is not. In exceptional cases the cells are distributed over such a large area as almost to include the lateral half of the skull. A specimen in the possession of Dr. Ernest de Wolfe Wales presents the remarkable phenomenon of the apparent communication of the mastoid cells with the sphenoidal cells via the base of the skull, below and posterior to the petrous pyramid of the temporal bone. In such a case it would perhaps be impossible to exenterate all the pneumatic cells. The surgeon may know,

however, when he has removed all the cells in the mastoid process, the zygomatic root and the squamous plate. It is somewhat more difficult to locate the cells when they are anterior to the meatus. In such cases they are usually also present in the zygomatic root, and if the zygomatic cells are carefully exposed in a forward direction those in the region anterior and superior to the bony meatus will be exposed to view and exenteration.

Having suggested the possible anatomic distribution of the cells, the question of the necessity for their complete removal remains to be discussed. The chief object of their removal is to establish free drainage and ventilation. If these purposes can be accomplished without a complete exenteration, the tissues may gradually assume their normal condition and a cure result. Unfortunately the ostia between the cells are often small and may prevent such a happy result.

In the first place, the channels or ostia of communication between the cells are often so small that the least swelling of the mucous membrane completely blocks them. In the second place the remote cells are often the seat of infective granulation tissue which still further obstructs

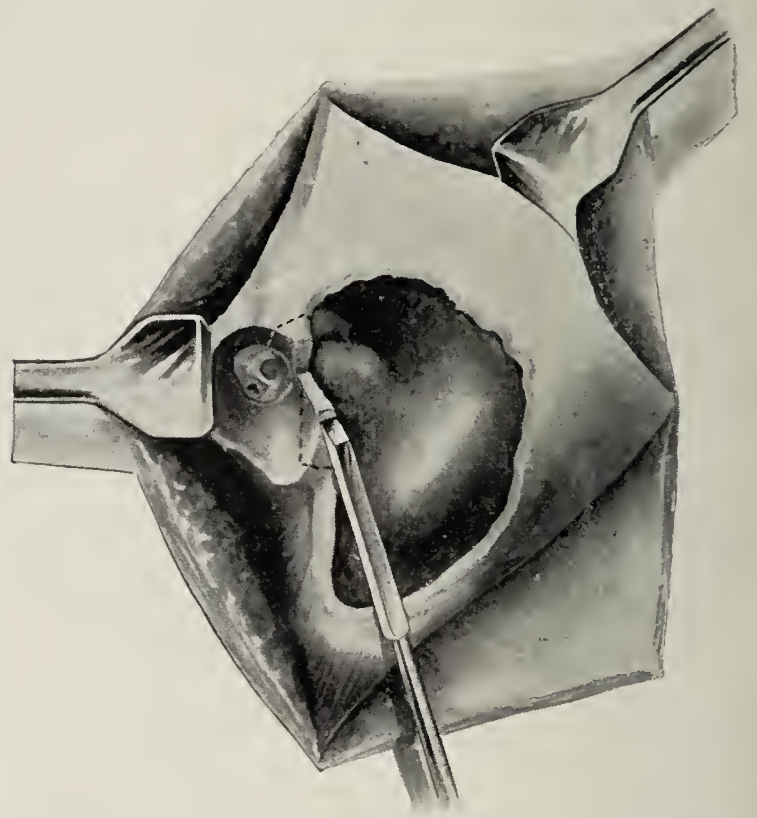


Fig. 1.—The complete exenteration of the mastoid cells. In the meato-mastoid operation the posterior wall of the meatus should be removed down to the annulus tympanicus as shown by the dotted lines.

the drainage and ventilation. If the cells are not fully exposed and exenterated they will continue to discharge purulent secretions into the mastoid wound for an indefinite period. I recall a few cases in which such a discharge persisted from beneath the upper plastic meatal skin flap and have no doubt that it came from the zygomatic cells.

(2) *Shall the Walls of the Bony Wound Be Left Rough or Shall They Be Made Smooth?*—Another reason for the complete exenteration of the mastoid cells is that in many of the cases of chronic mastoiditis the bone is dense and sclerosed, and the nutrient blood vessels are small. The vitality is low and the process of regeneration by granulation tissue is imperfectly performed. The low vitality predisposes the new granulation tissue to infection, and exuberant granulations. It becomes necessary, therefore, to adopt measures that will provide better nutrition to the granulation tissue. The most feasible way is to reflect the plastic meatal skin

\* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908. The article is here abbreviated by the omission of the comparative table of technic and part of the pictures. The complete article appears in the Transactions of the Section.



flaps into the mastoid wound. They are richly supplied with blood vessels which rapidly extend into the new granulation tissue covering the mastoid walls. The granulation tissue is thus abundantly supplied with nutrition, and the process of repair is completed with but little or no exuberant granulations. The mastoid wound should be rendered comparatively smooth as the plastic skin flaps are reflected on its surface. If the flaps are reflected over uncapped or half removed cells, infective foci remain beneath it, and, the drainage and ventilation being blocked, the suppurative process continues beneath the flaps. This not only prevents the union of the flaps with the mastoid wall, but it also measurably interferes with the reparative process in the uncovered portion of the mastoid walls. The portion of the wound not covered with the plastic meatal flaps should also be made comparatively smooth for two reasons; first the blood supply is inadequate (in sclerosed bone) to support healthy or vigorous granulations, hence any bony recesses left may become foci of infection and thus interfere with the process of repair.

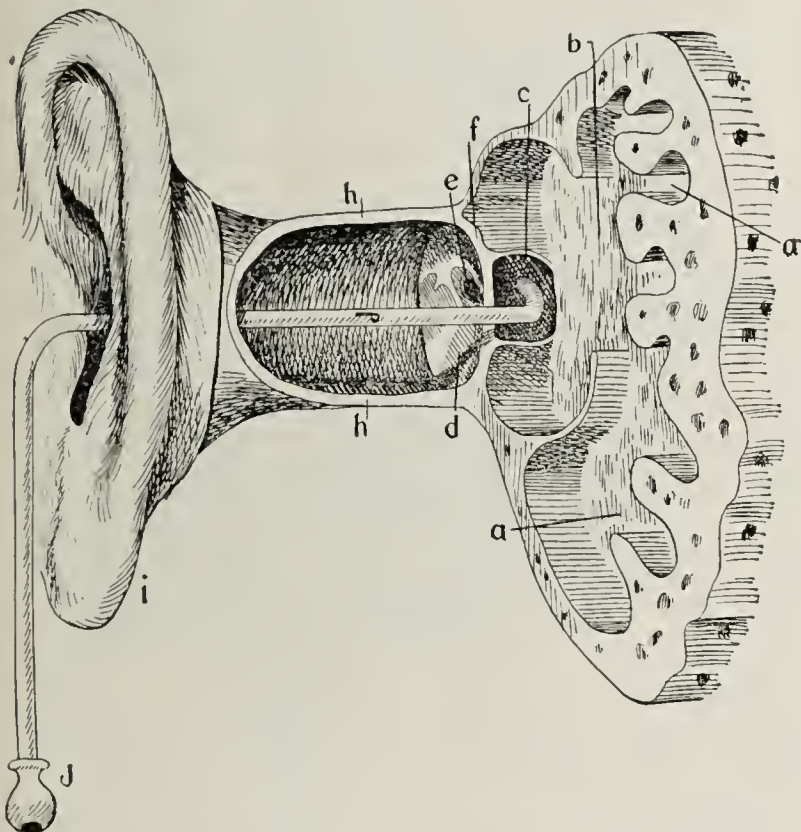


Fig. 4.—Schema showing the method of introducing the canula into the aditus ad antrum during the after treatment of the meato-mastoid operation. a, a, mastoid cells; b, mastoid antrum; c, aditus ad antrum; d, membrana tympani; e, perforation in the membrana tympani; f, annulus tympanicus; h, h, opening in the posterior wall of the meatus; i, auricle; j, j, silver canula.

In all cases in which the bone is sclerosed or eburnized the walls of the bony wound should be made smooth with the enrette and burr (Fig. 2). In those cases in which the bone is well supplied with blood this procedure is not essential.

(3) *The Plastic Meatal Skin Flaps.*—The proper use of plastic meatal skin flaps exerts a decided beneficial effect on the speed and certainty of the cure. In other words I believe that in a given case, all other points of technic being equal, the recovery will take place more quickly and certainly if properly formed and adjusted skin flaps are reflected into the mastoid wound *via* the window in the posterior wall of the meatus, than it will if plastic flaps are not used, or if used, are improperly adjusted. I also believe that improperly adjusted flaps are worse than no flaps. One operator told me that he often made the Trautmann tongue flap and then cut it off, as he had considerable trouble with it

when the dressings were removed. That is, the deeper end became detached, and if it was not removed, caused a stricture in the region of the aditus ad antrum (in the radical operation). The same objection applies to any other plastic flap. The main question is, how may the plastic flap be adjusted and anchored permanently in the proper position? I have used the Ballance flaps in a large number of cases during the past five years with increasing satisfaction and success, and inasmuch as a number of my colleagues have expressed a disappointment in their plastic work, I am encouraged to describe my method of procedure.

While I use the Ballance incision and flaps I do not anchor them as he does. My technic is as follows: (a) Having lifted the cutaneous meatus from the external auditory canal, the fibrous, muscular and fatty tissue is removed from its posterior wall with strong curved scis-

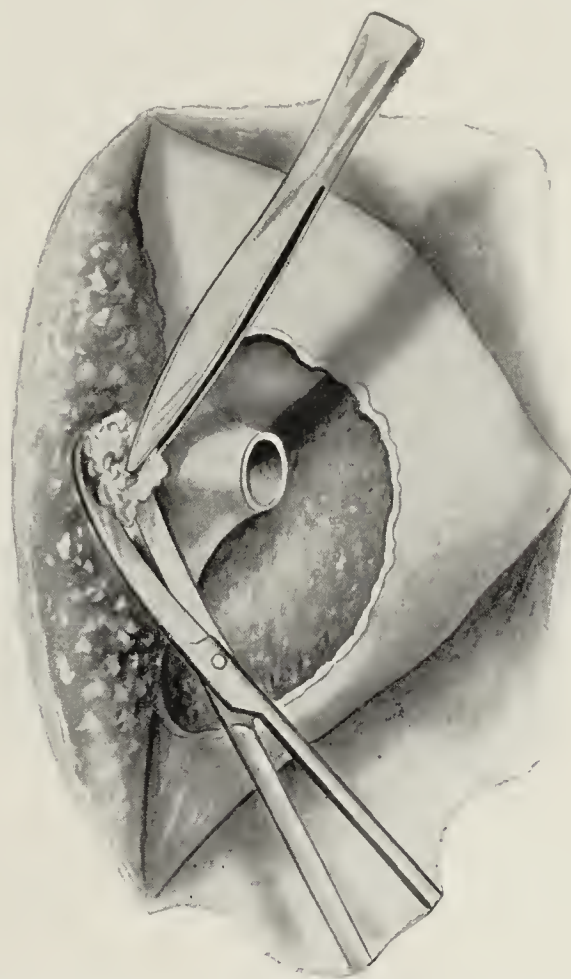


Fig. 5.—Removal of the redundant tissue from the posterior wall of the meatus and concha preparatory to making the Ballance incision.

sors (Fig. 5). The posterior wall of the concha is likewise freed from the same kind of tissue. This is done to render the flaps as thin as possible so that when they are reflected through the window in the posterior wall of the meatus they will occupy but little space. The removal of the redundant tissue also insures speedy union with the bony walls over which the flaps are reflected. The fibrous tissue on the posterior wall of the meatus and concha has low regenerative powers and is easily infected. Should it be left on the flaps and become infected prolonged suppuration would ensue. When it is removed, and only skin is left, rapid union with the bony tissue takes place without the danger of suppuration between flaps and bony walls. I therefore urge that this step of the technic be observed, as I believe it is essential to the best success.

(b) Introduce the divulsion forceps into the cutaneous meatus in such a position that the prongs will open at the posterior inferior portion of the tube (Fig. 6), as the incision should be made in this segment of it.



The prongs should then be spread apart to render the tissues tense preparatory to making the incision.

(c) The meatal or straight portion of the incision should be made with a small scalpel beginning at the inner end of the meatus and extended to the concha (Fig. 7).

(d) The ear should be placed in its normal position in the mastoid wound and the conchal or curved portion of the incision completed with the scalpel (Fig. 7).

(e) The cartilage on the conchal portion of the flap should be dissected from it, and any remaining redundant tissue removed from the meatal flaps to render them as thin and pliable as possible. Tension should be made on them in the direction toward which they are to be retracted in the wound to ascertain whether they are entirely free, as it is necessary to carry them into the wound as far as possible. If they are still bound by tissue attachments these should be overcome by incision or the removal of more redundant tissue.

(f) Introduce the tension or anchor sutures into the plastic flaps as shown in Figure 8. Usually two are required in the upper flap, one in the conchal and one in the meatal portion. One suture is enough for the shorter lower flap.

(g) Replace the auricle in its natural position and exert tension on the conchal suture to determine where

flaps; and when they have assumed the proper position in the wound cease making tension. Tie them in the order mentioned in section (g).

The tension sutures serve two purposes: (1) They hold the plastic flaps in position against the faecal ridge and the upper or cranial wall of the mastoid bony wound until they become firmly adherent. The rich blood supply from the flaps insures rapid extension of healthy granulations over the mastoid wound. (2) They lift the auricle upward and partially restore it to its normal position. Without the sutures in the upper plastic flap the auricle droops about one-half inch below its normal position.

I wish to reiterate what I have already said, namely, that the proper use and adjustment of the plastic meatal flaps is one of the most important points of technic in the surgery of chronic sclerosing mastoiditis, as the sclerosed bone is inadequately supplied with nutrient blood vessels to support rapidly growing healthy granulation tissue. The plastic skin flaps supply the necessary nutrition, granulation and epidermization

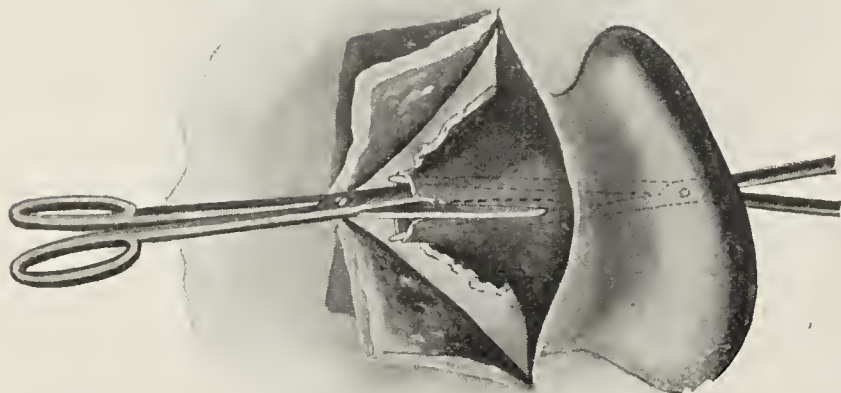


Fig. 6.—The meatus put on a tension with divulsion forceps while the incision is being made.

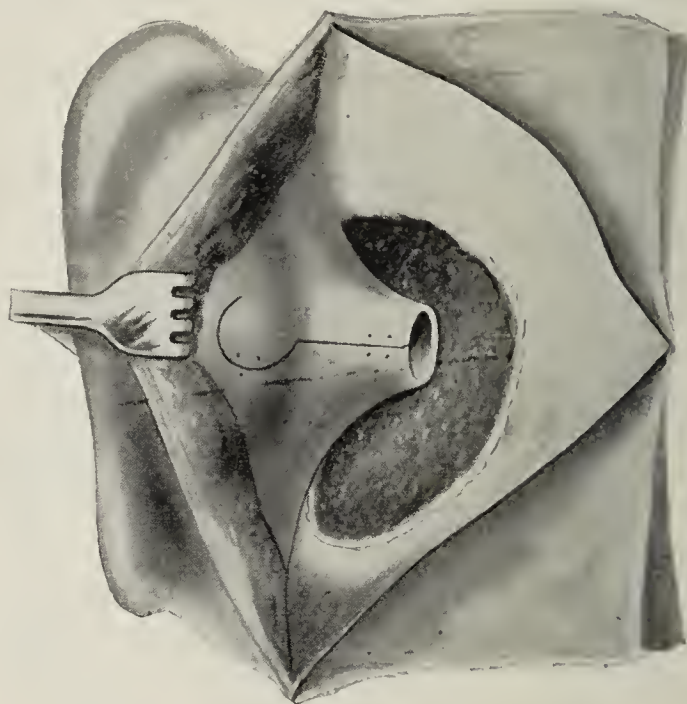


Fig. 7.—The Ballance incision in the posterior inferior wall of the skin meatus and the concha.

it will be necessary to anchor it to the skin posterior to the postauricular incision, in order to retract that portion of the flap against the upper or cranial wall of the mastoid bony wound. Then pass the needle beneath the skin for a distance of three-quarters of an inch and bring it out through the skin at this point (Fig. 9). Next make tension on the suture in the meatal portion of the upper plastic flap and determine the point of anchorage required to bring it into the upper part of the wound. Finally make tension on the sutures in the lower plastic flap and determine the point of anchorage required to bring it over the facial ridge. Each suture should pass through the skin three-quarters of an inch posterior to the primary mastoid incision as shown in Figure 9. The other end of each suture should pass out through the postauricular incision. Catch the two ends of each tension suture with artery forceps or tie them loosely until the postauricular incision is closed.

(h) Close the postauricular incision as usual, carefully placing each loose end of the tension suture in lines parallel with the end passing through the skin.

(i) Tie the tension sutures over small roller bandages (Fig. 10), carefully noting through the enlarged meatal opening in the concha the position of the plastic

often being complete in from two to six weeks. If this method of adjusting the plastic flaps is used it will rarely be necessary to use Thiersch grafts except, perhaps, in the tuberculous cases.

(4) *The Drainage Dressing.*—A distinction should be made between the drainage dressing and the external or absorbent dressing. The drainage dressing is for one purpose only, namely, to carry the secretions from the mastoid wound as fast as they form. The external dressing is for two purposes, namely, to absorb the secretions carried to it by the drainage dressing, and to protect the wound from extraneous pathogenic bacteria.

If the wound is either tightly or loosely packed with gauze the secretions saturate it and are constantly in contact with the reparative granulation tissue. This not only subjects it to chemical and mechanical irritation, but also to infection, as evidenced by exuberant granulations. When the gauze is removed the granulation tissue is also more or less injured.

If, on the contrary, the drainage dressing consists of a small wick of gauze within a rubber tube, the granulation tissue is but little disturbed by its removal. Furthermore, the granulating bony walls of the wound are not bathed in the secretions as the drainage dressing



is only in contact with the most dependent portion of the wound. The secretions gravitate to the bottom of the wound where they are taken up by the wick of drainage gauze and carried outward to the external absorbent dressing. I have used this form of dressing for nearly two years and have noted decidedly better results. During the same period I have also improved my technique in the use of the plastic meatal skin flaps, and ascribe some of the improvement to that fact. It stands to reason, however, that the drainage dressing should only be large enough, or have the capacity, to carry the secretions away as fast as they are formed. If, however, the drainage dressing completely fills the wound it will become saturated before it will carry the secretions to the external or absorbent dressing. While it ultimately drains the secretions it primarily causes their retention in the wound.

As the first and fundamental law pertaining to the relief of infection of suppurating cavities is free drainage it is obvious that failure (in any degree) to secure it will hinder the process of repair somewhat in proportion to the degree of failure. This being true the drainage gauze or tube should be in contact with the most dependent portion of the cavity while the capacity of the wick should only be great enough to carry away

so that the secretions may be drained through it. Heath uses a silver canula so bent as to allow it to be introduced through the meatus and the window in its posterior wall, into the antral end of the aditus ad antrum (Figs. 3 and 4). A rubber hand bulb is attached to the proximal end of the canula and blasts of air are forced through the middle ear. By this means the secretions and small polypi are expelled from the middle ear through the perforation in the drumhead into the external auditory meatus. This procedure is repeated, daily until the aditus ad antrum becomes closed by granulation tissue.

At the end of this time the secretions will have diminished in quantity, and the lumen of the Eustachian tube will have increased in size, and drainage is thereafter adequately provided for. The conditions in the middle ear are more nearly normal, the infection and inflammation gradually subside, and the processes of repair go on to a favorable resolution. At the end of a few weeks or months the perforation in the drumhead becomes closed in some of the cases, while in others it remains open.

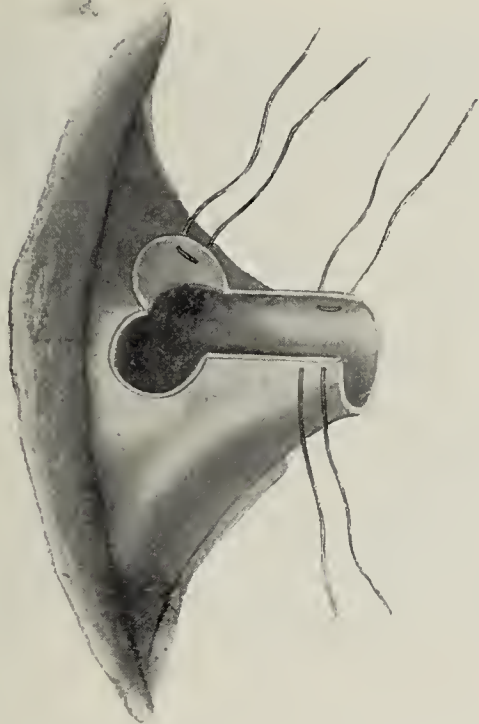


Fig. 8.—The anchor sutures in the meatal flaps.

all the secretions. If it is smaller than this it will not remove the secretions, whereas, if it is larger it retains the secretions within its meshes, at least to the point of saturation, after which it discharges them upon the external or absorbent dressing.

A small drainage wick removes the secretions, and maintains the granulation tissue at its maximum vitality and speedy healing follows.

A large drainage dressing which fills the wound becomes saturated with the morbid material, which constantly bathes the granulation tissue, macerates and infects it, and lowers its vitality. Exuberant granulations and tardy healing results.

As the middle ear is not exposed in the meato-mastoid operation provision should be made during the first week or ten days following the operation to facilitate its drainage. The Eustachian tube is still more or less blocked on account of its swollen mucous membrane, and if it can be given a few days in which to recuperate the swelling will subside, and its lumen increase in size,

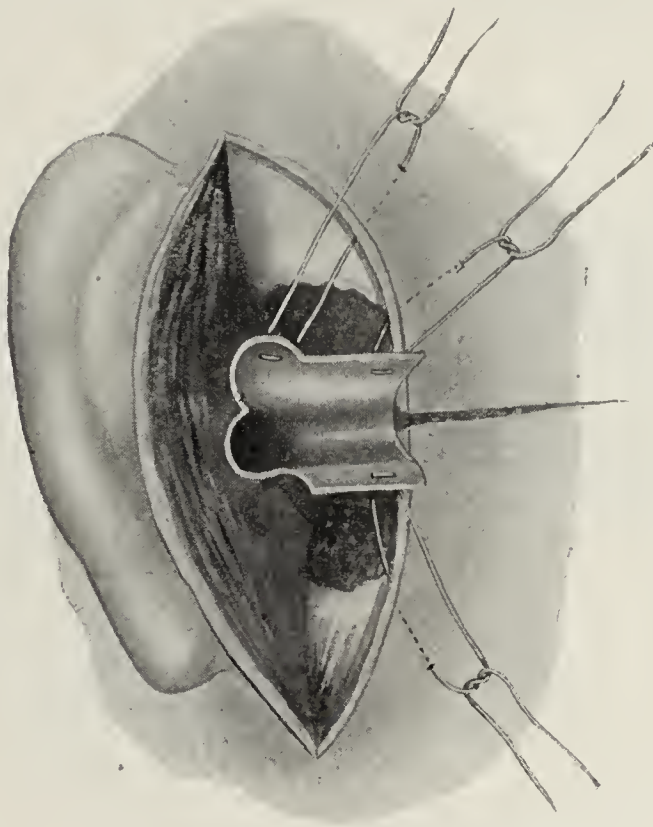


Fig. 9.—The anchor sutures in place.

#### THE RATIONALE.

The rationale of the meato-mastoid operation is based on the following principles:

(a) The promotion of healthy granulation tissue and epidermization of the walls of the mastoid wound. This is accomplished by making the surface of the bony wound smooth, and the proper adaption of the plastic meatal skin flaps to it.

(b) The establishment of ample drainage. This is accomplished by diverting the secretions from the mastoid antrum and cells through the window in the posterior wall of the meatus into the external auditory meatus and by passing blasts of air via the aditus ad antrum through the middle ear.

If the above conditions are established in properly selected cases of chronic mastoiditis the results will be as good as if the radical operation were performed, and in one respect they will be much better, namely, the hearing will be much improved, often approaching normal.



## THE INDICATIONS FOR THE MEATO-MASTOID OPERATION.

It is too early to accurately forecast the exact indications for this operation, as only an extended experience will afford the data for such a forecast. There are, however, certain broad principles on which the indications may be tentatively based. In addition we may revert to our small experience as a guide in formulating the indications.

Based on the therapeutic indications, chronic mastoiditis may be divided into three classes, namely, (1) Those amenable to non-operative treatment, or to surgical treatment through the perforate drumhead, to the vault of the pharynx, and to the nose. (2) Those amenable to the meato-mastoid operation. (3) Those only amenable to the radical mastoid operation.

(1) *The Cases Amenable to Non-surgical Treatment or to Minor Surgical Procedures.*—These are usually characterized by a central (non-marginal) perforation (Fig. 11, a, b, c) and the absence of necrosis of the walls of the tympanum and mastoid antrum and cells.

Many of these cases are amenable to simple treatment addressed to the tympanic cavity and Eustachian tube. Indeed, most of them are directly due to infection

other cases, the presence of a chronic infection and inflammation of the posterior ethmoidal and the sphenoidal sinuses will perpetuate an infection and inflammation of the Eustachian tube, middle ear, and mastoid cells. In either of the above conditions, the first therapeutic indication is to remedy the epipharyngeal or the nasal disease before attempting to cure the aural disease by a mastoid operation. Having overcome the infection of the epipharynx and the accessory nasal sinuses the Eustachian tube may be irrigated through a Weber-Liel catheter, and drainage promoted through the external auditory meatus by dry gauze wicks as suggested by Spencer of St. Louis in the early eighties, or by such other local treatment as may be deemed best. Should these cases resist these and other simple therapeutic measures they may be successfully cured by the meato-mastoid operation, and the hearing restored to near the normal.

(2) As a general proposition it may be stated that the meato-mastoid operation is indicated in all cases in which simpler measures have failed, and in which the operation will establish adequate and permanent drainage, and remove the morbid material.

Conversely it may be stated that the meato-mastoid operation is contraindicated in those cases in which it

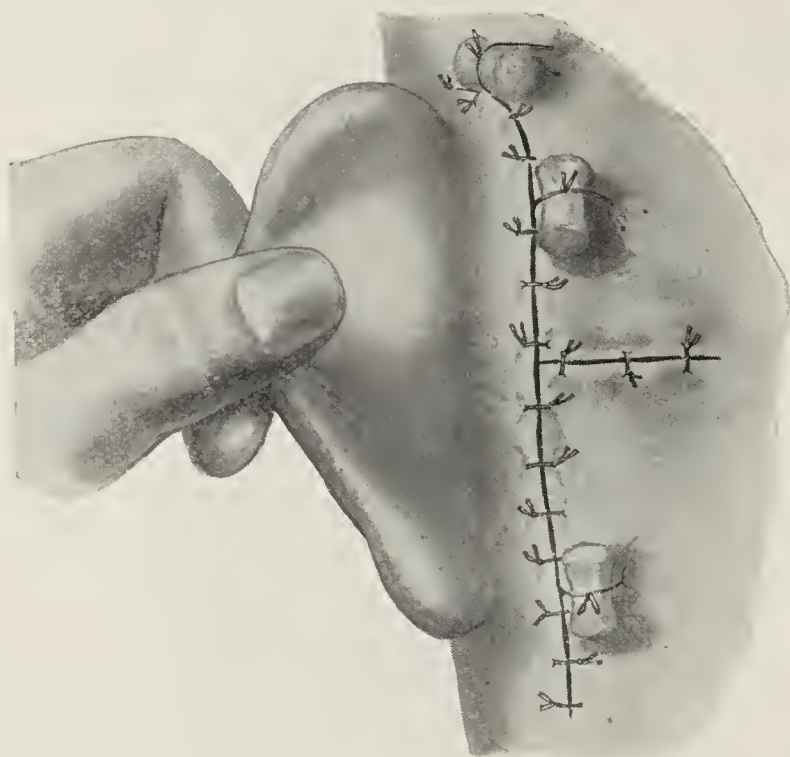


Fig. 10.—The skin and anchor sutures.

and inflammation of the Eustachian tube and can only be overcome by curing the pathologic process in the tube. The question naturally arises, as to the cause of the continued infection of the tube. Is it due to some peculiarity of the tube or to some pathologic process in some of the contiguous structures? In my opinion it is usually due to a pathologic process in one or more of the contiguous structures, as the lymphoid tissue in the epipharynx, and the posterior ethmoidal and sphenoidal sinuses. The presence of adenoids is almost always attended by more or less infection and inflammation (epipharyngitis) which extends by continuity of tissue and by direct infection to the Eustachian tube. Adenoids or their remnants are often present in adults, as any one who has made many examinations of this region can testify.

It is obvious, therefore, that the therapeutic indication in such cases is first to remove the infected lymphoid tissue from the epipharynx, and then to irrigate the Eustachian tube and tympanic cavity before deciding on the necessity for a mastoid operation. In

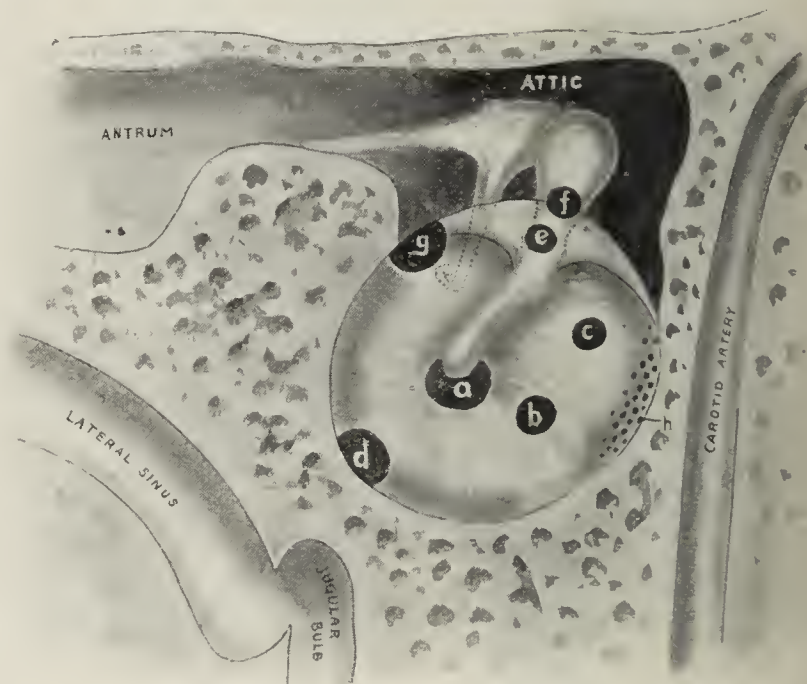


Fig. 11.—Schema showing the significance of variously located perforations of the membrana tympani: a, b and c, Central perforations, usually denoting infection of the Eustachian tube; d, e, f, g, marginal perforations, usually denoting necrosis of the contiguous bony tissue.

will fail to establish adequate and permanent drainage, and remove the morbid material. In the later class of cases the radical mastoid operation is indicated.

The indications according to the above propositions are to be found in the answer to the following question:

Under what conditions will the meato-mastoid operation establish adequate and permanent drainage and remove the morbid material?

Before answering this query it is necessary to define what is meant by (a) adequate and permanent drainage and by (b) the removal of the morbid material.

(a) Adequate drainage consists in the removal of the secretions as rapidly as they are formed. Inadequate drainage is present when for any reason the secretions are retained in sufficient quantity, and for a long enough period of time, to cause undue pressure, and to undergo decomposition. According to a well-established law in pathology, adequate (free) drainage raises the vital re



sistance of the involved tissues and favors the disappearance of the infection and inflammation; that is, if the process of repair is established. Conversely, inadequate drainage lowers the resistance of the tissues and favors the perpetuation of the infection and inflammation and prevents the successful establishment of the process of repair.

(b) The morbid material may be a purulent or other abnormal secretion, or it may be cholesteatomatous material or necrotic bone.

In simple otitis media and mastoiditis (without necrosis or other complications) with a central perforation of the drumhead, adequate drainage and the removal of the morbid material may often be accomplished without surgical intervention. The morbid material in these cases is the purulent or mucopurulent secretion. The use of cotton-tipped applicators, the Eustachian air douche, and sterile gauze in the meatus in the interims between treatments is often the only treatment necessary. If the perforation is small it should be enlarged by incision to facilitate the drainage of the secretions (morbid material). In other cases in which the infection is perpetuated by an obstruction at the floor of the attic (the aditus ad antrum being open) the removal of the malleus and incus will effect a cure. Even when small granulations are present in the attic, faithful and intelligent treatment through the meatus and Eustachian tube sometimes effects a cure. In the type of cases referred to in this paragraph the infection and inflammation are often perpetuated by epipharyngitis, adenoids, and posterior ethmoidal and sphenoidal sinusitis. Appropriate therapeutic measures addressed to these conditions, together with simple treatment of the middle ear, will often effect a cure.

If cases of the above type resist the treatment suggested, they may be subjected to the meato-mastoid operation with almost certain success. By this operation the secretions from the mastoid antrum and cells are diverted through the window in the posterior wall of the meatus, into the meatus. The secretions from the middle ear escape through the Eustachian tube and the perforation in the drumhead. By this division of labor the secretions are adequately drained, the resistance of the tissues raised, and the process of repair permanently established. Even when superficial necrosis of the ossicles and tympanic walls are present complete healing may occur. Many cases are on record in which large sequestra of bone were removed and healing followed without a mastoid operation. It is possible, therefore, that by improving the drainage by the meato-mastoid operation an extensive necrotic process within the middle ear may heal out, though in such cases I would recommend a radical mastoid operation.

In those cases in which the necrotic process is limited to the mastoid antrum and cells, the meato-mastoid operation is indicated. Such cases have frequently occurred in my practice as well as in that of others. Even should there be some necrosis in the tympanum the removal of the antral and mastoid disease and the diversion of the secretions to the external meatus, greatly favor the subsidence of the infection, and accelerate the process of repair.

That the operation will as favorably influence more extensive diseased processes in the tympanic cavity I do not claim, indeed, I doubt it. Only time and the combined experience of a large number of operators can determine this fact.

(3) If grave complications, such as thrombosis of the lateral sinus perforation of the tegmen antri, and an

epidural or brain abscess, having its atrium of infection through the tegmen antri, are present, it is probable that the meato-mastoid operation will effect a favorable termination, provided, of course, that the complications are treated in the usual manner. In such conditions the operator should be guided by the symptom-complex present in each case. If, for example, there is a marginal perforation over the short process of the malleus it is probable that there is necrosis of the tegmen tympani. With such an indication I would advise the radical operation. If, however, the perforation is at the margin of the posterior superior segment of the drumhead the meato-mastoid operation may be tentatively performed, as a perforation in this region is significant of necrosis in the mastoid antrum, rather than of the tympanic cavity. The meato-mastoid operation would, therefore, establish adequate drainage and remove the morbid material and would probably effect a cure, i. e., a regeneration of the remaining diseased tissues.

#### THE CONTRAINDICATIONS TO THE MEATO-MASTOID OPERATION.

(a) All simple cases, cases curable by non-surgical and minor surgical treatment through the external meatus.

(b) All cases curable by the proper surgical attention to the epipharynx and the posterior ethmoidal and sphenoidal sinuses.

(c) Cholesteatoma of the tympanic cavity. The removal of the cholesteatoma from the tympanic cavity would dislocate the ossicles, and if this is done the radical mastoid operation should be performed as the chief object, the meato-mastoid operation, is defeated by the dislocation of the ossicles, namely, the preservation and improvement of the hearing.

(d) Epidural abscess with its atrium of infection through the tegmen tympani. It is obvious that in order adequately to drain an epidural abscess in this region the tympanic cavity should be exposed to give access to the atrium of infection which should be enlarged.

(e) Brain abscess with the atrium of infection through the tegmen tympani is a contraindication to the meato-mastoid operation for obvious reasons.

(f) Infection, suppuration, and necrosis of the labyrinth is a contraindication to the meato-mastoid operation as the affected portions of the labyrinth should be exposed to inspection and if necessary to surgical treatment.

The conditions referred to in paragraphs c, d, e and f call for the radical operation, as only by this method of exposure is adequate drainage and the removal of the morbid material certainly established.

It is true that the radical operation will cure all the conditions in which simple conservative treatment, minor surgical procedures, and the meato-mastoid operation are alleged to be indicated. It is also true that they may be cured in many cases by less radical procedures, hence the less radical procedures should be tried when there is a probability of a cure by them. Furthermore, the less radical measures preserve and often greatly improve the hearing even to the point of almost normal hearing. The radical operation, on the contrary often results in great impairment of the hearing, and, therefore, should only be used when the other methods of treatment have failed, or, for obvious reasons must fail, because by them adequate drainage and the removal of the morbid material can not be effected.



## DISCUSSION.

DR. JANSEN, Berlin: Ballenger's method is an old operation newly but not well named. Many years ago I recommended this operation in acute suppurations in which a long after-treatment could be foreseen: for instance in scarlet fever. Other surgeons performed this operation when they did not consider a radical operation necessary, or did not feel competent to perform the radical operation. In general, I believe that fully as much can be accomplished with the simple mastoid operation: with the open method (as we employ it in the after-treatment) and frequent changing of the dressings, free drainage is obtained. I mean that when one had proceeded as far as the lateral wall of the attic the question of the hearing comes into consideration, in chronic cases, before doing a complete radical operation. In cases in which the question of hearing was considered, I employed this method—that is, a radical mastoid operation which was not carried to completion. I believe this method to be especially indicated when the operator does not feel that he can perform the radical operation with preservation of the ossicles, without dislocating the incus. In 1893 I described this method—that is, the radical operation with conservation of the ossicles and drum membrane, as well as the removal of the outer attic wall and the exposure of the posterior and inferior tympanic cavities. Since then this method has been employed in about 200 cases with very satisfactory results in the majority, that is with healing and conservation of the hearing. Also in cases of cholesteatoma this method can often be employed, that is, when the cholesteatoma is situated in the outer portion of the attic, where it begins to develop. Dr. Ballenger justly lays great stress on the obliteration of all pockets. This is necessary in all operations on the mastoid. He, however, does not refer to the most important cavities, namely, the retrolabyrinthine and the perilabyrinthine cells. While the other diploetic cells are easily found, these perilabyrinthine and retrolabyrinthine cells must be hunted for. If not found, they frequently lead to osteomyelitic suppurations of the pyramid and to meningitis. For their radical exposure, I regard the burr as indispensable. It is not advisable to apply Thiersch grafts primarily in cases of tuberculosis. Every dressing irritates. I pack the gauze in the external auditory canal very loosely; often do not employ any packing.

DR. ALBERT H. ANDREWS, Chicago: In a number of cases of acute and subacute mastoiditis, or mastoid abscess, I have employed the meatomastoid method merely as an experiment to see if it would not give quicker results than the old method of open operation: and while I have not used it in more than a dozen cases belonging to this class I think that my cases healed a little quicker than if I had finished the operation after the old method of open packing. I am not ready to recommend it as the best and only method of handling these cases, but in view of the results in the cases in which I have used this, though only as an experiment, I have been well pleased with it.

DR. J. W. MURPHY, Cincinnati: I have no doubt that in some selected cases this operation described by Dr. Ballenger has a very distinct place, especially in those chronic cases in which the ear is so filled with granulation tissue and old chronic discharge, possibly of years' duration, such as we frequently meet following the diseases of childhood, scarlet fever, for instance, and in which the ear is so full of granulations that it is impossible to tell whether the bones are intact or not, but there is great destruction of the drum membrane. In these cases if the radical operation is done, it is not certain that, after healing has occurred and cicatricial tissue has formed in the middle ear, the hearing will not be much interfered with. However, if Dr. Ballenger's operation is done in these cases, what hearing the patient possesses will be retained, and in many cases it will be found that great improvement has occurred after operation, as by this method perfect drainage may be obtained. The discharge will cease and the patient will frequently have very good hearing. I have done this operation since hearing Dr. Ballenger describe this method. I operated the following day on a young woman 20 years of age who had always refused operation for fear of scarring, and also for fear that the little hearing she had would be decreased. Not a particle of hair was removed from

her head. She had always refused to have the head shaved, so I fastened a cap tight around the head and it was pulled back so as to give ample room for the operation. After the operation the posterior wound was closed, a simple gauze wick inserted into the ear for drainage, and in one week's time I had primary union and the discharge had almost ceased. I saw this patient the day before I left home. There wasn't a particle of discharge in the ear; hearing for the watch was about 12/40, and for ordinary conversation with the face turned away, across the room, fifteen or twenty feet. The patient could hear and repeat every word. So in this case a useful ear resulted and as no scarring will occur within this middle ear there is every reason to believe it is going to remain a useful ear.

DR. D. T. VAIL, Cincinnati: Dr. Wendell Phillips of New York addressed the Oto-Laryngologic section of the Ohio State Medical Society at its recent meeting at Columbus on the present status of the mastoid operation as a cure for chronic suppurative otitis media, but made no mention of the meatomastoid operation. In the discussion I asked him if this operation had a place in mastoid surgery. He said that he knew nothing about it from personal experience, but had formed an unfavorable opinion from reports. Dr. McKernon of New York, at a recent meeting of the Laryngological, Rhinological and Otological Society at Pittsburg, in speaking of the dangers of the radical operation, said that 2 or 3 per cent. of the patients died on the table or soon after, either from the anesthetic narcosis or from some accident in the operation, such as plunging into the cerebral fossa or lateral sinus or from some other accident. He said that, though the statistics were suppressed, from 6 to 15 per cent. of the patients had facial paralysis and that from 25 to 45 per cent. of them had recurrent attacks of suppuration; requiring a later operation. In discussion it was said that one patient had had eleven operations for recurrent mastoiditis and was still uncured.

The question is whether this operation which Dr. Ballenger has revised and perfected will not do away with at least some of these dangers. This operation will to a certain extent guard the patient against facial nerve paralysis. With this operation, in my opinion, the present large percentage—25 to 45 per cent.—of recurrences will not take place, for the reason that the middle ear is amenable to local treatment. There is epidermatization of the middle ear, and because this important region is not disturbed and the debris can be cleaned out by the other methods which Dr. Ballenger did not speak of, but which is part of this treatment, the patients have the chance of avoiding recurrences, and the shortening of the length of time of the operation will guard the patient to a certain extent against fatal termination during or after the operation.

DR. C. F. WELTY, San Francisco: The operations described by Dr. Heath and Dr. Ballenger are identical, and very easy to do. The operation described by Dr. Jansen is entirely different and requires most careful technical work; at the same time it is much more complete. If Dr. Jansen has given up this operation, which I consider superior to the Heath operation, I can not see that the Heath operation should be entitled to a place at all. Some time since, otologists as a class, have given up the removal of the ossicles for chronic suppuration. They have also given up the Stacke operation for chronic suppuration, and the reason for this is that some of their cases remained uncured, while with the radical operation, practically all recovered. In a recent publication by Heath, he lays particular stress on the impairment of hearing. It is a well-known fact that practically all patients with chronic suppuration have a decided impairment of hearing. This impairment is due largely to the adhesive changes that have taken place as the result of the chronic irritation, and so long as such adhesions are not removed, the hearing will remain about the same. Those patients that have improved hearing following the Heath operation depend for their improvement on the mechanical removal of the pus and epidermis, which impede the sound waves. Kerner says that hearing is always benefited following the radical mastoid operations, except in those cases in which there is a labyrinthine disease to start with. I have had but two cases in which the hearing was made worse, and in these cases prior to operation the patient heard



a whisper at twenty feet. It is unusual to hear so well. A very small percentage of patients are made worse by the radical operation. About half remain the same, and the remaining have improvement dependent altogether on the amount of eustachian tissue that covers the stapes, that is, provided that the labyrinth is intact. I have had two cases in which the hearing improved from a whisper at three feet prior to operation to twenty feet following the operation. I consider this a very good result.

Dr. Vail is entirely wrong regarding mortality. I consider the radical mastoid operation one of the greatest achievements in surgery, because it avoids the possibility of death by cerebral complications and because it is attended with such a small mortality, probably not more than 0.5 per cent, and I am led to believe with Niemann of the Politzer clinic that this slight mortality is entirely dependent on unrecognized suppurative affections of the labyrinth. If not too anxious to do a beautiful operation one need not fear facial paralysis.

DR. NORVAL H. PIERCE, Chicago: Küster attempted to thrash out this whole thing when he published his paper in the *Deutsche Medicinische Wochenschrift* in 1889. His object was to establish a principle in the treatment of suppurating cavities having non-collapsible walls—the antrum of Highmore, the pleuritic cavity and the mastoid and middle ear. Up to this time Wolff was perhaps the first to suggest a scientific operation for opening the mastoid cells, and he was followed by Schwartz, who more fully developed the idea, and who with the enormous amount of material at his command has done so much to place the surgery of the temporal bone on a sound basis. Schwartz operated in chronic and acute cases alike by his method, removing the diseased area from the mastoid and leaving the cavum intact. In a certain number of cases of chronic disease suppuration persisted, but in many chronic cases cure was effected by this method. To reduce the number of persisted cases and to shorten the after-treatment Küster not only removed the diseased bone within the mastoid, but cleaned out the contents of the cavum as well when they were diseased. He had difficulty in differentiating between suppuration limited to the mastoid cells and suppuration limited to the epitympanic space and the cavum tympani. I think that these are the principles governing the whole matter. If before operation it can be established that the cause of the suppuration is entirely limited to the mastoid cells, this operation first advocated by Jansen will have just as many recoveries as Schwartz's operation; I scarcely think many more. What Dr. Jansen thinks of the operation may be gained from the fact that he has performed literally thousands of the radical operation and less than 200 of the other. I have done this operation in cholesteatoma with a small marginal perforation, retention of the tympanic membrane and ossicles with very good hearing power; and that is the very kind of a case in which Bezold recommends the operation. Two years after the operation, as far as the mastoid cells are concerned there is a cure. The cavity is quite dry, covered with epithelium. A small pin-head perforation remains in Shrapnell's membrane, however, and out of the epitympanic space, (because the aditus has been preserved) there once in awhile rolls a clump of cholesteatoma, together with a putrid discharge. This patient is not cured after two years, I think. To-day I heard from the clinic at the Illinois Eye and Ear Infirmary that the next to the last patient, operated on six months ago, is back with great pain and swelling back of the ear. There will be many more relapses in this operation than after the radical. Now, as regards hearing, because that is the only thing that recommends the operation, can we say we shall have better hearing after two or three years from this operation than from the radical operation? I am doubtful. What good are the ossicles if they are necrotic or bound down by adhesions between the promontory and the long process of the incus or the handle of the malleus? I think that they are rather a detriment than otherwise. Indeed, it is for just such conditions that ossiculectomy has been advised for the purpose of increasing audition.

DR. J. HOLINGER, Chicago: As I understand it, this operation is indicated in chronic suppurations without cholesteatoma. In these cases I have operated any number of times simply by the old Schwartz method, often removing sequesters,

cleaning out all the cells and allowing the whole wound to fill in with granulations; in two or three weeks I see complete recovery, stopping of the suppuration and normal hearing. This operation answers the same purpose as the one described by Dr. Ballenger.

I think I assisted at the first radical mastoid operation in which Thiersch's grafts were made, in the spring of 1891. At that time the grafts were put in, about ten days after the first operation, on a granulating surface. Does Dr. Jansen always graft directly on denuded bone? Does he use the burr on such bone? I have never tried it, but I understand from other operators that in using the burr the superficial layer of the bone is seared and granulations do not come up as fast as in using the chisel. Will Thiersch's grafts in such instances attach and grow as well as on a granulating surface?

For the last ten years I have not used any grafts at all, but allowed the cavity to granulate and afterward obtained a smooth granulating surface by using nitrate of silver salves of different concentrations. Afterward I simply apply violet powder without any dressing whatever. I speak of the radical operation, in which the wound behind the ear is sewed shut at the operation and the after-treatment is performed through the external meatus.

DR. A. JANSEN, Berlin: This method, in my opinion, does not in general come into consideration when dealing with acute cases. In acute cases healing is much more rapid when the simple mastoid is performed and closed, primarily after Zaufall's method; healing occurs in from ten to eighteen days. Dr. Pierce has correctly given the history of the newer methods, and has given Küster due credit. It was also Küster who stated that a method that required two years to bring about a healing (as was the case in the Schwartz operation in chronic cases) could not be classed as a practical one. My experience allows me to make the assertion that in cases in which the ossicles were preserved good hearing was retained, while, on the other hand, the hearing was often made worse when the ossicles were removed. The diminution in the hearing was often so marked that the disappointment of my patients was very perceptible to me. I repeat that the radical operation without the removal of the ossicles is my discovery and should, therefore, not be attributed to Heath. Since 1893 I have taught this operation in my courses. I usually apply Thiersch grafts immediately, or at the first dressing, in order to obtain healing in the shortest time possible. I have had cases in which healing took place in less than three weeks. The burr has never caused necrosis or a retarding of the healing. I never allow the burr to become overheated.

DR. WILLIAM E. SAUER, St. Louis: I think that Heath made the claim that there was marked improvement in the hearing even when the incus was absent in these cases. Professor Jansen made the point that the operation had no special value when the connection between the incus and the stapes was lost.

DR. WILLIAM L. BALLENGER, Chicago: It might be appropriate to turn the men who originated this operation loose in a pen and let them decide it. Dr. Jansen declares that he is one of the earliest. There are others who assert that they have done it a little earlier than he. We are all glad to know that the value of the operation was recognized a long time ago. Dr. Jansen did not find the improvement in the hearing that is claimed by Dr. Heath.

PROF. A. JANSEN, Berlin: I have performed the operation to conserve, not to improve, the hearing, and I have found that I could improve bad hearing. The only indication in this operation is from the standpoint of good hearing, naturally. I have done nearly two hundred operations and in the majority of cases preserved good hearing.

DR. WILLIAM L. BALLENGER, Chicago: My experience is too recent to estimate the value as to hearing. In a period of one year I have done only sixteen operations of this kind, one of which I have converted into the radical. None of the others, so far as I know, have shown any necessity of being converted into the radical. So far as I know the patients are cured and the hearing up to date is conserved and very greatly improved. One man now prefers to use the telephone with



the ear on which operation was done. Some patients can hear whispers at ten to thirty feet. The hearing in all cases has been markedly improved over that before the operation. Whether it will continue is a question.

The meato-mastoid operation is different, as I understand, from Professor Jansen's operation. In the meato-mastoid operation he does not remove the outer wall of the attic.

PROF. A. JANSEN: In my modified operation I remove the lateral wall of the attic when necessary. When this is not necessary I conserve only the limbus. I take away the whole wall or leave the posterior part of the limbus, because when I do otherwise I consider it only a simple Schwartz operation.

DR. WILLIAM L. BALLENGER: As to the value of paying attention to the ethmoid and sphenoid, my experience does not coincide with that of our distinguished guest. I have found that it does make a difference to open the ethmoid and sphenoid cells, because they drain posteriorly over the mouth of the Eustachian tube and keep up swelling and inflammation of the tube and consequently perpetuate the discharge from the tube into the middle ear, and I have found that by cleaning out the ethmoid and sphenoid cells I have been able to stop the process without the mastoid operation. The same is true of adenoids.

The Thiersch grafting is not an essential part of the mastoid operation, I am positive, whether done primarily or two weeks afterward, or, as in my cases, four and six months, and in one case two years afterward. If you will follow the technic as I have attempted to describe it I believe you will not have to use Thiersch grafts and will be able with the skin flaps and the other technic to obviate the necessity for Thiersch grafts. It will be a rare case, indeed, in which they will have to be used. Of course, my cases are few as compared with Dr. Jansen's and I can not compare my experience with his, but in my limited experience I am convinced that the Thiersch grafts are very rarely required.

This is the third time I have read a paper on the meato-mastoid operation, and I have had a chance to observe the temper of the audience in listening to the subject. Each time the audience is tamer and tamer and entertains the thought with more and more tolerance. I predicted six months ago that every man in the audience I was addressing would do more than 50 per cent. of his operations along this line rather than by the radical method. I repeat the prediction here.

## RESTORATION OF THE CONJUNCTIVAL CUL-DE-SAC FOR THE INSERTION OF AN ARTIFICIAL EYE.\*

M. WIENER, M.D.

ST. LOUIS.

Wherever great difficulty is encountered in combating a certain disease or condition, we also find numerous methods for its relief. Thus when we have an orbital socket contracted by scars from burns or otherwise, we have the choice of many modes of procedure for restoring its depth so that it may retain a glass eye. Knapp<sup>1</sup> states that of the numerous attempts in the past twenty-five years which have been made to remedy this unfortunate condition he has not seen a single case either of his own or of others where there had been more than temporary improvement; this, too, including cases where the only object was to fit a stump for the prosthesis of an artificial eye. Fuchs says cases of extensive symblepharon are incurable.

Czermak<sup>2</sup> says there are many devices for relief of symblepharon, but few are successful. Nine years ago May<sup>3</sup> reported the restoration of the conjunctival cul-

sac by means of Thiersch's skin grafts, in which he used a porcelain shell covered with grafts from the arm or thigh, the shell being held in place by three stitches in the lid. Hotz<sup>4</sup> and Woodruff<sup>5</sup> have employed similar means, using a lead plate covered with skin grafts; while Wilder<sup>6</sup> found paraffin plates most advantageous in keeping the grafts immovable.

Leslie Paton<sup>7</sup> successfully relieved a case of symblepharon by sewing a piece of mucous membrane from the roof of a frog's mouth. Maxwell<sup>8</sup> uses skin flaps from the lid with good results, but there remains a scar on the cheek and some objectionable puckering. There have been methods similar to these devised by Pravosud, LaGrange,<sup>9</sup> Wicherkiewicz, Bruch, Gidney,<sup>10</sup> and others, but all along the same lines.

My method has its use where the socket, while shrunken, has still a small amount of conjunctiva left. An incision (A, B, C, Fig. 1) is made through the conjunctiva and a flap, including only the conjunctiva, is carefully dissected down to the lid margin (A C, Fig. 1). This dissection after being started with a knife can easily and quickly be finished with a small curved blunt scissors. The dissection is then continued with the scissors so as to loosen the skin below the lid margin (A C to B, Fig. 2), leaving a raw surface toward the bulbar side extended from B to B' and A to C (Fig. 2), and on the palpebral side A B C (Fig. 2). Then sutures with a needle on either end are introduced at the points d, e, f (Fig. 1), and passing them through the bottom

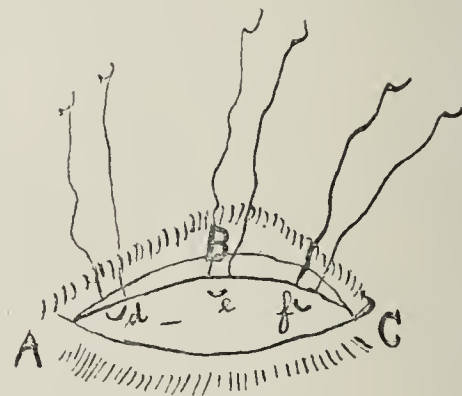


Figure 1.

of the newly made sulcus are brought through the skin at d' e' f' (Fig. 2) and tied over a button. This gives a conjunctival covering for the lower lid and leaves the bulbar surface A B C B' (Fig. 2) to be covered. This is done by covering a lead plate, previously shaped, with grafts from the thigh and placing carefully in position. A dressing is then applied and both eyes bandaged, the patient remaining undisturbed in bed for four days, when the outside dressings are replaced by clean ones without disturbing the plate. On about the eighth day the plate may be removed, cleaned and replaced. The glass eye can usually be worn by the tenth or fourteenth day. The stitches at d' e' f' (Fig. 2) are not removed, but are tightened each day after the fourth day until they pull through. This is an additional help to holding the lower sulcus intact, as the internal scars resulting tend constantly to pull on the bottom of the sulcus and thus heighten the effect. It is important that these stitches should be allowed to pull through and not be removed before, for one is tempted to remove them after

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Norris and Oliver, System Diseases of Eye.

2. Augenärztlichen Operationen, 1893.

3. Arch. Ophth., 1899, 182.

4. Ann. Ophth., 1905.

5. Ann. Ophth., April, 1903.

6. THE JOURNAL A. M. A., 1906, xlvii.

7. Lancet, April 23, 1904.

8. Ophth. Rev., 1903.

9. Arch. d'Ophth., 1905.

10. Indian Med. Gaz., 1904.



a week when the lower sulcus may appear too deep. I have made this mistake, thinking I had secured a lower sulcus of exaggerated depth, when, on removing the stitches, it rose too high and became almost obliterated, so that the stitches had to be replaced. The following cases are of patients treated in the above manner:

**CASE 1.—Patient.**—Miss H. P., aged 28, of Helena, Mont.

**History.**—Lost left eye, when 8 years of age, following measles. Evisceration performed by a prominent ophthalmologist in Kansas City. She was able to wear an artificial eye for six years, when the socket became inflamed, contracted, and expelled the eye. Was treated until inflammation subsided, and then, being unable to wear a glass eye, was operated on three successive times by one ophthalmologist, and once by another, without success. Since then she had been told by

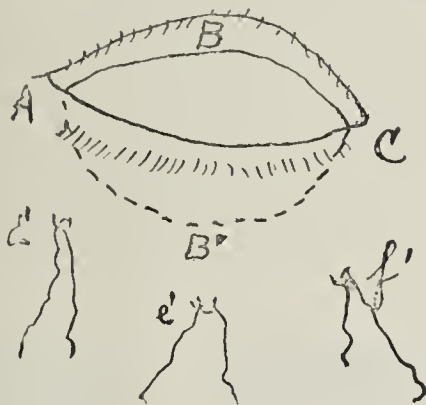


Figure 2.

several others that nothing could be done and that further operative procedure would be useless. She was compelled to wear dark glasses to hide the deformity, which was very embarrassing.

**Examination.**—Patient came to me for examination Oct. 8, 1904, and examination showed a much shrunken socket, traversed by scars, with no lower sulcus and a very shallow upper one.

**Operation.**—On Oct. 11, 1904, the above described operation was performed at Washington University Hospital under local anesthesia, skin for the grafts being taken from the arms. Both eyes were bandaged and not disturbed until the fourth day, when the outside dressing was removed, stitches tightened, and fresh dressing applied. October 24 the dressings were entirely removed, lead plate taken out, and a reform eye in-



Figure 3.

serted. This was worn continuously for three days, being taken out only to be cleaned; and on October 27 the eye was worn all day and taken out at night. Two of the stitches were pulled out on the eleventh day and the inner one pulled out on the fifteenth. The photograph (Fig. 3), shows the appearance of patient wearing a Snellen reform artificial eye three years after the operation. As will be seen, there is practically no sinking of the upper lid, while the eye has good movement.

**CASE 2.—Patient.**—Miss N. S., aged 17, Macedonia, Ill., came to Washington University Hospital Feb. 5, 1907.

**History.**—The patient had an atresic left eye due to a wound from a 22-caliber bullet, which had gone through the lower lid and lodged in the globe. There was a gap in the center of the lower lid margin and almost complete symblepharon of lower lid.

**Operation.**—The eye was enucleated the following day, at the same time the edges of the lower lid were approximated. On February 27 the above described operation was done and the patient treated in much the same manner as in Case 1. She is now able to wear a well-fitting artificial eye.

**CASES 3 and 4.**—Two other patients also were operated on at the Jewish Hospital, one on Nov. 26, 1907, and the other on Dec. 27, 1907. The immediate results in these cases have been good, but I have not thought it wise to report them in detail as they are of too recent date.

My reason for presenting this method is that my greatest difficulty heretofore, and also of my friends whom I have questioned, has been to establish a sufficiently deep lower sulcus. This operation has seemed to have overcome this difficulty.

#### DISCUSSION.

**DR. F. C. TODD, Minneapolis:** In attempting to restore a partial or complete obliteration of the cul-de-sac we must consider the fact that obliteration has occurred as a result of cicatricial contraction following erosion, trauma or burns (mechanical or chemical, as lime), and that after operation the same tendency exists, and is even aggravated by the trauma of the operation so that resulting failure occurs after ordinary implantation of grafts in the course of a few months. Were it not for the work of Drs. May, Hotz, Woodruff and Wilder, I should feel that success in severe cases at least could not be attained unless the skin-graft is anchored as in the Weeks operation, described at the Saratoga session, or by the method described by Dr. Wiener. You will remember that Dr. Weeks dissects clear to the periosteum and fastens the large skin-graft to this periosteum, thereby effectually holding the skin in place and preventing later contraction. He also uses plates of dentists' modelling wax to hold the grafts during the healing process. The resulting cul-de-sac is very deep, which is no disadvantage, however, as an artificial eye can be made to order, if necessary, to fill the cavity and need not extend to the upper limits. Dr. Wiener emphasizes the importance of anchorage and recognizes this principle in an admirable manner, for the tissues, being cut through by the sutures during the healing process, make permanent ligatures, so to speak, of the resulting cicatricial bands which extend from the lining of the cul-de-sac to the skin surface of the cheek. His suggestion of the utilization of remaining conjunctiva, where it exists, as a lining for the lid, is good, for the normal position of the lid margin can thereby be better maintained than is the case when skin is used, and entropion or ectropion is less liable to result. These cases are rare and the experience of one operator is usually not great, though Dr. Weeks wrote me last fall that he had performed seventeen successful operations on ten patients (some requiring an operation for each lid), and in my limited experience since hearing his paper I have followed his method. At first I used the dentists' wax plates and later plates covered with paraffin after Dr. Wilder's plan, using aluminum instead of lead, however. It can be as readily moulded and secured of any dental supply house. I discarded paraffin, as it came off in a few days anyway, and I found that the aluminum could be made smooth by burnishing the edges after shaping the plate at the time of the operation. In the Weeks operation a large plate is necessary and I had difficulty in reinserting; therefore, I had some plates made. These are in two sections, and by loosening the thumb-screw will slide on one another (thus coming together into half the size), and then can be removed easily, and after reinserting closed, can be spread out and fastened by the thumb-screw. They are made of German silver, gold-plated, and are skeleton in form (they could be made solid, however), and adjustable to different sizes. The description and illustration of this plate will be published in the Ophthalmic Record.

**DR. F. C. HOTZ, Chicago:** In the attempt to enlarge or to restore the conjunctival sac for the insertion of an artificial eye, the main object must be to restore the lining of the inside of the lower lid, because if we have a well-marked lower lid the lower edge of the artificial eye can rest securely in a cul-de-sac, and that is the main thing. When there is conjunctiva



left, the plan that was followed here is certainly very good, to utilize the remaining conjunctiva as a lining for the lower lid. We do not need much of the recess in the upper lid to hold the artificial eye, but the lower lid must afford a deep recess for the artificial eye or it is apt to slide out. In fixing this lower lid conjunctival flap I have been using a plate on the lid to keep the flaps smooth. To fix the plate I put the sutures through its lower edge to fasten it with the skin. That absolutely insures smoothness. I leave it in until the stitches cut through. If necessary, the wound of the socket can be filled in with a Thiersch graft, fastened down by sutures, a plug of white wax moulded to the form and the depth of the sac is put in, the lids closed over it, and a pressure bandage applied to hold it firm.

We hear much about shrinkage of the flaps. They of course shrink according to the lessened resistance of the surrounding parts. If it is fixed, in ectropium of the upper lid, for instance, to the free lid border and the upper border of the cartilage, you will be surprised how little shrinkage takes place, for here the graft is attached to parts which can not be moved, and therefore successfully prevent the shrinkage of the flap. Where there are movable borders, however, the shrinkage will take place, and it may be necessary to repeat some grafting. The first case I operated on, simply to enlarge the socket. I took out the scar tissue, put in a pretty large flap. It shrank, of course, within the first three months, but I saw the patient several times in after years, and to my satisfaction saw that the flap had not shrunk visibly any more than the first three months.

MR. E. TREACHER COLLINS, London, Eng.: I have had some very satisfactory results in these cases of contracted socket from the employment of an operation devised by Dr. Maxwell of Dublin. As the first step, make an incision through the conjunctiva at the bottom of the cul-de-sac, then one through the skin of the lower lid of about the same length as the other. Mark out on the eyelid a flap of skin; you dissect up that flap but leave it attached at the center. Now make a tunnel between the two incisions—under the lid. Then pass a suture through the angle of the flap and carry it up under this bridge of tissue and insert it at this point. You then have a flap the center of which is held down. You afterward stitch up the gap in the lower lid. At the conclusion you put in a glass shell, like a glass eye with the cornea taken out, to allow drainage. I used to try to get rid of these cases, but since the adoption of this operation I am rather pleased when they come along, for I have had some very satisfactory results.

DR. W. H. WILDER, Chicago: If the plate is covered with some material such as paraffin, it is possible, even after it is in place, inasmuch as the graft then lines the pocket, to insert stitches that will anchor it in position. This, in simple cases, is not necessary. One advantage of having a plate covered with some material like paraffin, is the ease in handling the thin graft which has such a tendency to roll up, but which adheres so evenly and smoothly to the paraffin surface. Furthermore, with such a covering of the plate as paraffin, one can feel sure that the cornea will not suffer injury.

DR. M. WIENER, St. Louis: We all know that in taking the flaps *in toto* there is contraction, but there is very little contraction with the Thiersch grafts. Dr. Todd objected to inserting the lead plate because it is rough. He uses aluminum. I have used a lead plate dipped in paraffin, which makes it smooth. The Maxwell operation is mentioned in my paper, but not described. The objection I stated to this operation was that there was a good deal of puckering in the lower lid. As I have said, my reason for presenting this method is that my greatest difficulty heretofore, and also of my friends whom I have questioned, has been to establish a sufficiently deep lower sulcus. This operation has seemed to overcome this difficulty.

**Treatment of Circulatory Disorders.**—Paul Franz, of Bad Nauheim, states in the *Dietetic and Hygienic Gazette*, July, 1908, that the one great and fundamental factor in circulatory disorders of all kinds is to restore normal metabolism by means of physical treatment and diet.

## Clinical Notes

### LARYNGECTOMY FOR CARCINOMA OF THE LARYNX.

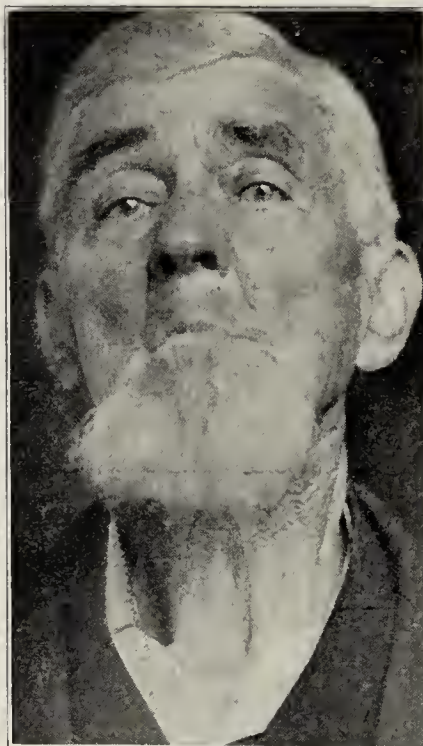
REPORT OF TWO CASES, SPECIMENS EXHIBITED.\*

LA FAYETTE PAGE, A.M., M.D.

Clinical Professor of Diseases of Nose, Throat and Ear, Indiana University School of Medicine.  
INDIANAPOLIS.

**CASE 1.**—*Patient.*—E. L. L., age 72, a mechanic, was first examined by me Sept. 5, 1903. He had always had excellent health until he lost his voice from a cold during the previous spring. He had used tobacco constantly and alcohol occasionally. Nothing in the man's appearance indicated dissipation. The hoarseness had been persistent and occasionally a little blood came from his throat. There had been more or less constant pain in the left ear radiating from the throat.

*Examination.*—A laryngoscopic examination showed a growth rather larger than a bean, in the anterior commissure of the vocal cords, apparently springing from the under surface of the left cord. There was considerable infiltration about the left cord. The surface of the tumor was irregular and nodular, very hard and light in color, and the left cord per-



Case 1.



Case 2.

**CASE 1.**—Mr. E. L. Long. Left half of larynx removed for carcinoma, Feb. 5, 1904, age 72. Now has fair voice and good health at 76.

**CASE 2.**—Mr. J. S. Farrell. Left half of larynx removed for carcinoma, Dec. 26, 1904, age 52. At present in fair voice and good health.

fectly immobile. A saturated solution of iodid of potassium was prescribed and the patient was kept on large doses until it was found that the drug did not retard the growth of the tumor in the least. Sections were removed and submitted to two pathologists. Both reported that the growth was a carcinoma. By the first of the following February—five months—the growth had increased to such an extent and breathing was so labored that death from suffocation was evidently near at hand. The case afforded almost every clinical evidence of cancer.

*Operation.*—A radical operation was performed Feb. 5, 1904, in which the left half of the larynx was removed entire. The patient was placed in the Trendelenburg-Rose position and chloroform administered. The first incision extended from the hyoid bone to the sternum and the tissues were dissected and pushed aside, exposing the laryngeal and tracheal cartilages.

\* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty ninth Annual Session, held at Chicago, June, 1908.



A low tracheotomy was done and an ordinary large cannula was introduced and secured with tape. The chloroform was then administered through a rubber tube connected with chloroform apparatus and the cannula. The thyroid cartilage was then split (with difficulty owing to calcification) in the median line with bone forceps and the larynx laid wide open and examined with a strong head light. The interior of the larynx was then painted with cocaine and adrenalin. The disease was found to be confined to the left half. The left half of the thyroid and cricoid cartilages were then removed by freeing the surrounding tissues and pushing aside the perichondrium. Great care was necessary in separating the laryngeal tissues from the esophagus. Several strips of iodoform gauze were placed in the laryngeal cavity and brought out through the lower part of the wound and secured. The upper part of the larynx was closed with sutures and the dressings placed.

*Later History.*—The subsequent treatment required close and careful attention. The tracheal tube was kept in two days. It was several days before fluids or solids could be swallowed without passing out the wound, so he was nourished through a tube. He made a good recovery, and now, at the end of four years, is 76 years old, in good health and able to earn his living (Fig. 1).

*CASE 2.—Patient.*—J. S. F., age 52, contractor, had an excellent tenor voice and often sang in choirs. He used tobacco excessively and at one period of his life used alcohol. His father, a soldier, died of dysentery during the war, at the age of 40; his mother died at 65 from an accidental fall. His six brothers and sisters were all living and healthy. There was no history of malignant disease or syphilis. The patient was an excellent specimen of manhood and had always enjoyed good health with the exception of chronic bronchitis.

*Course of Disease.*—A persistent hoarseness set in during the spring of 1904, following an acute laryngitis. During this attack a small papillomatous-looking growth appeared growing from below the cords in the anterior commissure. During the months of May and June applications of argyrol were made to the larynx with other local treatment and a saturated solution of the iodids administered internally. The progress of the growth was daily watched until about the first of July when sections were removed and microscopically examined. Each specimen was reported to be unmistakably a flat-celled carcinoma. After these examinations the patient took several weeks rest in the woods of Wisconsin. When he returned I advised an immediate and radical operation, and at that time a thyrotomy would have been, in my opinion, sufficient. After this advice (September 1) the patient was not seen again until December 20, when he called at my office and said that he was ready to have the radical operation performed, if I thought best. In the meantime, he said, he had consulted Dr. E. Fletcher Ingals of Chicago, who said that the growth was suspicious but that he hoped it was only a large papilloma. He removed the tumor intralaryngeally, and sent the specimen to Professor Hektoen for examination. His report was: "The specimen which you sent me is a flat-celled carcinoma." This was followed by local treatment for a few days and then the patient was permitted to return home. He again visited Dr. Ingals two months later, who found that the growth had returned. The patient was then advised to undergo a radical operation. After he had given me this history, an examination of the larynx was made and it was found that the disease had made rapid progress, but was as yet apparently confined to the left half of the larynx.

*Operation.*—After explaining to the patient his chances for recovery, and that a complete laryngectomy would probably be necessary, it was decided to have the operation performed at once, Dec. 26, 1905, at the Deaconess Hospital. The teeth and upper respiratory tract were rendered as nearly aseptic as possible. The trachea was prepared by frequent injections of antiseptic oils and sprays. The patient was placed on the table in the Trendelenburg-Rose position and the chloroform was administered first by mouth and then by tube and cannula. The different steps of the operation were about the same as detailed in Case 1. Extensive removal, including a part of the right thyroid cartilage and vocal cord, in addition to the entire left half of the larynx and the adjacent lymphatic

glands, was found necessary. In separating the cartilages from the esophagus, the esophageal tube was introduced and found to be of decided help.

*Later History.*—In the after-treatment of this case there were a number of complications. The old bronchitis was troublesome and at one time pneumonia was threatened. A very rapid pulse and irregular and disturbed respiration, due probably to interference of functions of the pneumogastric, were finally corrected with digitalis and strychnia. After the wound healed the x-ray was used with apparent good effect in preventing a return. Three and one-half years have elapsed, the allotted time, the laryngeal cavity looks exceedingly healthy, and the patient has been perfectly well since. (Fig. 2).

The Hahn cannula was not found necessary in either of these cases.

30 Willoughby Building.

## DOUBLE-HEADED MONSTROSITY.

GEORGE E. OREBAUGH, M.D.

HIGHLAND, OHIO.

*Parents.*—Mrs. C. L. M., aged 25, weight 108 pounds; had been in good health for several years, except for a leucorrheal discharge. She is perfectly developed. Her husband has no bad habits and no deformities. The family history on both sides is good, there being no abnormal births or twins in either family.

*History.*—I was called to see the woman during the latter months of pregnancy and found her suffering from persistent vomiting and from intense pain in the right side. On March 6, 1900, I was again called to see her. After protracted labor she gave birth to a female child which died in a few minutes. The breech presented, making the delivery difficult, and in addition the placenta was adherent. The mother is now in good health and has since given birth to a normal child.

*Description of Child.*—The child had one body, perfect in form from shoulders to feet. There were two legs and two arms, three spinal columns and two perfectly formed heads and necks, each separate and distinct. Each head measured fourteen inches in circumference. Other measurements were as follows: Across the shoulders, 8 inches; around thorax, 15½ inches; length of arm, 8½ inches; length of legs, 11 inches; length of body, 20 inches; weight, 14 pounds.

## A CASE OF SUPPURATIVE PYELONEPHRITIS, WITH SPECIMEN.

G. SHEARMAN PETERKIN, M.D.

SEATTLE, WASH.

This case and specimen is presented as graphically illustrating possible sequelæ of gonorrhea and teaching (1) the necessity of care in pronouncing gonorrhea cured, i. e., that there will be no sequelæ; (2) the necessity of gentleness in genitourinary surgery; (3) the rapidity with which infection in the genitourinary tract may prove fatal.

The specimen was obtained in the following case:

*History.*—M., male, aged 36, occupation, logger; had gonorrhea in 1895. During the last two years he had had some trouble in voiding urine, but only when drinking heavily. At this time he had also a slight urethral discharge; otherwise, no symptoms. He was never incapacitated from work. On June 6, 1907, he had been drinking heavily, but had attended to his duties. On this date he had acute retention and the sound was used to relieve same. Twenty-four hours later, June 7, he came to Seattle and presented himself for treatment at the local hospital. His condition was referred to the visiting physician as that of a case of gonorrhea, with retention, complicated by orchitis because of the swollen scrotum. He was catheterized with difficulty and two or three ounces of bloody urine obtained; catheterization was repeated after four hours. Twenty-four hours later the case was referred to me.



*Examination.*—There was evidence of commencing uremic coma: extravasation of urine, extending over the perineum, scrotum and half way up to umbilicus.

*Operation.*—A suprapubic cystotomy was done to relieve the retention. No attempt was made toward diagnosis. One quart of reddish-black, grumous, ammoniacal urine was evacuated and the bladder mucous membrane came away in large shreds. The patient died in eight hours without recovering consciousness.

*Autopsy.*—Postmortem findings were as follows: At the bulbous portion of urethra, was a stricture (Fig. 1, A). Along side of this, but slightly posterior, was found a urethral calculus (Fig. 1, B): size,  $\frac{5}{8}$  by  $\frac{5}{16}$  inches, or 1.5 by 8.5 cm.; weight, 8.5 gms., or a little over 2 drams; composition, phosphatic calcium magnesium. A cavity was plainly visible where the stone in the urethra lodged (Fig. 1, C), and a piece of catheter has been passed through the opening caused by the stone (Fig. 1, D). The prostate was found to be the seat of

voluted arrangement. In the areas of interstitial degeneration, the tufts are either partially or totally destroyed. The convoluted and straight tubules show a mild degree of swelling, with a paling and disappearing of the nuclei; they give the appearance of moderate amyloid degeneration. The lumens of the tubules are not distended, but flat and normal in appearance; they contain no casts or moulds. The interstitial tissue, shows perhaps, the greatest change of all. There is present a

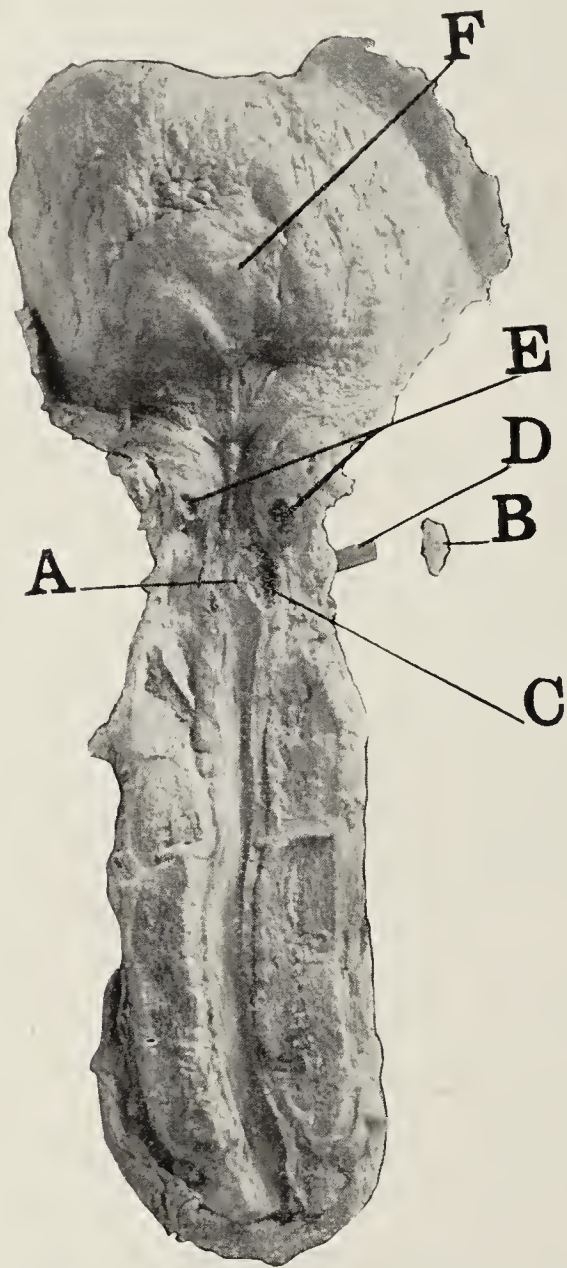


Fig. 1.—The urethra laid open; A, point of stricture; B, urethral calculus; C, cavity in which calculus lodged; D, piece of catheter passed through opening caused by stone; E, seat of abscess in prostate; F, bladder denuded of mucous membrane.

an abscess (Fig. 1, E) and the bladder was absolutely denuded of all mucous membrane (Fig. 1, F).

*Left Kidney.*—Macroscopic Findings: Size, 6 by 10 cm. ( $2\frac{1}{4}$  by 4 in.); weight, 139.3 gms. ( $4\frac{1}{2}$  oz.); surface irregular, lobulated and knotty; capsule, thin and tight; strips with ease; in cortex, near surface, abscess (Fig. 2A), 1 by 1.5 cm. ( $\frac{3}{8}$  by  $\frac{5}{8}$  in.) in size, filled with thick cheesy pus. Pelvis and calices enlarged; membrane, thick and rough; ureter, distended and thickened, coated with flakes of fibrin.

*Microscopic Findings:* Micro-organisms *Bacillus coli communis*, *Staphylococcus pyogenes albus*. Cortex, glomeruli congested, showing marked diapedesis of the red blood cells, a thinning distention and rupture of the capsular epithelium and membrane: in other places, the epithelial cells are lifted and separated from the basement membrane. The appearance of the tufts is irregular, having lost their definition and con-

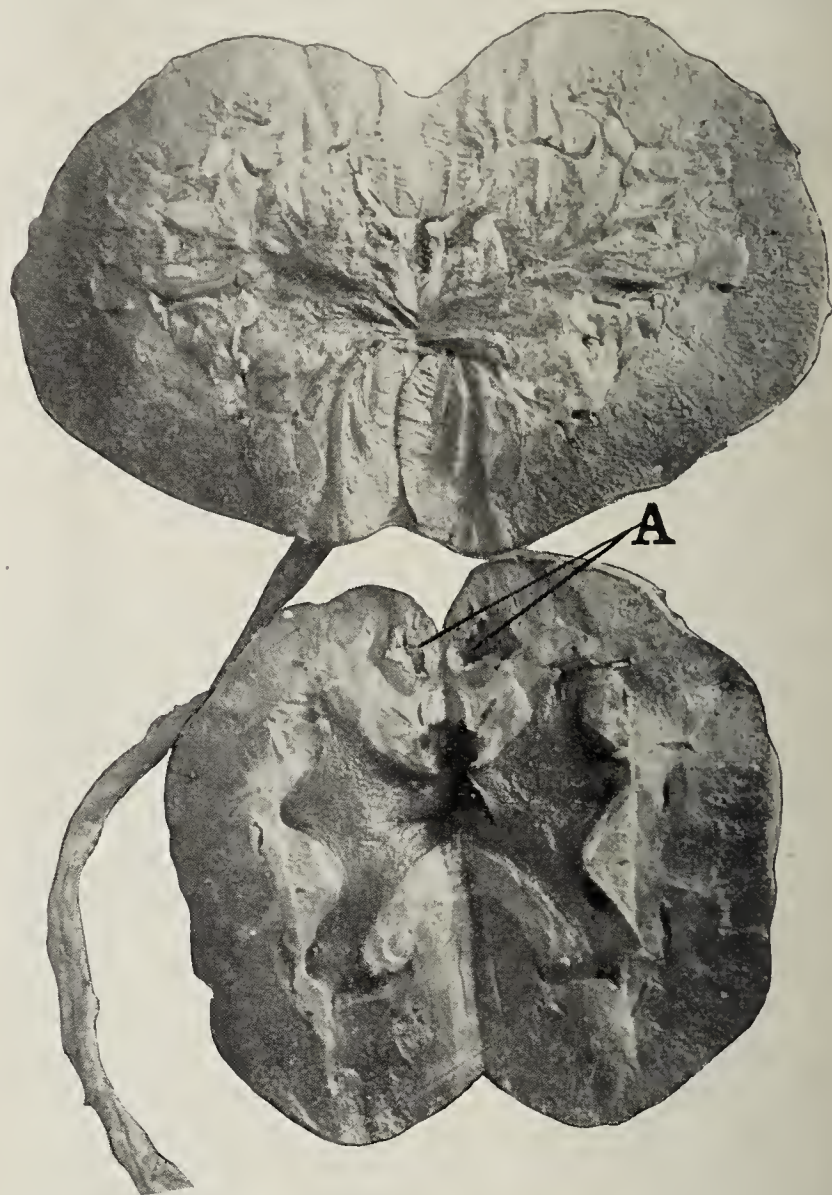


Fig. 2.—Left kidney split open showing an abscess (A) in cortex.

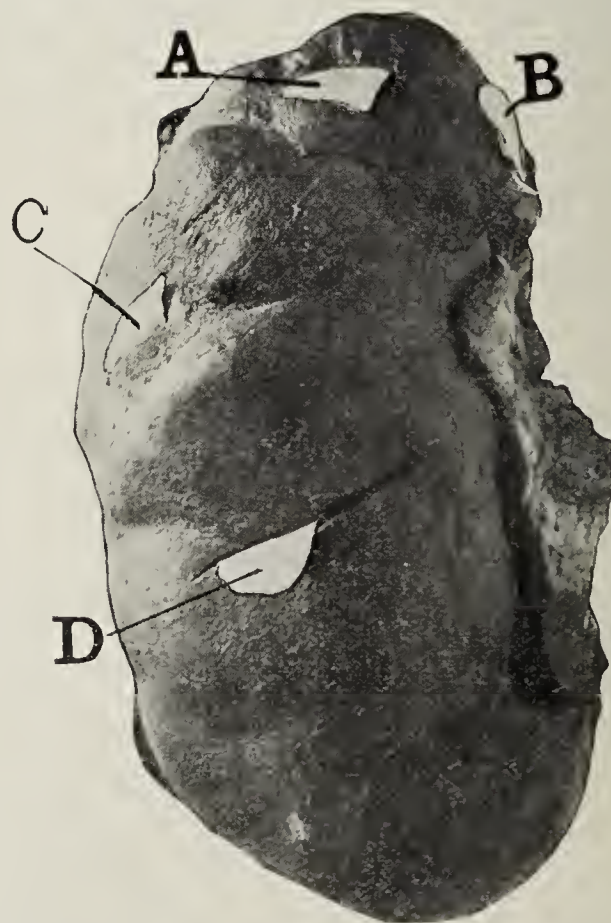


Fig. 3.—Left kidney showing abscesses A, B, C, D, seen only from the external surface.



marked active congestion, leucocytes often predominating the field. In other places, there is a wide and free dissection of the interstitial tissue, with rupture of glomeruli and tubules; many of these are communication cyst cavities. Between the tubules are small collections of pus. The dissection has separated the straight tubules and extends clear to the renal capsule—in many places resembling the appearance of emphysematous lung tissue, being a fine, irregular network of stroma tissue, creating spaces lined with epithelium or cells. In Figure 3—left kidney—the white pieces of paper show other abscesses seen only from external surface.

**Right Kidney.—Macroscopic Findings:** Size, 8 by 11 cm. (3 by 4½ in.); weight, 217.70 gm. (7 ounces); heart-shaped; surface, slightly lobulated, smooth, capsule, adherent; cortex, 1.5 to 2.5 cm. (½ to 1 in.) thick, firm, no abscesses; pelvis large, irregular; ureter, large thickened walls; pelvis dilated. mucous membrane thickened, congested, and coated with patches of fibrin.

**Microscopic Findings.**—These show a similar picture to that of the left kidney, with the active congestion well marked and hemorrhagic infiltration of the tufts. The blood vessels show no characteristic changes, except the venous system, which is slightly dilated, with distortion of the capillaries.

## TWO ADENOMATA OF THE ISLANDS OF LANGERHANS.

MARY ELIZABETH MORSE, M.D.

Pathologist to the New England Hospital for Women and Children.  
BOSTON.

Adenomata of the islands of Langerhans have seldom been described in the literature, probably because they are accidental findings in the routine examination of autopsy material rather than because they are actually very rare. Nichols,<sup>1</sup> in 1902, reported one which he believed was the first of the kind on record, and Helmholtz,<sup>2</sup> in 1907, added a second case. The reader is referred to their articles for a discussion of several other tumors described as arising from the islands of Langerhans, but apparently of doubtful origin. A search through the literature reveals no additional cases. Recently, however, two tumors of this kind have come under my observation. The first was found at the New England Hospital in the service of Dr. Clara J. Alexander; the second at the Boston City Hospital by Dr. O. R. Mabee, through whose courtesy I am enabled to report it. Both were discovered at autopsy, and have no bearing on the clinical histories or the other anatomic changes.

The first growth was from the pancreas of a woman, aged 44, dying of peritonitis. The gland appeared normal macroscopically, and the tumor was found in the specimen from the splenic end saved for microscopic examination.

**Examination of First Tumor.**—It forms a sharply defined encapsulated nodule, 5 mm. (¼ in.) in diameter, situated in the midst of the pancreatic tissue. It is composed of interlacing strands of cells supported by a connective tissue framework carrying blood vessels. The columns are in general two or three cells broad, but they often spread out into irregular masses. The cells are uniform in appearance throughout the tumor. They are indistinct in outline, polyhedral or cuboid in form, with a large vesicular nucleus and a moderate amount of finely granular cytoplasm,

which stains faintly with eosin. The nucleus is usually centrally situated, and contains one or more prominent chromatin masses. In short, the cells correspond in appearance and arrangement to those of the islands of Langerhans. No mitotic figures are found. The connective tissue framework is rather heavy. The blood vessels are dilated, frequently forming large spaces. They are intimately related to the cell columns, the latter resting directly on the capillary walls. The capsule is composed of coarse fibrillated connective tissue. Groups of tumor cells are included in it at several points, but do not penetrate it.

Islands of Langerhans are abundant in the pancreatic tissue surrounding the tumor. Some of them are unusually large, but otherwise they show nothing noteworthy. The pancreas contains a slight excess of connective tissue. The acini are small, the gland cells are shrunken, stain deeply and show no signs of secretion. The entire pancreas was cut in cross section at intervals of about 5 mm. (¼ in.), but no other tumor nodules were seen. Sections from various parts of the gland show numerous enlarged islands, some three or four times the usual size.

The second adenoma, which was found in the pancreas of a man, aged 46, dying of cerebral hemorrhage, arteriosclerosis and chronic nephritis, closely resembled the first.

**Examination of Second Tumor.**—It forms an encapsulated nodule 3 mm. (⅛ in.) in diameter. It is, however, more cellular than the first tumor, and the cells show greater variation in size and appearance. Some are three or four times as large as others; still others have a coarsely reticulated cytoplasm which scarcely stains.

The relation of adenomata of the islands of Langerhans to malignant tumors of the pancreas is unknown; but it seems doubtful whether they have any importance



Adenoma of the islands of Langerhans. The tumor here shown is 3 mm. (about ¼ inch) in diameter and situated in the midst of pancreatic tissue. The tumor cells are indistinct in outline, polyhedral or cuboid in form and each contains a large vesicular nucleus and finely granular cytoplasm. The capsule is composed of coarse fibrillated connective tissue.

1. Jour. Med. Research, May, 1902, iii, 385.  
2. Johns Hopkins Hosp. Bull., 1907, xviii



in this direction. Fabozzi<sup>3</sup> has reported five cases of carcinoma, however, which he considered arose from the islands of Langerhans. His work has not been confirmed, and indeed others (Reitmann,<sup>4</sup> Sauerbeck<sup>5</sup> and Grimani<sup>6</sup>) dissent strongly from his views. Speaking against this theory is the fact that, in carcinoma of the pancreas the islands, if not entirely destroyed, have in most of the cases reported shown no essential change. They seem to be more resistant to the invasion of the tumor than are the pancreatic acini, and may persist as isolated structures in the new growth after the glandular tissue has vanished. Sauerbeck describes carcinomatous masses inside the islands in one case, metastases from a cancer of the breast. This, he thinks, is the first report of the involvement of the islands in a carcinomatous process, either primary or secondary.

For permission to use the photomicrograph of the second tumor I am indebted to Dr. F. B. Mallory.

## PELLAGRA.

### REPORT OF CASE, WITH REMARKS ON ETIOLOGY.

N. M. MOORE, M.D.

Professor of Materia Medica and Therapeutics, Medical Department  
of the University of Georgia.

AUGUSTA, GA.

Pellagra was first described by Gaspar Casal in 1750, under the name of "*mal de la rosa*," and since then has been found to be prevalent in many countries. It is said that there were fully 100,000 cases in Italy in

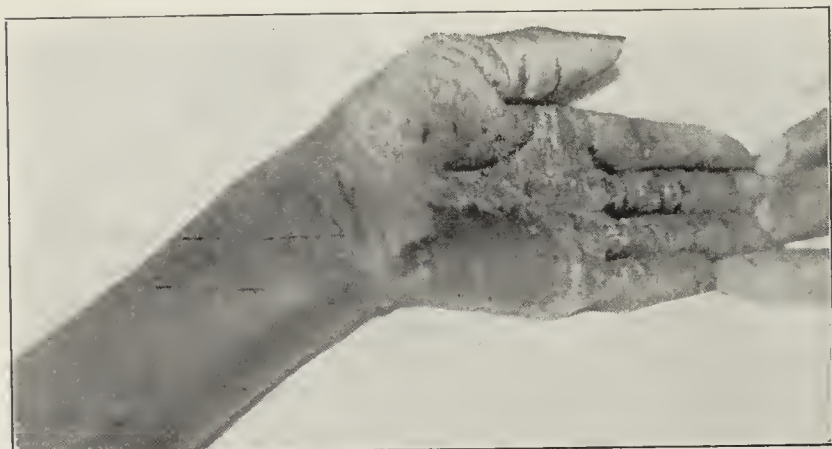


Fig. 1.—Hand of pellagrous patient from photograph taken after decided improvement had occurred in skin lesions.

1905, and at least 3,000 of these were in the lunatic asylums.

Many cases have been reported from the various tropical and subtropical countries, but none from the United States until 1907; although in 1902, Dr. H. F. Harris reported to the Georgia Medical Association a case of ankylostomiasis with pellagrous symptoms and called attention to the possibility of this disease being present in Georgia.

In July, 1907, Dr. George H. Searcy<sup>1</sup> reported an epidemic of acute pellagra at the Mount Vernon Hospital for the (colored) Insane in Alabama. Dr. J. W. Babcock<sup>2</sup> of the State Hospital for the Insane at Columbia,

S. C., made in December, 1907, a written report to the board of trustees of that hospital, calling attention to the presence of pellagra in South Carolina, and urging further investigations. Since Dr. Searcy's article, a case has been reported by Dr. T. C. Merrill,<sup>3</sup> from Texas.

### REPORT OF CASE.

*Patient.*—A woman, aged 37, born in Columbia County, Ga., was admitted May 19, 1908, to the Lamar Hospital for Negroes, at Augusta, Ga. It was impossible to get any history further than that the patient had worked on a farm, and moved into the city about March 1. No peculiarities were noted by her acquaintances at that time in regard to her mental condition, but the skin lesions were then present, and she said that they began to appear during February. Previous to their appearance, she complained of weakness and pain,



Fig. 2.—Legs and feet of pellagrous patient, from photograph taken after decided improvement had occurred in skin lesions.

especially in her hands and feet. About two weeks before she entered the hospital, it was noticed that she would act peculiarly at times, often having fainting spells and falling to the floor. May 19, she started to walk to the hospital, but fell on the street, and was brought in an ambulance. When seen by me the next day, she was in a semistupor, and would not answer questions. The buccal cavity was filled with foul-smelling fluid, which she made no effort to expectorate.

May 23: She was delirious, screaming loudly and talking religion. At times, since then, her mind seemed clearer, and she would answer questions; but most of the time she took

3. Beitr. z. Path. Anat. u. allg. Path., 1903, xxxiv.  
4. Ztschr. f. Heilk., 1905, xxvi (vi, new series), 1.  
5. Virchows Arch. f. path. Anat., September, 1904, supplement, clxxvii.  
6. Policlinico, Rome, 1906, xiii, 460.  
1. An Epidemic of Acute Pellagra, THE JOURNAL A. M. A., July 6, 1907, xlix, 37.  
2. What are Pellagra and Pellagrous Insanity? Does Such a Disease Exist in South Carolina, and What are Its Causes? Preliminary Report from S. C. State Hospital for the Insane.

3. A Sporadic Case Diagnosed as Pellagra, THE JOURNAL A. M. A., Sept. 14, 1907, xlix, 240.



no interest in her surroundings. Marked salivation, noted when she first entered hospital, gradually subsided.

*Physical Examination.*—The pupils were normal. There were no ulcers in the mouth at time of admittance, but a small superficial ulcer of tongue was noted at one time during her stay in the hospital. A narrow pigmented line was noted on each side of the tongue near the margin and extending toward the tip. Similar pigmented areas were noted on the inner sides of cheeks. There were five badly decayed teeth. Lymphatic glands were generally palpable. Small, brown, pigmented spots were seen on various parts of the body and on the soles of the feet, probably lentic in origin. Examination of lungs, heart, and abdominal organs was negative. Nothing abnormal was noted on either arm, but on each elbow the epidermis was dry and darkly pigmented. Beginning at the middle third of each forearm, the skin was dry, very much thickened, especially over the hands, and black, looking very much as if the hands had been dipped into soot. The diseased skin was wrinkled and fissured in various places over the hands. The palms and fingers were involved as well as the backs of the hands. The nails were not involved. The thighs were normal in appearance, but the epidermis was somewhat thickened, wrinkled, and decidedly discolored over each patella, and the inner side of each knee. Extending from the lower third of the leg over the dorsum of each foot, and over the toes, the skin looked mummified—was black, scaly, dry, hard, and very much thickened. The skin was cracked in various places, and over the middle toe of the left foot had sloughed, leaving granulating tissue exposed. The toe-nails were normal. There were small, brown, pigmented spots on the soles of the feet; otherwise the skin was normal. The external genitals showed no ulcerations. The patient gave no evidence of pain when stuck with a pin over the affected areas of skin and over parts of the arm; but flinched when the body was touched. Knee-jerks were absent. The bowels were very constipated. The stools were neutral in reaction, and contained no eggs.

*Urine:* The patient passed urine in bed, unless vessel was given her at regular intervals. Examination of catheter specimen, May 23, showed: Reaction, acid; sp. gr., 1012; no albumin; no sugar; no cellular elements. Examination of 24-hour specimen of urine, June 16, showed: Amount, 1450 c.c.; reaction, acid; albumin, none; sugar, none; indoxyl, slightly increased; no casts; no blood.

*Blood:* Four blood examinations made by Dr. M. S. Levy, at different times during the patient's stay in the hospital, showed hemoglobin varying from 80 per cent. to 86 per cent.; leucocytes from 9,400 to 10,600; red cells from 4,500,000 to 4,610,000. The differential counts showed a variation in the small lymphocytes from 20.5 per cent. to 24 per cent.; large lymphocytes from 4 per cent. to 5 per cent.; polynuclears from 65.5 per cent. to 68 per cent.; eosinophiles from 4 per cent. to 5.5 per cent.; transitionals from 1 per cent. to 2.5 per cent. No plasmodia or other abnormalities were noted. Examination of smears and cultures from cerebrospinal fluid gave negative results.

*Course of Disease.*—The patient began to show signs of improvement soon after her admittance to the hospital, and by June 16, her mental condition was much better, although still sluggish. She was then able to be up, but would occasionally fall on attempting to walk across the ward; the diseased skin of the arms and hands had peeled (Fig. 1), leaving fairly normal tissue beneath, and the skin lesions on her legs and feet (Fig. 2) showed signs of improvement.

This case is of interest, because of the very marked presence of the three cardinal symptoms of the disease, salivation, mental disturbance, and peculiar skin lesions. The fact that the skin lesions did not appear on the face, but on the knees, is of interest in showing that exposure of the part to the sun does not always determine the location of the lesion.

#### PREVALENCE OF THIS DISEASE IN SOUTHERN STATES.

From correspondence with physicians in charge of different insane asylums in the south, I believe that pel-

lagra is much more prevalent in this section of the country, especially among the negroes, than we have any idea of at the present time.

Louis W. Sambon,<sup>4</sup> in 1905, called attention to the peculiar fact that no cases had been reported from the United States, but said: "I believe it is far more common in tropical and subtropical regions than we are aware of at present."

#### ETIOLOGY.

It is by no means proved that damaged maize alone is capable of producing this disease, although this is the theory held by many authorities, especially the Italian investigators. So good an authority on tropical medicine as Sambon, and many of the Spanish investigators oppose this view, and give much evidence against it. Sambon says:

If I were to suggest a new theory of pellagra, merely as a working hypothesis, I should feel inclined to draw attention to the many analogies between pellagra and some of the protozoal diseases which have been recently worked out.

So far, only a few complete reports have been made of examinations of the blood and cerebro-spinal fluid, and as yet, no light has been thrown on the subject by work along this line. However, Sambon's suggestion offers a most inviting field for further investigations.<sup>5</sup>

### NASAL MENSTRUATION.

F. E. WALKER, M.D.

Surgeon to Our Lady of Lourdes Hospital,  
HOT SPRINGS, S. D.

*Patient.*—Mrs. H., aged 55, German.

*History.*—She has always been well and has borne five children. Menstruation commenced at age of 13, and has always been regular, though with some pelvic pain and distress two or three days prior to flow. She entered the climacteric at age of 49. There were no unusual pelvic symptoms. However, as the regular monthly uterine menstruation diminished there was "nasal menstruation," lasting from two to four days, preceded by more or less severe headache. This condition lasted about two years when normal menstruation ceased and "nasal menstruation" became permanently established.

*Examination.*—I first saw the patient in December, 1907, almost two years after the last normal menstrual epoch. She consulted me on account of an enlargement in the angle of the right jaw in the region of the parotid gland. She stated that on the cessation of the menses the gland would become painful, and enlarged each month, while at the same time she experienced more or less headache. All these symptoms disappeared as soon as the nose bleed commenced. After a few months she noticed that the gland remained enlarged; it had gradually increased in size so that at this date it was as large as an apple. During the period of nasal hemorrhage the gland would "swell up" and after the flow disappeared would "go down."

*Operation.*—April 14. The entire gland was removed and the patient rapidly convalesced. On the third day following the operation the nose bled more or less freely though not exceeding 64 gms. *in toto*. The symptoms were identical with those of menstruation following oöphorectomy.

*Subsequent History.*—The patient has had no more headache and no nasal hemorrhage and is in the best possible condition.

4. Remarks on the Geographical Distribution and Etiology of Pellagra, Brit. Med. Jour., 1905, ii, 1272-1275.

5. In addition to references already given the following may be consulted:

Pellagra Occurring in England, Practitioner, London, 1906, lxxvi, 679-685.

Examen du sang et du liquide céphalo-rachidien dans la pellagre, Compt. rend. Soc. de biol. Paris, 1907, lxxiii, 218.

Le traitement de la pellagre par l'atoxyl, Bull. Acad. de Méd., Paris, 1907, lxxii, 139-142.



## New and Nonofficial Remedies

### THE MEETING OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

#### ADOPTION OF REVISED RULES GOVERNING NEW AND NON-OFFICIAL REMEDIES.

A meeting of the Council on Pharmacy and Chemistry of the American Medical Association was held at the Association building, Chicago, July 17 and 18, 1908. The following members were present:

- J. A. Capps, A.M., M.D., Assistant Professor of Medicine, Rush Medical College, University of Chicago.  
David L. Edsall, A.B., M.D., Professor of Therapeutics and Pharmacology, Department of Medicine, University of Pennsylvania, Philadelphia.  
Otto Folin, S.B., Ph.D., Professor of Biologic Chemistry, Harvard Medical School, Boston.  
C. S. N. Hallberg, Ph.G., M.D., Professor of Pharmacy, University of Illinois School of Pharmacy, Chicago.  
R. A. Hatcher, Ph.G., M.D., Professor of Pharmacology, Cornell University Medical College, New York City.  
Reid Hunt, M.D., Chief of the Division of Pharmacology, U. S. Public Health and Marine-Hospital Service, Washington, D. C.  
L. F. Kebler, M.D., M.S., Ph.C., Chief of the Drug Laboratory, Department of Agriculture, Washington, D. C.  
J. H. Long, M.S., Sc.D., Professor of Chemistry, Northwestern University Medical School, Chicago.  
F. G. Novy, M.D., Sc.D., Professor of Bacteriology, University of Michigan, Ann Arbor.  
W. A. Puckner, Ph.G., Secretary of the Council and Chief of the Chemical Laboratory of the American Medical Association, Chicago.  
G. H. Simmons, M.D., LL.D., Chairman of the Council and Editor of THE JOURNAL of the American Medical Association, Chicago.  
Torald Sollmann, M.D., Professor of Pharmacology and Materia Medica, Medical Department, Western Reserve University, Cleveland, O.  
Julius Stieglitz, Ph.D., Professor of Chemistry, University of Chicago.  
M. I. Wilbert, Ph.M., Apothecary, German Hospital, Philadelphia.

As its chief business the Council discussed the revision of the rules and the rearrangement of the matter contained in "New and Nonofficial Remedies." It was decided that the book "New and Nonofficial Remedies" shall contain descriptions of the proprietary articles accepted by the Council and of such simple non-proprietary and unofficial substances as are of sufficient importance. It was decided that proprietary mixtures shall not be included in the main body of the book unless they show some originality and present a marked advance over similar products, but when these conform to the rules they shall be included in the form of an appendix to the book. Articles which are official in the United States Pharmacopeia or in the National Formulary, and non-proprietary mixtures of official articles, are not eligible for inclusion in the book.

The rules were modified in minor particulars, the following modifications being of first importance:

Rule 5 was so amended as to require that the actual identity of the manufacturer of a product be furnished.

The Council voted to interpret Rule 8 so that after Jan. 1, 1909, pharmaceutical preparations and mixtures will be admitted only under a pharmaceutical title which shall indicate the most potent ingredients. Arbitrary coined names will not be recognized for pharmaceutical mixtures.

It was decided that no pharmaceutical mixture shall be accepted whose name indicates its therapeutic action or is suggestive of the names of diseases or pathologic conditions in which it is to be used. After Jan. 1, 1909, this rule is to be extended to simple articles.

The Council voted to condense Rules 9 and 10 to become Rule 9.

A rule—Rule 10—was adopted under which recognition will be refused to articles which, because of their unscientific composition, are useless or inimical to the best interests of the public or of the medical profession.

The rules as modified are as follows:

#### OFFICIAL RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

##### INTRODUCTION.

The following rules have been adopted by the Council with the object of protecting the medical profession and the public against fraud, undesirable secrecy and objectionable advertising in connection with proprietary medicinal articles. Those physicians who wish to profit by this protection can do so by confining themselves in their prescribing to the articles which are contained in the current issue of the United States Pharmacopeia ("U. S. P."), of the National Formulary ("N. F.") or of "New and Nonofficial Remedies" ("N. N. R.").

The "N. N. R." contains a description of such proprietary articles as have not been found to conflict with the rules of the Council; and, of such simple non-proprietary and unofficial substances as seem of sufficient importance.

Proprietary pharmaceutical mixtures should comply with the rules and will be investigated by the Council. The Council, however, endorses the principle that prescriptions should be written on the basis of the therapeutic effects of the individual ingredients. For this reason, it does not include mixtures in this book unless they present some real advantage. If, however, the physician wishes to prescribe ready-made proprietary mixtures, he will find in the appendix, listed under the name of the manufacturer, those proprietary mixtures which on examination have not been found to conflict with the rules.

Non-proprietary mixtures share the status of the substances from which they are prepared, and therefore are not contained in the book.

#### RULES GOVERNING THE ADMISSION OF PROPRIETARY ARTICLES TO THE BOOK "N. N. R."

(The term "proprietary article" in this place shall mean any chemical, drug or similar preparation used in the treatment of disease, if such article is protected against free competition, as to name, product, composition or process of manufacture; by secrecy, patent, copyright, or in any other manner.)

*Rule 1 (Ingredients).*—No article shall be admitted unless its active medicinal ingredients and the amounts of such ingredients in a given quantity of the article be furnished for publication. The general composition of the vehicle, its alcoholic percentage, and the identity of any preservatives, must be furnished.

*Rule 2 (Identity).*—No chemical compound will be admitted unless sufficient information be furnished regarding tests for identity, purity and strength, the rational formula or the structural formula, if known.

*Rule 3 (Direct Advertising).*—No article that is advertised to the public will be admitted; but this rule will not apply to disinfectants, advertised for uses other than on the human body, or to non-medicinal food preparations, except when advertised in an objectionable manner.

*Rule 4 (Indirect Advertising).*—No article will be admitted whose label, package or circular accompanying the package contains the names of diseases, in the treatment of which the article is said to be indicated. The



therapeutic indications, properties and doses may be stated. (This rule does not apply to circulars, etc., when distributed solely to physicians, to advertising in medical journals, or to vaccines and antitoxins.)

*Rule 5 (Fraudulent Claims as to Origin).—*No article will be admitted or retained concerning which the manufacturer, or his agents, make false or misleading statements as to source, raw material from which made, or method of collection or preparation. The identity of the actual manufacturer of the article must be furnished.

*Rule 6 (Fraudulent Claims as to Therapeutic Value).—*No article will be admitted or retained concerning which the manufacturer or his agents make unwarranted, exaggerated or misleading statements as to the therapeutic value.

*Rule 7 (Poisonous Substances).—*The principal label on an article containing "poisonous" or "potent" substances must state plainly the amount of each of such ingredients in a given quantity of the product.

*Rule 8 (Objectionable Names).—*If the trade name of an article is not sufficiently descriptive of its chemical composition or pharmaceutical character, or is, for any other reason, unsatisfactory or objectionable, the Council reserves the right to include with the trade name a descriptive title in the book. Articles bearing objectionably suggestive names will be refused consideration.

[a. The Council has voted so to apply this rule that after Jan. 1, 1909, pharmaceutical preparations and mixtures will be admitted to the "N. N. R." or appendix only under pharmaceutical title which shall indicate the most potent ingredients. Arbitrary coined names will not be recognized for pharmaceutical preparations or mixtures, but they may be admitted for new chemicals or active principles.

b. The Council has voted that no pharmaceutical mixture will be admitted whose name indicates its therapeutic action, or is suggestive of the names of diseases or pathologic conditions in which it is to be used; after Jan. 1, 1909, this ruling is to be extended to simple articles, as well as mixtures.]

*Rule 9 (Patented Products and Protected Names).—*If the article is patented—either process or product, or both—the number of such patent or patents should be furnished to the Council. Furthermore, if the name of an article is registered, or the label copyrighted, the registration (trademark) number and a copy of the protected label should be furnished the Council. In case of registration in foreign countries the name under which the article is registered should be supplied.

*Rule 10 (Unscientific and Useless Articles).—*No article will be admitted which, because of its unscientific composition, is useless or inimical to the best interests of the public or of the medical profession.

#### EXPLANATORY COMMENTS ON THE RULES.

*Introduction.*—The Council on Pharmacy and Chemistry was established in February, 1905, by the American Medical Association primarily for the purpose of gathering and disseminating such information as would protect the medical profession in the prescribing of proprietary medicinal articles. In pursuance of this object the Council examines the articles on the market as to their compliance with definite rules which are designed to prevent fraud, undesirable secrecy and the abuses which arise from advertising to the laity. Such articles as appear to conform to the rules are admitted and their essential features are described in the annual publication of the Council, the "N. N. R.," if they come within the scope of this book. This description is based in part on investigations made by or under the direction of the Council, but in part also on evidence or information supplied by the manufacturer or his agents. Such

interested statements are examined critically, and are admitted only if they appear to be in conformity with the evidence. It is, however, manifestly impossible for the Council to investigate the composition of every complex pharmaceutical mixture, or thoroughly to check every therapeutic claim; it can only give an unbiased judgment on the submitted evidence. Criticisms and corrections of the descriptions which may aid in the revision of the matter will be appreciated. The Council judges an article entirely by the facts existing at the time of its admission. Previous infringements of the rules (short of intentional fraud) do not prevent the favorable consideration of an article, provided that they have been thoroughly corrected. Infringements after admission, or the discovery that the Council's information was incorrect, will cause the acceptance to be reconsidered. The Council desires physicians to understand that the admission of an article does not imply a recommendation. It means only that no conflict with the rules has been found by the Council.

*The Scope of the "N. N. R." and Appendix.*—To aid physicians and manufacturers in deciding what articles come within the scope of this book, or, in other words, to enable physicians to recognize whether an article has been omitted because it does not need admission or because it has been rejected, the Council furnishes the following more detailed definitions:

*Official Articles.*—The status of the articles which are official in the United States Pharmacopeia or in the National Formulary naturally does not require the approval of the Council. Since authoritative information concerning them is readily obtainable, they have no place in the "N. N. R." To avoid confusion with non-official substances marketed under similar names the Council recommends that they be prescribed by their official Latinized title followed by the abbreviation "U. S. P." or "N. F.," thus: *Tincturae Nuceis Vomicae U. S. P.* 5 c.c., *Elixir Gentianae N. F.* 95 c.c.

"Trade names," protected or otherwise, for these articles will not be recognized by the Council unless they antedate the recognition of the article in the United States Pharmacopeia or National Formulary. Nor will non-essential modifications of official or non-proprietary preparations be recognized. Essential and important modifications, however, will be accepted and will receive individual mention in the "N. N. R."

*Substances Described in the "N. N. R."*—In the body of the book will be described simple proprietary substances and their preparations when these are marketed by the original manufacturer; proprietary mixtures if they have originality or other important qualities which entitle them to such place; and important non-proprietary unofficial articles. The Council recommends that when these latter are prescribed, that they be indicated by the abbreviation "N. N. R.," thus insuring to the prescriber the quality of these articles laid down in the book.

*Proprietary Mixtures.*—A mixture will be considered as proprietary, and therefore requiring consideration by the Council and admission to the book or appendix, if it contains any proprietary article; if it is marketed under a name which is in any way protected; or if its manufacturer claims for it any unusual therapeutic qualities. All proprietary mixtures which are marketed in conformity with the rules are listed in the appendix of the "N. N. R." under the names of their manufacturers. They are not admitted to the body of the book, save in the exceptional cases cited in the preceding paragraph.

*Non-Proprietary Mixtures of Official Substances.*—Since the ingredients of such mixtures do not require



the approval of the Council, and since the mixtures are not open to the proprietary abuses which called for the work of the Council, it is not necessary that they should be investigated and approved by the Council. The physician should judge whether such mixtures should be directed to be prepared by the pharmacist, or whether he is justified in ordering a ready-made preparation. If he decides to use a ready-made non-proprietary preparation he must judge for himself if it is marketed in accordance with the rules. (It should also be remembered that the application of trade names to any substance makes it proprietary.)

*Objectionable trade names for official substances.*—The application of "trade names" to official or established non-proprietary products tends to confusion and fosters many abuses. It can only be condoned if the "trade name" possesses priority as previously defined. Such trade names will therefore not be admitted by the Council except in those few cases in which the trade name has already come into extensive use. The protection of the manufacturers can be amply secured by appending the firm or "brand" name to the official name, and to this there can be no objection. Appended names or initials of manufacturers as in *Mistura Rhei et Sodæ*, N. Y. & Co.: Mixture of Rhubarb and Soda, "Jones;" Pills of Aloes and Iron, "Smith brand," are considered non-proprietary. Protected generic brand names shall not be regarded as proprietary. However, the preparation "Adrenalin suppositories" is proprietary because the name adrenalin itself is protected.

*Unessential Modifications of Official Substances.*—The subterfuge for obtaining proprietary rights over an official or established non-proprietary product, by introducing unessential modifications, also tends to confusion and abuses, and such articles will not be admitted by the Council. Essential and important modifications, however, will receive recognition. (The Council interprets the term "established non-proprietary product" to apply to a preparation of any formula which has been published through any recognized or reasonably accessible channel of publication, prior to its appropriation or modification by a manufacturer.)

#### EXPLANATORY COMMENTS ON THE RULES GOVERNING THE ADMISSION OF PROPRIETARY ARTICLES.

*Rule 1 (Ingredients).*—It is not only the right but the duty of the physician to know the essential composition of what he prescribes; the Council can not compromise on this proposition. Not only the potent ingredient, but also the general character of the vehicle, the presence of alcohol, and the identity of preservatives, or of any other substance, whether added or present as an impurity, must be stated, if these can under any circumstances affect the action of the article. This generally does not mean the publication of such trade secrets as flavors or the details of the working formula. Furthermore, trade secrets will not be received as confidential by the Council, since it accepts information only with the distinct understanding that this may be freely published, at its discretion. Nor does the Council accept invitations to inspect factories; its concern is with the finished products.

On the other hand, the Council requires that the information be complete and accurate as to the medicinal ingredients. Unofficial constituents of proprietary mixtures must be submitted by the manufacturer in the regular way and must be approved by the Council before the preparations containing them can be admitted.

When it appears that a manufacturer has made a *deliberately* false statement concerning his product he is asked to furnish an explanation; and if this is not satisfactory the product will not be admitted, even if the false statement is subsequently corrected or omitted. This applies not only to statements made to the Council, but

also to statements furnished to physicians by the manufacturer or his agents, even when these statements are in the guise of testimonials.

*Rule 2 (Identity).*—In order to avoid errors in the case of chemical compounds and to guard against adulterations, lack of potency or strength and the mistaking of one chemical for another, it is necessary to have at hand suitable tests. If these facts have appeared in the literature, or in standard text-books, reference to them will be sufficient; but with new chemicals, especially synthetics, the manufacturer or his representatives will be required to supply such tests for publication, together with the rational formula, or structural formula, if known, in order that an intelligent opinion of these products may be assured.

*Rule 3 (Direct Advertising).*—The impossibility of controlling the irresponsible claims which are usually made in advertisements to the public, the well-known dangers of suggesting by descriptions of symptoms to the minds of the people that they are suffering from the many diseases described, the dangers of an unconscious and innocent formation of a drug habit, and the evils of harmful self-medication, including the dangers of the spread of many infectious and contagious diseases when hidden from the physician, and similar well-known considerations, are the reasons for discouraging, in the interest, and for the safety, of the public, this reprehensible form of exploitation.

In the case of subjects on which the public should be instructed, as the use of disinfectants and foods, such advertisements, if not in objectionable forms, are considered admissible.

We may divide the foods into three groups. The first group contains the ordinary foods, including the well-known breakfast foods. These do not come under the supervision of the Council in any way. The second group includes medicinal foods proper, such as predigested foods, which have a relatively low food value and which are characterized by a high alcohol or preservative content, and which frequently contain strictly medicinal substances, or food substances for which distinct therapeutic properties are claimed. These products should be used only on the advice of the physician, and the advertisements should be restricted as in the case of ordinary medicines. The third group includes a large and important class of manufactured products, such as invalid and infant foods, which in a sense stand between the first and second groups. The public has the same interest in these foods that the physician has, and usually has full information concerning them. While the primary recommendation of these articles should naturally come from the physician, it can not be expected that their continued use should depend on repeated prescriptions. Information concerning this group of foods would come naturally and properly from a physician, and the collection and dissemination of this information may very properly be included in the work of this Council. As the use of products in this class is an extended one, it is not proper to limit their advertising to medical journals, but the advertising should be permitted in the lay press so long as it is conducted in a manner compatible with the rules of the Council.

*Rule 4 (Indirect Advertising).*—It should be remembered that the sole intent of this rule is to protect the physician, so that in prescribing a proprietary medicine he need not unconsciously become an advertising agent of proprietors. The rule imposes no restriction on the legitimate methods of bringing a remedy to the atten-



tion of the profession, such as advertising in medical journals, circulars and other printed matter distributed solely to physicians. The rule applies only to the package as it may reach the patient. The naming of diseases on the label or package is not necessary, as is shown by the very large number of proprietary products which have been successfully introduced without resorting to this expedient. This method of popularizing a proprietary remedy with the laity is most objectionable, and should not be tolerated in any form. The Council considers therapeutically suggestive names (see Rule 8, b) as an unworthy expedient to the same end. It would prefer to have therapeutic indications omitted from the label and package, but does not insist on this point, because these are useful in some exceptional cases. It will be considered an infringement of the rule when an article is marketed in bottles which have the name of the article blown into the glass, or if otherwise the name or initials or other distinctive mark of the article are permanently stamped on the container, on the article itself, or are contained on the stoppers or seals. Articles which are marketed in any of these ways are not admitted. Readily removable labels are not objectionable. The Council does not countenance the use of an admitted article for advertising other articles which have not been admitted by the Council.

*Rule 5 (Fraudulent Claims as to Origin).*—No false or misleading statement in regard to an article can be permitted concerning the source or material from which it is made, or the persons by whom it is made. Some glaring frauds of this nature have been perpetrated in the past, and this rule is intended to prevent such imposition. The identity of the actual manufacturer of an article should be known, since the manufacturer is in part responsible for the quality of the product. No good reason can exist for concealing the identity of the manufacturer of a legitimate article: such concealment must be considered evidence of the doubtful character of a product or its method of exploitation.

*Rule 6 (Fraudulent Claims as to Therapeutic Value).*—This rule is intended to restrict the direct and indirect claims of the manufacturers or agents as to the therapeutic superiority of their products, to what is compatible with ascertained facts. The Council aims to be quite liberal in the application of this rule. There are honest differences of opinion as to many therapeutic questions. It is natural that a manufacturer should be rather partial toward his own product, and, since every one should be cautious in accepting such biased claims, a moderate degree of emphasis may not be objectionable. The Council, therefore, does not assume to censor any reasonable statements, especially when such statements are confirmed by responsible clinicians. Claims are often made, however, which are incompatible with common experience and which sometimes defy the laws of Nature. Claims which seem highly improbable will not be admitted by the Council unless the manufacturer supports them by evidence acceptable to the Council. In doubtful cases the Council acts on these questions under the advice, and with the cooperation of its staff of clinical consultants.

*Rule 7 (Poisonous Substances).*—For the information of the pharmacist or dispenser, and to enable him to safeguard the interests of the patient and the physician, all articles containing such potent agents as the poisonous alkaloids and other organic substances and the salts of some of the metals, should have the exact

amount of these ingredients which is contained in the average adult dose stated on the label.

*Rule 8 (Objectionable Names).*—Many of the abuses connected with proprietary medicines are intimately associated with the more or less arbitrarily selected or "coined," usually protected, names. In the interest of those physicians who would prefer to employ a more rational nomenclature the Council advises the use of scientific names by the manufacturers, at least as synonyms. In view of the existing trade conditions, however, it does not insist on this except in such specific cases as explained below in which experience has shown the necessity of restrictions. These restrictions will be applied to all articles admitted after Jan. 1, 1909.

*Pharmaceutical Preparations and Mixtures.*—Since these, with rare exceptions, are not original in composition, there is no sufficient reason why they should be endowed with arbitrary names; on the contrary, it is important that the prescribing physician should be constantly reminded of the potent ingredients on which the actions of such preparations are based. It is particularly important that actively poisonous or habit-forming drugs be not disguised under an innocently worded title.

The Council recognizes, on the other hand, the right of discoverers of new synthetic products or active principles to name their discovery, and interposes no objection to arbitrary names for such products, so long as such names do not tend to advertise the product to the laity, as specified under Rule 8, b. It is desirable, however, that the coined names should indicate the chemical composition of the article. With synthetic chemicals the true chemical name should be stated, at least in addition to the trade name. If an article conflicts only with Rule 8 it may be admitted as soon as the manufacturer substitutes a name which the Council considers satisfactory.

*Rule 9 (Patents, Trademarks, Copyrights, Etc.).*—This information is desirable in determining the legal status of these articles and will permit their ready recognition in current publications.

*Rule 10 (Unscientific and Useless Articles).*—The Council has been justly criticized because its rules failed to exclude certain unscientific mixtures, whether of well-known or obscure substances. The use of articles which are unessential modifications of official or established non-proprietary articles is unscientific and serves no useful purpose. The Council, therefore, will not admit products which are scientifically unsound and which, therefore, must be considered useless or inimical to the best interest of the medical profession and the public. This class includes mixtures containing an excessive number of ingredients; those which contain substances of no probable therapeutic assistance to each other; those of no therapeutic value.

---

*Sciatica from Lemonade.*—F. Koren, of Christiania, writes to the *Tidsskrift for den norske Lægeforening*, August 15, asking whether others know of experiences similar to his with sciatica after taking lemonade. On three occasions he had a very severe, acute attack of sciatica, compelling him to remain in bed for a day, after drinking a glass of lemonade. His wife's aunt, in England, also suffers severe lumbago for several days every time she drinks lemonade, as he learned later. He experienced the intense sciatic pain almost at once after drinking his "lemon squash." Under salicylates and local heat the neuralgia vanished by the second day.



## Therapeutics

### HYPNOTICS.

It is impossible to enumerate the hypnotics in the order of their importance, as the importance of each individual drug varies with the condition to be combated; consequently the following are arranged alphabetically. The official hypnotic drugs are:

Bromids.	Paraldehyd.
Chloral.	Sulphonethylmethanum
Chloralamid.	(trional).
Hyoscin.	Sulphonmethanum
Morphin.	(sulphonal).

### BROMIDS.

The bromids are used to produce sleep and to quiet the nervous system in conditions of irritability and excitation. Their action is largely as a sedative to the spinal cord, and also as a sedative to the cerebral cells. They are depressant to the circulation and, therefore, quiet circulatory excitement. Under their action the heart is slowed and the blood pressure falls; consequently in any condition of serious heart or circulatory weakness bromids are contraindicated. On the other hand, in any condition of inflammatory irritations of the cerebrospinal system they are indicated.

Their prolonged use tends to cerebral degeneration; consequently in old age and in mental debility or melancholia, or with symptoms of paresis bromids should not be used. Their prolonged use also tends to produce muscular weakness as well as weakened circulation, sluggish digestion, loss of appetite, and, generally, imperfect nutrition. Mental actions become sluggish, the eyes lose their luster, the face becomes pale, and actual anemia may develop. The perspiration is increased and may be irritating and sour. The whole condition is that of great depression. Such a chronic condition caused by the administration of bromids has been termed "bromism," but the term should be confined to the condition of chronic poisoning.

As the bromids are partially excreted through the skin, they often, directly or indirectly, irritate it, and acute or various papular or even wartlike eruptions can occur. The more carefully the body is cleansed with baths during prolonged administration of bromids the less likely is the skin to show eruption.

The over-action of a single dose of a bromid is shown by acute depression (lowered temperature, weak pulse, cold, clammy perspiration), impaired speech, tremor, profound sleep, perhaps stupor and, possibly, paralysis due to spinal depression.

The treatment of such a condition would be the application of dry heat, atropin and strychnin hypodermatically, black coffee by the mouth or rectum, and artificial respiration if it is needed.

Acute poisoning by bromids is rare, as a single dose to produce poisoning is rarely taken. The large doses often administered in epilepsy do not cause poisoning, as the patient has become tolerant to such dosage.

Bromids are indicated as follows: \*

1. To produce sleep.
2. In hysterical conditions without neurasthenia.
3. In acute cerebral excitement.
4. In inflammation of the meninges.
5. In convulsions caused by irritation of the brain or spinal cord (uremia, tetanus, hydrophobia).
6. In epilepsy.
7. As an antidote in strychnia or other convulsive poisoning.

### 8. To prevent cinchonism.

The only justification for administering bromids for a long period is in epilepsy, and in this disease it is a symptomatic treatment, though it seems at times to be curative. The size of the dose that should be used, the total amount and the length of time that the drug should be given must be decided by the symptoms of the disease and by the action of the bromids on the individual patient. However, by greatly diminishing the amount of sodium chlorid allowed in the food, it has been proved that therapeutic effects may be achieved from the bromids in epilepsy with much smaller doses than formerly were given.

As above stated, the eruptions on the skin caused by the continued use of bromids can be much abated or even abolished by the plentiful drinking of water and by daily hot baths. The coincident administration of arsenic is also often successful in preventing these eruptions.

There is no question that in hysterical conditions and conditions that simulate exophthalmic goiter (Graves' thyroid disease) bromids given for some time are of great value. They are also valuable in the nervousness and vasomotor disturbances of the menopause. The value of a bromid is probably not only in its actual sedative action on the nerve centers, but also by its quieting action on the thyroid gland, which in all of these conditions shows more or less hyperactivity. While in hysterical conditions bromids, even when administered for several weeks, may do nothing but good, it constantly must be borne in mind that their tendency is to cause debility and malnutrition that it may be difficult later to combat. The dose of a bromid to meet these indications is not large, from 0.50 gram ( $7\frac{1}{2}$  grains) to 1 gram (15 grains), two or three times a day.

As a hypnotic, the dose should be at least 2 grams (30 grains), given from one to two hours before bedtime. More may be given if deemed advisable. A smaller dose is rarely of any utility. As a hypnotic, bromids should not be given for any great length of time. If a hypnotic must be given for a considerable time, some substitute must be used, so that a habit for bromids may not be acquired.

The bromids are valuable in preventing the unpleasant symptoms from large doses of quinin. The coincident administration of three grains of a bromid for every one grain of quinin, *i. e.*, 1 gram (15 grains) of a bromid to 0.30 gram (5 grains) of quinin, will prevent cinchonism. Of course it would be inadvisable to give sufficient bromid to counteract the effect of the enormous doses of quinin given in pernicious malaria, but in ordinary intermittent fever during the period of the administration of fair doses of quinin to patients very susceptible to it, bromids are satisfactory.

The drugs whose physiologic actions are more or less similar to bromids are those that are termed depresso-motors. They are chloral, physostigma (calabar bean), gelsemium and conium. Chloral, however, is the drug that acts most similarly to the bromids and may be substituted for them both as a hypnotic and as a cerebrospinal depressant.

The official bromids are:

Ammonii bromidum.	Sodii bromidum.
Calcii bromidum.	Strontii bromidum.
Lithii bromidum.	Zinci bromidum.
Potassii bromidum.	

There is no reason for using the lithium, calcium or zinc bromid.



Strontium bromid is supposed to have a little less deleterious effect on the digestion than the other bromids have. The difference is so slight, however, that there is no good reason for using it.

The ammonium bromid is more disagreeable than the potassium or sodium bromid, and therefore is not often used. The pleasantest to take is the sodium salt.

The sodium and potassium bromids are the ones most frequently used, and of these the potassium salt seems slightly more hypnotic, but if long given is more depressant to the circulation, as potassium is more of a heart muscle depressant than is sodium. Consequently, for prolonged use the sodium bromid is best, except, perhaps, a combination of potassium and sodium bromids. It is thought by some physicians that a combination of bromids in small doses acts better than an equivalent large dose of a single bromid.

Hydrobromic acid should never be used as a substitute for a bromid. While it causes bromid action, it is acid and therefore more irritant to the gastrointestinal tract. There is no good reason for using hydrobromic acid.

The following preparations are found in the National Formulary:

ELIXIR AMMONII BROMIDI: Each teaspoonful represents 0.30 gram (5 grains) of ammonium bromid.

ELIXIR CALCI BROMIDI: Each teaspoonful represents 0.30 gram (5 grains) of calcium bromid.

ELIXIR LITHII BROMIDI: Each teaspoonful represents 0.30 gram (5 grains) of lithium bromid.

ELIXIR POTASSII BROMIDI: Each teaspoonful represents 0.60 gram (10 grains) of potassium bromid.

ELIXIR SODII BROMIDI: Each teaspoonful represents 0.60 gram (10 grains) of sodium bromid.

LIQUOR MAGNESII BROMIDI: Each teaspoonful represents 0.5 gram ( $7\frac{1}{2}$  grains) of magnesium bromid with syrup aurantii.

MISTURA CHLORALI ET POTASSII BROMIDI COMPOSITA: Each teaspoonful contains about 0.80 gram (12 grains) each of chloral hydrate and potassium bromid, and 0.008 gram ( $\frac{1}{8}$  grain) each of the extracts of cannabis indica and hyoscyamus.

PULVIS POTASSII BROMIDI EFFERVESCENS: A heaping teaspoonful contains about 0.65 gram (10 grains) of potassium bromid.

PULVIS POTASSII BROMIDI EFFERVESCENS CUM CAFFEINA: A heaping teaspoonful represents about 0.65 gram (10 grains) of potassium bromid and 0.065 gram (1 grain) of caffein.

SYRUPUS BROMIDORUM: Each teaspoonful contains 1 gram (15 grains) of the mixed bromids of potassium, sodium, ammonium, calcium and lithium in compound syrup of sarsaparilla.

The potassium and sodium bromids are best administered in plain water, though they may be given in effervescing water if preferred. Any syrup makes the salty taste of the sodium bromid or the flat taste of the potassium bromid more disagreeable.

Bromid tablets should never be swallowed whole, as these concentrated salts may seriously irritate the stomach and cause severe pain and even pseudo-angina pectoris, and may even cause an ulcer of the stomach. Hence, whenever bromids are taken they should be ordered thoroughly dissolved and well diluted.

R.	gm. or c.c.	
Sodii bromidi .....	20	or 5v
Aque .....	100	flʒiv

Sig.: Two teaspoonfuls in water, two hours before bedtime.

## ARSENIC.

It has long been known that while arsenic is often used in anemias it does not *per se* increase the hemoglobin or the output of red blood corpuscles, although it has many times caused clinical improvement in various blood diseases, notably in pernicious anemia. At times it seems to increase the number of white blood corpuscles, and at other times, in leukemia, has been shown to diminish them. The administration of arsenic has not seemed to increase the production of red blood corpuscles in normal animals.

While iron is the most satisfactory treatment in chlorosis, other drugs or salts are often as successful in the treatment of this condition, notably salines, bowel antiseptics, thyroid and arsenic. The disturbance in chlorosis seems to be due to a disturbed physiologic chemistry of the iron from the food to the red blood corpuscles, and other salts may sometimes correct this chemical error as well as an iron salt.

Arsenic has been supposed to act as a stimulant to the bone marrow, and hence perhaps in certain conditions increases the red blood corpuscle output. It also seems to be a stimulant to the thyroid, and that gland probably takes some part in blood formation.

Dr. James A. Gunn, Edinburgh, Scotland, in the *British Medical Journal*, July 18, 1908, presents his results from experimentation with this drug.

He suggests that in studying pernicious anemia and the etiology of this condition we look to a weakened condition of the stroma of the red corpuscles as a probable cause of their untimely destruction rather than to the organs that produce the red corpuscles or to the contents of the red corpuscles. The hemoglobin content of the red corpuscles in pernicious anemia seems to be perfect or even increased in amount. The stroma of the cells contains considerable lecithin and cholesterin, and if not enough of these substances are in the system the stroma can not be well formed.

Lecithin also seems to be a stimulant to the red bone marrow, and in various conditions of anemia the feeding of red bone marrow preparations or the administration of lecithin preparations has often improved the anemia.

Anything that could make the stroma of the red corpuscles less liable to destruction would probably improve the condition of pernicious anemia. Gunn finds by experiments that very dilute solutions, even 1 to 400,000 parts of arsenic (Arseni trioxidum) mixed with blood, will prevent the destruction of the red corpuscles when treated with distilled water. Distilled water causes destruction of the red cells when added to blood. If this blood was previously treated with arsenic solution, the destruction becomes less and less rapid, depending on the strength of the arsenic solution; the greater the strength, up to 1 to 50,000 dilution, the greater the ability of the stroma of the cells to withstand the destructive action of water. Gunn finds by estimation that it is possible with ordinary good-sized doses of arsenic to cause a solution of arsenic in the blood equal to 1 part to 400,000. He thinks that this is the reason of the prevention of red corpuscle destruction that is the cause sometimes of the improvement in pernicious anemia from the arsenic.

He also thinks, as arsenic in the blood has not been proved to act on malarial organisms, that its value in malarial fevers is due to preventing the parasites from entering the red corpuscles and destroying them.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, SEPTEMBER, 26, 1908.

## THE CAMPAIGN AGAINST TUBERCULOSIS IN SWEDEN.

An official communication to the International Congress on Tuberculosis in Washington this week, from the Antituberculosis Association of Sweden,<sup>1</sup> reviews the progress of the crusade against the disease in that country.<sup>2</sup> The movement may be traced back to 1896, when the Swedish Medical Society took the initiative and pointed out the necessity of establishing sanatoria in the country for the treatment of tuberculous patients. This object was at last secured through the generosity of King Oskar II, who devoted to it the jubilee fund amounting to about \$583,000.

Another movement which has greatly promoted the antituberculosis campaign is the National Antituberculosis Association, which was founded in 1904 and now has a membership of about 22,000, a very respectable number when it is remembered that Sweden is a small country, its population numbering only about 5,300,000. All classes of the population are represented in this association and the fees are so small as to allow even the working classes to belong to it, a permanent membership costing \$26.00 and annual dues being only 53 cents. The association receives income from membership fees, from gifts and from the sale of the so-called charity stamps, which are a profitable source of revenue. This association does not undertake to cure the sick or to treat consumptives, or in any way to usurp the functions of the municipality, but confines its efforts mainly to education. Three methods are chiefly employed: The first consists of lectures, for which the lecturers receive a moderate fee. These lectures are supported by the press and are well received by the people. They are practical and a distinct effort is made at each lecture to explain and recommend the methods and work of the association. During the years 1904 to 1907 883 lectures have been given, and these have been attended by about 147,600 persons. Secondly, in Stockholm a museum of tuberculosis has been established which serves the purpose of ocular demonstration in the results of the disease and the methods of fighting it. The third method is the free distribution of pamphlets to soldiers, students, societies, magazines and newspapers and their

sale at a moderate price. The association publishes a quarterly journal for the information of those interested in the antituberculosis movement.

One of the difficulties against which the association has had to contend is the "consumption terror," an unreasonable fear of the disease and everything connected with it, which has been aroused by this propaganda, and to counteract this feeling a special pamphlet has been published. The cooperation of the press in this campaign has been secured to a gratifying extent. One commendable feature of the association's work is the attempt to provide for the training of physicians who may have to deal with this disease. For this purpose the directors of the public sanatoria of the jubilee fund have extended to physicians nominated by the Antituberculosis Association the privilege of two months' courses at some of the sanatoria.

The government has made a statistical investigation of the prevalence of the disease, which resulted in showing about 30,000 consumptives in the country, of whom about 10,000 die annually, giving a death rate about the same as that of other countries. The government then took the important step of furnishing free sites for the building of sanatoria from the public lands and advancing half the cost of building, with a maximum of about \$265 a bed. In addition, provision was made for the appropriation of about 13 cents a day per patient toward the maintenance of these institutions. Reports of deaths from tuberculosis and disinfection of the premises at public expense are proposed, but it is not thought desirable to require reports of cases. It is also proposed to exclude tuberculous persons from the dairy business and to forbid their employment as wet-nurses or school teachers, and tuberculous children may be excluded from the schools. Poor-law authorities are to be required to see that children whom they board out do not run the risk of contracting tuberculosis.

Tuberculosis dispensaries are being established in the larger cities and serve a useful purpose in the instruction of patients and their relatives. A number of the methods pursued in Sweden are somewhat peculiar and receive an extended notice. It is natural in so small and poor a country that some of the methods found practicable in other countries can not be carried out.

Ragnar Friberger, from some experiments undertaken by him, reports that if the clothing and person of a consumptive are kept strictly clean there need be no fear of the clothing becoming a source of infection. But, on the other hand, the neglect of these rules is proved to result in the clothes becoming infected. Prof. Josef Svensson states, as the result of experiments to determine whether or not tuberculosis can be communicated by the inhalation of dust containing tubercle bacilli, that tuberculous matter is readily absorbed into the lungs in a dry condition and that direct infection of the lungs is the way in which tuberculosis most frequently makes its appearance in cattle. From an investigation of the

1. The Struggle Against Tuberculosis in Sweden: A Publication Dedicated to the International Tuberculosis Congress in Washington. Issued by the Swedish Government, Stockholm, 1908.

2. For a previous review of the work, see THE JOURNAL, Dec. 7, 1907, p. 1930.



frequency of tuberculosis in different parts of Stockholm, in 1906, as compared with density of population and economic position. J. E. Johansson and R. Moosberg draw the following conclusions: Consumption is most frequent in those parts of the town where the rents are lowest and the population densest. The amount of house rent per fireplace regularly decreases with the increase of frequency of consumption, and the percentage of "poor" among the cases observed rises with the same regularity. The number of inhabitants per 100 fireplaces increases with the frequency of consumption. An investigation tending to throw light on the relation of bovine to human tuberculosis was made in the parish of Lower-Lulea, a district comprising 2,293 inhabitants. Of these 1,498 were examined and tuberculosis either of the lungs or of glands was found in 701. On the other hand, bovine tuberculosis was found to be entirely absent from the district.

An especially insanitary arrangement for sleeping is found in some parts of Sweden. While the houses are of good size they are not utilized to their full capacity. In the winter the inhabitants climb into beds attached to the wall which are closed by a door (so-called cupboard beds). Experiments are being made in the building of model tenements for working people and also in the attempt to provide for the healthy children of consumptive parents, so that they shall run as little risk as possible of contracting the disease.

The encouraging thing in this valuable communication to the congress is in the fact that *pari passu* with the advance of these prophylactic methods the tuberculosis mortality of Sweden is shown to be progressively diminishing. This demonstration of the effects of intelligent sanitation, limited as it necessarily is by the smallness and meager financial resources of the population, is a credit to the country and should stimulate other countries of greater scope and lesser limitations to renewed and at least equally successful endeavor.

#### HUMAN SERUM IN CEREBROSPINAL FEVER.

Much progress has been made during the last few years in our knowledge and treatment of epidemic cerebrospinal fever. The most conspicuous event in the recent history of this dreaded disease is the introduction, by Wassermann in Germany and by Flexner and Jobling in this country, of active therapeutic sera. It is not the present purpose to discuss the mode of action of these sera or the results obtained by their use, but rather to direct attention to recent studies into the reactions that occur in patients suffering from cerebrospinal fever and to certain practical deductions from the results. The results obtained by Davis<sup>1</sup> show that while the serum of normal human beings may contain meningococcidal substances as well as opsonins for meningococci, both these specific properties are markedly

increased in the course of meningitis. Houston and Rankin<sup>2</sup> found that from the sixth day onward all the patients examined showed a marked increase in their opsonic index for meningococci, and McKenzie and Martin<sup>3</sup> noted that while the serum of normal human blood in many cases contains meningococcidal substances these substances are certainly increased in the blood of patients with acute or chronic meningococcal meningitis.

Davis as well as McKenzie and Martin found that normally the cerebrospinal fluid is totally devoid of meningococcidal properties, and this observation, coupled with the knowledge of the antimeningococcal power of the blood, naturally suggested intraspinal injections of human serum in patients suffering from epidemic meningitis. Davis used normal fresh human serum in two cases, eight and ten cubic centimeters being injected after first withdrawing a larger quantity of cerebrospinal fluid. One patient recovered and the other died, and the only deduction permissible would seem to be that the serum in no way did harm. McKenzie and Martin used serum from patients who had recovered from cerebrospinal fever; this treatment was applied in fourteen acute and two chronic cases of meningitis. They also used in two chronic cases the serum of a patient who had recovered from pneumonia, and, furthermore, two patients with acute meningitis were injected intraspinally on the sixth and seventh days, respectively, with their own serum. These last two patients recovered; the four chronic patients all died; and of the fourteen treated with serum from recovered patients eight got well and six died. The authors state that the patients thus treated were unselected and cite figures showing that the recovery rate presented by the patients injected with human serum is much greater than that presented by other cases in the same hospital but not treated with serum—fifty such cases giving only four recoveries.

This work is not without practical bearing because it seems to reveal a source for antimeningococcal serum from which it may be possible to draw if other sources should fail. Whether serum from cases of meningitis is more potent in some way or other or safer than the serum from immunized animals is, of course, not known at present, and as yet we have no ready standard whereby to measure the actual value of any antimeningococcus serum. Antimeningococcus serum owes its properties to several distinct bodies, of which the most important probably is the antiendotoxin. The great toxic action of the meningococcus is well shown in the experiment by Davis in which he obtained a prompt and profound reaction in twenty minutes by injecting dead meningococci into a normal person; a profound intoxication resulted with violent headache, some delirium, vomiting, and later herpes and severe acute nephritis developed.

1. Jour. Infect. Dis., 1907, iv, 558.

2. Lancet, 1907, 172, p. 1212.

3. Jour. Path. and Bact., 1908, xii, 539.



but there were no special meningeal symptoms. The amount injected and the meningococcus used were the same as injected in a case of meningitis; in the latter, however, no special reactions followed the injection, showing that probably the patient had acquired a marked immunity to the endotoxin of the meningococci, and hence we might be permitted to infer that the serum of patients that have recovered from meningitis may contain antiendotoxin in considerable quantities.

#### DAMAGES FOR USE OF ALLEGED TESTIMONIAL

The "Great American Fraud" articles in *Collier's Weekly* exposed the value to be attached to testimonials in favor of nostrums from prominent or locally well-known people, by disclosing some methods by which such testimonials are frequently obtained. Mr. Meriwether Smith, in the *Kentucky Medical Journal*, for August, gives an account of a fraudulent testimonial, published by the Foster-Milburn Company, of Buffalo, N. Y., in reference to Doan's Kidney Pills. It seems that Col. Jack P. Chinn, of Harrodsburg, Ky., is a man well known to almost every one in the neighborhood. It was with considerable chagrin, therefore, that he found a letter endorsing Doan's Kidney Pills, purporting to have been signed by himself and accompanied by his portrait, circulated in the neighborhood in a "patent-medicine" circular called Doan's Directory. Naturally this subjected him to considerable chaff and ridicule from his acquaintances, and even to a sinister suspicion that he must have sold his reputation to this quack concern, a course of action which in the south, at any rate, has always been regarded as disgraceful in one of social standing. Action was taken and various well-known legal expedients were practiced by the defendant's lawyers to head the action off, but fortunately they were defeated and a jury recorded a verdict of \$2,500 in favor of Colonel Chinn. The question seems to have been fought along the line of invasion of the right to personal privacy, a right to which the courts in this country seem to be lamentably asleep. There are, however, two cases on record in which this right has been championed. In the first, a recent New York case, a young woman was refused damages for the unauthorized use of her picture as an advertisement, but the judge who delivered the opinion apparently confined it to the circumstances of the particular case, pointing out that a similar course in certain cases "might justly be found by a jury to cast ridicule or obloquy on the person whose picture was thus published." Moreover, three justices in a dissenting opinion pointed out that the right to privacy is the complement of the right to the immunity of one's person. In the other case, a man brought action in Georgia against an insurance company for the use of his picture in their advertisement. The justice who delivered the opinion, in which all the justices concurred, expressed himself as thoroughly satisfied "that the law recognizes within proper limits as a legal right the right of privacy, and that the publication of one's picture without one's consent, by another as an adver-

tisement for the mere purpose of increasing the profit and gains of the advertiser, is an evasion [invasion?] of this right." Mr. Smith points out in the present article that the phenomenal success of "patent-medicine" companies in using forged and fraudulent letters recommending their nostrums, is largely due to the slowness of the courts in recognizing the right of the individual to recover damages for the invasion of this right of privacy.

#### THE MNEMIC THEORY OF DEVELOPMENT.

President Darwin's<sup>1</sup> inaugural address at the meeting of the British Association for the Advancement of Science, September 2, with its avowed adherence to the anti-Weismann doctrine of the inheritance of acquired characters, must have come as a shock to many of his hearers to whom this view had been only an exploded scientific heresy. It is evidence, however, that it will not down, and Darwin's adherence to it will be welcomed by a respectable quota of biologists, medical men and pathologists. If the study of plants has led Darwin to the belief in an inherited organic memory of the cells as an explanation of heredity and development, the idea ought, it would seem, to fit still better in the animal kingdom, where we are accustomed to expect psychic activities such as memory, even in their most rudimentary form, more than in plants. According to this mnemonic hypothesis of Semon, as adopted by Darwin, somatic inheritance lies at the root of all evolution and involves the acceptance of the inheritance of acquired characters. He does not find that the idea of a special germ plasm, independent of the body cells generally, with its hypothetic determinants and biophores, accounts for the facts of ontogeny, that is, "the capacity of the ovum of developing into a more or less predetermined form"; it does not explain its automatic character. Development is to him an actual instance of habit. This mnemonic theory, he holds, "makes the positive action of natural selection more obvious; if evolution is a process of drilling organisms into habits, the elimination of those that can not learn is an integral part of the process." The only basis for acceptance of any theory is that it best explains facts, and up to this time Weismann's theory has been so accepted by many. Darwin's attack on it will undoubtedly excite general comment and reopen the question with some who had considered it settled. Of those who have considered it settled there will perhaps be fewer among physicians than among biologists, for the clinical evidence of the inheritance of acquired characters is not always so easily disposed of as some writers on this subject have claimed.

1. *Nature*, Sept. 3.

**Red Blood Counts.**—J. R. Neal, Jr., and W. H. Buhlig, Chicago (*Quar. Bull. Northwestern Univ. Med. Sch.*), state that investigation made in young adults shows that the red cell count is distinctly above the average, 5,000,000, as usually accepted, and that the variations are large. This fact is of value in the proper interpretation of the significance of the total count.



## Medical News

### CALIFORNIA.

**Deaths Charged to Careless Nurse.**—At the San Diego County Hospital three deaths are said to have occurred, September 18, as the result of carelessness of a young nurse who neglected to make proper disposition of a glass of atropin solution which these patients took in mistake for their medicine.

**Beriberi in Alviso.**—Dr. William Simpson, San José, health officer of Santa Clara County and state health inspector, states that the news item which appeared in THE JOURNAL, September 5, regarding beriberi in Alviso is incorrect. In San José there is a society known as the Asiatic Exclusion League, which requested the supervisors of Santa Clara County to investigate the reported epidemic of beriberi on the Alviso meadows, where great quantities of berries and small fruits are grown. Dr. Simpson investigated the matter and found one chronic case of beriberi, which had existed for more than seven months and had been seen by many physicians. Dr. Simpson, in company with Dr. William C. Rueker, P. H. & M.-H. Service, and Dr. Roscoe A. Whiffen, representing the city of San José, made a thorough examination of the camps said to be infected, and came to the conclusion that there was no danger and there was no reason to fear an epidemic of beriberi.

**Personal.**—Dr. Charles C. Falk, William H. Wallace and John N. Chain have been appointed members of the Eureka Board of Health.—Major Edward R. Schreiner, Medical Corps, U. S. Army, in charge of the United States General Hospital Presidio, of San Francisco, has been appointed honorary professor of medicine in the University of California.—Dr. Andrew W. Morton, San Francisco, has returned from Europe.—Dr. Oliver D. Hamlin, Oakland, has been appointed division surgeon for the Southern Pacific Railway, vice Dr. James P. Dunn, deceased.—Dr. Sydney R. Dannenbaum, pathologist at Mount Zion Hospital, San Francisco, has been appointed professor of principles and practice of medicine and clinical medicine at the College of Physicians and Surgeons, San Francisco.—Dr. Charles H. Bulson, Sacramento, has been elected chief surgeon of the Veteran's Home, Napa, vice Dr. Frank A. McMahon, resigned.—Dr. and Mrs. Harry F. Worley, Oakland, are taking a trip to Europe and the Holy Land.—Dr. and Mrs. Victor G. Veeki, San Francisco, have started for Europe.—Dr. E. Scott Blair, San Bernardino, has succeeded Dr. A. P. Williamson as medical superintendent of the Southern California State Hospital for the Insane, Patton.—Dr. Leon J. Roth, Los Angeles, has gone to Europe.

### COLORADO.

**McCormack in Colorado.**—Dr. J. N. McCormack, chairman of the Committee on Organization of the American Medical Association, addressed the physicians of Boulder, September 11, on "A Plea for Such Cooperation of the Medical Profession and the People as Will Make Health More Contagious than Sickness." In the evening he delivered a public lecture on "Things About a Doctor the Public Ought to Know."

**State Society Meeting.**—At the thirty-eighth annual meeting of the Colorado State Medical Society, held in Denver, September 8-10, the following officers were elected: President, Dr. Peter J. McHugh, Fort Collins; vice-presidents, Dr. David H. Coover, Denver; D. Gilmore Thompson, Trinidad; Charles H. Graves, Canon City, and Orland P. Shippey, Saguache; secretary, Dr. Melville Black, Denver (re-elected), and treasurer, Dr. George W. Miel, Denver (re-elected). The society decided to meet at Steamboat Springs in 1909.

**Personal.**—Dr. Benjamin L. Jefferson, Steamboat Springs, who has represented Routt County in the legislature for the last ten years, has been made presidential elector on the Democratic ticket.—Dr. Mary E. Phelps, Canon City, was elected president of the Colorado Woman's State Medical Society, at its meeting, September 8.—Dr. I. B. Perkins and family, Denver, have returned from Europe.—Dr. C. F. Wilkins, Laporte, fractured his right arm while cranking his automobile, August 27.—The license of Dr. Henry H. Van Hummell is said to have been revoked on account of his acceptance of a fee on promise to cure advanced tuberculosis.

### ILLINOIS.

**Rabies from Bite of Squirrel.**—Seven residents of Springfield recently bitten by a squirrel found to be suffering from rabies have gone to Chicago for treatment in the Pasteur Institute.

**New Hospital for Evanston.**—Work has been begun on the new hospital to be erected by the Sisters of St. Francis on Ridge Avenue, Evanston. The building will be four stories in height, 55 by 180 feet, and will cost \$180,000.

**Physician Fined for Violating the City Code.** Dr. Samuel R. Harwood, East St. Louis, is said to have pleaded guilty, August 31, to a charge of failing to report a birth to the health commissioner in compliance with the city code, and to have been fined \$10 and costs.

**Communicable Diseases.**—Smallpox is reported from Spring Valley.—Gillespie is reported to have an epidemic of typhoid fever.—Scarlet fever and smallpox are reported to be epidemic at Taylorville.—Saint Anne is threatened with an epidemic of diphtheria and the opening of school has been delayed one week on account of the prevalence of the disease.—In the Spaulding Institute, Nauvoo, 5 cases of scarlet fever are reported.—The opening of the schools of Abingdon has been postponed on account of the prevalence of scarlet fever.—The Girard Board of Health issued a proclamation, September 8, closing schools and churches and prohibiting other public gatherings, owing to an epidemic of diphtheria.

### Chicago.

**Home from Abroad.**—Dr. and Mrs. John B. Murphy and family arrived, September 19, after spending the summer abroad.—Dr. and Mrs. A. H. Brumback have returned from Europe.

**School Children Barred.** During the last week 700 pupils of the Chicago public school were barred from school, the result of examination by medical inspectors. Less than ten of this number had symptoms of contagious disease, but many had parasitic diseases.

**Medical Inspection of Homes.**—During the last seven weeks the 75 medical inspectors detailed to instruct mothers in the proper care of infants during the hot weather have visited 43,784 homes. The inspectors found 2,410 cases of illness and 24,702 unvaccinated persons.

**Contagious Diseases.**—There were reported to the department of health, during the week ended September 19, 275 cases of contagious disease, distributed as follows: Diphtheria, 83; scarlet fever, 79; typhoid fever, 52; tuberculosis, 23; whooping cough, 20, and measles 5.

**College Opens.**—The College of Physicians and Surgeons, the College of Medicine of the University of Illinois, will begin its twenty-seventh annual course of instruction September 28. The opening exercises will be held in the assembly hall of the college, Congress and Honore streets. Dr. Channing W. Barrett will deliver the address.

**Hospital Notes.**—Orthodox Jews in Chicago have organized an association to erect and maintain a Jewish hospital on the West Side. About \$10,000 has been already subscribed and a permanent building will be erected. The corporation is licensed as Miamonides Kosher Hospital Association, and it is proposed to carry out the orthodox Jewish dietary laws and habits in the institution.—On September 5 the health department is said to have instructed the police to close a private dispensary conducted by Mrs. Anna Breckler, 1151 North Robey Street.

**Statement of Mortality.**—There were 525 deaths reported from all causes during the week ended September 19, 93 fewer than for the corresponding week of last year and 31 fewer than for the preceding week of this year. The chief decline has been in child mortality, as among children under 5 years of age there were 70 fewer deaths than in the preceding week. Acute intestinal diseases caused 108 deaths; tuberculosis, 77; heart diseases, 44; violence (including suicide), 43; nephritis, 31, and consumption, 28. Of the communicable diseases, diphtheria and scarlet fever each caused 6 deaths and measles 2.

### INDIANA.

**Defendant Wins.**—In the suit for alleged malpractice brought by Mrs. Eliza Bower, Sulphur Springs, against Dr. Burton O. Post, in which the plaintiff asked \$2,500 damages for what she claimed to be improper treatment of a fractured arm, the jury returned a verdict for the defendant.

**To and from Europe.**—Dr. Edward J. McOscar, Fort Wayne, has returned from Europe.—Dr. Charles E. Barnett, Fort Wayne, sailed for Europe September 24.—Dr. Jacob O. Malsbury, Peru, has started for Europe.—Dr. and Mrs. Frank Randolph, Elkhart, have returned after three months abroad.

**Ill, Injured and Operated.**—Dr. Edwin Walker, Evansville, was operated on recently at Mercy Hospital, Chicago, for cyst of the thyroid gland.—Dr. William H. Wood, Mishawaka,



en route to New Mexico, was seized with hemorrhage September 14 and was removed to the Trinidad (Colo.) Hospital, where he is said to be in a critical condition.—Dr. Richard E. Holder, Columbus, fractured his arm recently while cranking his automobile.

#### LOUISIANA.

**Medical College Opening.** The Medical Department of Tulane University of Louisiana will open for its new year the first week in October. Three new buildings will be opened at this session, the Richardson Memorial Medical Building, the Richardson Chemical Building, and the medical dormitory. Dr. George Dock, formerly of the University of Michigan, Ann Arbor, has arrived to assume his position as professor of medicine.

**New Board of Health.**—The governor has appointed a new State Board of Health, which will assume office October 1. Dr. D. Harvey Dillon, Many, has been named to succeed Dr. Clifford H. Irion, New Orleans, as state health officer. The other members of the board are Drs. Benjamin A. Ledbetter and Hermann Oeschner, New Orleans; Beverly W. Smith, Franklin; Theophilus T. Tarlton, Grand Coteau; Sidney D. Porter, Moreauville; and George W. Gaines, Tallulah, the latter being the only holdover member of the board.

**Tuberculosis Clinic Established.**—The new free clinic of the Louisiana Antituberculosis League is expected to be in operation in October. The staff of the clinic is made up as follows: Dr. J. George Dempsey, children up to 12 years of age; Drs. A. I. Weil and Otto Joachim, consulting laryngologists; Drs. Sidney K. Simon and Jacob A. Storek, consulting physician on contagious diseases; Dr. Edward L. McGehee, in charge of male service; Drs. Sarah T. Mayo and Edith Loeber, in charge of female service; Dr. Albert B. Brown, consultant on genito-urinary diseases; Dr. C. A. Bahn, consultant on diseases of the eye; Dr. Joseph N. Roussell, consultant on diseases of the skin; Dr. E. M. Hummel, consultant on diseases of the nerves; and Dr. Wallace J. Durel, especial consultant. The league has an antituberculosis exhibit at the Home Manufacturers' Exhibition.

#### MARYLAND.

**Personal.**—Dr. George Reuling, Baltimore, has returned from Europe.—Dr. James J. Mills, Baltimore, is in Paris.—Dr. Victor C. Cullen, formerly of Washington County, has been elected assistant to the medical superintendent of the Maryland Tuberculosis Sanatorium.

**State Society Meets.**—At the semi-annual meeting of the Medical and Chirurgical Faculty of Maryland, held in Ocean City, September 15-17, the state care of the insane was endorsed. The society has raised \$25,000 for the completion of its library building, placing a mortgage on its property on Cathedral Street whereon the building is to be erected. The mortgage is for five years at 5 per cent.

**Need of Hospital for Colored Insane.**—The report of Dr. Arthur P. Herring, secretary of the State Lunacy Commission, urges the need of a hospital for negroes in connection with the State Hospital at Springfield. He will soon start on an inspection of almshouses on the Eastern Shore. He also proposes to compile for the use of the medical profession a hand book containing the laws relating to insanity and important information concerning private institutions for the care of the insane.

#### Baltimore.

**Charge of Illegal Practice Dismissed.**—The charge of practicing medicine without a license, made by the president of the State Board of Medical Examiners, against Dr. Joseph Reynolds has been dismissed, as it was shown that he had been a practicing physician prior to 1892 and thereby entitled to practice by the law passed in that year. He stated that he did not understand the law and had neglected to register as therein required.

#### MICHIGAN.

**European Tourists.**—Drs. Jean A. Vernier and Minta Proctor Kemp, Detroit, have returned after spending the summer abroad.—Dr. Henry M. Cunningham, Marquette, has returned from abroad.—Dr. and Mrs. Harry J. Hornbogen, Marquette, sail for Europe this month.

**Tent Colony Established.**—A tent colony has been established in the suburbs of Kalamazoo for advanced and highly contagious cases of tuberculosis. Seven Ottawa tents, one pavilion and one shack for four patients were put up within two weeks after "Blue Star" day, held under the auspices of the local antituberculosis society, when \$700 was raised. It is

expected that the colony will be turned over to the health board of the city in due course.

**Medical Society Meets.**—The twelfth annual meeting of the Upper Peninsula Medical Society closed at Marquette, September 3. The following officers were elected: Dr. Alfred W. Hornbogen, Marquette, president; Drs. Edward T. Abrams, Dollar Bay, and George Bjorkman, Gladstone, vice-presidents; and Dr. William D. Whitten, Baltic, secretary. The next meeting will be held in Calumet. The society by resolution requested that the Upper Peninsula be represented on the State Board of Health and that Dr. Oscar C. Breitenbach, Escanaba, be appointed the member for the peninsula.

#### MISSOURI.

**Will Add to Sanitarium.**—Dr. Charles R. Woodson has commenced construction of an addition to his sanitarium in St. Joseph. The building will be a two-story brick structure, will accommodate about 25 patients, and will cost about \$20,000.

**Personal.**—Dr. George R. Highsmith, Carrollton, is suffering from angina pectoris.—Dr. William Weiss has been appointed vaccine physician by the health department of St. Louis.—Dr. Thomas E. Graham has resigned as assistant city physician of St. Louis.—Dr. Walter S. Wheeler has been appointed health commissioner of Kansas City, and Drs. George P. Pipkin, Carl A. Jackson, J. Park Neal, W. T. Thornton, Earl C. Reiger and George Ringle have been appointed physicians in the hospital department of Kansas City.

#### NEBRASKA.

**Tag-Day Plan.**—The Clarkson Hospital Association held a Tag Day, September 9, to raise \$6,000 to complete the \$20,000 fund necessary for the erection of the hospital.

**Returned from Siam.**—Dr. Paul G. Wooley, who for the last five years has been director of the Siamese Government Serum Laboratory in Phrapatoom and chief inspector of health and medical advisor to the minister of the interior, has accepted the position of associate professor of clinical pathology in the University of Nebraska College of Medicine, Omaha.

#### NEW MEXICO.

**New Sanatorium.**—Alamo Cottage Sanatorium for the Treatment of Tuberculosis, Alamogordo, is said to be an assured fact, as the founder, Mr. W. A. Reed, has bought 20 acres of land one mile and a half from Alamogordo on which to locate the sanatorium, and as work has already been commenced on the administration building.

**State Society Meeting.**—The twenty-seventh annual session of the New Mexico Medical Society was held in Albuquerque, September 2 and 3. The following officers were elected: President, Dr. George K. Angle, Silver City; vice-presidents, Drs. John W. Elder, Albuquerque; Frances T. B. Fest, East Las Vegas, and Robert L. Bradley, Roswell; secretary and editor, Dr. George S. McLandress, Albuquerque; and treasurer, Dr. Charles G. Duncan, Socorro.

#### NEW YORK.

**Fire in Insane Asylum.**—The main building of the Long Island Home was partly destroyed by fire September 16, with an estimated loss of from \$15,000 to \$20,000. There were 90 inmates in the building and it was with considerable difficulty that they were all hurried to places of safety.

**Transfer of Insane.**—On September 15, 250 female patients were taken from the Central Islip State Hospital and 50 men from the Kings and Park state hospitals, which are very much overcrowded, and transferred to the new institution for the chronic insane which has just been completed at Poughkeepsie.

#### New York City.

**Rabid Dogs.**—The Department of Health in 1906 received 101 rabid dogs for examination; in 1907 it received 181, and if the record keeps up for this year the number will be about 250. All these dogs had rabies.

**Personal.**—Dr. Fred H. Albee sailed for Europe September 16.—Dr. Francis Delafield returned from Europe September 15.—Dr. William T. Bull's condition has improved very much.—Dr. George B. McAuliffe fell from a street car September 15, sustaining a Pott's fracture of the right leg.

**Low Death Rate Continues.**—The death rate for the week ended September 12 was next to the lowest for the summer, being 14.38 per 1,000 population. For the corresponding week of last year it was 16.18. During this week above named 578 persons died in the tenements, while in 1907 there were 668



during the corresponding week. The number of deaths of children under 5 years of age was 428, as compared with 534 for the previous year.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ended September 12, 423 cases of tuberculosis, with 153 deaths; 189 cases of diphtheria, with 19 deaths; 65 cases of measles, with one death; 93 cases of scarlet fever, with 3 deaths; 132 cases of typhoid fever, with 17 deaths; 5 cases of whooping-cough, with 3 deaths; 4 cases of cerebrospinal meningitis and 6 deaths; 14 cases of vacicella, and one case of smallpox, a total of 924 cases and 202 deaths.

**Coney Island Camps.**—The Health Department has ordered closed the camps at Coney Island because of alleged insanitary conditions prevailing there. It is claimed that there is a lack of sewerage and careless disposal of garbage. About one month ago the department gave warning that such a course would be pursued if the conditions were not remedied. There are about 250 tents on the beach. Lawyer Roy has obtained an injunction restraining the Health Department from interfering with the tent-dwellers. A hearing will be held next week.

#### NORTH CAROLINA.

**Hines Memorial Meeting.**—The Wake County Medical Association has decided to devote the October meeting to memorial exercises in memory of the late Dr. Peter E. Hines, Raleigh.

**Personal.**—By the will of the late Major S. G. Ryan, Raleigh, several thousand dollars were bequeathed to Dr. Hubert Haywood, Raleigh, in "appreciation of his long and faithful professional services in my family."—Dr. Myers G. Hunter, Charlotte, was operated on for appendicitis at St. Peter's Hospital, Charlotte, September 10.

**Hospital Association Organized.**—The ladies of Statesville have organized the Statesville Hospital Association to raise funds for Billingsley Hospital. This hospital, which was built by the Rev. A. S. Billingsley, is unendowed and, according to the provisions of the donor, must be maintained by funds provided by the citizens.

**Hydrophobia.**—Dr. C. A. Shore, pathologist of the State Board of Health, has recently pronounced as having had rabies a dog which is known to have bitten seven persons and many other dogs. The individuals who were bitten are now under treatment in the Pasteur Institute in Raleigh. The authorities are to be urged to enact most rigid and severe rules on the keeping and bringing of dogs within the city limits.

#### PENNSYLVANIA.

**Personal.**—Dr. Charles E. Woodward, secretary of the West Chester board of health, has been reappointed for a five years' term.—Dr. E. C. Dort, Pittsburg, sailed September 16, from Vancouver for Bangkok, and from there will go to his post in northern Siam, where he will have charge of Van Santvord Memorial Hospital at Lakawn.—Dr. George A. Ickes, Altoona, is said to be critically ill with typhoid fever.

**Typhoid Fever.**—In order to prevent the spread of typhoid fever the school board of Wilkes-Barre has adopted the rule that every pupil must bring a bottle of boiled water to school.—The typhoid situation at Susquehanna is serious, as 14 cases have developed in the last ten days.—Butler is said to be threatened with another epidemic of typhoid.—There are many cases in Williamsport.

**Communicable Diseases.** Nine cases of diphtheria were reported at Greensburg, and a portion of the Seventh Ward public school was closed September 18.—The government, the Pennsylvania Railroad and the traction companies are co-operating with the State Health Department in endeavoring to stamp out smallpox in the Cumberland Valley. Investigation by the state medical inspectors has revealed that cases supposed to have been chickenpox have existed for several weeks in Camp Hill and other places on the west bank of the Susquehanna River.—Dr. James C. Mewhinney of Spring City is reported to have been fined \$52.20 by the health authorities for failure to report a case of typhoid fever.

**State Society Meeting.**—At the annual meeting of the Medical Society of the State of Pennsylvania, held in Cambridge Springs, September 14-17, the following officers were elected: President, Dr. George W. Wagoner, Johnstown; vice-presidents, Drs. James I. Johnston, Pittsburg; Glennis E. Humphrey, Cambridge Springs; Lowell M. Gates, Scranton, and Samuel Z. Shope, Harrisburg; secretary, Dr. Cyrus L. Stevens, Athens; assistant secretary, Dr. Theodore B. Appel, Lancaster; treasurer, Dr. Clarence M. Harris, Johnstown; trustees, Drs. George W. Guthrie, Wilkes-Barre; George D. Nutt, Williams-

port, and Jefferson H. Wilson, Beaver; delegates to the American Medical Association, Drs. William L. Estes, South Bethlehem; Thomas D. Davis, Pittsburg; Fremont W. Frankhauser, Reading, and Samuel Wolfe, Philadelphia; and alternates, Drs. Alexander G. Fell, Wilkes-Barre; John C. Price, Scranton; Luther B. Kline, Catawissa; John B. Lowman, Johnstown; John B. McAlister, Harrisburg; William T. Williams, Mount Carmel, and Henry D. Jump and Wendell Reber, Philadelphia. Dr. James H. MacKee, Philadelphia, was made chairman of the section on medicine; Dr. George W. Guthrie, Wilkes-Barre, chairman, and Dr. Jonathan M. Wainwright, Scranton, secretary of the section on surgery; Dr. William C. Posey, Philadelphia, chairman, and Dr. Francis R. Packard, Philadelphia, secretary of the section on specialties. Bedford Springs was selected as the place of meeting for 1909.

#### Philadelphia.

**Personal.**—Dr. Clarence A. Veasey, who for several years has been assistant professor of diseases of the eye in Jefferson Medical College and ophthalmic surgeon to the Methodist Episcopal Hospital, has resigned.—Dr. James M. Anders, G. Oram Ring and Joseph F. Gibb have returned from Europe.

**Medical Schools Open.**—The annual opening exercises of Jefferson Medical College were held in the college buildings September 24. The annual address was delivered by Dr. Henry W. Stelwagon, professor of dermatology.—The annual opening exercises of the Medical Department of the University of Pennsylvania were held in the college September 25, in conjunction with the opening of the university in general.

**Health Report.** The total number of deaths reported for the week ended September 19 aggregated 425, a decrease of 20 from the preceding week and a decrease of 46 from the corresponding week of last year. The principal causes of death were: Typhoid fever, 13; scarlet fever, 2; pertussis, 2; diphtheria, 5; consumption, 41; cancer, 22; apoplexy, 16; heart disease, 30; arteriosclerosis, 8; acute respiratory diseases, 30; enteritis, 49; hepatic cirrhosis, 8; appendicitis, 8; Bright's disease, 28; premature birth, 9; congenital debility, 15; senility, 6; suicide, 3; accidents, 19, and marasmus, 8. There were 161 cases of contagious disease reported, with 19 deaths, as compared with 149 cases and 23 deaths reported in the previous week.

#### SOUTH DAKOTA.

**County Society Organized.** The physicians of Beadle County have organized a county medical society on standard lines. This organization is the result of the visit to Huron of Dr. J. N. McCormack, Bowling Green, Ky., representative of the American Medical Association.

**Antituberculosis Association Organized.**—After the meeting of the South Dakota State Medical Association, an Association for the Study of Tuberculosis was organized with the following officers: President, Dr. Francis M. Crain, Redfield; vice-presidents, Drs. Cheney C. Gross, Yankton; and A. E. Clough, Deadwood; secretary, Dr. George W. Potter, Redfield; and treasurer, Dr. E. C. Issenluht, Redfield.

**State Society Meeting.** The twenty-seventh annual meeting of the South Dakota State Medical Association was held in Yankton, September 2-4. On the first evening Dr. J. N. McCormack delivered a public address on the relations of the physician to the people. The following officers were elected: Dr. Samuel A. Brown, Sioux Falls, president; Drs. Thomas B. Smiley, Mitchell, and William E. Moore, Tyndall, vice-presidents; and Dr. Robert D. Alway, Aberdeen, secretary-treasurer. The next meeting will be held in Aberdeen.

#### WASHINGTON.

**Society Favors New Law.**—King County Medical Society, at its meeting August 31, requested its delegates to the State Medical Association to urge the passage of a resolution recommending that the next legislature amend the state law by adopting the "Arizona law," defining the practice of medicine more clearly.

**Hospital Notes.**—A maternity hospital has been erected at Hoquian by Dr. R. F. Hunter.—Dr. Wilhelmy has purchased the old McCoy Hospital at Wenatchee.—The hospital at South Bend has been enlarged and remodeled. The contract for the Naval Hospital at the Puget Sound Navy Yard, Bremerton, has been awarded on a bid of \$139,000.

**Personal.**—Dr. Charles M. Buchanan, for sixteen years physician and superintendent of Tulalip Indian Agency, has been made assistant superintendent of Haskell Institute, Lawrence, Kan.—Dr. Fred J. Whittaker has been appointed resident physician at St. Luke's Hospital, Spokane.—Dr. Elmer D. Olmsted, Spokane, is reported to be seriously ill with nephritis.



## GENERAL.

**Tuberculosis Conference.**—The International Conference on Tuberculosis, made up of representatives of tuberculosis associations from all parts of the world, was held in Philadelphia, September 23-26. A report of the conference will appear in THE JOURNAL.

**Personal.**—Dr. Fred B. Bowman, assistant clinical pathologist in the United States laboratory in the Philippine Islands, has been appointed physician to the St. Paul Hospital.—Esther F. Hassan, who was nurse in the Spanish-American War, has been appointed chief of the corps of women nurses authorized for the Navy at the last session of Congress.

**Warning Against Book Agent.**—The Oxford University Press writes: "We wish to warn the medical profession against a man who is going about representing himself as our agent and calling himself O. G. Beauvang, and other aliases. He is about 5 feet and 5 inches tall, has a light complexion and is stockily built. We would be pleased to be informed of his whereabouts. He is not employed by us and has no right to take orders for us."

**Coming Meetings.**—Dr. Henry M. Bracken, Minneapolis, secretary of the Conference of State and Provincial Boards of Health of North America, announces the twenty-third annual meeting, to be held in Washington, D. C., September 25 and 26, under the presidency of Dr. Newell K. Foster, Sacramento, Cal.—The Southern Medical Association will hold its annual meeting at Atlanta, November 10 to 12, under the presidency of Dr. George C. Savage, Nashville, Tenn. The railways have granted excursion rates of a fare and a half plus 25 cents for the return trip. The tickets are on sale November 7 to 9, and are good for return until November 14, leaving Atlanta with three days' transit limit.—The next annual meeting of the Association of Seaboard Air Line Railway Surgeons will be held in Columbia, S. C., October 27 and 28, under the presidency of Dr. Louis S. Oppenheimer, Tampa, Fla.

## INTERNATIONAL CONGRESS ON TUBERCULOSIS.

(By telegraph from our Washington Correspondent.)

WASHINGTON, D. C., Sept. 22, 1908.

The sixth International Congress on Tuberculosis was formally opened last night, over 1,500 people being present. On the stand were James S. Wilson, Secretary of Agriculture; Gen. George M. Sternberg, U. S. Army retired, treasurer of the congress; Dr. Lawrence M. Flick, Philadelphia, chairman of the central committee; Patten MacDougall, vice-provost, Edinburgh, Scotland; Dr. Abraham Jacobi, New York; Dr. Samuel G. Dixon, state health officer of Pennsylvania, and Dr. Eduardo Liceaga of Mexico.

Commissioner MacFarland presided and welcomed the visitors on behalf of the citizens of the district. He called attention to the new municipal hospital as an example of the best type of construction. He also referred to the important step achieved by securing the law requiring registration of those afflicted with tuberculosis and free examination of sputum.

## ACHIEVEMENTS OF SCIENCE.

Commissioner MacFarland then introduced General Sternberg, who gave a history of the great achievements of science over smallpox, cholera, bubonic plague and yellow fever. He called attention to the frightful mortality from tuberculosis and predicted that the present congress and exhibition would stimulate the antituberculosis crusade in all parts of the country.

## TUBERCULOSIS IN ANIMALS.

Secretary Wilson showed what measures the Department of Agriculture has undertaken toward the prevention of the importation of tubercular animals into the United States. He quoted statistics showing the percentage of tubercular cattle in the country, and closed by giving the method of inspection followed in the District of Columbia.

Dr. Samuel G. Dixon told of the crusade in Pennsylvania during the past year.

Dr. Henry G. Beyer, medical director United States Navy, spoke of American progress in the fight on tuberculosis, and paid a fitting tribute to the instructive contributions from abroad.

Dr. Lawrence F. Flick, chairman of the central committee, spoke of American progress in the fight on tuberculosis, and spoke hopefully of the prospect of greatly reducing the mortality from this disease. He extended an invitation to the audience to visit the exhibits and called attention to their

elaborateness and the valuable instruction to be obtained from them.

## The Exhibits.

Space is inadequate to describe the magnitude of the Tuberculosis Exhibition. Valuable and elaborate exhibits from all over the world are arranged for the inspection of the crowds of those interested. The most important ones noticed are briefly referred to below.

## NATIONAL EXHIBITORS.

Argentina shows plans of her dispensaries and hospitals, as well as mortality charts and methods of educational instruction.

Austria contributes charts, books and pathologic specimens. Belgium sends plans of hospitals and popular literature.

Brazil is represented by models, maps and mortality records.

Canada is represented by a magnificent series of pathologic specimens prepared at McGill University.

France sends microscopie specimens, to be demonstrated by Dr. Paul Courmont and Professor Arloing. Photographs and samples of drugs used in the treatment of tuberculosis are also shown.

Germany's exhibit is one of the most complete. It is presented in four sections. That of the German central committee consists of illustrations showing the pathology of tuberculosis, mortality records, photographs of various sanatoria, illustrations of sanitary dwellings and copies of literature. The Imperial Board of Health presents records of research work, maps and pathologic specimens. The various German insurance offices present maps, tables and charts. A prominent feature is a model of the workingmen's sanatorium of the national insurance office of Berlin at Beelitz, which accommodates nearly 1,200. The German Red Cross Society demonstrates the manner of combating tuberculosis by books and illustrations. The fourth section consists of private exhibitors, and includes many publications and instruments.

Great Britain is represented by valuable pathologic preparations contributed by the Royal College of Surgeons, the Museum of Westminster Hospital, St. George's Hospital, University College Hospital, the Western Infirmary of Glasgow, Humphrey Museum, University of Manchester and the School of Medicine of the University of Leeds. Prominent among these are Dr. Sidney H. C. Martin's specimens illustrating feeding experiments.

Japan is represented by books and charts from Kitasato's institute.

Russia exhibits pharmaceutical products.

Sweden shows maps and statistics and their antituberculosis methods. [In this connection the reader will be interested in an editorial in this issue on Sweden's work in the crusade.—Ed.]

Switzerland shows charts, diagrams, photographs and reports.

Uruguay shows stereoscopic views, photographs and charts.

## THE PUBLIC SERVICES.

The United States Public Health and Marine-Hospital Service shows a large model of the tuberculosis sanatorium at Fort Stanton, N. M., models showing details of its arrangement, and a large number of wall charts illustrating tuberculosis from the standpoint of vital statistics. The diagnostic and therapeutic uses of electricity are shown by apparatus. The Service hygienic laboratory exhibits many pathologic specimens and demonstrates the growth of the tubercle bacillus on fruits and vegetables.

The United States Army, in its exhibit, shows models of special wards constructed at Fort Bayard, N. M., for tuberculous patients. Wall maps, charts and statistics are also shown.

The Medical Department of the Navy presents a model of its sanatorium at Las Animas, Colo., and many photographs illustrating fully the details of this hospital.

## EXHIBITS OF GOVERNMENTAL DEPARTMENTS AND BUREAUS.

The Department of the Interior is well represented. The Smithsonian Institution and the Bureau of Indian Affairs show maps of Indian reservations with population, prevalence of tuberculosis, and photographs showing present living conditions where tuberculosis is prevalent. Plans of a new sanatorium for Indians are shown. The entire exhibit is an object lesson on the destructive influence of civilization on the American Indian.

The Department of Agriculture shows a number of specimens of experimental tuberculosis and presents many gross



pathologic specimens showing tuberculosis in various animals, and the manner in which it may be communicated.

The census office exhibits a complete set of its reports and many valuable comparative tables. Prominent features of this exhibit are a large wall map showing registration areas and diagrams demonstrating the international classification of causes of death. One of the interesting features of this exhibit is a punching and tabulating machine in full operation. The government printing office shows an apparatus for the disposal of sputa in crowded factories and workshops, consisting of an automatic device for disinfection and removal of sputa without the operator coming in contact with cuspidors.

#### STATE EXHIBITS.

Owing to lack of space it is impossible to more than mention the splendid showing made by the exhibits of the various states. The state exhibits show how thoroughly the profession is aroused on the subject.

Colorado has a large exhibit. Special exhibits have been given by various Colorado sanatoria.

Connecticut shows plans of many sanatoria.

The District of Columbia shows the plans of the new municipal hospital which has many new features. A concrete cottage for workmen to cost \$1,200 is on exhibition. Many kinds of apparatus are shown.

Maryland has a large exhibition of photographs, literature and pathologic specimens from various colleges and institutions.

Massachusetts has a series of photographs showing the factory conditions in that state, and also a very large and complete exhibition contributed by the hospital associations and Boston University.

New York and Pennsylvania present complete and thorough exhibitions of actual work being accomplished in these states and deserve great credit.

Maine, Michigan, Minnesota, Ohio, Rhode Island and Wisconsin have exhibits that reflect credit to their communities in this, the greatest congress of the century.

It really amounts to a world's fair on tuberculosis. It is illustrative of what is being done around the globe in the fight against tuberculosis. It is safe to say that no such exhibition has ever been seen before.

#### Prizes Offered.

Reference has already been made to the prizes offered in connection with this exhibition. The following is a more complete list of these awards than was given in our previous issue:

A. The Hodgkins Fund Prize of \$1,500, offered by the Smithsonian Institution, for the best treatise on the "Relation of Atmospheric Air to Tuberculosis."

B. A prize of \$1,000 for the best evidence of effective work in the prevention or relief of tuberculosis, by any voluntary association, since the last International Congress in 1905.

C. A prize of \$1,000 for the best exhibit of an existing sanatorium for the treatment of curable cases of tuberculosis among the working classes.

D. A prize of \$1,000 for the best exhibit of a hospital for the treatment of advanced pulmonary tuberculosis.

E. A prize of \$1,000 for the best exhibit of a dispensary or kindred institution for the treatment of the tuberculous poor.

F. A prize of \$1,000 for the best exhibit of a furnished house for a family or group of families of the working class, designed in the interest of the crusade against tuberculosis.

G. Prizes for educational leaflets. A prize of \$100 is offered for the best leaflet submitted in each of the following classes:

- For adults (not to exceed 1,000 words).
- For teachers (not to exceed 2,000 words).
- For mothers (not to exceed 1,000 words).
- For indoor workers (not to exceed 1,000 words).
- For dairy farmers (not to exceed 1,000 words).
- For school children in grammar school grades (not to exceed 500 words).

Pictorial booklet for children in primary grades and in the nursery.

Besides the money prizes, gold and silver medals and certificates of award are offered in each of the instances named.

#### The Transactions of the Congress.

It is not too late to visit the congress and to secure membership. Aside from the opportunities afforded at the meetings in Washington, membership in the congress will secure the published transactions in four volumes, which will be of vast importance to any one wishing to keep himself abreast of the times in this important subject, as the papers read at the congress will cover practically all phases of tuberculosis, being interesting alike to the pathologist, the practicing physician, the health officer and the sociologist.

The coming week will be given to the scientific work of the congress, which will be carried on in seven sections. The principal events of these meetings have been announced in

previous issues of THE JOURNAL (August 8, 22, 29, and September 12). We give below the program of the division devoted to the pathologic side of the subject. Much of the rest of the programs has already appeared.

#### Program of Section I. Pathology and Bacteriology.

MONDAY, SEPTEMBER 28, 2:30 P. M.

##### BIOLOGY OF THE TUBERCLE BACILLUS.

1. Remarks by the President of the Section, Dr. William H. Welch.
2. Election of Honorary Presidents of the Section.
3. Dr. Milton J. Rosenau, Washington: The Viability of the Tubercle Bacillus.
4. Prof. John Weinzirl, Ph.D., Seattle, Wash.: The Action of Diffuse Light on *Bacillus tuberculosis*.
5. Dr. J. von Szabóky, Budapest-Gleichenberg: A Contribution to the Knowledge of the Cultural Characters of Tubercle Bacilli (in German).
6. Dr. N. Jancsó and Dr. A. Effer, Klausenburg: Comparative Studies of the Practically Important Acid-fast Bacilli (in German).
7. Prof. S. Arloing and Dr. Paul Courmont, Lyons: New Homogeneous Cultures of Tubercle Bacilli (in French).
8. Prof. A. Rodet, Montpellier: The Virulence of the Tubercle Bacillus in Relation to the Clinical Development of Pulmonary Tuberculosis (in French).
9. Dr. A. Parker Hitchens, Glenolden, Pa.: A Chamber in Which Dried Tubercle Bacilli May be Handled Without Danger.

TUESDAY, SEPTEMBER 29, 9:30 A. M.

##### CHANNELS OF INFECTION, LATENT INFECTION, PREDISPOSITION, HEREDITY.

1. Prof. N. Ph. Tendeloo, Leyden: Channels of Infection.
2. Dr. Julius Bartel, Vienna: Concerning the Question of Channels of Infection (in German).
3. Dr. G. Kuss, Angicourt, France: Sources and Paths of Tuberculous Contagion (in French).
4. Dr. S. Bernheim, Paris: The Portals of Entry of Tuberculosis (in French).
5. Prof. Francis Harbitz, Christiania: Concerning Latent Tuberculosis.
6. Dr. Carl Hart, Berlin: The Predisposition of the Apices of the Lungs and the Law of Localization of the First Focus of Disease (in German).
7. Prof. A. S. Warthin, Ann Arbor, Mich.: The Present State of Our Knowledge Concerning Heredity in Tuberculosis.
8. Surgeon-General Simon von Unterberger, St. Petersburg: Heredity in Tuberculosis (in German).
9. Dr. J. von Szabóky, Budapest-Gleichenberg: The rôle of Inherited Predisposition in the Etiology of Tuberculosis (in German).
10. Prof. B. Stiller, Budapest: Pulmonary Tuberculosis and Asthenia Universalis (in German).

TUESDAY, SEPTEMBER 29, 2:30 P. M.

##### JOINT SESSION OF SECTIONS I AND II. OPSONIC INDEX, CONJUNCTIVAL AND CUTANEOUS TUBERCULIN REACTIONS, SERUM DIAGNOSIS.

1. Dr. T. W. Hastings, New York: The Opsonic Index in Certain Tuberculous Infections.
2. Dr. George P. Sanborn, Boston: The Opsonic Index in Early Diagnosis.
3. Dr. H. M. Kinghorn, Dr. D. C. Turchell, Dr. N. M. Carter and Mr. F. W. O. Werry, B.A., Saranac Lake, N. Y.: The Accuracy of the Tuberculin Opsonic Test and Its Value as a Control to Tuberculin Treatment in Pulmonary Tuberculosis.
4. Dr. Mary C. Lincoln, Chicago: The Tuberculin Opsonic Index in the Diagnosis and Treatment of Tuberculosis.
5. Dr. J. von Szabóky, Budapest-Gleichenberg: Opsonins and Their Value in Diagnosis, Prognosis and Treatment (in German).
6. Prof. A. Calmette, Lille: Concerning the Application of the Cutaneous and Conjunctival Tuberculin Reactions in the Diagnosis of Tuberculous Infections (in French).
7. Dr. C. von Pirquet, Vienna: Observations on the Cutaneous Tuberculin Reaction in 200 Children Examined Postmortem (in German).
8. Dr. A. Wolff-Eisner, Berlin: Cutaneous and Conjunctival Reactions (in German).
9. Dr. Arnold C. Klebs, Chicago: Cutaneous and Conjunctival Reactions.
10. Dr. E. R. Baldwin, Saranac Lake, N. Y.: Conclusions from 1,087 Conjunctival Tuberculin Tests.
11. Dr. Fernand Arloing, Lyons: The Ophthalmic Reaction (in French).
12. Dr. Ladislaus Detre, Budapest: The Application of the Differential Cutaneous Reaction in the Diagnosis, Pathology and Treatment of Tuberculosis (in German).
13. Dr. S. Trimescu, Roumania: The Ophthalmic Reaction with the Paratuberculins.
14. Dr. S. Trimescu, Roumania: The Prognostic Value of the Ophthalmic and Cutaneous Reactions.
15. Dr. Paul Courmont, Lyons: The Present State of Serum Diagnosis (in French).

WEDNESDAY, SEPTEMBER 30, 9:30 A. M.

##### INFECTION THROUGH THE SKIN. SOURCES OF INFECTION.

1. Prof. Jules Courmont and Dr. A. Lesieur, Lyons: Transcutaneous Inoculation of Tuberculosis (in French).
2. Dr. Isidora Spitzstein, Budapest: Contribution to the Question of Percutaneous Infection (in German).
3. Dr. Julius Bartel, Vienna: Concerning the Opportunity for Tuberculous Infection by Dust from Public Places (in German).
4. Dr. William H. Park, New York: Sources of Tuberculous Infection.
5. Dr. J. Héricourt, Paris: Danger from Persons with Unrecognized Tuberculosis (Apparently Healthy Bacillus Carriers): Prophylaxis (in French).



6. Dr. Alfred F. Hess, New York: A Study of Tuberculous Contamination of New York City Milk.
7. Dr. C. André, Lyons: Flies as Agents of Dissemination of the Bacillus of Koch (in French).
8. Dr. J. Woods Price, Saranac Lake, N. Y.: The Possibilities of Infection from Table Utensils at Sanatoria.
9. Dr. S. Matejka, Budapest: Concerning Opportunities for Infection (in German).
10. Dr. S. Bernheim, Paris: Relations of Air to Tuberculous Contagion. Sterilization of Air (in French).

WEDNESDAY, SEPTEMBER 30, 2:30 P. M.

JOINT SESSION OF SECTIONS I AND VII. THE RELATIONS OF HUMAN AND BOVINE TUBERCULOSIS.

1. Prof. Theobald Smith, Boston: The Relations of Human and Animal Tuberculosis, with Especial Reference to the Question of the Transformation of Human and Other Types of the Tubercle Bacillus.
2. Prof. G. Sims Woodhead, Cambridge, England: The Problems to be Solved in Dealing with Human and Bovine Tuberculosis.
3. Prof. S. Arloing, Lyons: Relations of Human and Bovine Tuberculosis (in French).
4. Prof. J. Fibiger and Prof. S. O. Jensen, Copenhagen: Human and Bovine Tuberculosis and the Tubercle Bacillus.
5. Dr. M. P. Ravenel, Madison, Wis.: Recent Developments in Regard to the Relations of Human and Bovine Tuberculosis.
6. Dr. Lydia Rabinowitsch, Berlin: Title to be announced.
7. Dr. R. M. Dinwiddie, Experiment Station, Ark.: The Susceptibility of Cattle to the Virus of Surgical Forms of Human Tuberculosis.
8. Dr. P. A. Lewis, Boston: Tuberculous Cervical Adenitis. A Study of the Tubercle Bacilli Cultivated from Fifteen Consecutive Cases.
9. Dr. Charles W. Duval, Montreal: Study of Tubercle Bacilli from the Tissues of Special Forms of Primary Cervical Adenitis in Man, with Particular Reference to Intermediate and Atypical Varieties of Bacilli.
10. Dr. William H. Park, New York: The Types of Tubercle Bacilli in Pulmonary Tuberculosis and Certain Other Forms of Tuberculosis in Human Beings. A Preliminary Report of Work Done by Drs. Woglom, Krumwiede and Montgomery.
11. Dr. J. N. Davalos and Dr. J. Cartaya, Havana: A Comparative Study of the Tubercle Bacillus of Human and Bovine Origin.

THURSDAY, OCTOBER 1, 9:30 A. M.

IMMUNITY.

1. Dr. E. R. Baldwin, Saranac Lake, N. Y.: The Problem of Immunity in Tuberculosis.
2. Prof. A. Calmette and Dr. C. Guérin, Lille: Concerning Immunity Against Tuberculosis (in French).
3. Dr. Julius Bartel, Vienna: Experimental Immunization Against Tuberculosis (in German).
4. Prof. Jules Courmont and Dr. A. Lesieur, Lyons: Contribution to Immunity in Tuberculosis (in French).
5. Prof. A. B. Marfan, Paris: Immunity of Man Against Tuberculosis (in French).
6. Dr. Gerald B. Webb, Dr. W. W. Williams, Colorado Springs, and Prof. M. A. Barber, University of Kansas: Immunity Production by Inoculation of Increasing Numbers of Living Bacteria, Beginning with One Organism.
7. Prof. A. Calmette, Lille: Tuberculins and the Measure of Their Activity (in French).
8. Dr. Camillo Calleja, Valladolid, Spain: Eupyrexia (in Spanish).

THURSDAY, OCTOBER 1, 2:30 P. M.

PROTEIDS OF THE TUBERCLE BACILLUS. IMMUNIZING SUBSTANCES. ENZYMES. CHEMICAL STUDIES.

1. Prof. Victor C. Vaughan, Ann Arbor, Mich.: A Study of the Proteids of the Tubercle Bacillus.
2. Dr. H. Noguchi, New York: The Action of Soaps on the Vitality and Immunizing Property of the Tubercle Bacillus. (To be read by Dr. Simon Flexner.)
3. Dr. T. Ishigami, Osaka, Japan: Tuberculo-Toxoidin and Immunizing Serum.
4. Dr. Eugene L. Opie, New York: The Part of Enzymes in Tuberculous Lesions.
5. Dr. Paul Courmont, Lyons: Humoral Properties of Tuberculous Exudates; Prognostic and Therapeutic Value (in French).
6. Dr. Fernand Bezançon and Dr. S. I. de Jong, Paris: Histochemical and Cytologic Study of Tuberculous Sputum (in French).
7. Prof. J. Nicolas, Lyons: Laboratory Aids in the Diagnosis of Cutaneous Tuberculosis (in French).
8. Dr. Alfred C. Croftan, Chicago: An Experimental and Clinical Study of the Calcium Metabolism in Tuberculosis.

FRIDAY, OCTOBER 2, 9:30 A. M.

PATHOLOGIC ANATOMY AND HISTOLOGY.

1. Prof. William T. Councilman, Boston: Some Considerations Concerning Lesions of Tuberculosis.
2. Prof. S. Arloing, Lyons: Tuberculous Infection According to the Pathologic Anatomic Criterion (in French).
3. Dr. Léon Bernard, Paris: Anatomic and Pathologic Study of the Non-Follicular Lesions of Tuberculosis (in French).
4. Dr. James Miller, Birmingham, England: Histology of Pulmonary Tuberculosis, with Demonstration. Discussion by Prof. G. Sims Woodhead, Cambridge, England.
5. Prof. J. Paviot, Lyons: The Anatomic Process in the Initial Hemorrhage of Pulmonary Tuberculosis (in French).
6. Prof. R. Tripier, Lyons: Pneumonia in the Process of Pulmonary Tuberculosis (in French).
7. Prof. A. S. Warthin, Ann Arbor, Mich.: The Frequency of Healed Tuberculosis of the Mesenteric Glands, with Particular Reference to the Relationship Between Hyaline Deposits in These Glands and the Healing of Tuberculous Lesions.
8. Prof. J. George Adami and Dr. John McCrea, Montreal: Analysis of 1,000 Consecutive Autopsies in Montreal with Reference to the Incidence of Tuberculosis in the Different Organs.

9. Dr. A. R. Landry, Montreal: Incidence of Chronic Pleurisy in 1,400 Consecutive Autopsies in Montreal and Its Relation to Tuberculosis. (To be read by Prof. Adami.)

FRIDAY, OCTOBER 2, 2:30 P. M.

PATHOLOGIC ANATOMY AND HISTOLOGY (Continued.)

1. Dr. Josef Kertesz, Budapest: The Histogenesis of Tubercle of Bone (in German).
2. Dr. Joseph Walsh, Philadelphia: The Kidneys in Tuberculosis of the Lungs.
3. Dr. D. J. McCarthy, Philadelphia: Tuberculosis of the Spinal Meninges, with a Consideration of the Mode of Infection of These Structures.
4. Prof. E. Boinet, Marseilles: Tuberculosis and the Suprarenal Capsules (in French).
5. Dr. C. Esmonet, Châtel-Guyon, France: Experimental Studies of Tuberculosis of the Testicle (in French).
6. Dr. O. Amrein, Arosa, Switzerland: Periostitis et Adipositis Tuberculosa Toxica Multiplex.
7. Dr. Walter Altschul, Prague: The Pathology of Peritoneal Tuberculosis (in German).
8. Dr. J. T. Ullom, Philadelphia: The Liver in Tuberculosis.

FOREIGN.

**Centennial of Medical Book Publishing Firm.**—The firm of F. C. W. Vogel of Leipsic celebrated three years ago the one hundred and seventy-fifth anniversary of its foundation. It has recently celebrated the centennial of the assumption of the present firm name. It has long published a large number of important scientific periodicals, especially *Archives* and *Zeitschriften*.

**Medical Research on Prehistoric Material from the Nile Valley.**—A cablegram from London states that the council of the Royal College of Surgeons has given permission to Dr. Elliot Smith and Dr. Wood Jones, of the Cairo Medical School, to carry out, in the museum of the college, an examination of a collection of mummies and parts of mummies found during excavations in the Upper Nile Valley. The material is representative of peoples inhabiting Nubia in ancient times, and is expected to throw light on their pathology and the results of their surgery. The Egyptian government has expressed its willingness to present the collection to the museum of the Royal College of Surgeons.

**The Cholera Situation.**—Late telegrams give alarming accounts of the spread of cholera in Russia. For the twenty-four hours beginning September 20, the Municipal Hospital, St. Petersburg, reported 380 cases with 155 deaths, and these did not include the number treated in the military and suburban hospitals for the same period. Dispatches received in St. Petersburg from three provinces report 488 new cases with 201 deaths in the last twenty-four hours, Rostov-on-the-Don furnishing 182 cases and 80 deaths.—The hospital situation is reported to be critical, as all hospitals are full and are turning away patients.—The government has threatened to proclaim martial law and the aldermanic council of St. Petersburg has appropriated \$250,000 to enlarge hospital space and to purchase and distribute disinfectants and expedite the interment of the dead. Several public schools have been closed and their rooms transformed into hospital wards.—The official bulletin states that there were 349 cases and 128 deaths between noon, September 18 and noon, September 19, and from noon, September 19, to noon, September 20, 398 cases and 141 deaths.—Official notice in the last issue of the *Münchener medizinische Wochenschrift* states that from August 8 to 14, 538 cases of cholera were reported in Russia with 270 deaths, and for the week of August 15-21, 1,145 cases with 517 deaths.—The consul general at St. Petersburg, under date of August 22, reports that during the week ended August 14, 538 cases of cholera were reported, with 270 deaths.—Despite preventive measures, cholera has entered Odessa. On September 18, 20 cases were reported, with 7 deaths, and on September 19, 20 cases and 6 deaths.—The *St. Petersburg Medical Weekly* says in its issue of September 5, that between July 8 and August 15, 3,141 cases, with 1,505 deaths, occurred in Russia, the majority in Astrakhan, Nijni Novgorod, where the great annual fair is now in progress, having 142 cases.—On account of the rapid spread of cholera in Russia, Surgeon-General Wyman of the Public Health and Marine-Hospital Service is said to have sent to that country an officer, a cholera expert, who will be expected to make a study of the situation and advise the surgeon general, and also take such steps as may be deemed desirable to prevent the spread of the disease to the United States.—United States consuls at Libau, Hamburg, Bremen, Rotterdam, Antwerp, London, Liverpool, Southampton and Glasgow have been instructed to detain all Russian immigrants en route to the United States for five days when circumstances render it advisable.—The report of the municipal hospitals of St. Petersburg for September 22 shows 417 new cases and 117



deaths. There is now a total of 1,587 patients in the various hospitals. The incompleteness of the municipal statistics is shown by the fact that in one cemetery alone there were 424 interments during the last three days or within 20 of the total number of deaths reported.—France is extending precautions and has established an emergency station in addition to the elaborate disinfectant plants at the terminals of the Northern and Eastern railroads.

Public Health Reports for September 18 announce that at Hankow more than 200 deaths have occurred among the native population, and that 8 cases have occurred among foreigners, with 7 deaths.—At Hongkong 4 cases occurred during the week ended August 1, with 3 deaths.—The reports from Shanghai, dated August 17, say that Asiatic cholera now prevails to some extent among the natives along the water front.—The disease is reported at Amoy and Hankow, the latter furnishing about 6 victims a day, the total mortality reaching 1,860, among the fatal cases being a number of foreigners.—The disease is said to be prevalent at Su Chow, Wo Sech, Hang Chow, Ning Po, Nan Kin and other native cities.—Under date of August 22 and 24, cholera is reported at Kure, the naval station in the inland sea near Heroshima, Japan, where a vessel from Calcutta is in quarantine with 4 cases on board.

Telegraphic advice from Manila, September 21, reports that on the previous day two white persons were attacked by cholera. During the day 35 new cases were reported in the city. For the twenty-four hours ended at 8 a. m., September 21, 58 new cases of cholera and 19 deaths were reported in Manila.—Governor-General Smith has called a special meeting of the Philippine Commission to lay plans for the extension of the campaign against the disease.—Chief Quarantine Officer Heiser, Manila, reports under dates of July 27 and August 3, that during the week ended July 25, two cases of cholera were reported, with one death, and during the week ended August 1, 14 cases, with 11 deaths.—During the week ended July 18, 1,445 cases were reported in the infected provinces of Benguet, Bulacan, Capiz, Ilocos, Sur, Iloilo, Misamis, Nueva Ecija, Pampanga, Pangasinan, Tarlac, and Union, with 778 deaths. During the next week 1,048 cases were reported, with 637 deaths, and during the following week 1,004 cases, with 695 deaths.—For the twenty-four hours ended at 8 a. m., September 23, 36 new cases of cholera were reported, with 11 deaths, the smallest gain made by the disease for several days. No additional cases in Americans are reported and those now ill have good prospects for recovery.

#### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Sept. 12, 1908.

##### The Health of the Army.

The report of Lieutenant-General Sir Alfred Keogh, director general of the Army Medical Department, shows that the health of the troops, at home and abroad, has been exceptionally good last year. The diminution in illness has been most marked in India and in Egypt. In the former country the hospital admission and death rate were the lowest on record. An enormous diminution in venereal disease is recorded. In 1897 the hospital admission rate was 507.8 per 1,000; in 1907 it had fallen to 89.9. As regards invaliding in India, during the past cold season the experiment was tried of sending men to the hills stations instead of invaliding them home, as was formerly the custom. The result has been most gratifying; the men improved markedly in these places, which possess an unrivalled climate in the winter. As a consequence, compared with the previous season, the number of invalids has decreased one-half. The improvement in the general health of the army is attributed to increased attention to sanitation. Prophylactic measures have been more generally adopted and sanitary details in barracks and camps more carefully attended to. The discovery that Malta fever is conveyed by the milk of goats has led almost to the extermination of the disease. A comparison with the latest figures of disease in other armies shows that in respect to all diseases the army of the United States heads the list, with an admission rate of 1,179 per 1,000, and this is followed by the armies of Austria, France and Germany in the order named, while the British army occupies the lowest place but one.

##### Tuberculozyne.

An inquest held at Southend on a boy, aged 11, the son of an Italian ice-cream vendor, shows once more the nostrum vendor as a greedy harpy, preying on the sick. A year ago the father took the boy to 6 Bouverie Street, London, the

address of the exploiters of Tuberculozyne, which was advertised as follows: "Tuberculozyne, by its peculiar action, destroys the bacilli. Its properties are such as to resist the disease germs. Do not delay too long. Tuberculozyne, if taken in time, will cure you of consumption." The father expected to see a doctor, but only saw some of the office help, and the boy was not examined. For twelve months, up to the time of his death, he took the nostrum. The necropsy showed an old pleurisy and tuberculosis of both lungs and of the intestines. The police took possession of two bottles of Tuberculozyne in the patient's house. Dr. Bernard Dyer, the public analyst, examined them and found that they consisted for the greater part of a solution of glycerin, flavored with cinnamon in one case and some kind of almond flavoring in the other. According to the directions, they were to be taken mixed. One contained some potash compound and some compound of phosphates or phosphoric acid and was slightly alkaline. The other was slightly acid and contained minute traces of copper (about one-fiftieth of a grain to the ounce). Medical evidence was given to the effect that the mixture would have no effect either to benefit or to injure the patient. The coroner, in reviewing the case, severely criticized the vendors. "When the father got into communication with them," he said, "they swamped him with 'literature' to induce him to undertake the treatment. He took the boy to London, expecting to see a doctor and saw only women clerks. He received two bottles of a useless mixture, for which he was charged \$10 and for which he could ill afford to pay. My only object in holding this inquiry is that the public may have some information in regard to highly advertised quack medicines." In one of their letters to the father the vendors stated that "the cost of Tuberculozyne is very low, considering the nature of the ingredients and the expense of making it widely known." Exhibiting a large newspaper advertisement of the nostrum, the coroner observed that it was evident that "making it widely known" must cost a considerable sum of money. In reply to a question from a juror whether it would not be possible to prosecute the vendors, the coroner said that that was not a question for the jury, but for the police.

##### Plague in the Punjab.

The report on the sanitary administration of the Punjab for 1907, which has just been issued, is of unusual interest. It deals with a year in which the mortality is without parallel in this or any other province of India. The deaths from plague reached the appalling figure of 608,685, or 30.3 per 1,000, almost equal to the aggregate death rate from all other causes in the province and more than double the rate from all causes in England. The highest death rate from plague previously reported was 19.7 per 1,000 in 1904. Plague first broke out in the Punjab in the severe epidemic form in 1902, since which time the population has been almost decimated by it; the deaths in the six years which have elapsed amount to 1,808,415, or about 9 per cent. of the population. Fortunately the epidemic of the present year is of a very mild character. The mortality has been far higher in the rural districts than in the towns. The most striking fact in the epidemiology of plague is its apparent dependence on climatic variations, its disappearance when the temperature becomes very high and its reappearance when the temperature falls. How does the bacillus maintain its existence during the non-epidemic season? Its life in the soil has been found to be comparatively short, and plague in man is dependent on plague in rats. There is no reason to suppose that man harbors the bacillus after recovery, and although chronic plague does occur among rats, the development of acute plague from a chronically infected rat is thought hardly possible. The only obvious way in which plague can be maintained in the non-epidemic season is by a chain of acute cases among rats. In the cities of Calcutta and Bombay, and in different areas in the widely infected provinces, plague occurs in man throughout the year. It follows that acute plague in rats must occur throughout the non-epidemic season. As the mildness of the epidemic of 1905-06 did not indicate an approaching cessation it can not be argued that the great decline of the present year indicates any hope of cessation. The government are taking active measures of the usual kind, but the attitude of the people toward them remains hostile. They endure the epidemic with their usual fortitude, but will not avail themselves of inoculation or evacuate their dwellings.

##### The Study of Tropical Medicine in Liverpool.

For a considerable time the teachers of the Liverpool School of Tropical Medicine have reported to the committee that the



time allotted for the course of instruction—ten weeks—is insufficient, especially as recent numerous advances have much enlarged our knowledge of tropical medicine. The school has determined, therefore, to add three weeks to the period of study. Owing to this lengthened term it will not be possible to give more than two courses in the year. These will begin on January 6 and September 15. Another innovation has been introduced—a course lasting one month, of practical instruction in tropical pathology and medical entomology. This will be given in June. It is hoped that it will be of great use to physicians returning on short leave to England, as it will enable them to acquire the technic of microscopic and laboratory work which has been much desired by many.

#### Irish Vital Statistics.

The annual report of the registrar-general for Ireland shows that in 1907 the marriage rate was 5.14 per 1,000, a decrease of 0.02 as compared with the year 1906 but 0.05 above the average rate for the last ten years. The birth rate was 23.2, the same as the average for the last ten years. The death rate was 17.7, or 0.7 above the rate for the preceding year, but 0.2 under the average for the preceding ten years. The excess of births over deaths was 24,408, but the loss by emigration amounted to 39,082, which exceeded the average for the last ten years (37,381). As usual, Ireland maintains its reputation as a land of centenarians. No fewer than 700 persons died whose ages were stated to be over 95, and 145 were reported as over 100. In the absence of public records for remote periods verification of the ages of very old persons is not possible, but secondary inquiries were made and showed that the ages were correct as far as could be ascertained. The most ominous feature of the report is the death rate from tuberculosis, which shows no diminution and amounts to 15 per cent. of the deaths from all causes. Nearly all the deaths from this disease occurred between the ages of 25 and 35.

#### Fat Men Barred as Divers.

The recent investigations of Mr. Leonard Hill have shown that fat men are more liable to caisson disease than thin ones, because adipose tissue is very absorbent of the nitrogen of the air, the liberation of bubbles of which in the body produces the symptoms. The same conclusion, of course, applies to divers or others exposed to increased atmospheric pressure. The admiralty has, therefore, laid down the following rules for the royal navy: From candidates for seaman diver and artificer diver only those who have not a tendency to fat are to be accepted, preference being given to men who are distinctly thin. In the case of men who have already qualified for divers all those who may be classed as fat are on no account to be employed in diving. Men who are inclined to fatness, but not to such an extent as in the opinion of the medical officer to disqualify them for work at the lesser depths, may continue operations in depths not exceeding 12 fathoms (72 feet). In all diving operations at 20 fathoms (120 feet) and over men of the sparest habit are to be selected from the available divers.

#### PARIS LETTER.

(From Our Regular Correspondent.)

PARIS, FRANCE, Sept. 2, 1908.

##### School Hygiene.

The application of the experimental method of psychology has profoundly modified our ideas on pedagogy. As this evolution from an abstract to an applied science advances, the important rôle that the physician is called on to play in the work becomes more and more apparent. The special knowledge of the physician enables him to solve, better than any one else, the difficult problems in the education of youth. This rôle of the physician has too long been underrated in France. Up to the present the medical inspection of schools has been very defective, and, indeed, it scarcely exists except in a few large cities.

About six years ago a private society, which is now known as the "French League for School Hygiene," was founded by the initiative of Dr. Albert Mathieu. At present it includes among its 1,300 members about 400 teachers and professors.

The purposes of the league are: 1. to call attention to the disadvantages for growing children of the present organization of the schools; 2. to secure for children the judiciously planned physical exercise and open-air life which are so important for the welfare of the young; 3. to reform educational programs and methods so as to avoid mental overwork and waste of intellectual energy, and, 4. to demand for physicians and for fathers of families a more effective share in the regulation of

the physical and intellectual life of pupils. The league has local branches which work to secure from the public authorities and from the heads of private schools the necessary improvements in school hygiene.

Being a society for propaganda as well as for study and for action, the league has twice organized national congresses of school hygiene at Paris, and is now preparing for an international congress,<sup>1</sup> the third of its kind, to be held in Paris in the spring of 1910.

For two years the league has been holding at Paris a series of medical-pedagogic conferences which have been very well attended. The subjects of some of the conferences which will be held next winter are as follows: The relations of medicine and pedagogy; classes for abnormal children; the prophylaxis of criminality by educational selection; sexual morality in school; instruction in sexual physiology at school; prophylaxis of venereal diseases at school; the maladies of growth, etc.

It is certainly under the influence of the propaganda carried on by the league that the minister of public instruction has decided to take measures looking to the care of the mouths of school children.

These measures comprise the organization of services of dental inspection and of dental treatment and instruction in regard to the care to be taken of the mouth. The service of inspection of the teeth is to be entrusted to a graduate of a dental school. The teeth of all pupils will be examined by this specialist twice a year, and the result of the examination will be recorded on a special memorandum, which will be preserved by the head of the school. The expense of the service of dental treatment will fall on the families, like the expenses of illness.

It will be easy, however, for the heads of schools situated in or near the large cities to secure for their pupils the services of the dentists in the clinics connected with the dental schools. Everywhere, moreover, lacking a dentist chosen by the parents, the service of dental treatment, organized outside the school, will be entrusted to a graduate of a dental school chosen, like the dental inspector, by the administration on recommendation of the head of the school, and to be paid in accordance with a scale previously fixed in each locality by agreement with the families. The dental inspector and the dental practitioner will never, however, be united in the same person, since the former is to keep check on the latter by means of a record in regard to the teeth treated and the work done, which the dental practitioner will fill out at each operation. This record will be returned to the school and compared by the dental inspector with his own records.

These measures will apply, not to primary schools alone, but also to the lycées, or grammar schools, and the high schools for boys and girls. At the Michelet School in Paris the two services of dental inspection and of dental treatment will begin with the opening term.

At the same school a fumigating apparatus for the disinfection of books has just been installed, in which all the books belonging to pupils who have had infectious diseases will be submitted to the fumes of formaldehyd. During the summer vacation all books lent to pupils during the course of the school year will be disinfected.

#### BERLIN LETTER.

(From Our Regular Correspondent.)

BERLIN, Aug. 29, 1908.

##### The Koch Antituberculosis Fund.

Until comparatively recently, wealthy people in Germany have not been inclined to make large endowments for philanthropic and especially for scientific purposes. It is only since the national wealth of the Germans has been increasing in the last few decades that the example of philanthropists in America, Russia, England and other countries has acted as a stimulus to our wealthy countrymen, but, of late, foundations for the promotion of the general welfare are increasing from year to year in the most gratifying way. It is true that we can not show such large endowments as have been made now and then in your country, as we do not have the multi-millionaires who are found in your enviable country in not inconsiderable number. Perhaps, however, the number of endowments made yearly may, to a certain extent, compensate for the amounts of the single gifts; in the course of the last decade alone, several millions have been devoted to general beneficence.

In many cases the possibility of obtaining distinctions from the government in the shape of titles and orders or even the

1. Previously referred to in THE JOURNAL, Aug. 15, 1908, p. 612.



elevation to the nobility may act as a powerful stimulus to the endowment of charity, and in this respect our emperor has without doubt done a very encouraging work. But, aside from these motives, there is the influence of the humanitarian trend which has seized the entire world, and especially the German people, leading men of means to devote a portion of their wealth to the general good without reference to earthly reward.

Last year a new foundation was established which, on account of its purpose and of the man to whom it is dedicated, should enlist the special interest of the entire medical profession. This is the Robert Koch Endowment Fund for the Fight against Tuberculosis—*Die Robert Koch-Stiftung zur Bekämpfung der Tuberkulose*.

The first suggestion for this foundation came from Prof. Schwalbe, the editor of the *Deutsche medizinische Wochenschrift*, who took advantage of the occasion of the twenty-fifth anniversary of the discovery of the tubercle bacillus, March 24, 1908, to issue an appeal for the collection of this Koch endowment fund. The editor of this well-known medical journal had an especial justification for his action in the fact, which may be well known to you, that with few exceptions Robert Koch has published his entire work in the *Deutsche medizinische Wochenschrift*, so that his journal is to a certain extent Robert Koch's "organ."

The plan received immediately the cordial support of the highest authorities and of the profession, and in less than a year it proved possible to realize the goal set by the committee. To date the subscriptions to the fund have already exceeded a million marks (\$240,000). To be sure, your great philanthropic countryman, Andrew Carnegie, contributed nearly half of the sum in response to an appeal from the first court physician on the occasion of a visit of Carnegie to the emperor at Kiel. The emperor has given the next highest contribution, 100,000 marks (\$24,000); the remainder has come from manufacturers and physicians, not only in Germany, but in many other countries, and other classes of the population have participated in the endowment.

The object of the foundation is the encouragement of scientific investigations to aid the campaign against tuberculosis. The board of directors of the foundation consists of 11 members: 1. Robert Koch himself; 2. a member named by the emperor; 3. the president of the imperial health office; 4. the director of the institute for infectious diseases; 5. a representative of the German central committee for the campaign against tuberculosis; 6. a representative of the imperial committee for medical postgraduate instruction; 7. a representative of the *Ärztervereinsbund*, a national German medical association, and four members selected by the board of directors. As honorary members such persons can be appointed as have been especially instrumental in promoting the purposes of the institution. (As I hear, it is proposed to elect Carnegie an honorary member.) The management has at its disposal for the purposes of the foundation the interest on the endowment fund and special donations.

Possibly the foundation may receive attention in America at the International Congress on Tuberculosis, which will certainly gain an especial attraction by the presence of Robert Koch. The most satisfactory recognition will, of course, be by gifts of money.

## Pharmacology

### Tuberculozyne.

Our London correspondent refers<sup>1</sup> to a coroner's inquest recently held in England on a boy who died while taking the nostrum Tuberculozyne. This cruel fake is a product of this country—for which we should blush—being put on the market by "Dr." Derk P. Yonkerman of Kalamazoo, Mich. It was exposed by Dr. Kebler in *THE JOURNAL*<sup>2</sup> about two years ago. Later Samuel Hopkins Adams in *Collier's*<sup>3</sup> paid his respects to it and its exploiter, and last year the *Sydney* (N. S. W.) *Bulletin*<sup>4</sup> had the following to say regarding the nostrum:

"The blastiferous 'Tuberculozyne' seems to be a mixture of many things and whether a patient strikes one bottle or the other there appears every reason to consider

that he is a swindled consumptive. Possibly the hash is harmless—the *Bulletin* does not know—but a harmless mixture may amount to the cold-blooded murder of a consumptive just as much as a keg of prussic acid. A patient who is capable of being cured under proper treatment may waste his time over the bottles of rubbish manufactured by shameless and grasping quacks till he becomes incurable, and in that case the quack has killed him just as much as if he beheaded him with an axe. In this case the bottled slush was manufactured by a Yankee person or company and imported here in drums (barrels)."

An analysis of the nostrum and its method of exploitation was published in the *British Medical Journal*<sup>5</sup> recently. This analysis compared with those published in *THE JOURNAL* two years ago, those made in Sydney, N. S. W., and others made by the public analyst for the coroner in the case described, show that like most remedies of that ilk—from antikamnia to peruma—one is never sure how long the "formula" will remain stationary.

It is to be hoped that more coroners on both sides of the Atlantic will force inquiries in cases of death occurring in patients who are taking these "sure cures." The awakening on the part of the British public to the worthlessness and danger of nostrums of the type of Tuberculozyne will indirectly help to abolish the Great American Fraud. It has become increasingly common since the American public has been aroused to the viciousness of "patent medicines" for the promoters of such to seek new victims in other English-speaking nations. Object lessons such as coroners' inquests will inevitably tend to eliminate those human scavengers who wring money from the incurably sick under the guise of "cure."

## Correspondence

### Marital Tuberculosis Infection.

TOPEKA, KAN., Sept. 9, 1908.

*To the Editor:*—In your editorial on "Marital Infection in Tuberculosis," in *THE JOURNAL*, September 5, you say: "At present it would seem to be fairly well established . . . that consumption is not actively contagious between husband and wife, and that a certain previous constitutional condition or predisposition is essential for its contagion to act in any case."

The experience and observation of a fairly long professional life fully confirm your conclusions. I know the nostrum vendors prove what they will by experience, by noting only what confirms. While I have never known an instance in which husband and wife contracted tuberculosis from this closest of human relationships, I have known many instances in which they did not, and give you one of exceptionally marked character.

Z. V., a pioneer in the Miami Valley, Ohio, who early fell a victim to the drink habit, married a healthy and vigorous woman; to them were born three sons and three daughters. Two of the sons contracted the drink habit, and two of the daughters died of pulmonary tuberculosis. The other daughter was married to a strong and healthy farmer of good heredity. Soon after the birth of their eleventh child the father died of congestive remittent fever. The youngest daughter died at the age of 19, of consumption. All the other children married healthy husbands and wives. The husband of the oldest daughter died early of fever, and after a number of years the widow married again, and died of consumption, leaving a healthy husband to die of old age. Her three sisters, dying of consumption, left healthy husbands, two of them marrying a second time and dying practically of old age, the other dying of fever at Burlington, Iowa. Of the sons, two escaped tuberculosis, two died of that disease, and two of alcoholism, contracted in the early fifties, when alcohol was supposed to cure consumption, and so it often did, by virtue of one dread destroyer outrunning another. The sons all left healthy widows, and the mother nursed all her children during their last illnesses, and died of old age.

1. London Letter, this issue, p. 1093.

2. Nov. 10, 1906, p. 1549.

3. The Great American Fraud, 4th Ed., p. 73.

4. Report of the Royal Commission, Australia, i, 1907.

5. Aug. 22, 1905, 505.



If tuberculosis is contagious, the contagion is of a widely different character from that of variola, rubeola, and allied diseases. As it is one of the great destroyers of mankind, though rarely developing in a vigorous life, the problem with the profession would seem to be how to secure and sustain such a life, and so prevent the development of the starving tuberculous cell.

W. L. SCHENCK, A.M., M.D.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### PRESCRIPTION WRITING.

Sept. 17, 1908.

To the Editor:—Will you kindly give the correct use of the word "ad" in prescription writing? If, after indicating the amount of basis, adjuvant, etc., the name of vehicle is followed by "ad" with the number of ounces indicated, shall the whole amount of prescription be brought to this amount or shall this amount of the vehicle be added? Does the use of q. s. preceding or following the word "ad" change its significance? There seems to be some confusion in regard to the matter; some claiming that "ad" is synonymous with add.

G. L. N.

ANSWER.—The use of "ad," in the connection above given, means that the immediately preceding ingredient is to be added until the entire bulk of the mixture is brought up to the amount specified. "Ad" is simply Latin for "to" or "up to," and has nothing to do (save in a remote philological connection with which we are not here concerned) with the English word "add." The addition of the letters "q. s." (*quantum sufficiat*) would effect no change in the sense, for their significance is there, whether written or not; but it would alter the grammatical construction of the entire phrase by requiring the name of the ingredient to which *quantum sufficiat* refers, to be put in the genitive case of quantity (as is done with the other ingredients) instead of in the accusative as the direct object of the verb "take." In Latin we say "*Recipe acidi hydrochlorici diluti drachmam unam*," where in ordinary English we should invert the order and say "take one dram of hydrochloric acid." What do we take? One dram. One dram of what? Of hydrochloric acid. In the last instance, however, the idea is different. "*Recipe aquam ad uncias sex*." What do we take? Water. How much water? (Enough to make) up to six ounces. If, however, we give expression to the "enough to make," by "q. s.," then "q. s." corresponds, as the direct object of *recipe*, to the specified amounts of the other ingredients and requires a genitive of the thing measured to qualify it. Hence we should have: *Recipe aqua, quantum sufficiat ad uncias sex*.

The above points are, of course, elementary, both in Latin and in prescription writing. It is only consistent, however, to answer the question rather fully, in view of the criticism that has been made so often, both by THE JOURNAL and by many members of the medical profession, that there is a marked lack of thoroughness in the teaching of prescription writing in medical colleges.

### LITERATURE ON CYSTITIS.

ECKERTY, IND., Sept. 12, 1908.

To the Editor:—Please give references to articles on cystitis that have appeared in THE JOURNAL.

J. E. SAALMAN.

ANSWER.—The following original articles and abstracts have appeared in THE JOURNAL:

- Prather, S. S.: Cystitis, *Am. Pract. and News*, May, 1905; abstracted in THE JOURNAL, May 27, 1905, p. 1716.
- Gersuny, R.: Improved Catheter to Prevent Cystitis, *Zentralbl. für Gynäkol.*, xxx, No. 1; abstracted in THE JOURNAL, March 17, 1906, p. 840.
- Norris, C. C.: Two Rare Forms of Cystitis, *American Medicine*, March 31, 1906; abstracted in THE JOURNAL, April 14, 1906, p. 1139.
- Sellei, J.: Treatment of Cystitis with Alcohol, *Berlin. klin. Wochenschr.*, lxiii, No. 45; abstracted in THE JOURNAL, Jan. 19, 1907, p. 270.
- Hunner, G. L.: The Tub Treatment of Cystitis, *THE JOURNAL*, Dec. 21, 1907, p. 2066.
- Pedersen, V. C.: Treatment and Prognosis of Suppurative Cystitis, reported in Society Proceedings, *THE JOURNAL*, Feb. 22, 1908, p. 639.

Reference may be made to the Department of Therapeutics in THE JOURNAL, Aug. 5, 1905, p. 429, and Sept. 8, 1906, p. 804.

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Sept. 19, 1908:

Kilbourne, E. D., capt., relieved from duty at Fort Brady, Mich., to take effect at such time as will enable him to comply with order, and will proceed to San Francisco, and take transport sailing for Manila, Nov. 5, 1908, and on arrival to report to the commanding general for assignment to duty.

Bailey, Edward, M. R. C., ordered to active duty in the service of the United States, and is assigned to duty at Fort George Wright, Washington.

Jones, G. B., M. R. C., relieved from duty at Fort George Wright, Wash., and ordered to Fort Benjamin Harrison, Ind.

Dade, W. H., M. R. C., granted leave of absence for two months and fifteen days.

Bruns, E. H., first lieutenant, relieved from further duty at Fort Monroe, Va., and ordered to proceed to Fort Bayard, N. M., and report in person to the commanding officer of the General Hospital for duty.

Winter, F. A., maj., and Baily, H. H., capt., appointed members of a board of officers to meet at the Army Dispensary, Washington, Sept. 22, 1908, and on such other dates as may be necessary for the purpose of conducting the physical examinations prescribed in G. O. 79, War Dept., May 14, 1908, of such field officers as may be ordered before it.

Ford, J. H., and Duncan, L. C., capt., appointed members of a board of medical officers to meet at Ft. Wm. H. Harrison, Mont., for the examination of such officers of the Medical Reserve Corps, as may be brought before it to determine their fitness for retention in service.

Halliday, F. A., first lieutenant, retired from active service, Sept. 13, 1908.

Quinton, W. W., capt., granted 30 days' sick leave.

Peed, G. P., capt., relieved from duty at Fort Ontario, N. Y., and ordered to Fort Monroe, Va., for duty.

Culler, R. M., capt., relieved from duty at Ft. Monroe, Va., and ordered to Fort Ontario, N. Y., for duty, instead of Ft. Logan H. Roots, Ark., as heretofore ordered.

Schmitter, Ferdinand, first lieutenant, ordered to Ft. Logan H. Roots, Ark., for duty.

Halliday, C. H., M. R. C., relieved from duty at Ft. Sam Houston, Tex., and ordered to Fort Fremont, S. C., for duty.

Cutliffe, W. O., M. R. C., ordered to Ft. McIntosh, Tex., for duty.

Guitard, A. M., cont. surg., ordered to report to the Surg. Gen. for annulment of contract.

Lynch, Charles, major; Delaney, M. A., and Siler, J. F., capt., detailed to act as judges at the third annual contest of the First Aid Corps of the Penn. Coal Co., and the Hillside Coal & Iron Co., to be held on Saturday, Oct. 3, 1908, at Inkerman, near Scranton, Pa.

Woodbury, F. T., capt., leave of absence extended 15 days.

### Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Sept. 19, 1908:

Old, E. H. H., asst.-surgeon, ordered to duty at the Naval Hospital, Norfolk, Va., September 15.

Dollard, H. L., asst.-surgeon, detached from the *Rhode Island* and ordered to the *Albatross*.

Hart, G. G., acting asst.-surgeon, detached from the *Albatross* and ordered home to wait orders.

Marsteller, E. H., surg., transferred to the retired list from Sept. 15, 1908, on his own application after completion of 30 years' service, in accordance with a provision of the naval appropriation act of May 13, 1908; detached from the Naval Recruiting Station, Baltimore, Sept. 15, and ordered home.

Wells, H., medical director, detached from the Naval Recruiting Station, New York, and ordered to the Navy Yard, Portsmouth, N. H., and to additional duty in command of the Naval Hospital at that yard.

Bogert, E. S., surgeon, detached from the Naval War College, Newport, R. I., and ordered to the Naval Recruiting Station, New York.

Hoen, W. S., P. A. surgeon, detached from duty as assistant to the Inspector in charge of the Third Lighthouse district, Tompkinsville, N. Y., and ordered to the Naval Hospital, New York, for treatment.

May, H. A., P. A. surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to duty with lighthouse vessels en route to the Pacific Coast.

Reed, E. L., asst.-surg., detached from the Navy Yard, Mare Island, Cal., and ordered to the Naval Training Station, San Francisco.

Murphy, J. A., surgeon, ordered to temporary duty on board the *Franklin*.

McCormick, A. M. D., surgeon, detached from the Naval Academy, and ordered to the Naval Recruiting Station, Baltimore.

Bishop, L. W., P. A. surgeon, ordered to duty at the Naval Hospital, New York.

Foster, T. G., asst.-surgeon, detached from the Naval Training Station, Newport, R. I., and ordered to the Naval Hospital, Newport, R. I.

MacKenzie, E. G., and Sterne, C. F., asst.-surgeons, detached from the Naval Hospital, New York, and ordered to course of instruction at the Naval Medical School, Washington, D. C., October 1.

Phelps, J. R., asst.-surgeon, detached from the Naval Hospital, Boston, and ordered to course of instruction at the Naval Medical School, Washington, D. C., October 1.

Henry, R. B., and Giltner, H. A., asst.-surgeons, appointed assistant surgeons from Sept. 10, 1908.

McMurdo, H. B., acting asst.-surgeon, detached from the Naval Training Station, San Francisco, and ordered to course of instruction at the Naval Medical School, Washington, D. C.

Whitside, L. C., acting asst.-surgeon, detached from duty at the Naval Hospital, Newport, R. I., and ordered to course of instruction at the Naval Medical School, Washington, D. C., October 1.



## Book Notices

URIC ACID AS A FACTOR IN THE CAUSATION OF DISEASE. By Alexander Haig, M.A., M.D., Oxon., F.R.C.P. Physician to the Metropolitan Hospital and the Royal Hospital for Children and Women. Seventh Edition. Pp. 940 with 75 illustrations. Price, \$4.00. Philadelphia: P. Blakiston's Son & Co., 1908.

Probably no book has exercised a wider influence or produced a deeper impression on the minds of English-speaking physicians than Haig's work on "Uric Acid in the Causation of Disease." It is safe to say that a good share of the present generation of physicians have formed their conceptions of disease and have conducted its treatment under the influence of the ideas set forth in the former editions of this book. Its influence has extended even to the laity, so that it is not uncommon for the intelligent patient to assist the physician to a diagnosis by suggesting that it may be uric acid in his blood.

Two problems are presented by the book: 1. What is the secret of its immense influence, and 2. why does it continue to exercise this influence in spite of the fact that the theories of Haig have been largely repudiated by the scientific world? The first query finds its answer largely in the style and character of the book and largely also in the nature of its theme. It is an attractive idea to build up a theory that shall simplify the causation and likewise the treatment of disease by referring all forms to one cause. Osteopathy, Christian science, and other fads owe much of their popularity to the fact that they attempt thus to simplify the problem of the causation of disease. An inspection of the index of Haig's book will show how thoroughly he has attempted to bring the various forms of disease under the dominion of uric acid. The ingenuity with which his theory is fitted to the exigencies of the different ailments of mankind is indeed remarkable. The book appears to have immense practical as well as scientific value. If the theory is true, the numerous practical suggestions scattered through its pages make it a mine of therapeutic wealth. The so-called facts of experiment and experience with which its pages are filled would render it an epoch-making contribution to science. The author has collated observations and recorded experiments on the relations of uric acid with as great diligence as Darwin collected and classified the facts of biology before announcing his theory of evolution. It is small wonder then that medical men seeking for uniformity and general principles amid the puzzling facts and theories of pathology and therapeutics should have welcomed a book that promised to lead them to the desired goal along so clear a path. Further, we must credit the author with a fascinating and pleasing style. So much may be said in explanation of the immense vogue which the book attained when first published.

But the second question is more difficult to answer. It is probably known to most physicians who have followed the advance of investigation that the ideas and theories of Haig have been long discredited and disproved. Why, then, do they still maintain their hold on a large proportion of our profession? The analytic methods of Haig were early shown to be unreliable, the central proposition on which he relies, viz., that there is a normal fixed ratio between urea and uric acid, was disproved as much as ten years ago, and yet he still propounds it with confidence and evidently expects that the profession will accept his conclusions.

Haig, having begun with the assumption that uric acid had some relation to headache, was soon puzzled by the fact that "while there might be a bad headache one day, with say, an excretion of 16 grains in the twenty-four hours, an exactly similar excretion might occur on another day without any headache." Nothing daunted, he sought for an explanation, which he found in an assumed abnormal relation of uric acid to urea on the day on which the headache occurred. The supposed fixed relation of uric acid to urea (a theory long since exploded) is the first false premise on which the imposing structure of Haig's uric acid theory is based.

The character of facts relied on to support his assumptions is shown on page 16, where he estimates the amount of uric

acid stored in the body from the amount found in various organs, arriving at the conclusions that the body contains about 300 grains. He then estimates with great exactitude the amount excreted for 3,161 days. Such imposing figures indicate a patience in scientific research that is commendable, but the results must be put down as mere guesswork. The guesswork character of these figures becomes more apparent when we consider that the method used by Haig is not an exact one. On page 18 we meet another theory propounded by Garrod and accepted by Haig, which is discarded by modern physiologists, viz., the theory that uric acid is formed in the kidney. Then for several pages of suppositions he explains how the uric acid on the headache day could not all have been formed in the kidney, since the proportion to urea would not allow of so much, but it must have come from some point at which it had been retained in the body.

The next false statement in this remarkable collection of errors is that acidity controls excretion of uric acid (p. 20). The view that alkalies increase uric acid excretion is again advocated on page 38. This statement, if made two decades ago, would have been pardonable, but with the advance of investigation it has been shown to be erroneous and ought not to appear in a book published at the present day.

On page 43 we meet the careless statement that glyccoll is a constituent of uric acid, and again on page 45 he says that the removal of glyccoll from the body is equivalent to the removal of uric acid. We learn (p. 47) that the effects of belladonna and opium are due to their action on uric acid secretion. On page 51 occurs the astounding statement that alkaloids increase uric acid in proportion to their xanthin elements. The presence of xanthin in alkaloids will be a surprise to most chemists, and the amount of uric acid produced from a grain of strychnin would not be very noticeable considering that the alkaloid is not by any means all decomposed in the body. Another remarkable statement occurs on page 21 and is formulated as a law, that "urinary water varies hourly and daily inversely with the excretion of uric acid or with the height of uric acid above urea." From this the author expands his theory until we find that uric acid controls the secretions, the blood pressure, the action of the capillaries, and the metabolism of the whole body.

The relation of uric acid to disease is a much discussed problem. With the prevailing uncertainty as to the normal metabolism the more careful investigators have been unable to find any evidence of its pathogenic action except in gout. Haig is troubled by no such scruples. He divides diseased conditions into two groups, apparently including the entire nosology and enumerates over a hundred affections which owe their origin, not solely, but principally, to this one substance. The two groups he sums up as gout and collemia. If one does not find a disease under one head he is pretty sure to hit it under the other. "Gout is relieved by solvents; collemia by retentives. Both are prevented, relieved or cured by a uric-acid-free diet. Gout is accompanied by quick circulation, raised temperature and few granules in the blood. Collemia is accompanied by slow circulation, subnormal temperature and many granules in the blood. This epitomizes the subject." Surely this simplifies pathology beyond the desire of the most indolent student.

It would be easy to fill many pages with demonstrations of the errors and inconsistencies of the book. Enough has been said, however, to show that while it may have once received attention as presenting plausible theories, the basis on which these theories are built is erroneous and superstructure worthless. This being the case, the question as to the continued popularity of the work is still more difficult of answer. We may attribute part of its popularity to the conservatism of physicians who hesitate to abandon old views and fail to keep abreast of scientific progress. It is to be hoped that the better education in chemistry of the coming generation of doctors will make impossible the acceptance of such untenable theories. How far the activity of proprietary interests has been efficient in keeping alive the theories of Haig is a question of interest, and if such influence has been considerable,



as we believe it has, its lesson ought to put the medical man on his guard as to the source from which he derives his science as well as that of his remedies.

THE PATHOLOGY OF THE EYE. By J. Herbert Parsons, B.S., D.Sc. (Lond.), F.R.C.S. (Eng.), Assistant Surgeon, Royal London (Moorfields) Ophthalmic Hospital. Vol. IV. General Pathology. Part II. Cloth. Illustrated. Price, \$3.50. New York: G. P. Putnam's Sons, 1908.

This is the latest of the series of works on the pathology of the eye by Mr. Parsons. On the whole it is even a better example of original work, patient compilation and practical application of laboratory study than his previous contributions to the same subject. Seven chapters treat of "Injuries of the Eye," "Exophthalmos and Enophthalmos," "Panophthalmitis, Orbital Cellulitis and Thrombosis," "Sympathetic Ophthalmia," "Symptomatic Diseases of the Eye" and "Hereditarity."

One of the most satisfactory chapters is that on "Migratory Ophthalmia." After a careful analysis of all the theories of its pathogenesis, Parsons is of the opinion that bacterial transmission by metastasis, first mentioned by Mackenzie and elaborated by Berlin, is worthy of acceptance. He believes that most of the facts point to sympathetic ophthalmia as a disease of bacterial origin, and "if the virulence of the organisms and the varying conditions of resistance of the tissues are taken into account the variations in latent period and many other difficulties are abolished." Parsons thinks that the organism is pathogenic only for the eye and is innocuous to other parts of the body. He points out that in leprosy and tubercle their characteristic organisms set up a metastatic inflammation that, though subacute or chronic, is yet not purulent. Even virulent organisms may circulate in the blood and be harmless until they reach an organ or tissue for which they are pathogenic. For example, saprophytes, reaching the eye by way of the blood current, may set up serious ocular inflammation, although they do not affect other organs of the body through which the same infected blood flows. Parsons restates this idea of blood transmission when he says that the "fact that sympathetic ophthalmia manifests itself as a uveitis both in the exciting and sympathizing eye points to the same *causa causans*. The organism multiplies in the exciting eye; if this is removed early infection does not occur, but if organisms have escaped in quantity into the circulation sympathetic ophthalmia may follow."

That rather odd lesion "hole" in the macular retina, first described by Knapp in 1869, may be due to disease as well as to trauma. In almost all instances it is preceded by edema of the macular region, as de Schweinitz and others have pointed out. In all probability this edematous condition is followed by atrophy and slow perforation and is not necessarily due to injury, though a contusion of the globe or any injury to the orbital region may precipitate the final result.

Parsons refers to the appearance of lipemia in some cases of diabetes mellitus. The ophthalmoscopic appearances are very striking, as the retinal vessels contain a fluid which looks like milk—a condition which Uthoff believes to be due to the arrangement of fat globules next the vascular wall, the red corpuscles remaining in midstream.

Parsons thinks that the main difference between diabetic and albuminuric retinitis lies in the absence of ophthalmoscopic changes in the arterial walls and of the absence of papillitis in diabetes—alterations so commonly observed in renal retinitis.

HEALTH AND HAPPINESS. By Robert Maxwell Harbin, A.B., M.D. Cloth. Pp. 184. Price, \$1.20. Philadelphia: Griffith & Rowland Press, 1908.

This book partakes of the character of a sermon to scientists in general and physicians in particular. Its platform may be best stated in the following words from Dr. Harbin's argument: "It is endeavored to produce an argument for the identities of the physical, intellectual and spiritual natures, respectively, and their relations to the Infinite Material Universe and Infinite Moral Universe. Health relates to the former, while happiness belongs to the latter realm. Science has to do with the material, while religion concerns the moral

sphere. Infraction of the laws of Nature brings disease, while violation of the moral law brings unhappiness. While health has some bearing on happiness, there is no necessary causative relation between the two, for there may be happiness without health and *vice versa*, and it is not within the purpose of this discussion to refer to that phase of the subject." The argument unfolds Dr. Harbin's position, as outlined above, fairly well, but its convincingness will depend on the mental attitude of the reader. Those, however, who are interested in the study of these problems, from whatever viewpoint, may derive pleasure from it; at least it contains nothing likely to offend anyone, unless it be the blank materialist. The Argument is followed by chapters on "The Influence of Nature in Disease as Revealed by Recent Investigations," "Physiology of the Soul," "The Analogy of Disease and Sin," and "The Philosophy of Death." The style is somewhat jerky and syncopated, and in places is lacking in lucidity from inattention to the requirements of grammatical connection. Moreover, some of the scientific statements are deficient in accuracy, as when the author says that "the physiologist . . . can not distinguish a red blood corpuscle of an animal from that of the human organism."

CATARACT EXTRACTION. A Series of Papers with Discussion and Comments Read Before the Ophthalmological Section of the New York Academy of Medicine, 1907-1908. Edited by J. Herbert Claiborne, M.D., Instructor in Ophthalmology Cornell University Medical College. Cloth. Pp. 169. Price, \$2.00. New York: William Wood & Co., 1908.

This work is a valuable symposium on cataract, although the title is "Cataract Extraction." The individual papers have been contributed by men chosen for their peculiar fitness to treat the particular subject assigned to them and the whole has been most ably edited by Dr. Claiborne, who has added many valuable data from his own personal experience. Briefly, the subjects considered are: stage of development of cataract most suitable for extraction; preparation of patient and instruments; combined extraction; extraction with keratome; after-treatment; technic and indications for discussion of secondary cataract; extraction in capsule; maturation operations; extraction of high myopia; final results of cataract extraction. These papers have been compiled with full discussions and may be said to cover the subject of cataract in full to date. One notable point is that in all the papers and discussions Herman Knapp of New York is the only one who mentions irrigation of the anterior chamber after cataract extraction.

MEDICAL GREEK. By Achilles Rose. Cloth. Pp. 262. Price, \$1.00. New York: Peri Hellados Publication Office.

This book is a republication of a series of papers advocating accuracy according to the genius of the Greek language in the formation of medical terms from the Greek. To attain this end Rose insists that we can not ignore the work in nomenclature by modern Greek physicians, among whom are to be found, he says, excellent philologists, versed in both the ancient and the modern Greek. The book contains chapters, among other things, on "Greek as the International Language of Physicians and Scholars in General," "Greek in Medicine," "A Conspiracy to Suppress the Truth About Living Greek," "Memorial on the Anatomic Nomenclature of the Anatomic Society," by Dr. Hermann Triepel; "Scientific Medical Nomenclature," by Dr. Herbert Kruger, and a "Guide to the Learning of Modern Greek" for those who know classical Greek, also by Dr. Kruger.

DIETS IN TUBERCULOSIS. By Noel Dean Bardswell, M.D., M.R.C.P., F.R.S. (Edin.) Medical Superintendent, King Edward VII Sanatorium, and John Ellis Chapman, M.R.C.S., L.R.C.P., Medical Superintendent, Coppin's Green Sanatorium. Cloth. Pp. 184. Price, \$2.50. New York: Oxford University Press, 1908.

Under a grant from the Royal Society, Bardswell and Chapman were engaged in research work for a period of seven years, and from time to time made reports to the society. This work is an abstract of these communications and represents the final report of their investigations. The conditions of these investigations were most favorable, because each worker was the medical superintendent of a large sanatorium. From their own experiences and from the results obtained by coworkers in Europe and America they deduce general princi-



ples of diets for consumptives and are able to state the comparative value of various foodstuffs. Their practical conclusions should be of value to superintendents of sanatoria, especially to those who are compelled to strive for economic efficiency in diets.

**DISEASES OF THE RECTUM AND ANUS**, Including the Fifth Edition of the Jacksonian Prize Essay on Cancer. By Harrison Cripps, F.R.C.S., Senior Surgeon, St. Bartholomew's Hospital. Third Edition. Cloth. Pp. 588. Price, \$4.20 net. London, J. & A. Churchill; Philadelphia: P. Blakiston's Son & Co., 1907.

Mr. Cripps' well-known work on the rectum comes to us in a new edition, revised, and enlarged by the addition of matter of much value. The commoner diseases of the rectum are treated in thoroughly modern fashion. The section devoted to cancer of the rectum is particularly thorough and contains an extensive table of cases. Full reports of illustrative cases are characteristic of the book. We note the omission of any reference to colopexy in the chapter on prolapse of the rectum, our author recommending only canterization or excision as methods of treatment for that ailment. With this exception the book is a valuable accession to the literature of this specialty.

## Medical Education and State Boards of Registration

### COMING EXAMINATIONS.

**GEORGIA** Homeopathic Board of Medical Examiners, 153 Whitehall street, Atlanta, October 1. Secretary, Dr. R. E. Hinman, 153 Whitehall street, Atlanta.

**LOUISIANA** State Board of Medical Examiners, New Orleans, October 1-2. Secretary, Dr. Felix A. Larne, 211 Camp street, New Orleans.

**RHODE ISLAND** State Board of Health, State House, Providence, October 1-2. Secretary, Dr. Gardner T. Swarts, 315 State House, Providence.

**ARIZONA** Board of Medical Examiners, Phoenix, October 5-6. Secretary, Dr. Ancil Martin, Phoenix.

**UTAH** State Board of Medical Examiners, Salt Lake City, October 5-6. Secretary, Dr. R. W. Fisher, Salt Lake City.

**IDaho** State Board of Medical Examiners, Boise, October 6. Secretary, Dr. W. F. Howard, Pocatello.

**MONTANA** State Board of Medical Examiners, Senate Chamber, the Capitol, Helena, October 6. Secretary, Dr. W. C. Riddell, Helena.

**COLORADO** State Board of Medical Examiners, State Capitol, Denver, October 6. Secretary, Dr. S. D. VanMeter, 1723 Tremont Place, Denver.

**NORTH DAKOTA** State Board of Medical Examiners, Grand Forks, October 6-8. Secretary, Dr. H. M. Wheeler, Grand Forks.

**MINNESOTA** State Board of Medical Examiners, the Old Capitol, St. Paul, October 6-9. Secretary, Dr. W. S. Fullerton, 214 American National Bank Bldg., St. Paul.

**NEW MEXICO** Board of Health and Medical Examiners, Santa Fe, October 12-13. Secretary, Dr. J. A. Massie, Santa Fe.

**ARKANSAS** Regular Board of Medical Examiners, Little Rock, October 13. Secretary, Dr. F. T. Murphy, Brinkley.

**ARKANSAS** Homeopathic Board of Medical Examiners, Little Rock, October 13. Secretary, Dr. P. C. Williams, Texarkana.

**GEORGIA** Regular Board of Medical Examiners, Capitol Building, Atlanta, October 13. Secretary, Dr. E. R. Anthony, Griffin.

**MISSISSIPPI** State Board of Health, The Capitol, Jackson, October 13. Secretary, Dr. S. H. McLean, Jackson.

**KANSAS** State Board of Medical Registration and Examination, Topeka, October 13-15. Secretary, Dr. R. A. Light, Chanute.

**MICHIGAN** State Board of Registration in Medicine, Lansing, October 13-15. Secretary, Dr. B. D. Harison, 504 Washington Arcade, Detroit.

**WYOMING** Board of Medical Examiners, October 14-16. Secretary, Dr. S. B. Miller, Laramie.

**NEW JERSEY** State Board of Medical Examiners, State House, Trenton, October 20-21. Secretary, Dr. J. W. Bennett, Long Branch.

**ILLINOIS** State Board of Health, Great Northern Hotel, Chicago, October 21-23. Secretary, Dr. J. A. Egan, Springfield.

**INDIANA** Board of Medical Registration and Examination, Room 120, State House, Indianapolis, October 27. Secretary, Dr. W. T. Gott, Room 120, State House, Indianapolis.

### Michigan May and June Reports.

Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examinations held at Detroit and Battle Creek, May 25-27, and at Ann Arbor, June 9-11, 1908. The number of subjects examined in

was 14; total number of questions asked, 100; percentage required to pass, 75, and 50 per cent. on each subject.

At the examination held May 25-27, the total number of candidates examined was 38, of whom 36 passed and 2 failed. One candidate took an incomplete examination. The following colleges were represented:

College.	PASSED.	Year.	Per
		Grad.	Cent.
American Med. Miss. Coll.	(1904) 96.1;	(1907)	84.89.9
College of P. and S., Chicago	(1908)		85.7
University of Maryland	(1903)		77.2
Detroit Homeo. Coll.	(1908) 82.9;	84.4.	85.5
Grand Rapids Med. Coll.	(1907)		77.4
Detroit Coll. of Med.	(1901) 75.3;	(1907) 76.6;	(1908) 79.6, 79.8,
	80.9, 81.9, 81.9, 83.4, 84,	84.2, 84.5, 84.5, 84.7, 84.8,	85.1, 85.2,
	85.3, 85.8, 86.3, 87.1, 87.7,	87.7, 88.7, 89.4, 89.6, 89.6,	
Jefferson Med. Coll.	(1874)		91.7

#### FAILED.

Detroit Coll. of Med. (1908) 71, \*78.6

At the examination held June 9-11 the total number of candidates examined was 68, all of whom passed. The following colleges were represented:

College.	PASSED.	Year.	Per
		Grad.	Cent.
American Med. Miss. Coll.	(1901) 92.9;	(1905) 90.5;	(1908) 85.2,
	87.1, 90.		
Detroit Coll. of Med.	(1907)		79.8
University of Michigan	(1902) 88.8;	(1908) 82.9, 83.5, 83.6, 83.7,	
	83.8, 83.9, 84.4, 84.5, 85.5, 85.6, 85.7, 85.9, 86, 86, 86.1, 86.2,		
	86.5, 86.6, 86.7, 86.9, 87, 87.1, 87.1, 87.2, 87.3, 87.5, 88, 88.2,		
	88.2, 88.2, 88.3, 88.3, 88.8, 88.9, 89, 89.2, 89.2, 89.3, 89.4, 89.5,		
	89.6, 89.7, 89.8, 90.1, 90.3, 90.5, 90.8, 91.6, 92, 92.7, 93.1, 93.1.		
University of Michigan, Homeo. Dept.	(1889) 95.2;	(1908) 83.4, 86,	
	87.5, 89.4, 90.1.		
American Med. Coll., St. Louis	(1903)		80.7
Dartmouth Med. School	(1908)		76.7
Jefferson Med. Coll.	(1902)		89.8

\* Conditioned in histology and embryology. Required four more marks to make 50 per cent.

### Illinois June Report.

Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, June 24-27, 1908. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 360, of whom 326 passed and 34 failed. Two candidates took an incomplete examination. The following colleges were represented:

College.	PASSED.	Year.	Total No.
		Grad.	Examined.
University of Southern California	(1908)		1
American Med. Miss. Coll.	(1901) (1906)		2
Bennett Coll. of Ecl. Med. and Surg.	(1908)		16
Chicago Coll. of Med. and Surg.	(1908)		44
College of P. & S., Chicago	(1908)		80
College of Med. and Surg., Chicago	(1908)		1
Dearborn Med. Coll.	(1907)		1
Hahnemann Med. Coll., Chicago	(1908)		21
Hering Med. Coll.	(1907) (8, 1908)		9
Illinois Med. Coll.	(1908)		7
Jenner Med. Coll.	(1908)		17
National Med. Univ., Chicago	(1907)		1
Northwestern Univ. Med. School	(1907) (90, 1908)		91
Rush Med. Coll.	(1903) (1906) (1907) (21, 1908)		24
College of P. and S., Baltimore	(1896)		1
Credighton Med. Coll.	(1908)		1
Long Island Coll. Hosp.	(1907)		1
University and Bellevue Hosp. Med. Coll.	(1899)		1
Eclectic Med. Inst., Cincinnati	(1908)		1
Ohio Med. University	(1896)		1
Pulte Med. Coll.	(1901)		1
Western Univ. of Pennsylvania	(1908)		1
Jefferson Med. Coll.	(1908)		2
Medico-Chirurgical College, Philadelphia	(1905)		1

#### FAILED.

Bennett Coll. of Ecl. Med. and Surg.	(1908)	2
Chicago Coll. of Ecl. Med. and Surg.	(1908)	1
College of P. and S., Chicago	(1908)	9
Hahnemann Med. Coll., Chicago	(1891) (6, 1908)	7
Illinois Med. Coll.	(1908)	4
Jenner Med. Coll.	(1907) (7, 1908)	8
Northwestern Univ. Med. School	(1908)	1
Med. Coll. of Indiana	(1903)	1
Barnes Med. Coll.	(1908)	1

### South Carolina June Report.

Dr. H. H. Wyman, secretary of the South Carolina State Board of Medical Examiners, reports the written examination held at Columbia, June 9-11, 1908. The number of subjects examined in was 16; total number of questions asked, 105; percentage required to pass, 75. The total number of candidates examined was 68, of whom 47 passed and 21 failed. The following colleges were represented:



College.	PASSED.	Year Grad.	Per Cent.
Howard University .....	(1906) 82.2; (1907)		80.3
Atlanta College of P. and S. ....	(1908)		78.3
Atlanta School of Med. ....	(1908)		83.6
University of Georgia .....	(1903) 77.6; (1908)	81.1	85.1
University of Louisville .....	(1907)		85
College of P. and S., Baltimore ..	(1907)		78.6
University of Maryland ..	(1907) 75.6, 80.8; (1908)	78.3, 80.7	88.3
Baltimore Med. Coll. ....	(1907) 75; (1908)		86.5
Maryland Med. Coll. ....	(1904) 81; (1907)		85.2
Leonard School of Med. ....	(1908) 78.2, 79.8, 83.1		83.1
Woman's Med. Coll. of Pennsylvania ..	(1908)		84.6
Medical Coll. of South Carolina (1907)	78.8, 87.6, 95.3; (1908)		
	75.3, 78.3, 79.8, 80.7, 81.3, 81.7, 83.1, 84.5, 85.2, 87, 87.8, 89, 89.3, 89.6.		
University of Tennessee .....	(1908)	75.2	82.6
Meharry Med. Coll. ....	(1908)		80.8
University of the South .....	(1904)		75.5
Tennessee Med. Coll. ....	(1907)		77.5
University of Nashville .....	(1907)		91.7
University of Virginia .....	(1901) 89.6; (1906)		75

College.	FAILED.	Year Grad.	Per Cent.
Howard University .....	(1907)		66.5
Atlanta College of P. and S. ....	(1908)		64
University of Georgia .....	(1906) 68.8; (1908) 69.3, 69.7, 70.6,		73.7
Baltimore Med. Coll. ....	(1903)		63
Leonard School of Med. ....	(1906) 66.5; (1908) 54.3, 56.2, 67.7,		75.3
Med. Coll. of South Carolina (1901)	34; (1907) 65.7; (1908)		61.5
Meharry Med. Coll. ....	(1907) 49.6, 62.8; (1908)		48, 74.3
University of the South .....	(1907)*		

\* Percentage not given.

### Arkansas July Report.

Dr. F. T. Murphy, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, July 14, 1908. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 51, of whom 36 passed, including 15 non-graduates, and 15 failed, including 11 non-graduates. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
College of P. and S., Little Rock .....	(1908)		77
Denver and Gross Coll. of Med. ....	(1907)		75
National Med. Univ., Chicago .....	(1908)		75
Tulane University of Louisiana .....	(1908)	81	85
St. Louis University .....	(1907) 85; (1908)		87
Barnes Med. Coll. ....	(1908)		75
Geneva Med. Coll., New York .....	(1867)		83
Vanderbilt University .....	(1908) 86, 87, 88		
University of the South .....	(1906)		83
University of Tennessee .....	(1908)		83
Meharry Med. Coll. ....	(1907) 75; (1908)		93
University of Nashville .....	(1906) 81; (1908)		77
Memphis Hosp. Med. Coll. ....	(1908)		77, 79
University of Wurzburg, Germany .....	(1903)		79

College.	FAILED.	Year Grad.	Per Cent.
Memphis Hosp. Med. Coll. ....	(1908)		71
Meharry Med. Coll. ....	(1907) 73; (1908)		71, 72

### LICENSED WITHOUT EXAMINATION.

There were also licensed at this examination five old practitioners, including one non-graduate, who were granted license by reason of having been registered under the old law. The following colleges were represented:

College.	Year Grad.
University of Maryland .....	(1877)
University of Nashville .....	(1878)
Gate City Medical College .....	(1906)
University College of Medicine, Richmond .....	(1895)

### Colorado July Report.

Dr. S. D. Van Meter, secretary of the Colorado State Board of Medical Examiners, reports the oral and written examination held at Denver, July 7-8 and 13-14, 1908. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. Fifty-nine applicants were licensed at this examination, 24 of whom passed the examination, and 35 were registered on presentation of satisfactory credentials, including state licenses. Two of the applicants appearing for examination failed to make the required percentage. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Denver Homeo. Med. Coll. ....	(1908)	75.8, 78.7, 78.8	
University of Colorado (1908)	77.5, 78.4, 79.1, 79.8, 82.4, 82.4, 83, 85.4, 86.3.		
Denver and Gross Coll. of Med. (1908)	75.7, 76.2, 76.5, 77.3, 78.5, 78.7, 79.4, 79.8, 80.2, 81.2.		
Maryland Med. Coll. ....	(1904)		75.9
Cleveland Coll. of P. and S. ....	(1902)		76.2

### LICENSED WITHOUT EXAMINATION.

College.	Year Grad.	State Licenses.
College of P. and S., San Francisco .....	(1902)	Nevada
Denver and Gross Coll. of Med. ....	(1907)	Nevada
Bennett Coll. of Ecl. Med. & Surg. (1883) Texas ..	(1902)	Illinois
Chicago Homeo. Med. Coll. ....	(1893)	Iowa
College of P. and S., Chicago .....	(1902)	Illinois
Hahnemann Med. Coll., Chicago (1881) Mich. ....	(2, 1899)	Iowa
Rush Med. Coll. ....	(1885)	Iowa
Northwestern Univ. Med. School (1898) Wis. ....	(1905)	Illinois
Ft. Wayne Coll. of Med. ....	(1882)	Nebraska
College of P. and S., Keokuk ..	(1896) Missouri; (1897)	Iowa
Keokuk Med. Coll. ....	(1896)	W. Virginia
Kansas Med. Coll. ....	(1907)	Kansas
University of Louisville .....	(1892)	Illinois
College of P. and S., Baltimore .....	(1891)	W. Virginia
Baltimore Med. Coll. ....	(1905)	W. Virginia
Harvard Med. School .....	(1898)	Mass.
University of Michigan .....	(1908)	Michigan
St. Louis Coll. of P. and S. ....	(1890) (1897)	Missouri
Barnes Med. Coll. ....	(1908)	Illinois
University Med. Coll., Kansas City .....	(2, 1906)	Missouri
Marion Sims Coll. of Med. ....	(1899)	Missouri
Cornell Univ. Med. Coll. ....	(1907)	New York
College of P. and S., New York .....	(1904)	New York
Ohio Med. University .....	(1898)	Ohio
Med. Coll. of Ohio .....	(1896)	Ohio
University of Pennsylvania .....	(2, 1902)	Penna.
Milwaukee Med. Coll. ....	(1907)	Wisconsin

College.	FAILED.	Year Grad.	Per Cent.
Denver Homeo. Med. Coll. ....	(1908)		66.9
College of P. and S., Keokuk .....	(1901)		56.3

### Connecticut July Report.

Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the written examination held at New Haven, July 14-15, 1908. The number of subjects examined in was 12; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 47, of whom 37 passed and 10 failed. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Georgetown University .....	(1908)		83
Yale University (1907)	79, 84.9; (1908) 78.8, 78.8, 79.5, 80.3, 82.9, 83.2, 83.5, 84, 84.4, 85.5, 85.5, 87.9, 88.2.		
Kentucky School of Med. ....	(1908)		86.4
Baltimore Med. Coll. ....	(1908)	75.4	77
Maryland Med. Coll. ....	(1908)		79.5
Johns Hopkins Medical School .....	(1907) 83; (1908)		78
College of P. and S., Baltimore .....	(1907)		81.6
Harvard Med. School .....	(1905) 81.8, 84.9; (1906)		79.6
Tufts College Med. School .....	(1907) 77.1, 82.4; (1908)		84.7
College of P. and S., Boston .....	(1908)		79.6
Syracuse University .....	(1908)		80.9
College of P. and S., New York .....	(1895)		85.7
University and Bellevue Hosp. Med. Coll. ....	(1908)	81.1, 81.2	
Jefferson Med. Coll. ....	(1908)	81.3, 84.2	
McGill University, Quebec .....	(1906)		82.6

College.	FAILED.	Year Grad.	Per Cent.
College of P. and S., Chicago .....	(1890)		67.2
Baltimore University .....	(1900)		67
Maryland Med. Coll. ....	(1908)		68
Baltimore Med. Coll. ....	(1906)		61.6
Johns Hopkins Medical School .....	(1908)		74.2
Harvard Medical School .....	(1904)		73.8
College of P. and S., New York .....	(1898)		67.9
Jefferson Med. Coll. ....	(1908)		73.1
Laval University, Quebec .....	(1892)		64.7
University of Naples, Italy .....	(1905)		59.5

### New Hampshire July Report.

Mr. H. C. Morrison, regent for the New Hampshire Board of Medical Examiners, reports the written examination held at Concord, July 15-16, 1908. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 15, of whom 10 passed and 5 failed. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Medical School of Maine .....	(1904)		86
Baltimore Med. Coll. ....	(1905)		77
Tufts Coll. Medical School .....	(1907) 82; (1908)		76
Boston University .....	(1906)		92
Dartmouth Medical School .....	(1907)		79, 79
Cleveland Coll. P. and S. ....	(1908)		81
Jefferson Med. Coll. ....	(1908)		76
University of Vermont .....	(1908)		89

College.	FAILED.	Year Grad.	Per Cent.
Kentucky School of Med. ....	(1908)		59
Baltimore Med. Coll. ....	(1903)		71
University of Vermont .....	(1906) 67; (1908)		79
Laval University, Quebec .....	(1905)		65



LICENSED THROUGH RECIPROCITY.

College.	Year grad.	Reciprocity with.
New York Homeo. Med. Coll.....	(1907)	Vermont
University of Vermont.....	(1887) (1906)	Vermont
Dartmouth Medical School.....	(1900)*	

\* This candidate was licensed by endorsement of his Dartmouth Medical School diploma, under the original medical act, allowing men who matriculated before 1897 and received a diploma between that date and 1903, to be licensed without examination.

Illinois July Report.

Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, July 22-24, 1908. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 63, of whom 46 passed and 15 failed. Two candidates took an incomplete examination. The following colleges were represented:

College.	PASSED.	Year Grad.	Total No. Examined.
George Washington University.....	(1907)	1	
Howard University.....	(1908)	1	
Bennett Coll. of Ecl. Med. and Surg.....	(1908)	1	
Chicago Coll. of Med. and Surg.....	(1908)	1	
College of Med. and Surg., Chicago.....	(1907)	1	
College of P. and S., Chicago.....	(1901) (4, 1908)	5	
Hahnemann Med. Coll., Chicago.....	(1908)	1	
Hering Med. Coll., Chicago.....	(1908)	1	
Illinois Med. Coll.....	(1908)	1	
Jenner Med. Coll.....	(1908)	4	
National Med. University, Chicago.....	(1903)	1	
Northwestern Univ. Med. School.....	(1908)	7	
Rush Med. Coll.....	(1908)	9	
University of Louisville.....	(1908)	1	
Hospital Coll. of Med., Louisville.....	(1897)	1	
Barnes Med. Coll.....	(1908)	3	
Washington University, St. Louis.....	(1908)	1	
St. Louis Coll. of P. and S.....	(1908)	1	
University of Oregon.....	(1907)	1	
Jefferson Med. Coll.....	(1900) (1908)	2	
University of Pennsylvania.....	(1897) (1907)	2	
FAILED.			
Pennett Coll. of Ecl. Med. and Surg.....	(1908)	2	
Hering Med. Coll., Chicago.....	(1908)	1	
Jenner Med. Coll.....	(1908)	1	
Rush Med. Coll.....	(1883)	1	
Indiana Med. Coll.....	(1907)	1	
Keokuk Med. Coll.....	(1894)	2	
Barnes Med. Coll.....	(1908)	2	
Homeopathic Med. Coll. of Missouri.....	(1901)	1	
Washington University, St. Louis.....	(1908)	1	
St. Louis Coll. of P. and S.....	(1908)	2	
Royal University of Naples, Italy.....	(1882)	1	

Marriages

CHARLES G. DAWLEY, M.D., to Miss Minnie Martin, both of Los Angeles, August 12.

GEORGE H. DAY, M.D., to Miss Tommie Hornsey, both of Louisville, September 10.

JOSEPH E. HALL, M.D., to Miss Stella Grizzle, both of Alexandria, Ind., September 2.

LEONARD W. SHOEMAKER, M.D., to Mrs. May Parkison, both of Tulia, Texas, August 30.

PERCIVAL J. MEYERS, M.D., to Miss Pauline Aronson, both of San Francisco, Cal., September 9.

A. L. McELROY, M.D., Palestine, Texas, to Miss Jettie Plaxco of Decatur, Texas, September 16.

ROBERT RETZER, M.D., Baltimore, to Miss Nannie Deidania Ridgely, at Baltimore, September 10.

GEORGE CLINTON BAKER, M.D., Gassaway, W. Va., to Miss Katherine Wells, at Baltimore, September 8.

FRANK ROBERT SLOPANSKY, M.D., Helper, Utah, to Miss Cecil May Budge of Salt Lake City, September 5.

WALTER F. LOWERS, M.D., Baltimore, to Miss Clara J. Margaret Ellinghaus, at Baltimore, September 9.

CLARENCE D. BRADLEY, M.D., Ford City, Pa., to Miss Margaret G. Dallas of Philadelphia, September 10.

CHARLES WILLIAM RAINS, M.D., Knoxville, Tenn., to Miss Margaret Whedon of Lincoln, Neb., September 16.

W. TAYLOR CUMMINS, M.D., Philadelphia, to Miss Josephine Widdecombe of West Chester, Pa., September 9.

HORACE HOWARD JENKS, M.D., Philadelphia, to Miss Eloise Comstock North, at New London, N. H., September 11.

LUDWIG MANNHEIMER LOEB, M.D., Chicago, to Miss Minna Juliet Morgenthau at Far Rockaway, N. Y., September 14.

Deaths

Charles Harrington, M.D., educator, physician and sanitarian, who probably did more than any one man to protect the health of the people of Massachusetts, and who by his example and work stimulated other sanitarians to do similar work; died suddenly September 11, from heart disease at a hotel in Lynton, Devonshire, England, aged 52. He was born in Salem, Mass., in 1856; attended Bowdoin College in 1873 and 1874; was graduated from Harvard University in 1878; and from the Medical School of Harvard University in 1881. He then studied at the universities of Leipzig, Strassbourg and Munich for two years; and returned to Boston, where he became assistant in chemistry and later instructor and assistant professor in his alma mater, serving in these positions from 1883-1906, when he was made professor of hygiene. In 1890 he entered the service of the State Board of Health; for nine years was chemist of the board; then for five years in charge of the bureau of milk inspection, and then made secretary. He was a member of the staff of the *Boston Medical and Surgical Journal* for many years, and latterly was in special charge of its department of hygiene. His text-book on "Practical Hygiene" is a standard work and has gone through several editions. He was a member of the American Medical Association, and greatly interested in its propaganda for the public health, and this year accepted a position on the National Legislative Committee. At the Chicago session of the Association he delivered the oration on state medicine, entitled "States' Rights and the National Health," in which he gave the history of the agitation for the national control of public health, detailed the constitutional difficulties in its way, discussed quarantine legislation and the doctrine of states' rights, emphasized the need of a constitutional amendment empowering the general government to act in health matters, deplored the predominance of the commercial principle, and suggested as the remedy for present conditions the education of public sentiment. This masterly oration attracted attention from the medical profession, sanitarians and jurists both at home and abroad. In the death of Dr. Harrington the medical and sanitary world suffers a distinct loss, as he was popular as an instructor and lecturer, devoted as a laboratory student, and was an organizer and administrative officer of the highest grade.

Hermon Joseph Smith, M.D., Dartmouth Medical School, 1867; a member of the Massachusetts Medical Society; of Lowell, Mass.; surgeon in the Army for three years during the Civil War; a member of the board of United States pension examining surgeons, and of the Lowell school board; at one time city physician; and for ten years superintendent of the Lowell Corporation Hospital; died in that institution September 12, aged 71.

Solomon S. Landon, M.D., University Medical College, Kansas City, Mo., 1896; professor of anatomy in the College of Physicians and Surgeons, Kansas City, Kan.; local surgeon for the C. B. & Q. Railway; and founder of the Sheffield Hospital, Kansas City; died in a sanitarium in that city, September 10, from mental breakdown, aged 36.

Anna Maria Wilkin, M.D., University of Michigan, 1880; a member of the American Medical Association; formerly physician for the Massachusetts State Reformatory Prison for Women and the state almshouse; a member of the staff of the South Framingham Hospital; died at her home in South Framingham, September 12, from pernicious anemia, aged 52.

David French Dayton, M.D., University of Michigan, 1875; a member of the Colorado State Medical Society; United States pension examining surgeon; health officer of Trinidad, Colo.; physician of Las Animas County; and consulting surgeon to the Colorado & Southern Railroad; died at his home, September 8, from asthma, aged 58.

Joseph Beechley Clifford, M.D., Cleveland Homeopathic Medical College, 1893; a member of the McKeesport (Pa.) board of health; died about August 31 and his body was found near Brown's bridge, September 12, aged 44. He is believed to have committed suicide while despondent from nervous disease and insomnia.

Eben Seward Lawrence, M.D., Albany Medical College, 1881; coroner, 1884-1886; village president in 1894-5; physician to the Saratoga County almshouse and jail; village trustee and member of the school board; died at his home in Ballston Spa, N. Y., September 11, aged 53.

Zachara T. Houseman, M.D., Eclectic Medical Institute, Cincinnati, 1870; a member of the Ohio State Medical Association;



a veteran of the Civil War; for two years mayor of Bairdstown; died at his home in Fostoria, Ohio, from dropsy, September 12, aged 59.

**James Henry Holly**, for 52 years a physician and dentist of Warwick, N. Y.; at one time president of the board of education; and for three terms president of the Second District Dental Society; died at his home, March 5, from general paresis, aged 72.

**James H. Carothers, M.D.** Miami Medical College, Cincinnati, 1866; physician of Contra Costa County, Cal., for 30 years; a member of the legislature in 1869 and 1870; died at his home in Martinez, May 14, from cerebral hemorrhage, aged 84.

**Ferdinand W. Rose, M.D.** Cincinnati College of Medicine and Surgery, 1883; a member of the American Medical Association; died at his home in Jamestown, Ohio, September 3, from fatty degeneration of the heart, after an illness of three days, aged 55.

**Charles M. Post, M.D.** College of Physicians and Surgeons, Chicago, 1892; a member of the Washington State Medical Association; of Colfax; died at the home of his brother in Barron, Wis., September 7, from malaria, aged 44.

**Emmett Porterfield, M.D.** Bellevue Hospital Medical College, 1883; a member of the Iowa State Medical Society; a member of the school board of Indianola, Iowa; died at his home, September 9, from angina pectoris, aged 50.

**James Franklin Jones, M.D.** University of Nebraska, Omaha, 1901; a member of the Arizona Medical Association; local surgeon for the Santa Fe, Prescott & Phoenix Railroad; died recently at his home in Wickenburg, aged 37.

**William Penn Brooks** (license, Neb.; years of practice, 1891); a practitioner of Johnson County, Neb., for more than 40 years; died at his home in Cook, August 14, from the effects of a carbuncle of the neck, aged 71.

**Joseph Randolph Harmer, M.D.** Howard University, Washington, D. C., 1873; contract surgeon United States Army for several years; died from paralysis at the home of his daughter in Opelika, Ala., April 15, aged 66.

**Oatie Russell Hess, M.D.** Kentucky School of Medicine, 1904; of Longacre, W. Va.; died in the Charleston (W. Va.) General Hospital, August 16, from drug habit, acquired during a previous illness, aged 32.

**George William Curtis, M.D.** University of Vermont, Burlington, 1884; a member of the Maine Medical Association; died at his home in Lisbon Falls, September 8, from cerebral hemorrhage, aged 48.

**Elias F. Dodd** (license, Washington County, Pa., 1881); for 55 years a practitioner of Washington County; township justice of the peace; died at his home near Van Buren, September 8, aged 84.

**Charles D. Conaway, M.D.** Eclectic Medical Institute, Cincinnati, 1887; a member of the Iowa State Medical Society; died at his home in Brooklyn, Iowa, September 12, from heart disease, aged 55.

**William Henry Snyder, M.D.** Long Island College Hospital, 1904; of Brooklyn; died in the Methodist Episcopal Hospital, Brooklyn, July 30, five days after an operation for appendicitis, aged 25.

**Cyrus Hamilton Allen, M.D.** University of Vermont, Burlington, 1857; surgeon in the Army during the Civil War; died at his home in Centerville, Cal., September 7, from senile debility, aged 75.

**Squier R. Mather, M.D.** University of California, San Francisco, 1889; a member of the Medical Society of the State of California; died at his home in San Francisco, September 8, aged 41.

**Benjamin Greene, M.D.** New York University, 1859; a member of the Rhode Island Medical Society; died suddenly at his home in Portsmouth, from heart disease, September 11, aged 76.

**Nathan B. Hughes, M.D.** New York University; a surgeon during the Civil War; died at his home in Guthrie, Okla., August 15, from uremia, after an illness of three weeks, aged 75.

**Robert B. Shackelford, M.D.** University of Virginia, Charlottesville, 1852; University of Pennsylvania, 1854; died at his home in Cismont, Va., September 5, from cerebral hemorrhage, aged 74.

**Robert W. Fleming, M.D.** Eclectic Medical Institute, Cincinnati, 1850 or 1851; died suddenly at his home in Alamo, Tenn., February 22, from cerebral hemorrhage, aged 80.

**Charles E. Bailey, M.D.** Western Reserve University, Cleveland, 1891; died at his home in Greensburg, Ohio, recently, from carcinoma of the stomach, aged 40.

**Henry McGrew, M.D.** Bellevue Hospital Medical College, 1878; died at his home in Pleasant Ridge, Ohio, from cerebral thrombosis, September 6, aged 62.

**John W. Hedden, M.D.** Cincinnati College of Medicine and Surgery, 1875; died suddenly at his home in Enid, Okla., March 13, from heart disease, aged 57.

**Joseph Runtz Hooper, M.D.** Cleveland Homeopathic College, 1877; died suddenly at his home in Elkton, Mich., August 29, from angina pectoris, aged 59.

**Joseph J. Crowe, M.D.** Rush Medical College, 1893; of Chicago; died at the home of his father, September 14, from pulmonary tuberculosis, aged 40.

**Gus R. Burson, M.D.** Starling Medical College, Columbus; died at his home in Mount Blanchard, Ohio, February 28, from cerebral hemorrhage, aged 65.

**William Wallace Nevin, M.D.** Jefferson Medical College, 1846; died at his home in Shippensburg, Pa., from senile debility, April 28, aged 84.

**Charles Bunce, M.D.** Rush Medical College, 1861; U. S. pension examining surgeon; died at his home in Hastings, Neb., July 11, aged 70.

**Isaac P. Sinclair, M.D.** Chicago Medical College, 1869; of Prairie Home, Neb.; died near Glenwood, Iowa, August 27, from anemia.

**George T. Greenleaf, M.D.** Chicago Homeopathic Medical College, 1881; formerly of Redlands, Cal.; died recently at Holtville, Cal.

**Herman F. Malech, M.D.** Jefferson Medical College, 1876; died suddenly at his home in San Francisco, September 7, aged 54.

**Marshal Beadles** (years of practice, Ky.); died at his home near Water Valley, Ky., February 10, from pneumonia, aged 67.

**Edwin Ruthvin Cook, M.D.** University of Pennsylvania, 1847; died at Hopkinsville, Ky., Nov. 2, 1907, aged 83.

**Robert G. Griffith**, a retired practitioner; died in Atlantic City, N. J., April 12, from arteriosclerosis, aged 73.

## Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

### Registration in Canada.

The *Canada Lancet*, in an editorial in its July number, discusses the relation between university degrees and licenses to practice medicine issued by the council of the College of Physicians and Surgeons of Ontario. It points out that, at the time the licensing power was conferred on the council, the medical colleges of Ontario were proprietary schools conducted by individual physicians mainly for profit and secondarily for the purpose of giving young men a medical education. At present, however, the medical colleges of Ontario are all affiliated with the universities. The Toronto School of Medicine and the Trinity Medical College, formerly proprietary schools, have become extinct and their places have been taken by the Medical Faculty of the University of Toronto. The Medical College of Kingston has become the Medical Faculty of Queen's University; the Medical College of London has become the Medical Faculty of Western University, so that to-day medical education in Ontario is in the hands of the universities and not under the control of private individuals.

The *Canada Lancet* agrees with Mr. I. H. Cameron, who in speaking before a recent meeting of the alumni of the university, said: "The university should again take to itself the authority of having its degrees in medicine carry with them the privilege of practicing in Ontario and Quebec without requiring its students to go to the trouble and expense of passing several arduous and to them unnecessary examinations before the Ontario Medical Council. The universities of McGill and Laval now have this power, and it is an anomaly and absurdity to think that such a university as Toronto is impotent in this respect."



The *Canada Lancet* states that the Medical Council might still be allowed to act as a sort of sentinel to see that the standard is maintained. Evidently the interest in this question centers around its bearing on dominion registration; that is, an arrangement whereby a common standard could be fixed for the entire Dominion of Canada so that one license and one registration would be good for all of the Canadian provinces. That such a uniform system of registration would be an advantage is evident. The plan as proposed, however, involves a return to the now well-nigh obsolete plan of uniting the teaching body with the licensing body. If the right to teach medicine is confined solely to the state university, then there is no objection to such a plan since the licensing power still remains in the hands of the state, but if any of the teaching bodies are controlled or could be controlled by private individuals, then there is no justification for conferring the power to license on such teaching institutions.

At the recent meeting of the Ontario Medical Association Dr. Roddick, dean of McGill Medical University, made a strong plea for interprovincial registration. The *Lancet* predicts that ultimately such a system will prevail and that its adoption would be an advantage in every way.

While conditions in the dominion vary considerably from those in the United States, the problems involved are much the same, and the efforts of the medical profession in Canada to improve conditions will be watched with much interest.

#### The Attitude of the Public Toward Medical Legislation.

The *Charlotte Medical Journal* for August contains, under the above title, a well-considered editorial, evidently inspired by comments in a New Orleans paper on the Labbe bill, recently adopted by the Louisiana legislature. The editorial says:

The inability of the public to comprehend the meaning of efforts on the part of the medical profession to protect them from quackery and imposition, or the belief that every proposal to establish legislation to this end is inspired by no other motive, so far as the medical man is concerned, than the establishment of a monopoly for his own personal advantage and aggrandizement, makes itself apparent in this country no matter where the attempt is made to introduce proper measures by legislative enactment. And it makes very little difference what the measure is directed at or against so long as the doctors are known to be backing it, or even if it is realized that the smallest good could possibly accrue to their benefit, immediately the hue and cry is raised that the doctors are attempting to establish a monopoly and thus interfere with the rights of the people to employ whomsoever they desire or to use whatever means they may wish to treat their real or supposed ills.

After quoting from the New Orleans paper in question regarding the provisions of the Labbe bill limiting the treatment of diseases to properly qualified persons, the editorial continues:

The public mind does not grasp the idea that it could possibly need protection from itself. A man has a right to say whether or not he shall have a doctor, and what doctor he shall have. And he has the right to choose a quack if he be ignorant enough to believe in one, but the quack or the nostrum dealer has no right to impose fraud on the public simply because the public can be fooled. Ninety-nine times out of a hundred attempts to enact legislation along these lines is for the good of the people, for the confusion of the fake and not for the establishment of a medical monopoly.

The distinction here made is an important one and involves an essential principle of restrictive medical legislation. If the individual is foolish enough to entrust his life to an uneducated, untrained charlatan, there is no law to prevent him from doing so, so long as his act does not endanger the health of the community. Similarly, there is no law to prevent any citizen from eating adulterated or impure food if he wishes to do so. It is, however, an unquestioned function of the state to protect its citizens from imposture or fraud, either in medical attendance or in foodstuffs. The object of pure food laws is to prevent dishonest dealers from selling to the consumer an

impure product, when the consumer thinks he is securing a pure article. This means that what was formerly sold as "genuine strawberry jam" must now be so labeled as to show that it is composed of glucose and hayseed, with anilin dyes and a very little strawberry. The object of medical practice acts is to prevent the faker and the impostor from imposing his services on the individual patient, who ignorantly believes that he is being attended by a competent physician. The ultimate objects in both cases are the enforcement of honesty in business and the protection of the individual from imposition.

The argument regarding "medical monopoly" is constantly made. Restrictive legislation is of little value unless it confers certain privileges on those who comply with its requirements. The question at issue is the ultimate purpose of the law and not the incidental provisions necessary for its enforcement. The United States government will not allow any one to act as captain, pilot or engineer on any registered vessel unless he bears a license from the Treasury Department. No one has ever accused the United States of endeavoring to establish a monopoly in masters or pilots. The object of the law requiring certain qualifications for a government license is the protection of human life. The restriction of the exercise of these occupations to licensed persons is a necessary but incidental feature of the law.

What is most sorely needed for the proper understanding of medical legislation on the part both of the profession and of the public is a clearer idea as to the purpose of such legislation, and a better understanding of the principles underlying it.

#### POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.  
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

##### Second Month.

##### SECOND WEEKLY MEETING.

##### IMMUNITY.

Definition.—Natural and acquired, inherited (animal species, or family or individual), active and passive, antibacterial and antitoxic, phagocytic (intracellular). Non-susceptibility. Historical: Theories of cause of immunity (a) exhaustion theory, (b) noxious retention theory, (c) phagocytosis. Bacteriolytic power of serum, discovery of toxins and antitoxins. Define alexins, cell receptors, hemolysins, cytotoxins, agglutinins, precipitins, of normal serum.

Side-chain Theory of Ehrlich.—Side-chain theory of nutrition; its application to process of immunity.

Toxins and Antitoxins.—Properties of toxins; secondary toxins, toxons, toxoids, prototoxoids, endotoxins. Ehrlich's side-chain theory; action center or nucleus (benzol nucleus), cell receptors, haptophore, excess of side-chains thrown off forming antitoxins, receptors of first order. Antigens and antibodies. Preparation and standardization of toxins and antitoxins. "Negative phase" and "positive phase of inoculation with antigens.

Agglutinins and Agglutination.—Normal and immune agglutinins, agglutinogens, agglutinoids, coagglutinoids, organisms producing agglutinins, variations in quantity, distribution in body, specificity of agglutination, "group agglutination." Technic of test, microscopic and macroscopic reactions. Agglutinins, receptors of second order with haptophorons and zymotic groups.

Precipitins.—Bacterioprecipitins, phytoprecipitins, zoöprecipitins. Precipitinogen, precipitin and precipitate. Formation of precipitin, receptor of second order with haptophorons and ferment-like groups. Forensic use of precipitins.

Bactericidal Serums.—Alexins, bacteriolysins, phenomenon of Pfeiffer, inactivation and reactivation, specificity of bactericidal serums, effect on endotoxins, standardization of serums. Amboceptors and complements. Amboceptor, thermostabile body with two haptophore groups, cytophile



and complementophile. Complement has haptophore and toxophore groups, effect of dilute salt solutions. Anti-amboceptors and anticomplements. Specificity. Receptors of third group.

Opsonins. Phagocytosis.—Leucocytes, intra-leucocytic cytase and fixators, effect of serum on leucocytes, change of toxin by leucocytes. Opsonins in serum render bacteria more easily taken up by leucocytes. Sensitized bacteria. Opsonins destroyed by heat, deteriorate quickly, have haptophorous and opsoniferous groups. Normal and immune opsonins, bacteriopsin and hemopsin. Method of producing opsonins. Value in different infections. Technique of Wright's opsonic index.

Cytotoxins.—Definition, structure, theoretic value, immunization with tissue cells. Spermatotoxin, leucotoxin, nephrotoxin, antinephrotoxin, hepatotoxins, neurotoxin, syncytiotoxin, thyrotoxin, pancreatotoxin.

Varieties of Immunization: 1. Against living microbes. 2. Against microbial poisons.

Methods of Immunization.

I. Active Immunization. 1. Prophylactic Remedies: a. Immunization by attenuated living virus, Jennerian vaccination. b. By infectious agents killed by heat, etc., Haffkine's cholera and plague vaccines. Wright's typhoid vaccine. c. With bacterial products, Koch's old tuberculin. 2. Curative Remedies: Koch's old and new tuberculin, T. O. and T. R., Wright's pneumococcus and staphylococcus vaccines.

II. Passive Immunization (Serum of Animals Actively Immunized). Prophylactic and Curative Remedies: a. Specific antitoxic sera, diphtheria, tetanus, dysentery, etc. b. Specific bactericidal sera, typhoid, cholera, dysentery (Shiga). c. Bactericidal action assumed, not proved, anti-streptococcus, antipneumococcus and antiplague sera.

III. Combined Active and Passive Immunization. Serum and vaccine, plague, etc.

## Medicolegal

### Character of Railroad Employés' Hospital Association and Liability of It and Railroad Company—Letting Insane Patient Leave Unattended.

The Supreme Court of Missouri, Division No. 1, says in the case of Phillips vs. St. Louis & San Francisco Railroad Company, of the Employés' Hospital Association of the Frisco Line, that it had but few, if any, of the earmarks of a voluntary benevolent association. Nor were there any earmarks of a public charity. What was received was paid for by the recipients. Under the weight of authority it could not be held to be a charitable institution. So that the rule that exempts such institutions from liability did not apply. Nor are institutions of the character of the one disclosed by this record exempted from liability by the mere employment of competent servants. They must go further and competently treat the patients received. In such case they occupy the position of ordinary physicians and surgeons and are bound by the same rules. If they undertake to furnish the treatment, not as a charity, they stand in no different light from the ordinary physician.

Furthermore, the court says that no one could read the record in the case without concluding that, if the thin corporate shell of the hospital association was broken, the yolk therein contained was the defendant railroad company. The hospital system was a worthy one, and a well-taken advance step; but, under the record in this case, such hospital association was but the agent of the defendant railroad company.

In this case an employé of the railroad company, who had been treated at one of the association's hospitals, took passage on one of the defendant's trains for St. Louis, his home. This train arrived about 7 o'clock that evening, and he left the train unharmed. About 9 o'clock of the same evening a man partially undressed and in condition to retire for the night, was lying across one of the many street car lines of

the city, and was run over and killed by a passing car. It was this man.

The chief surgeon of the association, who was also the chief surgeon of the railroad company, wrote, two days after the man's death but before it was known, in effect notifying the auditor's department at St. Louis, where the man had been employed, that the man was insane and should be sent to a proper asylum, that he was not entitled to further treatment in the hospital under the rules thereof, and that no further certificates to the hospital should be given him. The court holds that this letter was admissible in evidence against the railroad company as in the nature of an official report from one of the chief officials of the defendant to another of such officials, and a report which was contemplated by the rules, which stood in the nature of an admission by an agent, whilst acting in the line of duty, and as such was an admission of the defendant. The letter, the court says, was at least admissible to show that the defendant's chief surgeon and agent had knowledge of the fact that the man was unbalanced in mind when he permitted him to be placed on the train unattended.

It was correctly contended, the court says, that the defendant railroad company was liable only for such injuries as could have been reasonably expected to have been foreseen; that is to say, if it was granted that the defendant was negligent, yet it was only liable for such injuries as would reasonably be expected to follow from such negligence, and not for mere remote contingencies. But apply that rule to this case. In the view just expressed, the defendant railroad company, by and through its agent, had assumed the duty of treating this man. The evidence tended to show that the patient was insane, and that the defendant had knowledge of that fact. Now, if the patient was insane, and the defendant had knowledge of that fact, then might it not have reasonably presumed that accident might befall a man in that condition? The freaks of a wandering mind are varied, it is true; but none knew them better than the skilled chief surgeon, who represented the defendant, when he had the man conveyed to the train. The court is not saying that the act of placing his practically undressed body across a street railway track was the result of his insane condition; but there were sufficient circumstances to authorize the submission of the question, under properly guarded instructions, to a jury for its decision. It could not be said that such an act was not one that could not have been reasonably anticipated by the defendant's surgeon when he placed an insane man aboard of a train, unattended, and without notice to his family, knowing that he would have to find his home in a populous city, filled with a network of street railway lines.

### Admissible Evidence in Alleged Malpractice Case.

The Supreme Court of Vermont says that the first question in issue in the malpractice case of Willard vs. Norcross, where it affirms a judgment for the plaintiff, was whether the plaintiff had suffered an impacted "Colles' fracture" or a severe sprain, and another question followed it, namely, whether or not the defendant treated the case with the skill required of a physician and surgeon. The plaintiff claimed, and her evidence tended to show, that the injury consisted of a fracture of the radius, and that, if it were only a sprain, the defendant treated it unskillfully. On the other hand, the defendant claimed, and his evidence tended to show, that the injury was a sprain only; that his treatment of the case was skillful; that it was skillful if the injury were a fracture.

The plaintiff's counsel inquired of her whether, after the defendant made the first examination of her wrists the night after she was injured, she was able to move her hand or any of her fingers, and she answered, "No." That question was objected to on the ground that it ingeniously connected the defendant and his first visit with the plaintiff's pitiable condition that night, as if to lay the blame to him when he was not responsible for her condition. But as bearing on the character and extent of the injury, it was competent to show the condition of her hand and fingers the night after the accident.

The accident occurred in December. In the following May the plaintiff met the defendant and showed him her wrists.



and asked him what she should do, to which he replied: "Come up to my barn and milk my cows, and do my chores, and you will be all right." The plaintiff said to him that her wrists pained her so that she was almost insane, to which he replied: "Good, good enough." Counsel made a question whether this interview between the parties was had while the relation of physician and patient continued between them. The plaintiff's question, asking advice, and the defendant's answer, giving it, indicated that they both understood that the relation still existed. The answer seems frivolous, yet the defendant may have meant that the plaintiff should exercise her wrists, which was consistent with his theory that they were only sprained. All his conduct in relation to his treatment of the case was a proper subject of inquiry as bearing on the question whether he diagnosed and treated it skilfully. The admission of this evidence could not be held reversible error.

Again, the plaintiff's evidence tended to show that on the defendant's first examination he was asked whether the liniment would be a good application, and that he answered: "Yes; use horse liniment, or any old thing"; that the defendant set no bones, prescribed no medicine, bandages, nor application of any kind except said liniment. Another physician was called by the plaintiff as an expert witness, and duly qualified as such. He was asked whether he considered the prescribing of horse liniment good surgery in case of Colles' fracture, and he answered, subject to the defendant's exceptions, that it was not good surgery. One objection to the question was that in answering it the witness must assume the province of the jury. It was true that the rule by which the defendant's treatment of the case was to be tested was that of ordinary skill, such skill as physicians and surgeons in the same general neighborhood, in the same general line of practice, ordinarily had and exercised in like cases. On this question physicians and surgeons of practice and experience are experts, and their opinions are admissible in evidence on the questions that are strictly and legitimately embraced in their profession and practice. Whether the defendant's treatment was good surgery or proper treatment, whatever the nature of the injury, was a question on which the witness was competent to testify.

As the plaintiff's condition and complaints of pain tended to show the severity of her injury, the court holds that a witness might testify to what occurred after the accident and before the defendant saw the plaintiff, and that she complained of pain in her wrists. Moreover, the defendant being charged with malpractice and the plaintiff claiming that by reason of unskilful treatment her wrists still caused her suffering, it was competent for her to show their condition at any time before or during the trial.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Boston Medical and Surgical Journal.

September 10.

- 1 \*The X-Ray and Fractures. F. L. Cotton, Boston.
- 2 \*Use of Tuberculin as a Diagnostic Agent in Pulmonary Tuberculosis. H. L. Barnes, Wallum Lake, R. I.
- 3 Growth and Development of Surgery in Smaller Cities. C. H. Richardson, Pittsfield, Mass.
- 4 \*Omentopexy to the Intestine Deprived of Its Mesentery. C. L. Scudder, Boston.
- 5 Primary Carcinoma of the Appendix, with a Statement of the Literature. C. O. Kepler, Boston.

1. **X-Ray and Fractures.**—Cotton says that the addition to our fund of knowledge is probably the most important service of the *x*-ray. We have learned what to expect and what to look for, and in so doing we have learned how to look. Many types of fracture formerly supposed to be rare have proved common, and other lesions once commonly diagnosed, are now hardly heard of. There is, moreover, a whole series of joint fractures about which we formerly knew nothing. Another benefit conferred by the *x*-ray, used as it should be used,

merely as one means of examination, is a great increase in diagnostic power. We have learned new signs, have come to associate certain displacements, limitations of motion, points of localized tenderness, etc., with the lesions to which they are appropriate, and thus by means of the *x*-ray have greatly bettered our capacity to do without the *x*-ray. Cotton discusses its use in routine fractures, and stigmatizes as the sheerest nonsense, much that has been written as to its being criminal neglect to treat a fracture without the *x*-ray. There are a few classes of cases—fracture of metatarsals by direct crushing, fractures of scapula, some injuries about the shoulder joint, crushing injuries of the hand and wrist, fractures of the pelvis, a few hip fractures, some injuries to ankle and tarsus—that often do depend on the *x*-ray for diagnosis; but in all these cases, simple retentive apparatus until an *x*-ray can be obtained is adequate treatment for the first few days. With obscure and complicated luxations the problem is different, but the cases in which an accurate diagnosis is essential to reduction of gross displacements are fortunately limited to a few luxations, with or without fracture, in the tarsus and foot. In regard to routine fractures, Cotton maintains that in a great majority of cases a properly trained surgeon can make his diagnosis, so far as practical details go, about as well without as with the *x*-ray. If he has not the skill so to make the diagnosis he is unlikely to be greatly helped by the *x*-ray. Cotton does not decry early taking of *x*-ray pictures if convenient, but merely emphasizes his belief that they are not a necessary routine. The importance of *x*-rays after reduction as a method of review, for the purpose of correcting error, is emphasized. The author contends that the time for the *x*-ray is after, not before, reduction, for the following reasons: (a) Immediate *x*-ray pictures are hard to get, even in hospitals; any considerable delay in reduction means poorer reductions as a rule. (b) *X*-ray examination does not take the place of the time-honored examination under anesthesia, and this examination, properly done, with immediate replacement of fragments, usually fulfills the immediate indications. (c) Considerations of difficulty in transportation, expense, and procrastination, make it unlikely that more than one *x*-ray picture will be taken in a given routine case. This one may best be taken when it will check both diagnosis and corrected position, and will help in prognosis. As to late *x*-ray pictures, taken to inform ourselves as to the end result, he believes that in the usual run of fractures we should use the *x*-ray in practically all cases, at least for record, repeating the examination if we may, but certainly using it at such periods as will enable us to establish or confirm the diagnosis and to check our treatment. It should not be used in place of skilled manipulation, or as the arbiter of end results. He discusses the operative surgery of fractures.

2. **Tuberculin Diagnosis of Pulmonary Tuberculosis.**—Barnes discusses the tuberculin diagnosis of pulmonary tuberculosis as used at the Rhode Island State Sanatorium and records cases. He reports on the replies with reference to the use of tuberculin and its results as received from 225 hospitals in answer to a circular letter. He concludes, among other things, that the tuberculin test is at present necessary for prompt diagnosis in many suspected cases of pulmonary tuberculosis, in the great majority of which the subcutaneous test will give a direct diagnosis, and if given judiciously in small initial doses is safe; but in Addison's disease it should be used with extreme caution or not at all. The tuberculin test should be used only in patients who have symptoms or signs of tuberculosis, for a positive reaction has no clinical value in others, because of the uncertainty as to the location of the lesions and a probability of healed lesions reacting. He analyzes the use of tuberculin in the 225 hospitals and the demonstration of its use to students in 81 medical colleges. The accuracy of the ocular and cutaneous tuberculin test is yet to be proved, and cases reacting negatively should be tested by the subcutaneous method unless contraindicated. All cases suitable for subcutaneous testing should receive it in preference to the ocular test, because of its greater safety. Finally, all medical students should be thoroughly trained in the use of the three methods of applying the tuberculin test.



4. **Omentopexy.**—Scudder has undertaken experiments on four dogs simply to note the behavior of the bowel after it has been shorn of its mesentery and the omentum has been used to take the place of the mesenteric blood supply. These experiments demonstrate that, in the dog, if the vessels in the mesentery are tied far from the mesenteric attachment, the gut remains viable, even when considerable mesentery is detached. The nearer to the gut the ligation is made of the mesenteric vessels, the less detachment of mesentery can be made and viable gut yet remain. From 16 to 20 cm. of gut may be denuded with subsequent omentopexy safely; 10 cm. may be denuded with omentopexy with gangrene. In the dog which recovered, after two denudations and two omentopexies the gut at the seat of operation was slightly smaller in size, and a little thicker, from edema.

#### Medical Record, New York.

September 12.

- 6 Relation of the Medical Profession to the Housing Problem. S. A. Knopf, New York.
- 7 Acute Intestinal Obstruction, with Special Reference to Intussusception. E. W. Peterson, New York.
- 8 \*Abnormal Motility of the Stomach a Valuable Factor in Diagnosis of Gastric Lesions. M. R. Barker, Chicago.
- 9 \*Lupus Erythematosus. J. P. Kanoky, Kansas City, Mo.
- 10 Preparation for a Genitourinary Diagnosis. J. J. Valentine, New York.
- 11 Keratoplasty. H. R. Lesser, New York.

8. **Motility of the Stomach and Gastric Lesions.**—Barker considers that the loss of gastric motility, characterized by long-continued stagnation of food in the stomach and the partial or complete absence of mucus in the gastric contents, is characteristic of cancer, and when such conditions prevail careful search for the Oppler-Boas bacillus should be made. If this bacillus is found the diagnosis of cancer is positive; if it is not found the patient should not be allowed to pass into that stage of the disease in which operative measures are futile, by waiting for this more positive element in the diagnosis before exploratory measures are taken. A large accumulation of mucus in the stomach is one of the important elements in the diagnosis of chronic gastritis. This is due, in a large degree, to faulty contact between the ingested materials and the nerve centers in the stomach walls causing gastric immotility, which, in turn, prevents the escape of accumulated mucus into the intestines. The vicious circle being thus formed is broken up in certain cases by long-continued lavage; hence one of the beneficial effects of this treatment in chronic gastritis. A prominent factor in the diagnosis of gastric ulcer is the exaggerated motility of the gastric walls. This is characterized by the absence of any portion of the test meal in the stomach a comparatively short time after its ingestion. Mucus is also almost or entirely absent from the stomach in this condition, being digested as quickly as deposited in the stomach by the ever-present overacid secretion, and being expelled from the stomach as quickly because of the exaggerated motility of the gastric walls.

9. **Lupus Erythematosus.**—Kanoky discusses this condition in general, and reports six cases from which he comes to the conclusion that the iodine-quinin, or iodine-saline, method of treatment gives excellent results in a considerable percentage of cases of lupus erythematosus, especially if employed early in the disease. In cases in which the pathologic condition has been present for many years, these agents will often have to be supplemented by more vigorous measures. Of these salicylic-pyrogallol-collodion preparations are cleanly, efficient, cheap and easily obtained. The x-ray, while not so valuable here as in true lupus, is undoubtedly of assistance at times.

#### New York Medical Journal.

September 12.

- 12 \*Explanation of Seeming Paradoxes in Modern Phthisiotherapy. S. A. Knopf, New York.
- 13 \*Dangers of Excessive Sunlight in Tuberculosis. C. E. Woodruff, Fort Wadsworth, N. Y.
- 14 Cancer of the Rectum. J. P. Tuttle, New York.
- 15 Jaundice Due to Disease of the Biliary and Pancreas Passages. J. J. Gilbridge, Philadelphia.
- 16 \*A Dermatitis Due to the Irritating Effect of Metol. N. T. Beers, Brooklyn.
- 17 Neurasthenia Ventriculi and Gastroparesis. H. Weinstein, New York.

12. **Paradoxes in Modern Phthisiotherapy.**—Knopf calls attention to the lamentable practice of the lay press in seizing on apparently contradictory statements published by medical men and converting them into sensational impeachments of the consistency of medical science. He next refers to articles published in New York newspapers and attributed to Major Woodruff of the United States Army. Knopf meets Woodruff's views in regard to the injuriousness of excessive sunlight, the particular susceptibility of blondes to tuberculosis, etc., by publishing in tabular form the result of an appeal to a number of the leading phthisiotherapists for answers according to their experience to the following six questions:

1. Do your statistics show that blonde patients do better in cold weather or cold climate regions than those having brown or black hair?
2. Have you noticed the reverse, that is to say, that brunette patients do better in warm weather or warmer climates than blondes?
3. In your opinion is sunlight harmful in cool or cold weather to the average tuberculous patient, providing he is careful in protecting his head?
4. Do you ascribe the improvement which the majority of tuberculous patients experience in winter in our temperate zones, when "taking the cure," to the cold, to the absence of sunlight, or to other reasons?
5. Have you any experience in solar therapy, that is to say, sunbaths, and do you think them injurious or harmful in carefully selected cases under proper supervision?
6. Do you ascribe the relative wellbeing of the tuberculous patients in the morning as the natural sequel of sleep rest, quiet of the night, which the average healthy man also experiences, or to the absence of sunlight?

Summarizing the results a considerable majority have not found that blonde patients do better than brunettes in cold regions, or that brunettes do better than blondes in warm regions. All are agreed that sunlight is not harmful in cool or cold weather to the average tuberculous patient, providing the head is protected. Nearly all appear to hold that the improvement experienced during winter, when taking the cure in temperate zones, is due to the cold and not to the absence of sunlight. Many consider sunbaths beneficial, none injurious. The relative wellbeing of tuberculous patients in the morning also is attributed generally to rest and sleep, but in no case to the absence of sunlight. Knopf quotes passages from the letters of many of his correspondents. He admits, however, that from physiologic experiments on men and animals we have learned that "too much sunshine is as injurious as its total absence is deleterious," and he considers Major Woodruff right in some respects, for there is no doubt that in tropical countries the newly arrived person who has been born and raised in northern climes, be he blonde or brunette, unless he leads an exceedingly sober and careful life, and protects himself against the strong actinic rays of the sun and the intense heat of midday, is bound to suffer and become more easily a victim of endemic and epidemic diseases not excluding tuberculosis. Even in temperate zones, in hot weather when everyone feels better in the shade, it is absurd to expect the consumptive to be more comfortable in the sun. Knopf describes his method of prescribing a sunbath: he gives instances of the importance of individualization in the treatment of tuberculosis, and concludes that because we vary our treatment to the patient's individual conditions, sometimes even to his likes and dislikes, but always with the one point in view, to do the best for him, what seem like paradoxes, whether they refer to air, sunlight, water, climate, medicine or other remedial agents, are really the result of careful and painstaking individualization.

13. **Dangers of Excessive Sunlight in Tuberculosis.**—Woodruff replies to Knopf's article as above abstracted, and states that it was discovered by the Army, as early as 1900, that in all cases of tuberculosis white people in the tropics promptly perish unless they are sent home. The factors in this loss of resistance are heat, humidity, and in those with unpigmented skins, excessive light, and he quotes Sir Alfred Keogh, medical director of the British army, as supporting him with the assertion that investigations prove that the depressing effects in India are due to the actinic rays, and not to the heat rays, of the sun. To support his views as to the evil effect of sunlight in tuberculosis, Woodruff states that the tuberculosis mortality rate per 1,000,000 living is least in the cloudiest parts of Europe. Cloudy cities, like Amsterdam and London, have low rates, while sunny places like Moscow, St. Petersburg,



burg and Vienna, have high rates. He quotes the table from Hanscomb's 1908 report of the percentage of deaths from consumption to deaths from all causes in various occupations, to show that light or darkness may have opposite effects from what we now believe. He then discusses Knopf's points in detail and refers to the opposition of almost the entire profession in 1840, to Dr. George Bodington's opinion that tuberculosis should be treated in the open air, an opinion to which after all these years, the profession is now coming round. In 1840 the profession was strong in the opinion that cold air was fatal and they drove Bodington's patients away and closed this first modern sanatorium. Dr. Knopf, Woodruff asserts, is repeating the error—instead of giving facts he is giving opinions of the leaders. His "authorities" have never noticed any harm from excessive sunlight, not because it does not exist, but because they have never looked for it. Bodington's opponents never noticed the harm done by indoor treatment, and their opinion likewise did not prove that there was no damage by it.

**16. Metol Dermatitis.**—Beers points to the great increase of dermatitis among photographers which, in these days of amateur photography, embraces a large mass of people, from the irritant effect of metol (monomethyl-paramido-phenosulphate) which forms an ingredient in most of the developers on the market. He has found a saturated solution of paraffin in benzin, into which the fingers are dipped before developing, the best preventive. The condition must be treated symptomatically, with rest and protection of the affected parts, cathartics in a severe attack, and before the skin is broken some cooling astringent lotion such as lead and opium wash should be prescribed. After the skin is broken, care must be taken to protect the parts thoroughly and to use the blandest of applications. Zinc stearate makes a useful dusting powder; 1 or 2 per cent. of carbolic or salicylic acid may be added. When an ointment is indicated in this stage the following is mild and soothing:

R.	gm. or c.c.	
Hydrarg. chlor. mit.....	65	gr. x
Acidi carbolic.....	65 to 1.30 or	gr. x-xx
Ung. aque rosæ.....	30	3i
M.		

In the chronic form of the disease, when cracks form and the skin is indurated or scaly, an ointment containing one or more of the stimulating drugs gives the best results:

R.	gm. or c.c.	
Acidi salicylici .....	1 95	gr. xxx
Pulv. amyli .....	3 90 to 7.80 or	3i to 3ii
Zinci oxidi .....	1 95 to 2.90	3ss to 3i
Ung. petrolati .....	30	3i
M.		

R.	gm. or c.c.	
Ichthyolis .....	3 90	3i
Acidi salicylici .....	1 30 or	gr. xx
Acidi borici .....	1 95	gr. xxx
Ung. zinci oxidi.....	30	3i
M.		

To any one of these prescriptions resorcin or oil of cade may be added if necessary.

#### Medical Fortnightly, St. Louis.

August 25.

- 18 Korea and Japan. R. H. Eccles, Brooklyn, N. Y.  
19 Two Cases of Raynaud's Disease. T. D. Woodson, St. Louis.

#### The Lancet-Clinic, Cincinnati.

August 29.

- 20 Surgical Treatment of Acute Intestinal Obstruction. W. A. Melick, Zanesville, Ohio.  
21 \*Internal Strangulated Hernia, or Internal Intestinal Strangulation. E. M. Brown, Chicago.  
22 Excesses in Surgical Cleanliness. M. A. Austin, Anderson, Ind.  
23 \*Treatment of Pns Tubes. J. E. Cannaday, Hansford, W. Va.

**21. Internal Strangulated Hernia.**—Brown maintains that all internal cases of strangulated hernia or all internal strangulations show sufficiently early symptoms for an early diagnosis and operation before absolute occlusions have developed. When the diagnosis is obscure an exploratory operation should be done. In determining when a strangulated bowel is viable

Brown follows these rules: A bowel is considered safe: 1, when on liberation of the constriction it receives circulation; 2, when the peritoneum is smooth, shiny and not blistered, whether dark in color or not; 3, when no thrombi are present in the mesenteric border. If, however, there is rupture, ulcer, perforation, complete thrombosis of the mesenteric vessels, permanent unyielding stricture, excoriated peritoneum and blackened bowel, which has lost all contractility, it should be condemned. As regards anastomosis: 1. In late moribund cases, in which time of anesthesia and manipulation are important elements, we should rapidly resect and turn the divided ends out through the incision; 2, in acute early cases, in which the small bowel is involved, we should remove liberally beyond the condemned portion, turn in the divided ends with a purse-string suture, and make a lateral anastomosis; 3, when large and small bowel are gangrenous, end-to-side anastomosis should be made; 4, in resection of large bowel the end-to-end anastomosis is preferable.

23. Abstracted in THE JOURNAL, Nov. 2, 1907, p. 1552.

#### Surgery, Gynecology and Obstetrics, Chicago.

August.

- 24 \*Excision of the Rectum for Cancer. W. C. Lusk, New York.  
25 Case of Hermaphroditism. G. B. Johnston, Richmond, Va.  
26 \*Case of Torsion of the Omentum. W. W. Grant, Denver, Colo.  
27 \*Case of Intra-abdominal Rotation of the Great Omentum, Unaccompanied with Hernia. W. Fuller, Chicago.  
28 Pleural Reflexes. J. A. Capps and D. D. Lewis, Chicago.  
29 \*Advantage of the Elastic Ligature in Certain Cases of Anal Fistula. C. M. Echols, Milwaukee, Wis.  
30 Case of Concealed Hemorrhage in Pregnancy, Contrasted with One of Extrauterine Pregnancy. G. E. Shoemaker, Philadelphia.  
31 \*Are Gloves and Masks Advisable in Surgery? E. S. Bishop, Manchester, England.  
32 Case of Toxic Pernicious Vomiting of Pregnancy, with Total Nitrogen and Ammonia Estimations. W. H. Buhlig and H. M. Stowe, Chicago.  
33 Case of Linitis Plastica of the Stomach (Brinton) Cured by Jejunostomy. A. F. von Eiselsberg, Vienna, Austria.

**24. Excision of the Rectum for Cancer.**—In this monograph, for such it practically is, Lusk reports a case in a woman operated on with implantation of the sigmoid into the anus. He goes into detail in regard to the surgical anatomy and technic of the operation, the article being elaborately illustrated with half-tones accompanied by diagrammatic sketches of the pictures represented in half-tone.

26. Abstracted in THE JOURNAL, Feb. 1, 1908, p. 397.

**27. The Great Omentum.**—Fuller describes a case of intra-abdominal rotation of the great omentum, unaccompanied with hernia. He discusses the embryology, anatomy, and functions of the omentum, summarizes what is known regarding torsion of the omentum, adopts the classification of Corner and Pinches into abdominal, hernial, and hernial and abdominal, and discusses the etiology and mechanism, diagnosis, and treatment. He concludes as follows: 1. The great omentum should be regarded by the surgeon as an organ of vast importance, and its uses can not with safety be curtailed or compromised. 2. In all surgical operations requiring resection of the great omentum, the latter should be done in a careful manner, without leaving heavy or clumsy omental stumps uncovered by peritoneum, and the omentum at the completion of all operations should be unfolded and spread over the abdominal organs in a normal manner. 3. If the condition in any operation within the peritoneal cavity presents the slightest doubt as to the causes and nature of the extent of the difficulty, search for a complete and satisfactory explanation of the question in hand should include examination of the greater or gastrocolic omentum.

**29. The Elastic Ligature in Anal Fistula.**—Echols considers the operation by elastic ligature, while not applicable to all cases, such as the horseshoe fistula encircling the bowel, the operation of choice for ordinary complete fistula for the following reasons: 1. It preserves the contour of the anus and does not impair the function of the sphincter. 2. It is suitable for patients who can not or will not take a general anesthetic. 3. The period of complete disability of the patient after operation is less.

**31. Gloves and Masks.** Bishop discusses the relation of gloves and masks to efficiency, and gives reasons for conclud-



ing that masks and gloves, however theoretically correct, hamper materially the surgeon's movements, and, therefore, may easily do far more damage to the prospects of a safe recovery—which is, after all, the main end in view—than would result if they were omitted.

#### Journal of Nervous and Mental Disease, New York.

August.

- 34 \*Brain Tumor Localized and Completely Removed; with Symptomatology of Lesions Variousely Distributed in the Parietal Lobe. C. K. Mills and C. H. Frazier, Philadelphia.
- 35 Herpes of the Membrana Tympani, Due to Zosteroid Affection of the Petrosal Ganglion. T. J. Orbison, Los Angeles, Cal.

34. Abstracted in THE JOURNAL, July 4, 1908, p. 68.

#### Atlanta Journal-Record of Medicine.

August.

- 36 \*Sacroiliac Disease. C. R. Andrews and M. Hoke, Atlanta.
- 37 Examination of the Feces as an Aid to Diagnosis. J. N. Le Conte, Atlanta.
- 38 Use and Abuse of Drugs in Tuberculosis. W. M. Jones, High Point, N. C.
- 39 Chronic Gastric Ulcer: its Surgical Treatment. E. G. Jones, Atlanta.
- 40 Obstetrical Work from Standpoint of General Practitioner. A. B. Croom, Maxton, N. C.
- 41 Variable Effects of Apomorphin. F. A. Boland, Atlanta.
- 42 \*Improvement in Method of Determining if Gonorrheal Infection is Present in an Inflamed Prostate or Seminal Vesicle. E. Ballenger, Atlanta.

36. **Sacroiliac Diseases.**—Andrews and Hoke point out that the pelvic girdle is the structural base for the skeleton, and any instability of pelvic articulations must interfere with proper action of muscles attached thereto; conversely, any lack of development or alteration in tone of the muscles and ligaments protecting and holding the pelvic joints in position, must likewise render impossible their normal and anatomic relation and induce impaired function. Certain physiologic conditions bear a direct relation to relaxation of the sacroiliac joints. This is demonstrable in pregnancy and often during menstruation, and explains many of the backaches occurring in the menstrual period. The authors discuss the movement of the sacrum from an obstetric viewpoint, and state that with an existing excessive intestinal putrefaction, any injury or undue strain to a joint may precipitate a toxic inflammation. Such inflammations are common in the sacroiliac joints. They discuss the effect of position, recumbent and sitting. Lumbago is often simply a manifestation of a sacroiliac sprain. They discuss displacements and infectious processes, and call particular attention to the point that toxic inflammation due to intestinal putrefaction may be superimposed on any other condition of the sacroiliac joint. In cases of strain, long standing should be avoided and a correct attitude maintained. When sitting, lounging should be avoided; when recumbent, a firm pillow under the hollow of the back will prevent the lumbar spine from sagging. Adhesive plaster straps across the lower back and buttocks, or a belt, will be of service.

42. **Gonorrheal Infections.**—Ballenger describes a mode of ascertaining if gonococci are present in an inflamed prostate or seminal vesical by creating a chemical urethral discharge, and when it is well established, sealing the meatus with collodion or adhesive plaster and massaging the secretion from the prostate or vesicles into the inflamed canal, where it is left until the patient urinates. Gonococci will proliferate if placed in this favorable environment and may be demonstrated in the subsequent discharge.

#### United States Naval Medical Bulletin, Washington, D. C.

July.

- 43 \*Treatment of Tuberculosis by Administration of Mercury. B. L. Wright, U. S. Navy.
- 44 Pathologic Anatomy of Gula. A. J. Geiger, U. S. Navy.
- 45 History of Epidemics in Guam. F. E. McCullough, U. S. Navy.
- 46 \*Result of 300 Examinations of Feces with Reference to the Presence of Amebas. R. E. Hoyt, U. S. Navy.
- 47 Case of Banti's Disease with Splenectomy and an Arteriovenous Anastomosis. E. A. Vickery, U. S. Navy.
- 48 Modification of the Crile Cannula. E. A. Vickery, U. S. Navy.

43. **Mercury in Tuberculosis.**—Wright believes that mercury is a specific in tuberculosis and that it has a destructive effect on the tubercle bacillus. His other papers on this subject were

abstracted in THE JOURNAL, July 4, 1908, page 75, and September 12, page 944.

46. **Examination of Feces for Amebas.**—Hoyt analyzes the results of 300 examinations of feces, made as part of the regular laboratory routine at the Canacao Naval Hospital, P. I. In 200 cases blood examinations were also made, and in 100 an occult test was made. Of the 300 patients only 20 were admitted on the diagnosis of dysentery. The author concludes from these observations that, reasoning from a knowledge of the power of other forms of intestinal parasites to produce symptoms of a general nature, such as those mentioned, and taking into consideration the reported findings at autopsy in many cases of amebic infection without apparent symptoms of dysentery, it would be unwise to ignore this organism as an etiologic factor in affections other than dysentery.

#### American Journal of Physiology, Boston.

August.

- 49 Comparative Study of the Temperature Coefficient of the Velocities of Various Physiologic Actions. C. D. Snyder, Berlin, Germany.
- 50 \*Kidney Secretion of Indigo Carmin, Methylene Blue and Sodium Carminate. G. D. Shafer, Ithaca, N. Y.
- 51 Comparative Physiology of the Invertebrate Heart.—A Note on the Physiology of the Pulsating Blood Vessels in the Worms. A. J. Carlson, Chicago.
- 52 \*Resection and End-to-End Anastomosis of the Oviduct in the Hen, without Loss of Function. R. Pearl and F. M. Surface.
- 53 \*Hydrolysis of Vignin of the Cow-Pea (*Vigna Sinensis*). T. B. Osborne and F. W. Heyl.
- 54 Experiments Bearing on the Nature of the Glycogenolytic Fibers in the Great Splanchnic Nerve. J. J. R. MacLeod, Cleveland, Ohio.
- 55 Influence of Stimulation of the Great Splanchnic Nerve on the Rate of Disappearance of Glycogen from the Liver, Deprived of Its Portal and Systemic Blood Supplies. J. J. F. MacLeod and H. O. Ruh, Cleveland, Ohio.

50. **Kidney Secretion.**—Shafer reviews the literature concerning the theories of secretion of urine and the experimental work with various coloring matters that bears on these theories, and finally describes his own experiments with indigo-carmin, methylene blue and sodium carminate. His results, in the main, support the theory of Heidenhain, that most organic salts and free acids are secreted by the epithelium of the convoluted tubules. The experiments show that indigo-carmin, whether in its colored or colorless form, is excreted by the cells of the tubules, and there is no direct evidence that indigo-carmin is reduced in the living animal body, and it is, at least, not completely reduced. Methylene blue is reduced and is excreted by the epithelium of the tubules in the colorless condition, but is oxidized to the blue compound to a large extent, at least, in the bladder. Sodium carminate is excreted by the glomeruli, but there is reason to think that a slow excretion also takes place by way of the convoluted tubules.

52. **Anastomosis of Oviduct.**—Pearl and Surface show that the oviduct in the hen can be resected and an end-to-end anastomosis made without permanent loss of function, the hen producing practically normal eggs.

53. **Hydrolysis of Vignin.**—The analysis of the product of hydrolysis of the vignin of the cow pea, according to Osborne and Heyl, is able to account for only about 70 per cent. of the material by the determination of known substances. It is not likely that any quantity of tryptophan is missed, and there is no evidence that the missing substance is to be accounted for by a carbohydrate residue in the proteid molecule, so that the almost inevitable conclusion is that there are still unrecognized substances among the products of the decomposition of proteins.

#### American Journal of Public Hygiene, Boston.

August.

- 56 Determination of Oxygen Consumed in Waters. E. M. Chamot, Ithaca, N. Y.
- 57 Effect of Heating on the Determination of Leucocytes in Milk. H. L. Russell and C. Hoffman.
- 58 Diphtheria Diagnosis. B. R. Rickards, Boston.
- 59 Mathematics of the Bacterial Count. H. W. Hill, Minneapolis.
- 60 \*The House Fly as an Agent in the Dissemination of Infectious Diseases. T. Smith, Boston.
- 61 \*Disinfection of Books. B. R. Rickards, Boston.

60. **The House Fly as a Disseminator of Infectious Diseases.**—Smith points out that the war on flies can not be successfully waged with fly-paper and fly-traps, but must be waged,



as was done with mosquitoes, in the country of the animal itself, that is, against its breeding-places. Flies may be divided into biting and non-biting, the former including horse flies and stable flies, and the latter the house fly and various flesh flies and blow flies. The development of flies is practically the same as and resembles generally, that of mosquitoes, if we substitute putrefactive and fermenting animal and vegetable matter for water as a breeding place. The fly is essentially a scavenger and would be beneficent rather than injurious were it not for its habit of bringing disgusting material from its normal feeding places and depositing it on food. The breeding places are probably neglected garbage and stables with accumulating manure or a dump heap. At the seashore dead fish form good breeding grounds. Smith points out that all movements in the interest of the public health broaden out from their original narrow intent, and the campaign against flies would eventuate in a campaign for general cleanliness.

61. **Disinfection of Books.**—Rickards concludes that formaldehyd is inefficient as a means of disinfecting books, while steam sterilization is rapid and efficient, and does not materially harm the books except those with leather binding. The books should be subjected to dry steam for at least thirty minutes at from fifteen to twenty pounds' pressure.

**University of Pennsylvania Medical Bulletin, Philadelphia.**

*August.*

- 62 \*Brain Tumor Localized and Completely Removed, with Some Discussion of the Symptomatology of Lesions Variousely Distributed in the Parietal Lobe. C. K. Mills and C. H. Frazier, Philadelphia.
- 63 Two Cases of Streptococcus Infection which Gave a Typical Widal Reaction. J. Tyson and R. Pemberton, Philadelphia.
- 64 Examination for Carbon Monoxid Hemoglobin of the Blood of a Miner whose Death Occurred in a Recent Gas Explosion in a Bituminous Coal Mine, with Quantitative Determination of the Carbon Monoxid Contained in the Blood. J. Marshall, Philadelphia.
- 65 Medical Practice in Canton, China. A. H. Woods, Bryn Mawr, Pa.
- 66 \*Simple and Accurate Method for Measuring the Clotting Time of the Blood. M. Solis-Cohen, Philadelphia.

62. Abstracted in THE JOURNAL, July 4, 1908, p. 68.

66. **The Clotting Time of the Blood.**—Solis-Cohen discusses the various methods that have been employed for measuring the clotting time of the blood. He has devised an apparatus based on Milian's method, but which eliminates the errors due to evaporation and temperature change. It consists of a German Stender dish, 80 mm. in diameter and 40 in height, a small pan with an outlet and with a bracket for holding a thermometer (an ordinary tin baking pan, the outlet and bracket being made by a tinsmith will do), a bath thermometer, a wide elastic band, a piece of rubber tubing, a stop-cock and a millimeter scale. The rubber tubing is attached to the outlet of the pan, and clamped with a stop-cock, and the thermometer slipped into the bracket or holder. The pan is filled with water at 37 C. (98 F.) and maintained there by the addition of hot or cold water as required. The Stender dish is cleansed, the rim smeared with lanolin or petrolatum, the lid thoroughly cleansed and applied and held in place by the rubber band. The dish is then placed, everted, in the pan of water. The ear or finger is next thoroughly cleansed and given a free puncture with a clean, sharp instrument, so that the blood flows freely without undue pressure. The Stender dish is removed from the water, quickly dried, and the elastic band removed. The first drop of blood is wiped off and note is made of the time the second drop appears. This drop, while on the finger or ear, is lightly touched to the upper surface of the inverted lid of the Stender dish held horizontally. The part is then wiped off and several other drops are similarly deposited on the lid on either side of the median line, the time of the appearance of each drop being also noted. The dish is then placed on the lid and the rubber band applied. Placing the millimeter scale under the inverted dish, the size of the different drops is quickly measured and noted. Only those drops are regarded whose diameter measures 5 mm. or 6 mm. The dish is then placed back in the water bath with the lid underneath. At intervals the dish is removed from the water and held vertically, while the contour of the drops is rapidly observed from the side or the density studied by looking at the drops through the lid. As quickly as possible

the dish is returned to the horizontal position and replaced in the water. So long as, when observed from the side, the drops sag, are tear-shaped or pear-shaped, or, when looked at full, are denser below and clearer above, coagulation has not occurred. As soon as the drop is rounded on profile view, and of the same density throughout when seen from the front, coagulation is completed. To confirm this, the dish is removed from the lid and the clot is picked off with a needle or straw. The time at which coagulation was first observed is noted, and the period between this and the moment the drop appeared on the part is taken as the clotting time. With this method results are surprisingly constant.

**Northwest Medicine, Seattle.**

*August.*

- 67 \*Organization and Centralization of Medicine and Surgery of the Northwest. R. C. Coffey, Portland, Ore.
- 68 Standards of Medical Education. A. C. Panton, Portland, Ore.
- 69 \*Practical Methods of Dealing with Quacks and Quackery. A. W. Smith, Portland, Ore.
- 70 Value of Vision in Its Relation to Accident Insurance and Legal Indemnity. H. V. Würdemann, Milwaukee, Wis.

67. Abstracted in THE JOURNAL, Aug. 29, 1908, p. 780.

69. **Quacks and Quackery.**—Smith says that there are two special reasons for the Pacific Coast being infested with quacks: namely, failure on the part of the public to appreciate the quack in his true light, and laxity of law enforcement. The quack hitherto has not been prosecuted, because the public deemed him harmless, but now that the masses are being educated to the dangers of his business it is time to enforce the laws against fraud and misrepresentation. Unfortunately, the daily papers, as a rule, are not in sympathy with the movement to make the quack live up to the letter of the law. The campaign against quacks has brought to light some startling cases. The author reports one in which a quack extorted \$500 from poor people, who had to mortgage all they possessed to raise the money for the "cure" of a cancer patient already at the point of death, and who died in twenty-four hours. Yet this quack had the assurance to advertise this as one of his successful cases, cured by his treatment. He was arrested, convicted, fined and sentenced to hard labor. The profession of Portland has secured sixteen convictions of quacks for practicing medicine without a license. To rid ourselves of these undesirable citizens all that is necessary is a united profession. We must rally round the medical associations and make them stand for something, electing officials with the courage of their convictions. We must banish the indifference that has hitherto characterized us as a profession. A bill making it unlawful for any newspaper in Oregon to publish any medical advertisement of an indecent nature passed both the house and senate, but was lost (or stolen) and not located until too late for the governor's signature to make it a law. A new bill on the same lines will be presented to the next legislature.

**Journal of the Oklahoma State Medical Association, Guthrie.**

*August.*

- 71 \*Surgical Affections of the Gall Bladder. L. Long, So. McAlester.
- 72 Purposes and Attainments of Cystoscopy and Demonstration of the Author's Universal Cystoscope. B. Lewis, St. Louis, Mo.
- 73 Extrauterine Pregnancy. A. A. West, Guthrie.

71. **Affections of the Gall Bladder.**—Long reports three cases, one of which presents peculiar features. The patient was a white woman, aged 46, with a history of illness and invalidism covering eleven years. Extreme jaundice was present. A diagnosis had been made of obstruction of the common duct, probably by stone, with possibility of cancer as a complication, the last being suggested by the patient's rapid decline during the preceding two months. At the operation not the least remnant of the gall bladder could be found, nor could the common or cystic ducts be made out. A mass of adhesions involved pylorus, duodenum, gall-bladder region and under surface of the liver. The pancreas was felt as a hard, resisting body. A diagnosis of cancer was made, the abdomen closed, and the family warned of the probable outcome. The patient did well and in two weeks was out of hospital, declaring she had never felt better for years. Moreover, she



has steadily improved in the past six months and is still improving. Jaundice has disappeared, she eats heartily, walks erect, goes anywhere she wishes to, and has gained twenty pounds in weight. The author can only account for this remarkable result by supposing that in breaking up adhesions to outline the structures of the bile-tract area he released the common duct, so that its lumen would again permit the flow of bile fluid.

#### Journal of the Michigan State Medical Society, Detroit.

August.

- 74 \*Problems in Preventive Medicine. H. Ostrander, Kalamazoo.
- 75 Treatment of Joint Tuberculosis. E. H. Ochsner, Chicago.
- 76 \*Case of Obstetrics with Sequelæ. W. P. Manton, Detroit.
- 77 \*Treatment of Chronic Diseases of the Heart by Carbonated Mineral Baths and Auxillary Exercises. W. L. Wilson, St. Joseph.
- 78 \*Diet and Digestion. F. J. Groner, Grand Rapids.

74. Abstracted in THE JOURNAL, Aug. 22, 1908, p. 698.

76, 77, 78. Abstracted in THE JOURNAL, Aug. 29, 1908, pp. 784, 786.

#### New York State Journal of Medicine, New York.

August.

- 79 The Obstetric Forceps. J. K. Quigley, Rochester.
- 80 \*Method of Appendicectomy. T. L. Deavor, Syracuse.
- 81 \*Diffuse Peritonitis in Women, with Report of Fifty Cases. E. McDonald, New York.
- 82 Tuberculous Salpingitis. Results of Surgical Treatment in Four Recent Cases. J. O. Stranahan, Rome.
- 83 \*Traumatism as an Etiologic Factor in Appendicitis. J. P. Warbasse, Brooklyn.
- 84 Peritoneal Adhesions. A. H. Traver, Albany.
- 85 Treatment of General Peritonitis. H. C. Rooth, Buffalo.
- 86 Unhealthy Tonsils the Cause of Grip. T. B. Loughlen, Olean.
- 87 Porro Cesarean Section. F. H. Stuart, Brooklyn.
- 88 Lives of Officers of the Medical Society of the State of New York. J. J. Walsh, New York.

80. **Appendicectomy.**—Deavor describes a method which he has used in a fairly large number of cases, some being interval cases, others suppurative, and others gangrenous, with or without perforation. The following are the steps in the operation, some of which are common to all methods: Incision and delivery of the appendix; ligation and division of the mesentery; dissection of peritoneal cuff back to the cecum; ligation and excision of the appendix, and disinfection of the stump; ligation of peritoneal cuff over stump; union of mesenteric stump with that of the appendix; closure of incision.

The appendix is delivered with as little of the cecum as possible, but this will vary with the individual case. Deavor's custom is usually not purposely to displace the omentum and intestines in searching for the appendix, but while traction is being made with the left hand, the right index and middle fingers are carried at once to the right side of the colon, then downward to the cecum, when, without seeing the longitudinal band of muscle fibers, the appendix is found and lifted out. The mesoappendix, when present, is ligated in section, or preferably in one mass, half an inch from the cecum, the curved needle being carried close to the body of the appendix. This ligature is left long. When the mesoappendix is absent or very small, the appendicular artery alone is tied. Division of the mesentery greatly relieves the appendix and gives immediate room, and the ease with which a peritoneal cuff can be rolled back to the cecal junction is known to every one. This cuff should be long enough to allow for retraction. The body of the appendix is then ligated close to the cecum and excised. Disinfection of the stump is accomplished by means of the cautery, or better by carbolic acid. A blunt probe without cotton reaches all parts of the stump and its lumen. It is a wise precaution to displace the residue from the part of the appendix to be ligated, before placing the ligature, using a dressing forceps. The field having been cleansed and dried, all sponges are now removed, and the peritoneal cuff is returned and ligated like a sack over the end of the stump and the ligature tied with that of the mesentery previously left long. This brings the cut edges together and practically obliterates all dead space and raw surfaces. The wound is then closed. Deavor discusses the forms of incision and also the question of ligature. So far, he has used only chromicized catgut, and he mentions an experiment to show that without very strong traction a tight, durable knot can hardly be formed with dry

catgut, but that by slightly softening the same material before using very little force is required to produce a closely fitting knot, which will not relax its hold on further softening by the tissues.

81. Abstracted in THE JOURNAL, Feb. 8, 1908, p. 477.

83. **Traumatism and Appendicitis.**—Warbasse discusses the part that traumatism can play in producing appendicitis, and concludes as follows: The decision must be reached on two grounds: the association of the two conditions (appendicitis following traumatism), and the well known and accepted principle of surgical pathology that traumatism in any tissue predisposes and conduces to inflammation. The appendix, by virtue of its position and structure and the history of its inflammation, falls under both these stipulations. It is susceptible to traumatism; it sometimes is injured, and its inflammation sometimes follows such injury. There is every reason, therefore, to regard traumatism as an etiologic factor in appendicitis.

#### Vermont Medical Monthly, Burlington.

August, 15.

- 89 \*Partial Thyroidectomy in Treatment of Exophthalmic Goiter. A. P. Heineck, Chicago, Ill.

89. This article by Heineck appeared under another title in *Surgery, Gynecology and Obstetrics*, December, 1907, and was abstracted in THE JOURNAL, Feb. 1, 1908, page 401. It was also published as an original article in the *Chicago Medical Recorder*, January, 1908, and in several other journals. Apparently the only thing new in the present article is the title.

#### Chicago Medical Recorder.

August 15.

- 90 Treatment of the Commoner Penetrating Wounds of the Eyeball. F. Allport, Chicago.
- 91 Psychic Treatment. J. Grinker, Chicago.
- 92 \*Present Status of the Relation of Bovine to Human Tuberculosis. C. J. Whalen, Chicago.
- 93 Conservative Drainage of High Pelvic Abscess. R. C. Turck, Jacksonville, Fla.
- 94 Carcinoma of the Rectum: Comparative Results of Operative Procedures. J. R. Pennington, Chicago.
- 95 Desmoid Reaction. A. D. Kohn, Chicago.
- 96 Repair of Superficial Perineal Lacerations with Michel's Clamps. O. Betz, Heilbronn, Germany.
- 97 Cicutine. W. F. Waugh, Chicago.

92. **Bovine and Human Tuberculosis.**—Whalen discusses the relation of bovine and human tuberculosis, and concludes that experimental work strongly favors the view that infection in pulmonary tuberculosis takes place, in a majority of instances, through the respiratory and not the alimentary tract, though there is good evidence to show that intestinal infections do sometimes lead to pulmonary tuberculosis.

#### Journal of Cutaneous Diseases, New York.

August.

- 98 \*Occurrence of a Proliferating Cestode Larva (*Sparganum proliferum*) in Man in Florida. C. W. Stiles, Somerville, Mass.
- 99 Choleitis Exfoliativa. M. L. Ravitch, Louisville, Ky.

98. Abstracted in THE JOURNAL, Oct. 12, 1907, p. 1305.

#### Denver Medical Times and Utah Medical Journal, Denver.

August.

- 100 Typhoid Fever. E. Stuver, Ft. Collins, Colo.
- 101 Postoperative Intestinal Obstruction. F. C. Buehtel, Denver.
- 102 Recent Interesting Surgical Cases. F. Finney, La Junta, Colo.
- 103 Phlebitis Following Abdominal Operations. A. H. Harris, Denver.
- 104 New Dressing for Fractured Clavicle. J. Lindahl, Denver.

#### Mississippi Medical Journal, Vicksburg.

August.

- 105 Chloroform and Ether Anesthesia. O. N. Arrington, Brookhaven.
- 106 What Remedies Shall We Use? H. C. Buck, Friars Point.
- 107 Typhoid Fever. A. P. Alexander, Sledge.

#### St. Louis Medical Review.

August.

- 108 Review of Serum Anaphylaxis. R. L. Thompson, St. Louis.
- 109 Can the Aged Prostatic be Prevented? J. L. Boogher, St. Louis.
- 110 Large Dermoid Cyst of Ovary with Carcinomatous Degeneration Involving One-Third of the Bladder: Extirpation: Recovery. J. F. Menestrina, St. Louis.



**Journal of Advanced Therapeutics, Rahway, N. J.**

August.

- 111 Case of Lupus, Showing the Effects of Treatment of Concentrated White Light. F. Barrett, Westbrook, Maine.  
112 Removal of Superfluous Hair by the X-Ray. F. A. Bardwell, Boston.  
113 Treatment of Various Conditions with Static Electricity and High Potential Currents. T. H. Cannon, Baltimore.

**American Journal of Urology, New York.**

August.

- 114 Interesting and Obscure Cases. L. W. Bremerman, Chicago.  
115 Case of Orchidopexia by Hahn's Method. Joseph Budde, Two Harbors, Minn.

**Western Medical Review, Omaha, Neb.**

August.

- 116 Induction of Labor. C. W. Pollard, Omaha.  
117 Malignant Endocarditis. R. W. Bliss, Omaha.  
118 Bier's Hyperemia. C. W. M. Poynter, Lincoln.  
119 Adding a Grain of Salt to Professional Ethics. C. J. Alger, Leigh.

**American Practitioner and News, Louisville.**

August.

- 120 Treatment of Pneumonia. A. E. Gardner, Louisville.  
121 Life Insurance Examiner. O. P. Nuckols, Louisville.  
122 Value of Urine in Diagnosis. E. S. Allen, Louisville.  
123 Health Bureau Work. G. B. Jenkins, Louisville.

**Journal of the South Carolina Medical Association, Greenville.**

August.

- 124 Case of Torsion of the Omentum. T. P. Whaley, Charleston.  
125 Proposed Work of the South Carolina Antituberculosis League. A. B. Patterson, Barnwell.  
126 Nervous Manifestations of Gastrointestinal Indigestion. J. C. Sosnowski, Charleston.  
127 Tuberculosis in State Prison. F. W. P. Butler, Columbia.

**Journal of the Kansas Medical Society, Kansas City.**

August.

- 128 Pseudoleukemia. H. W. Manning, Eureka.  
129 Gastrointestinal Neuroses. W. R. Heylman, Iola.  
130 Gunshot Wound of Abdomen. W. S. Grisell, Ransom.  
131 Treatment of Fractures of the Leg. G. P. Marner, Marion.  
132 Acute Glaucoma. J. G. Dorsey, Wichita.

**Alabama Medical Journal, Birmingham.**

August.

- 133 Sacroiliac Strain. E. L. Scott, Birmingham.  
134 Lead Poisoning. Z. B. Chamblee, North Birmingham.  
135 Conservative Surgery of the Ovaries and Tubes. E. M. Robinson, Birmingham.  
136 Autointoxication. W. D. Partlow, Tuscaloosa.  
137 Fused or Horseshoe Kidney. B. Robinson, Chicago.  
138 Tetany. G. L. Faucett, Gadsden.

**Bulletin of the Johns Hopkins Hospital, Baltimore.**

August.

- 139 Organs of Respiration. W. G. MacCallum, Baltimore.  
140 Right Mesojejunal Hernia. W. G. MacCallum and R. T. Miller, Baltimore.  
141 Abnormalities of the Pulmonary Blood Vessels. C. R. Meloy, Baltimore.  
142 Tuberculosis of the Stomach; Tuberculous Cavities of the Liver; with Report of a Case. M. C. Winternitz, Baltimore.  
143 Case of Sigmoid Kidney. M. C. Winternitz, Baltimore.  
144 Relation of Bronchial Stenosis to Bronchiectasis. W. L. Thornton and J. P. Pratt, Baltimore.  
145 Occurrence of Newly Formed Lymphatic Vessels in Malignant Growths, with Demonstration of Their Origin and Ingrowth in the Metastases of a Round-Celled Sarcoma. H. M. Evans, Baltimore.  
146 Effects of Feeding Animals on an Iodine-Free Diet. A. R. Dochez, Baltimore.  
147 Changes in the Pancreatic Duct and Their Relation to Chronic Pancreatitis. M. C. Winternitz, Baltimore.

**FOREIGN.**

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

**Lancet, London.**

August 29.

1 \*Student's Number.

1. This number of the *Lancet* contains no original articles, but is devoted entirely to information concerning medical education and practice in the British Empire. In addition to an address of counsel to students it contains a statement of the powers and duties of the General Medical Council, the regulations and requirements of all the medical examining bodies throughout the United Kingdom, a list of scholarships awarded

by the various schools in aid of medical study, the regulations for the government medical services, the requirements for the various diplomas in state medicine and public health, and the regulations for diplomas in dentistry. There is also a review of the conditions under which British (and in some cases, no doubt, other) practitioners are permitted to practice in various foreign countries.

**British Medical Journal, London.**

August 29.

- 2 Significance of Some of the Symptoms of Appendicitis from Point of View of Urgency of Operation. C. M. Moullin.  
3 Fibrolysin in Cicatricial Pyloric Obstruction. M. B. Stewart.  
4 Case of Acute Intestinal Obstruction in a Hemophilic. R. H. Kingsford.  
5 \*Points in the Anatomy and Pathology of the Hernial Sac. E. S. Carmichael.  
6 \*Treatment of Chronic Empyema by Hyperemia and Hypertransudation. J. S. Diek.  
7 \*Smoke Abatement. H. A. Des Voeux.  
8 National Military Service and National Physique. J. E. Barker.  
9 \*Administrative Treatment of Phthisis. A. Walker.  
10 Coordination in Pathology and Public Health. F. G. Bushnell.  
11 Death Certification and Death Verification. J. B. James.  
12 Infant Mortality. S. G. Moore and A. E. Naish.  
13 State Regulation of Proprietary Medicines and Foods. G. E. Prichard.  
14 \*Hampton Interpretation of the Operation of Sewage Purification. G. L. Travis.  
15 Lodging Houses Under the Public Health Acts Amendment Act, 1907. J. C. McWalter.  
16 The Causes of Dyspnea. J. S. Haldane.  
17 Pulmonary Ventilation in Disease. A. P. Beddard and M. S. Pembrey.  
18 Changes in the Pituitary Body After Removal of the Thyroid. P. T. Herring.  
19 Pancreatic Juice and Glycosuria. J. S. Goodall and H. G. Earle.  
20 Suggestion in Its Physiologic Bearings. R. J. Anderson.  
21 Appetite: an Attempted Analysis of the Physiologic Factor. J. S. Goodall.  
22 Teaching and Examination in Anatomy. C. Addison and David Waterston.  
23 Mechanism of Respiration in Health and Disease. A. Keith.  
24 Meso-photography and Its Application to Delicate Unfixed Embryos. C. J. Patten.  
25 Significance of Fusion of the Atlas to the Occipital Bone, and Manifestation of Occipital Vertebrae. G. E. Smith.  
26 The Hard Palate and Maxilla in Primates. R. S. Anderson.  
27 Right-handedness. G. E. Smith.

5. **Hernial Sac.**—Carmichael describes a series of observations from which he draws the following conclusions: 1. In early childhood, clinical evidence, gained by examining the spermatic cords of apparently normal children, shows that between 50 and 75 per cent. present thickening due to incomplete closure of the funicular process. 2. The anatomic conditions present in patients operated on support the view of a congenital origin, as shown by the relation of the sac to its coverings, and its presence in spite of a narrow canal and a small external abdominal ring. 3. The histologic and naked-eye appearances of the sac in most cases do not afford reliable evidence of its congenital origin or otherwise, although a markedly thickened sac, if small, is suggestive of the embryonic condition.

6. **Suction Hyperemia in Chronic Empyema.**—Diek reports a case in which, two years from the onset of pneumonia and nine months from the final operation for a subsequent empyema, there was still a cavity having a capacity of over two drams, and secreting over one dram of pus daily. This had been *in statu quo* for three months, so that a cure by drainage was despaired of. An attempt was, therefore, made to increase the transudation of blood to the infected area, as follows: A cupping glass with rubber exhaust was applied, so as to include the sinus and portion of the chest wall bounding the cavity externally. The application at first was rather painful. While the cupping glass was used the patient inflated a football. The cavity was filled daily with sodium citrate chlorid solution recommended by Wright (*Practitioner*, May, 1908; abstracted in *THE JOURNAL*, July 4, 1908, p. 80) in the article which suggested to the author the use of this plan. [The solution consists of four parts of common salt and one part of sodium citrate dissolved, when required, in 100 parts of boiling water.] An increase in the amount of discharge ensued. Mercury biniodid solution (1 in 2,000) was substituted after a week, and the discharge diminished. The alternation of the two solutions was continued with alternating increase and diminution of the discharge, until at the end of six weeks the cavity held about ten minims and in two



weeks admitted only a fine probe and was quite dry. While the case is not conclusive, the fact that the condition had been stationary for three months makes it probable that the case is one of those referred to by Godlee, in which the cavity walls having been drawn in to the utmost possible extent, granulation must be relied on to fill the cavity, but owing to tension preventing a continuation of the process, the pleura becomes lined with a perfectly smooth surface secreting pus, but developing no further granulations.

**7. Smoke Abatement.**—Des Voeux dissects the smoke evil and particularly attacks the kitchen chimney. He lauds the use of gas for cooking and points out that its expense is due to wastefulness. In London this has been overcome by the use of a slot system, whereby gas for cooking can be bought by pennyworths at a time. One penny (two cents) in the slot gives from 25 to 30 cubic feet of gas. Of the substitution of gas fires for coal fires, he says that all the objections are due entirely to inadequate gas fitting. A properly constructed gas fire, carefully fitted with a pipe large enough to take away the products of combustion, is sanitarily perfect.

**9. Administrative Treatment of Tuberculosis.**—Walker emphasizes the importance of sanatoriums in the treatment of early cases of phthisis and urges the extension of this treatment to the poorer classes. He discusses the financial aspect of the question.

**14. Sewage Purification.**—Travis essays to show that the purification of sewage by artificial processes has been misunderstood from its inception, and that the phenomena attending it have been wrongly interpreted throughout. His paper is devoted to defining and proving the Hampton interpretation of sewage purification phenomena, which teaches that the purification of sewage is essentially the result of an act of desolution. It affirms that the impurities contained in the sewage, whether in suspension or in a condition of solution, are by this operation, as a preliminary effect, removed from the liquid as by a process of precipitation. This initial separation from the sewage of its solid constituents as particulate matters can be shown to occur under all conditions; therefore, it is held to constitute the most important, as it is also the most manifest, effect in every treatment area. He affirms that the correctness of any interpretation of sewage purification phenomena is evidenced by, and is proportional to, the fidelity of its adherence to the following propositions: 1. That the complete operation of sewage purification is a complex one, in which physical, chemical and biolytic—in its widest sense—factors are severally engaged; 2, that the physical operation manifests itself in removing the suspended, and the more highly complex so-called soluble organic, as well as some inorganic, matters from the sewage; 3, that the chemical operation assists the physical in completing the desolution of the liquid, and takes its part in the subsequent changes induced by biolysis; 4, that the biolytic operation is concerned in a very minor degree with the purification of the sewage itself, inasmuch as its effects are almost entirely evidenced by the changes occurring in those substances which have been removed from the sewage, rather than by being associated with those which are contained therein; and 5, that the biologic operations on the deposited and absorbed solids, whether on those arising from the suspended, or on those resulting from the so-called soluble solids, are always attended by huge, only partially reduced, and practically persistent accumulations. The important principles involved in the above enumerated propositions are that the physical and chemical operations of desolution manifest themselves by depriving the sewage of its impurities during the transit of that liquid through the artificial treatment area; and that the biolytic operations never find expression in the complete conversion of the deposited organic matters, nor, indeed, could they do so were the area increased a hundredfold.

#### Medical Press and Circular, London.

August 26.

- 28 Treatment by Hyperemia of Bier. Professor Gebele.
- 29 Public Health and Poor-Law Medical Services. A. D. Edwards.
- 30 \*Incidence of Pulmonary Tuberculosis in Children of School Age. J. A. Coutts.
- 31 Methods of Dealing with Suppuration in the Maxillary Sinus. S. Thomson.

**30. Pulmonary Tuberculosis in School Children.**—Coutts quotes various authors to show that, notwithstanding a consensus of opinion that pulmonary tuberculosis is rarer in children than in adults, there is great variation in opinion as to its absolute frequency in the young. His own experience leads him to regard it as not only comparatively rare, but as exceedingly rare. The rarity of phthisis in children he regards as the one safeguard against the spread of tuberculosis through the agency of schools.

#### Australasian Medical Gazette, Sydney.

July 20.

- 32 School Hygiene. J. H. Evans.
- 33 Tetanus. A. G. Salter.
- 34 Manifestations of Filariasis as it Appears in Queensland. E. S. Jackson.
- 35 Diphtheria Carriers. W. G. Armstrong.
- 36 Diphtheria in West Australia. H. Cumpston.
- 37 Curious Case of Urethral Obstruction. H. C. Hinder.
- 38 Three Interesting Intestinal Cases. E. H. Binney.
- 39 Sarcomatous Tumor of Ileum. Removed by Resection of Bowel and End-to-End Anastomosis by Suture—Recovery. R. Worrall.
- 40 \*Treatment of Inflammation by Passive Congestion. C. MacLauren.
- 41 Calmette's Ocular Reaction. C. Reismann.

**40. Constriction Hyperemia.**—MacLauren gives a practical account, for the practitioner, of the method of using constriction hyperemia. A rubber bandage  $2\frac{1}{2}$  inches wide is applied lightly around the limb, well above the inflamed part, so as to slow the venous current without interfering with the arterial inrush. The test of sufficiency is that the limb should show a slight reddening, slightly bluish in parts. At the end of twelve hours the limb should be slightly swollen, and there should be no definite blueness or pain. In acute inflammations the bandage is kept on at first for twenty-two hours, then removed for two hours, the limb being elevated. Treatment should be begun in the early morning. The patient should not go to sleep until it is seen how the limb is going to behave. There should be no pain or inconvenience whatever; these indicate a too tight bandage. The duration of application is decreased daily till the inflammation is entirely well. Its use should be continued for two or three days longer, lest the symptoms break out again. Ten hours is the duration of application at first in chronic inflammations, lengthened by two hours daily until twenty-two hours' application is reached. Except in tuberculous disease, gentle massage is given during the interval. A cupping glass is the easiest mode of application to the breast. A light bandage round the neck is used by Bier in mastoid disease.

#### Indian Medical Gazette, Calcutta.

August.

- 42 \*Treatment of Leprosy with X-Rays and High-Frequency. E. A. C. Matthews.
- 43 \*Rat Destruction Operations in the Punjab. S. Browning-Smith.
- 44 Flea-Killing Power of Certain Chemicals. R. D. Saigol.
- 45 Mode of Spread and Prevention of Plague. A. Buchanan.
- 46 Enteric Fever in the Native Army. G. S. Thomson.

**42. X-Rays in Leprosy.**—Matthews reports seven cases of leprosy treated with the x-rays, and says that the results in these cases go to show that exposure to x-rays forms a valuable means of treating leprosy in all forms and stages of the disease.

**43. Rat Destruction.**—Browning-Smith describes the methods of rat destruction by poison, traps and infective disease, and discusses their effect on plague. The evidence shows that rat destruction is a procedure of great value for the prevention and mitigation of plague epidemics. It is also a preventive, and has the further advantage in India that it interferes little with the customs and comforts of the people. He prefers trapping, but when that can not be carried out poisoning may be used. It is inadvisable to kill rats in a town by poison when an epidemic is at all widespread or when it is well started in small villages, for the rat epizootic is usually in advance of the epidemic. Trapping should be extended to every town in uninfected districts that is likely to become an important center for diffusing plague infection, should the disease be introduced.



**Annales de Gynécologie et d'Obstétrique, Paris.***August, LXXV, No. 5, pp. 449-512.*

- 47 **Technic and Benefits of Gynecologic Massage in Treatment of Plastic Infiltration and Pelvic Exudates.** Bourcart.  
48 **Modifications in the Blood in Puerperal Infection. (Modifications globulaires du sang dans l'infection puerpérale.)** E. Exchaquet.  
49 **Three Cases of Long Delay Before Recurrence and Generalization After Incomplete Operations on Mixed Ovarian Cysts. (Retard prolongé des récidives et de la généralisation dans les cas de kystes mixtes des ovaires, malgré la limitation forcée des opérations d'exérèse.)** E. Vincent.  
50 **Hypertrophy of the Clitoris.** A. Broca.

**Archives des Maladies du Cœur, Paris.***August, I, No. 8, pp. 457-504.*

- 51 **Pseudoaneurismal Dilatation of Sinus of Valsalva with Various Malformations of Heart.** E. Devic and P. Savy.  
52 **Hemorrhagic Purpura Following Contusion of Kidney Region.** E. Lenoble.

**Presse Médicale, Paris.***August 19, XVI, No. 67, pp. 529-536.*

- 53 **The Lipoids.** H. Iscovesco.  
54 **Present Status of Serum Treatment of Tetanus.** L. Lagane.

*August 22, No. 68, pp. 537-544.*

- 55 **\*Acute Tuberculosis Simulating Typhoid. (Typhobacillose de Landouzy. Diagnostic bactériologique pendant la période d'état.)** H. Gougerot.

55. **Acute Tuberculosis Simulating Typhoid.**—The clinical aspect of Landouzy's typhobacillosis is that of some form of typhoid, the absence of rose spots being almost the only distinguishing feature; and even the spots were present in ten of Landouzy's first series of 200 cases. Certainty of diagnosis is obtained only by inoculation of animals with blood or with the sediment from centrifugated urine. This typhobacillosis terminates fatally during the acute period or it may end in apparent recovery with localization of the tuberculous process; only exceptionally is the outcome a complete cure. Recurrence has sometimes been observed. Gougerot has been able to reproduce the syndrome in its various types in rabbits by inoculation in the vein of the ear with bird bacilli and homogenized human bacilli. He has thus reproduced even the type which develops in two stages, and also the definitely curable type. In the clinic, the impending second phase imposes the necessity for extra careful supervision of the convalescence to prevent localization of the tuberculosis. This type of typhobacillosis is so frequent that it should be borne in mind in every case of typhoid.

**Archiv für Gynaekologie, Berlin.***LXXXVI, No. 1, pp. 1-253. Last indexed, August 15, p. 630.*

- 56 **Placenta Tumor.** A. Ravano.  
57 **Case of Thoracopagus Tetrabrachius.** H. v. Oeynhausens.  
58 **\*Duodenal Occlusion. (Duodenalverschluss.)** B. Rosenthal.  
59 **\*Importance of Hemolytic Streptococci in Puerperal Infection. (Bedeutung der hämolytischen Streptokokken für die puerperale Infektion.)** T. Heyemann.  
60 **Histology of Hydatidiform Mole. (Histologie der Blasenmole.)** F. Daels.  
61 **Influence of Gravity on Production of Frontal Presentation. (Einfluss der Schwerkraft auf die Entstehung der Schädel-lagen.)** L. Seitz.  
62 **Pathology and Therapy of Chondrodystrophic Dwarf Pelvis. (Chondrodystrophischen Zwergbecken.)** F. Engelmann.  
63 **\*Mutual Relations of Diabetes and Pregnancy. (Zusammenhang und Schwangerschaft in ihren Wechselbeziehungen.)** H. Offergeld.  
64 **Ovarian Pregnancy Terminating in Formation of Lithopedion. (Ausgetragene Ovarialschwangerschaft mit Ausgang in Lithokelyphopädiobildung.)** W. Weibel.  
65 **Spontaneous Childbirth with Narrow Pelvis. (Zur Spontangeburt bei engem Becken, und zu Baisch, Reformen in der Therapie des engen Beckens.)** T. Lelawitz.

58. **Duodenal Occlusion Curable by Posture.**—Rosenthal adds two more to the few cases on record in which menacing post-operative ileus was arrested as if by magic by turning the patient on his stomach. The occlusion is the result of traction on the mesentery of the small intestine, which drags down with it the superior mesenteric artery as it crosses over the duodenum. The probable mechanism of the occlusion is discussed in detail and a number of cases from the literature are summarized in which a retrospective diagnosis of this trouble can be made. The case reported throws unusual light on the mechanism of the condition, confirming the secondary nature of the dilatation of the stomach as also the magical efficacy of assuming the prone position. The first symptom with

occlusion of the duodenum from this cause is intense thirst. The fluid excreted by the stomach in such large amounts can not be passed along into the intestine to be reabsorbed, on account of the high occlusion of the duodenum. For this reason the thirst is more extreme than with ileus from other causes. Then comes vomiting, sometimes recurring every five minutes, at other times with intervals of four or five hours or more. A characteristic feature is that large amounts are vomited while the stomach keeps constantly full of fluid. The vomit is first yellow, then greenish, then dark green and finally almost black. This of itself suggests occlusion below the papilla. When the stomach keeps constantly filling up again with the bile-impregnated fluid there must be either stenosis of the duodenum below the papilla or some abnormal communication between the stomach and the bile passages. The vomit smells sour, never feculent. Hydrochloric acid can not be detected, but pancreatic juice is always to be found in the stomach when it contains bile unless the pancreas functioning is deranged or its outlet is occluded. The temperature remains normal until the autointoxication increases. The pulse is accelerated and small, but this is from the frequent vomiting—referable to irritation of the vagus. Clay-colored stools and flatus pass under the influence of enemas. The urine is reduced in amount and contains exceptional proportions of indican. The abdomen is generally distended in the epigastrium, but elsewhere is normal until the dilatation of the stomach increases. Sometimes the abdomen is retracted; it is not tender anywhere except in the epigastrium, and there only to a slight extent. The general condition grows rapidly grave. The patient feels weak and depressed from the frequent vomiting and tormented by the intense thirst which is only transiently relieved by saline infusion. The eyes are sunken, the tongue dry, the skin gray and flabby—the whole body showing the effects of the lack of water. The immediate recovery when the patient is turned on his stomach has never failed when the condition was differentiated in time and proper treatment applied. In some cases on record the patients recovered after lavage of the stomach and raising the pelvis—the relief probably being due to subsidence of traction on the mesentery as the pelvis was raised. If lavage of the stomach is undertaken it might be wise to pour some castor oil into the stomach to promote recovery by increasing peristalsis. If the prone position brings no relief, Rosenthal advises before resorting to another laparotomy to place the patient across the bed, in the knee-chest position, and try to manipulate the small intestine so as to release it from the small pelvis. If this can not be done the abdomen must be opened and the root of the mesentery loosened. The suggestion has been made that some of the loops of the small intestine might be fastened to prevent the intestine's slipping down again into the small pelvis. Albrecht's method of shutting off the small pelvis from the abdominal cavity might also prove useful, or tamponing. As a last resort, gastroenterostomy may be necessary, but none of the patients thus treated recovered.

59. **Hemolytic Streptococci in Puerperal Infection.**—Heyemann endorses the great practical value of discovery of hemolytic properties in the streptococci in puerperal infection as a sign of extra virulence on the part of the germs. The non-hemolytic streptococci were found only in the cases of milder infection, in his experience. A single examination of the streptococci found in the vaginal and uterine secretions is thus liable to solve the question as to the seriousness of the infection observed, and thus afford indications for treatment.

63. **Diabetes and Pregnancy.**—Offergeld reports two cases of pregnancy in diabetic women. One of the patients succumbed during delivery; the other passed through the childbirth without much disturbance. He has been able to collect from the literature 63 cases of pregnancy occurring in diabetics or of diabetes developing in the course of a pregnancy, which he tabulates for comparison. Of the 57 women, 17 died in coma in connection with the pregnancy, and 14 of the others succumbed in the following thirty months, while nothing is known of the later history of 29 women who survived the pregnancy. The total mortality is thus at least 50 per cent. in thirty months; and the mortality of the children is still



higher, over 66.6 per cent. In the 25 cases in which the fetus had died, the death of the mother followed in 17 cases. On account of the occasional cases in which a diabetic woman seems to pass unscathed through the pregnancy, treatment must be strictly individualized. The indications are the same as outside of diabetes in regard to management of the pregnancy. In 10 of the total 63 cases hydramnios was observed, requiring artificial termination of the pregnancy in 4 cases. It is notable, however, that vicious presentations and postpartum hemorrhage were not often observed with the hydramnios under these conditions. The physician should be prepared to terminate the pregnancy at any moment if serious symptoms develop. Efforts must be made to counteract the chronic deficient nourishment in pregnancy and the consequent injury of the liver; this is best accomplished by interruption of the pregnancy, but if coma has already developed, it is too late, as a rule. In 3 of the cases on record the coma did not prove fatal and improvement followed, although transient. If delivery occurs during coma, it should be hastened in every way; the fetus succumbs inevitably if the mother has coma. It generally develops during or soon after the childbirth, and it is still an open question whether a carefully induced premature delivery is more of a strain on the woman's organism than delivery at term when the organism has been under the influence of the diabetes for the additional months. In any event, Offergeld concludes, the fear of eventual development of coma should not deter from inducing premature delivery if it is otherwise indicated. The entire 63 cases are summarized and analyzed from various points of view.

#### Archiv für Verdauungs-Krankheiten, Berlin.

August 12, XIV, No. 4, pp. 369-478.

- 66 \*Fistula Between Lung and Esophagus. (Lungen-Speiseröhren-fistein.) F. Pachnio.
- 67 Lack of Connection Between Proportion of Indican in the Urine and Indol in the Stools. (Mangel von Relation zwischen Harnindikan und Kotindol.) W. v. Moraczewski.
- 68 Three Cases of Benign Stenosis of Pylorus Simulating Gallstone Affections. (Fälle von Isochymie, Gallensteinerkrankung vortäuschend.) M. Elnhorn.
- 69 \*Standards for Proportions of Constituents of Normal Stools. (Zur Lehre von den Abführmitteln.) II. Ury.
- 70 \*Functional Stomach Tests in Diagnosis of Ulcers of Stomach. (Bedeutung der Magenfunktionsuntersuchung für die Diagnose des Ulcus ventriculi.) A. Borgbjärg. Commenced in No. 3.

66. **Fistula Between the Lung and Esophagus.**—Pachnio reports a case in which an old tuberculous process in the lung had caused morbid changes in the surrounding tissues which then healed; in healing the esophagus was involved in the cicatricial retraction and this resulted in the formation of a diverticulum. The process in the lung continued, with ultimate perforation of the cavity into the diverticulum. The case was distinguished by its exceptionally chronic course.

69. **Standards for Constituents of Normal Stools.**—Ury's article is the first of a series on the action of purgatives. This one treats of the secretions and residue of food in normal stools. It issues from the chemical laboratory of the Pathologic Institute at Berlin, in charge of Salkowski. The Schmidt test diet is the basis of the research, slightly simplified. The main features of this test diet are restriction to from 0.5 up to 1.5 liters of milk; 100 gm. white bread (rolls, zwieback or crackers); from 100 to 200 gm. potato soup, and a quarter of a pound of chopped beef, of which part, at least, is raw or nearly raw. It is not necessary to measure the amount of butter, sugar, oatmeal, coffee or wine. The test diet thus modified is not difficult to enforce, and it is sufficiently uniform for purposes of research on the stools. The results of the research reported show that aqueous extraction of the normal stools allows only secretions to pass into the filtrate. The articles of food which the digestive processes have dissolved are absorbed to the last particle, with the consequence that none of these dissolved substances passes into the filtrate. He tabulates the averages of the findings from repeated tests on five normal subjects, and gives the average of the five as standards which can be used for comparison with pathologic conditions. The standards for the aqueous extract of 100 grams of absolutely dried solids are: 14.784 dried solids; 1.0483 nitrogen; 4.552 ash; 0.3944 calcium; 0.10249 chlorine;

0.0293 sulphuric acid; 3.3586 potassium chlorid plus sodium chlorid.

70. **Functional Tests for Diagnosis of Gastric Ulcer.**—Borgbjärg announces the following as the conclusions of extensive research: 1. Microscopic stagnation twelve hours after a test supper is decided evidence of the presence of an organic stomach trouble; as a rule, it is an ulcer (or carcinoma), but it may be chronic gastritis. 2. If with this stagnation of microscopic nature there is secretion of hydrochloric acid in the fasting stomach, the presence of an ulcer is still more probable. 3. If with continuous hypersecretion and microscopic stagnation there is a macroscopic stagnation—even very slight or occurring only at intervals, or if there is insufficiency of the first degree (atony), an ulcer is certainly present. 4. Continuous hypersecretion is strong evidence of the presence of a gastric ulcer. As this is almost invariably accompanied with microscopic stagnation, it will seldom be found necessary to base the diagnosis of gastric ulcer on the hypersecretion alone. The presence of a hydrochloric secretion in the fasting stomach—even in very small amounts—should always direct attention to the stomach, and if other symptoms point to the stomach, the hypersecretion indicates that these gastric disturbances are due to gastric ulcer. He believes that atony of the stomach is not an idiopathic trouble of nervous origin, but that it is usually or possibly always—like ectasia—a symptom of organic trouble, and most frequently of an ulcer. The atony may lead to ectasia, but as a rule atony is found with an ulcer located outside the pylorus, while ectasia is observed with ulcer at the pylorus. The ulcer in the pylorus is usually circular or semicircular, and, as it heals, the cicatricial retraction draws up the lumen of the pylorus. Not every ulcer is accompanied by ectasia or atony. With the ulcer at the pylorus, the musculature of the antrum may be vigorous enough to force the chyme through the partially obstructed pylorus. If the ulcer is in the antrum, the musculature suffers and atony results, but, as the pylorus is intact, the stomach empties itself and dilatation does not follow. When the ulcer involves both antrum and pylorus, even if the stenosis is but slight, there may be great insufficiency as the expelling force is enfeebled. If an ulcer in the antrum spreads to the pylorus, the atony may be followed by ectasia. He adds that as continuous hypersecretion is frequently referable to an ulcer, so alimentary and digestive hypersecretion may be produced by an ulcer—the continuous hypersecretion may be merely a long-continued digestive hypersecretion. He is convinced that digestive hypersecretion is a symptom of ulcer. Whether or not it may come from other causes is a question to be decided by future researches.

#### Beiträge zur klinischen Chirurgie, Tübingen.

July, LIX, No. 1, pp. 1-234.

- 71 \*Hydatid Disease in Long Bones. (Echinokokken der langen Röhrenknochen.) A. Reich.
- 72 \*Tuberculous Pyonephrosis without Outward Manifestations. (Geschlossene tuberkulöse Pyonephrose.) R. Krauss.
- 73 \*Primary Tuberculosis of Mesenteric Glands. (Primäre Tuberkulose der mesenterialen Lymphdrüsen.) H. Mächtle.
- 74 \*Spondylitic Abscesses in Posterior Mediastinum. E. Finckh.
- 75 Apparatus to Collect Urine After Operations on Bladder. (Nachbehandlung der suprapubischen Cystotomie.) Id.
- 76 \*True Fractures of Neck of Femur in the Young. (Echte Schenkelalsfrakturen im kindlichen und jugendlichen Alter.) O. Haldenwang.
- 77 \*Injuries of Ankle Region, Especially of Scaphoid Bone. (Verletzungen im Bereiche der Fusswurzelknochen mit besonderer Berücksichtigung des Os naviculare.) H. Finsterer.
- 78 \*Traumatic Abscesses of Anterior Mediastinum. G. v. Saar.
- 79 Cases and Treatment of Diverticula of Male Urethra. (Divertikel der männlichen Harnröhre.) Ehrlich.
- 80 Plastic Operations on Penis to Remedy Congenital Adherence of Prepuce. (Posthioplastik bei kongenitaler Verwachsung von Vorhaut und Eichel.) E. Streissler.
- 81 Isolated Fracture of Scaphoid Bone. (Isolierte Fraktur des Os naviculare tarsi.) A. Hoffmann.
- 82 Tetany with Chronic Dilatation of the Stomach. (Tetanien bei chronischer Dilatatio ventriculi.) F. Brucks.

71. **Echinococcus Affections of the Long Bones.**—Reich summarizes 31 cases of operative treatment of hydatid disease of the long bones, including an unpublished one from von Bruns' clinic. The humerus was the seat of the lesion in 12 cases, the tibia in 11, the femur in 5, and there was multiple localization in 3 cases. Of the total 31 patients, 26 were cured, 7 by mutilating operations. The outcome is not known in 2 other cases; 3 patients succumbed to septic complications.



**72. Tuberculous Pyonephrosis Without External Manifestations.**—Krauss' patient was a woman of 50 who applied for relief from a large tumor in one kidney. The urine was normal on repeated examination and there were no pains. On the assumption of hydronephrosis, the kidney was exposed, and the trouble was found to be a tuberculous process which had transformed most of the kidney into a sac larger than a man's head, with several chambers, with rigid walls, not adherent to its vicinity, and containing three or four quarts of fluid. The patient has been in perfect health since the nephrectomy and has gained 27 pounds during the six months.

**73. Primary Tuberculosis of the Mesenteric Glands.**—Mächtle's interest was attracted to this subject by a case in a young woman in von Bruns' service at Tübingen. He gives the details of 14 other cases of the kind, in which all the patients were cured by removal of the tuberculous glandular tumor. There was no involvement of the intestine in any of these cases. The first symptoms are attacks of pain, the further development of the tumor causing compression and various digestive disturbances, constipation, vomiting and diarrhea, with emaciation. Palpation reveals a movable, knobby, sensitive abdominal tumor, generally on the right side. This tumor can be separated from the other abdominal organs, and sometimes a stem leading downward into the depths can be recognized. Surgical intervention not only cures the trouble, but removes a dangerous focus from the organism.

**74. Spondylitic Abscess in the Posterior Mediastinum.**—Finckh's case shows the importance for differentiation of Roentgen-ray examination in such cases.

**76. True Fracture of the Neck of the Femur in the Young.**—Haldenwang reviews 25 cases, including two personally observed. This fracture is rare under the age of 10. He reviews this material in detail, pointing out that consolidation generally occurs, and that appropriate treatment of the still recent fracture gives good prospect of healing in normal position; otherwise coxa vara almost invariably results.

**77. Injuries in the Region of the Ankle.**—Finsterer discusses this subject and gives examples of the various forms of injury and the methods of treatment followed according as the different bones in the region are more or less involved in the injury.

**78. Traumatic Abscesses of the Anterior Mediastinum.**—Saar tabulates the particulars of nine cases, including one from his own experience. The prognosis of this traumatic abscess is always grave; the outcome depends materially on energetic surgical intervention at the right moment. The diagnosis is sometimes difficult; considerable edema of the anterior wall of the chest and the disturbances in breathing are the most reliable symptoms. Treatment should include resection of some of the costal cartilages or part of the sternum, with copious drainage, if possible with the patient lying prone.

**Berliner klinische Wochenschrift.**

August 24, XLV, No. 34, pp. 1557-1592.

- 83 \*Relations Between Congenital Muscular Defects, Infantile Disintegration of the Nuclei and Progressive Infantile Dystrophy of the Muscles. (Beziehungen zwischen angeborenen Muskeldefekten, infantilem Kernschwund und Dystrophia muscularis progressiva infantilis.) Ziehen.
- 84 Two Cases of Multiple Encephalitis with Meningococcus Meningitis. Maschke.
- 85 Multiple Peritoneal Pseudometastases of an Ovarian Dermoid. E. Melchior.
- 86 Ocular Tuberculin Reaction. (Weitere Ergebnisse der Conjunctivalreaktion auf Tuberkulose.) R. Fabian and H. Knopf.
- 87 Deviation of Complement in Scarlet Fever. (Komplement ablenkung bei Scarlatina.) H. Boas and G. Hauge.
- 88 \*Simplification of Jakoby-Solms Method for Determination of Pepsin. (Vereinfachung der Jakoby-Solmschen Ricinmethode der Pepsinbestimmung.) M. Einhorn.
- 89 Corporal Punishment in the Schools from Neurologic Stand point. (Körperliche Strafen in der Schule.) E. Forster.

**83. Relations Between Congenital and Acquired Muscle Defects.**—Ziehen discusses this question in connection with a patient of 18 with congenital ophthalmoplegia, hypoglossal and facial paralysis, and absence of the pectoral muscle on the left side. He distinguishes between the group of congenital atrophic paralyses or defects and the group of atrophic paralyses which develop on a congenital predisposed soil. This group includes infantile progressive bulbar paralysis and mus-

cular dystrophy. The two groups are distinguished by the non-progressive course of the purely congenital cases. The stationary course is noticeable, even in cases of congenital paralyses in inherited syphilis. He remarks in conclusion that injury from a forceps delivery may possibly be the explanation of the congenital predisposition in certain cases. The case described shows the necessity for refraining from diagnosing infantile disintegration of the nuclei in such cases; they should be differentiated by the pathologic anatomic basis.

88. This article also appeared in the *Medical Record*, Aug. 29, 1908, and was abstracted in *THE JOURNAL*, Sept. 12, 1908, p. 944.

**Deutsche medizinische Wochenschrift, Berlin.**

August 20, XXXIV, No. 34, pp. 1457-1496.

- 90 Successful Treatment of Experimental Nagana. (Tsetsekrankheit.) F. Loeffler, K. Rühs and E. Walter.
- 91 Determination of Atoxyl in Urine, and Course of Its Elimination. (Nachweis und Gang der Ausscheidung des Atoxyls im Harn.) G. Lockemann and M. Paucke.
- 92 Present Status of Pneumococcus Serum Treatment of Infecting Corneal Ulcer. (Gegenwärtige Stand der Pneumococcenserumtherapie des Ulcus serpens.) P. Römer.
- 93 \*Operative Treatment of Hydrocephalus. Heile.
- 94 Relative Eupraxia with Right Hemiplegia. (Relative Eupraxie bei Rechtsgelähmten.) Liepmann.
- 95 \*Funnel-Shaped Hystereurynter. (Erweiterung des unteren Uterinabschnittes durch einen neuen, verbesserten Konkav-Metreynter.) N. J. Maery.

**93. Treatment of Hydrocephalus.**—Heile has noticed that the iodids were better tolerated in the treatment of hydrocephalus when their administration was preceded by puncture of the ventricle. The effects of single or repeated spinal or ventricular puncture were much better when supplemented with as large doses of potassium iodid internally as possible. The benefit from permanent drainage in many cases rebellious to puncture has led him to attempt to relieve the compression in the skull from the excess of fluid by diverting it elsewhere, especially from the spinal canal into the abdominal cavity. This technic he has applied in one clinical case with promising results. Of course it is applicable only when there is free communication between the ventricle and the spinal canal. If the foramen of Magendie is obstructed by the results of inflammation this technic is useless. His patient was a child about a year old from whom a spina bifida had been removed two days after birth. He cut a flap on one side of the old scar and drew up a loop of the large intestine. He then incised the dural sac and sutured the serosa of the bowel to the dura; this connected directly the peritoneum and dura, close to the intact spine. The pelvis was then raised and the spinal sac compressed to prevent too rapid flow of the cerebrospinal fluid during the operation. An illustration shows the exact technic of the direct serosa communication between the peritoneum and dura. The skin flap was replaced and sutured and in the course of the day the circumference of the head grew 3 cm. smaller—similar to the effect after withdrawal of large amounts of fluid by puncture. The child was doing well, the pulse good, but the attendant after 20 hours inadvertently made the child sit up, and the sudden change from the previous position with the pelvis very high caused such a flow of fluid that the child succumbed at once. Heile says that in another case of the kind he would never withdraw more than 40 or 50 c.c. at a time by puncture, preferring to repeat the puncture more frequently. In this case he drew each time from 70 to 80 c.c., and he is convinced that this contributed to the debility of the child, from the excessive loss of albumin. His experience on the cadaver has shown that access to the spinal canal is best attained by resection of the coccyx and two lower vertebrae. The peritoneum in the cul-de-sac of Douglas is then opened, and the serosa of the peritoneum sutured to the dura, thus providing a serous passage by which the fluid can be diverted into the abdominal cavity. This latter technic avoids danger of injury of important nerves, vessels and organs, as there is nothing of the kind near the coccyx, while the peritoneum is most readily reached at this point, and is opened as for an operation on the rectum.

**95. Funnel Hystereurynter.**—Maery uses a funnel-shaped hystereurynter into which the child's head slides along the lines of least resistance. It can not slide out again on either side. The article is illustrated.



## Jahrbuch für Kinderheilkunde, Berlin.

August, LXVIII, No. 2, pp. 131-260.

- 96 \*Daily Variations in Body Temperature in Healthy and Sick Infants. (Tagesschwankungen der Körpertemperatur beim gesunden und beim kranken Säugling.) F. Gofferje.
- 97 Pepsin in Infant Stomach and Dependence of Its Digesting Power on Presence of Hydrochloric Acid. (Vorhandensein von Pepsin im Magen des Säuglings und die Abhängigkeit seiner verdauenden Kraft von der Anwesenheit von Salzsäure.) W. Reeve-Ramsay.
- 98 Orthodiagraphic Study of Heart in School Children. (Orthodiagraphische Herzuntersuchungen bei Kindern im schulpflichtigen Alter.) A. Veith.

96. **Daily Variations in Temperature in Infants.**—Gofferje has made a study of the temperature in healthy and sick infants. It keeps on a high level plane from 6 a. m. to 6 p. m., with a corresponding low level plane at night, from 10 p. m. to 4 a. m. To be truly instructive, the temperature should be recorded uniformly at 2 and 10 a. m. and at 6 p. m. The difference between the day and night plateaux was more marked in the older children, but no difference could be detected between breast children and others thriving on artificial feeding. The temperature in the axilla is that of the muscles, and is an index of the innervations of the muscles. From the record of the temperature taken in the axilla it is easy to tell just when the infant awoke, when he lay quietly, and when he cried. As the child wakes and grows lively the temperature rises, reaching its height about 10 a. m. The curve drops a little at each nap, and rises above the level at each crying spell. Febrile conditions affect the daily variations in three typical ways. The most frequent type is that in which the night reduction does not occur at all or occurs tardily, and there are occasional peaks rising above the normal diurnal plane. This is the type in dyspeptic disturbances; in severe alimentary intoxication this type is most pronounced. The peaks become sharper and more frequent, but there is no difference between the day and night levels, merely the irregular zigzag of the temperature, amounting to actual delirium of the temperature in the severest form of intestinal catarrh. This type is also observed in serum diseases. Curves are given from various affections of this and the other types, all confirming the diagnostic importance of the daily variations in the temperature of infants. In one case, for example, the projecting peaks and the delay in the night decline were observed the second day after a prophylactic injection of diphtheria antitoxin. Nothing else indicated anything wrong; the child slept quietly, but in a day or two an exanthem developed, the peaks rose higher, and the temperature did not decline in the least at night. The onset of the serum sickness in this case was revealed early by the temperature curve long before it could be otherwise detected. The second type of changes in the curve in febrile conditions is that in which the temperature line runs night and day horizontal along the day level, or moves in waves with no connection with the normal daily variations. This type includes remittent and continuous fevers, and this change from the normal type may occur without the temperature surpassing the physiologic limits. When the temperature curve runs in a horizontal line at the level of the day plane this indicates the onset of a febrile condition. In his experience this was always the premonitor of an infectious affection. He calls it *febris continua sine elevatione*. In the beginning of this research the attendants thought something was wrong with the thermometer when the infant was found sleeping quietly at night but with temperature still at the day level, although other conditions seemed to be entirely normal. In a day or so symptoms developed in every such case showing that the absence of the usual night drop was the result of the incipient morbid process. The absence of the nocturnal decline is one element of the febrile syndrome; it seems to be the first phase of continuous fever. In estimating the tuberculin reaction, this lack of the nocturnal drop in the temperature must be regarded as the equivalent of fever. The third type of disturbance in the daily variation of temperature is quite rare: The daily variations persist, but they are very much exaggerated both upward and downward. It must be borne in mind, he adds, that the glandular organs in infants represent about 6.4 per cent. of the total weight, against 3.8 per cent. in adults, while the muscles represent only 25 per cent., against 4.3 per cent. in adults.

## Medizinische Klinik, Berlin.

August 16, IV, No. 33, pp. 1257-1292.

- 99 \*Operative Mobilization of Chest Wall and Lung in Treatment of Unilateral Pulmonary Phthisis. (Pneumolysis zwecks Behandlung einseitiger Lungenphthise.) P. L. Friedrich.
- 100 Cerebrospinal Meningitis. L. Cohn.
- 101 \*Hereditary Occurrence of Exophthalmic Goiter. (Zum erblichen Auftreten der Basedowschen Krankheit.) J. Grober.
- 102 Lumbar Puncture in Psychiatric Diagnosis. F. Chotzen. Commenced in No. 32.
- 103 Retrograde Incarceration of Intestines. (Weiterer Beitrag zur Kenntnis der retrograden Darminkarzeration.) E. Heller.
- 104 Relations Between Chronic Atrophic Rhinitis and Diphtheria. L. Wolff.
- 105 Pyocyanase in Ozena. Id.
- 106 Composition and Importance of Horny Substances. (Zusammensetzung und die Bedeutung der Hornsubstanzen.) P. G. Unna.
- August 23, No. 34, pp. 1293-1328.
- 107 Paratyphoid and Similar Affections in Children. W. Knoepfelmacher.
- 108 Abdominal Contusions. (Offene und subkutane Verletzungen der Bauchorgane.) R. Lampe.
- 109 Lupus Erythematosus and Tuberculids in General. S. Ehrmann and S. Rehn.
- 110 Color Photography for Stereoscopic Work. (Farbige, stereoskopische Photographie.) Kudlek.
- 111 Effectual Balneologic Courses. (Wirksame Badekuren.) H. Zikel.
- 112 Action of Aggressins. (Aggressinwirkung.) P. Ikonnikoff.

99. **Operative Treatment of Unilateral Pulmonary Phthisis.**—Friedrich shows how the operative measures previously in vogue have been based on mistaken premises. Puncture, aspiration of contents of cavities and resection of the lung tissue and even general treatment all fail to realize the best effect because the walls of the cavities are rigid and distended. The mechanical conditions of the cavities interpose resistance to the healing process. Study of spontaneous healing of cavities in children shows that the cavity shrinks and the lung shrivels, and with this the pleural cavity contracts and the chest sinks in. In children, thus, every change in shape and size of the lungs brings a corresponding change in the shape of the pleural cavity and possibly of the chest. By cutting away all the ribs over the lung, with the tough muscles, the chest wall becomes soft and yielding; Nature's method of healing is imitated and promoted. The aim is to allow the affected lung to be compressed toward the hilus without the development of pneumothorax. Friedrich proposes the term "pneumolysis" for this technic, and relates promising results from it in the hands of Brauer, Frey, Spengler, Turban and von Muralt. The patients were all between the ages of 19 and 45, with predominant unilateral processes constantly progressing, under observation for years, refractory to all medicinal and climatic therapy. Nearly all had been in a febrile state for weeks or months. All expectorated from 120 to 200 or more c.c. sputum containing bacilli. As the aim was to mobilize the wall to the utmost possible extent, the ribs were cut away from their cartilage to the spine—removing the second to tenth ribs inclusive, refraining from the slightest injury of the costal pleura. About 200 cm. of ribs are thus resected in from 20 to 25 minutes, and with them the entire intercostal musculature, nerves and vessels. The anesthesia must be induced with the smallest possible amount of the drug, and the position during the operation must counteract any tendency to aspiration from the diseased into the still sound lung. The only trouble is from the mechanical influence on the heart from the flooding of the pulmonary artery with blood as the conditions of the circulation in the lungs undergo such marked changes. The fever subsides almost at once. In less than ten weeks the sputum drops from 200 to 20 or 5 c.c., the cough subsides, and the patient increases in weight. Friedrich does not hesitate to maintain that pneumolysis should be given a trial in all cases of severe progressing unilateral pulmonary phthisis with tolerable general condition. It may yield gratifying results. Afterward, internal, dietetic and climatic therapy should be resumed with renewed energy.

101. **Hereditary Exophthalmic Goiter.**—Grober reports three cases in the same family, a brother and sisters in the 50's and a niece of 25. The family history showed that the older patients had apparently healthy parents, but an uncle and his son had diabetes. They had further two healthy brothers, but the children of one brother included the niece with exophthalmic goiter and one epileptic, while four died young. Grober comments that there seems to be in such cases hereditary



transmission of a general constitutional weakness with a predisposition to develop certain allied affections. He draws the comforting conclusion that by casual or conscious avoidance of certain factors it is possible for the members of such tainted families to escape the effects of their inherited tendency and to develop into healthy adults.

#### Monatsschrift für Geburtshilfe und Gynäkologie, Berlin.

August, XXVIII, No. 2, pp. 131-256.

- 113 Histologic Peculiarities of Vagina and Bladder During Pregnancy. (Histologische Besonderheiten von Vagina und Blase während der Gravidität.) J. Hofbauer.
- 114 Does the Weight of the Trunk Influence Shape of Pelvis? (Hat der Druck der Rumpfmast Einfluss auf die Formbildung des Beckens?) S. Bokofzer.
- 115 Abdominal Pregnancy. (Bauchhöhlenschwangerschaft.) A. Jarzeff.
- 116 Axial Torsion of Large Intestine in Relation to Pregnancy and Childbirth. (Achsendrehung des Dickdarms in Beziehung zu Schwangerschaft und Geburt.) G. Becker.
- 117 Case of Typhoid Suppuration of Ovarian Tumor. (Typhus-vereiterung des Ovarialtumors.) H. Gans.
- 118 Missed Abortion. B. Rosinski.

118. **Missed Abortion.**—Rosinski is convinced that the retention of the dead fetus has a decidedly injurious effect on the general health of the woman, and cites two cases from his experience to sustain this view. Both of his cases seem to demonstrate the necessity for prompt evacuation of the uterus before injury to the maternal organism results. His patients presented extreme anemia with albuminuria and some edema. The effect on the uterus is especially bad, interfering with involution and impairing its future functional capacity.

#### Münchener medizinische Wochenschrift.

August 18, LV, No. 33, pp. 1721-1768.

- 119 \*Sterilization of Rubber Gloves. (Gummihandschühe.) A. Fiessler, Y. Iwase and A. Döderlein.
- 120 Clinical and Bacteriologic Study of Paratyphoid. (Paratyphus.) A. Bingel.
- 121 \*Full Directions for Technic of Serum Test for Syphilis. (Technik der Wassermann-Neisser-Bruckschen Serodiagnostik der Syphilis.) K. Taege.
- 122 \*General Anesthesia and Lecithin. J. Nerking.
- 123 Roentgen-Ray Tests of Stomach Motor Functioning. (Magenmotilitätsprüfungen mit Hilfe der Röntgenstrahlen.) C. Kaestle.
- 124 Modification of Kocher's Hernia Operation. (Modifikation der Verlagerungsmethode bei der Kocherschen Bruchoperation.) H. Takata.
- 125 Local Anesthesia for Operations on Inguinal and Femoral Hernias. (Operation von Leisten- und Schenkelhernien in lokaler Anästhesie.) A. Nast-Kolb.
- 126 Technic of Walking Casts. (Technik der Gehgipsverbände.) J. Fränkel.
- 127 \*Minor Points to Improve Schultze's Swinging. (Kleine Verbesserungen der Schultzeschen Schwingungen.) R. Ziegenspeck.
- 128 Boric-Acid Treatment of Otitis Media. (Borsäurebehandlung bei Mittelohreiterungen.) R. Dolger.
- 129 Eye Affection from Artificial Fertilizer. (Augenerkrankung mit einem künstlichen Düngemittel.) R. Hessberg.
- 130 Treatment of Cicatricial Contracture of Hand. (Therapie der Narbenkontraktur der Hand.) K. Vogel.

119. **Practical Technic for Sterilization of Rubber Gloves.**—The great drawback to the use of rubber gloves is that they do not bear boiling or steam sterilization without injury. In this communication from Döderlein's clinics at Tübingen and Munich it is asserted that the damage results merely from absorption of the moisture, and that it can be remedied by expelling the moisture from the rubber. This is accomplished by heating the gloves until they are thoroughly dry throughout. The gloves must not touch each other, but lie spread out on one of a set of wire netting trays. A further improvement is that the gloves after the steam sterilization are dipped, still wet, in a 20 per cent. suspension of talcum powder in alcohol. Each is then held up to drain and laid flat in the drying box through which hot air at 75 C. (167 F.) is passed for about 45 minutes. When taken out they are found covered with a thin, even coating of the talcum powder inside and out.

121. **Technic of Serum Diagnosis of Syphilis.**—Taege has been studying the details of this technic at Neisser's clinic, and gives it here with all the minor points. The articles necessary are enumerated as follows: meat-grinding machine to prepare the liver; ice chest; vacuum apparatus to concentrate the fluid by heat; a vibrating apparatus for washing out the blood corpuscles and for distributing the antigen through the salt solution; centrifuge; animal board; incubator, and the reagent and graduated glasses, pipettes, water bath, boiling pot, platinum needle and cage for the animals.

122. **Anesthesia and Lecithin.**—Nerking reviews research which seems to show that anesthetics are taken up by the lipoids, and especially by the lecithin, of the central nervous system and form a stable solution with them. According to this theory an anesthetic acts more vigorously the greater its solubility in the lipoids. The stable combination of the anesthetic with the lipoids of the central nervous system is what induces the anesthesia. He has found that if lecithin is supplied from without, after general anesthesia has been induced, the anesthetic can be attracted out of its combination with the lipoids of the central nervous system. Experiments with animals have constantly demonstrated that the anesthesia can be shortened or suspended altogether if a suspension of lecithin is injected intravenously soon after the animal has come under the influence of the anesthetic.

127. **Schultze's Swinging.**—Ziegenspeck does not approve of the Ogata or Schröder technic as he has witnessed a case of rupture of the liver afterward. The main advantage of Schultze's swinging is that the gravitation of the liver causes artificial respiration not only of the costal, but also of the abdominal and diaphragmatic type. He suggests, as a further improvement, to take the head between the two little fingers and let the body hang down before seizing the shoulder and chest of the child with the fingers according to Schultze's directions. This insures that the trachea and spine run parallel before the swinging is begun. He also stops the upward swing below the level of the chest, not at head level, and completes this movement, very gently, with a forward movement at an angle of 45 degrees with the horizon, so that the abdomen is bent over gently. Before proceeding from this gentle movement to the forcible downward movement, he makes a brief pause, allowing a slight rest before starting the vigorous downward movement.

#### Wiener klinische Wochenschrift.

August 20, XXI, No. 34, pp. 1203-1230.

- 131 Proportion of Tubercle Bacilli in Commercial Milk and Dairy Products at Leipsic. (Tuberkelbazillengehalt der in Leipzig zum Verkauf kommenden Milch und Molkereiprodukte.) A. Eber.
- 132 Theories of Origin of Senile Cataract. (Entstehung der Alterskatarakt.) R. Possek.
- 133 Pulsating Vessels in the Throat. (Befunde von pulsierenden Gefässen im Rachen.) S. Tenzer.
- 134 \*Examination of the Blood in Various Peripheral Vascular Provinces, with Circulatory Disturbances. (Blutuntersuchung in verschiedenen peripheren Gefässprovinzen bei Zirkulationsstörung.) M. Krämer.

134. **Examination of Blood at the Periphery.**—Krämer gives the findings in the blood drawn from the ear, finger and toe of a number of bedridden patients with various circulatory disturbances. In case of defective circulation there is generally an accumulation of red corpuscles in the blood from the toe. The specific gravity of the toe blood is also increased. This difference between blood from the toe and from the ear is a sign of insufficient heart action.

#### Zentralblatt für Gynäkologie, Leipsic.

August 22, XXXII, No. 34, pp. 1113-1136.

- 135 L. Goth's Technic for Treatment of Postpartum Hemorrhage from Atony of Uterus. (Neuer Handgriff zur Behandlung der atonischen Nachblutungen.) G. Zickel.
- 136 \*Simple Technic for Management of Delivery After Vaginofixation. E. Schroeder.
- 137 Circular Laceration of Vagina. (Zirkulärer Abriss der Vagina am Introitus.) A. Weischer.

August 29, No. 35, pp. 1137-1168.

- 138 Cure of Insufficiency of Bladder Sphincter by Drawing Forward the Uterus. (Beseitigung einer Insuffizienz des Sphincter vesicae durch Verlagerung des Uterus.) E. Schroeder.
- 139 \*The Curette and Treatment of Abortion. F. Engelmann.
- 140 Transplantation of Epithelium of the Vagina to Cure Erosions in the Portio Vaginalis. (Transplantation des Scheidenepithels als neues Verfahren zur Heilung der Erosionen der Portio vaginalis.) V. Frommer.

136. **Management of Childbirth After Vaginofixation.**—Schroeder relates that he has carried four women through a confinement after a low vaginofixation of the uterus without isolated suture of the peritoneum. Another woman who had had three abortions before the fixation, aborted again afterward. In the other cases delivery proceeded naturally. In one there was transverse presentation, requiring version and



extraction. In another case the external os had receded during labor to a point behind and above the promontory. He introduced half of his hand into the uterus past the internal os and exerted gentle traction forward and downward. This brought the cervix and lower segment of the uterus and the child's head down into the pelvis with surprising ease.

**139. The Curette in Treatment of Abortion.**—Engelmann has been trying to ascertain how extensively the curette is used by general practitioners in treatment of abortion in the first months of pregnancy. He sent a question blank to 80 physicians in and around his city, Dortmund, and received replies which showed that 54 colleagues had had 1,500 cases of abortion in their charge during the year, and that 37 used the curette unconditionally and 9 under certain conditions. Only 7 refuse to use it under any circumstances. These groups do not include specialists, and the physicians who reported the largest number of cases of abortion are the ones who are unconditional advocates of the curette. These findings show, he says, that the curette evidently does not deserve the wholesale denunciation poured on it by certain writers.

#### Grèce Médicale, Syra.

July 15, X, Nos. 13-14, pp. 25-28.

141 Malaria in Greece During 1907, and Work of Antimalaria League. C. Savas. Commenced in No. 11.

#### Policlinico, Rome.

August 23, XV, Practical Section, No. 34, pp. 1061-1092.

142 Morphology of Bacilli of Malta Fever. A. Amato.

August, Surgical Section, No. 8, pp. 329-376.

143 \*Pseudotuberculous Peritonitis from Relics of Vegetables. R. Alessandri.

144 \*Experimental Pericardiectomy and Its Possible Therapeutic Application. G. Parlavecchio.

145 \*Suppurative Pancreatitis. M. Fasano.

**143. Pseudotuberculosis of the Peritoneum.**—Alessandri reviews ten cases from the literature in which tubercles were found on the peritoneum, and tuberculous peritonitis was diagnosed, but the microscope showed that the tubercles were merely the local reaction to the eggs of parasites or to foreign bodies. In four other cases the pseudotuberculosis was the result of a local reaction to small fragments of vegetable residue escaping into the peritoneum. He reports a case, from his own experience, in a woman of 26 with digestive disturbances for some years. Symptoms finally developed suggesting abdominal mischief, and on the assumption of adhesions the abdomen was opened. The stomach, omentum and liver were found studded with tubercles, with the greater number around a point in the stomach wall where there were traces of a healed ulcer. The adhesions were detached and the abdomen was sutured. Diagnosis was made of tuberculous peritonitis. Microscopic examination of two or three scraps excised from a tubercle showed that it consisted of giant cells with particles of vegetable cells, giving the starch reaction, with no traces of tuberculosis. The vegetable residue had probably escaped from the stomach through the ulcer and had induced the local reaction. The patient has been in the best of health since.

**144. Experimental Pericardiectomy.**—Parlavecchio has been conducting considerable experimental research on the question whether or not pericardiectomy could ever have a therapeutic application. A number of cases are on record of congenital absence of the pericardium, and in most of these, which he summarizes, there were no disturbances calling attention to its absence, which was an autopsy surprise. There were circulatory disturbances in a few, but the prognosis of this defect seems to be good when the thoracic organs are normal. Experiments on ten dogs showed that pericardiectomy is an operation on about the same plane as splenectomy or partial thyroidectomy. It should be regarded only as a last resort, but under these conditions it has good prospects of success. Broad resection of the pericardium may, therefore, be considered in cancer of the adjoining organs or in chronic pericarditis resisting conservative measures. The pericardiectomy would leave a defect which might favor infection of the pleura, but pleurisy is much easier to cure than pericarditis, and it is the lesser of two evils. The Rydygier technic gives ample access. He does not try to avoid sacrificing the left phrenic nerve, having found that the functions of the dia-

phragm do not suffer by its removal, while its retention might result in dangerous adhesion of the nerve to the heart. The technic should be dominated by the necessity of avoiding injury of the auricles and large vessels and to refrain from touching the right wall of the pericardium, for fear of injuring the phrenic nerve or the other pleura, which would be liable to entail paralysis of the diaphragm or bilateral pneumothorax. In none of his dogs were the adhesions after pericardiectomy very calamitous. The fewest adhesions were found in dogs with more extensive resection. Some of the dogs are in apparent good health to date, five or six months since the operation, although all grew thin at first and the left ventricle became hypertrophied.

**145. Suppurative Pancreatitis.**—Fasano's patient was a girl of 13. An operation was performed as the last resort, but the advanced autointoxication, stereoremia and complete paralysis of the intestine rendered the intervention futile. The syndrome presented is studied from the differentiating point of view, with analysis of the corresponding literature.

#### Sei-I-Kwai Medical Journal, Tokyo.

July 31, XXX, No. 7, pp. 305-314.

146 \*The Extirpation of Bugs. R. Oka. Commenced in No. 6.

**146. Extermination of Vermin.**—Oka's report deals mainly with vermin in barraeks, and describes numerous methods of extermination practiced. None was found entirely satisfactory, but the best results seemed to follow pouring a 15 per cent. solution of caustic soda into the crevices from the spout of a teapot. Referring to the bites, Oka says that when the region swells or itches, sucking the region stung for 25 or 30 minutes, will give relief and cure if repeated once or twice.

## Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

**ANATOMY, DESCRIPTIVE AND SURGICAL.** By Henry Gray, F.R.S., Lecturer on Anatomy at St. George's Hospital Medical College, London. 17th Edition. Revised and Re-edited with additions by John Chalmers DaCosta, M.D., Professor of Principles of Surgery and of Clinical Surgery in Jefferson Medical College, Philadelphia, and Edward Anthony Spitzka, M.D., Professor of General Anatomy in Jefferson Medical College, Philadelphia. Cloth. Pp. 1614, with illustrations. Price, \$6.00. Philadelphia: Lea & Febiger, 1908.

**GYNECOLOGY AND ABDOMINAL SURGERY.** Edited by Howard A. Kelly, M.D., F.R.C.S. (Hon. Edin.), Professor of Gynecologic Surgery at Johns Hopkins University, Baltimore, and Charles P. Noble, M.D., S.D., Clinical Professor of Gynecology at the Woman's Medical College, Philadelphia. Cloth. Pp. 862, with illustrations. Price, \$8.00. Vol. II. Philadelphia: W. B. Saunders Co., 1908.

**GENERAL SURGERY.** By Ehrlich Lexer, M.D., Professor of Surgery, University of Berlin. Translated from Second German Edition by Dean Lewis, M.D., Instructor in Surgery, Rush Medical College. Edited by Arthur Dean Bevan, M.D., Professor of Surgery, Rush Medical College. Cloth. Pp. 1041, with illustrations. Price, \$6.00. New York: D. Appleton & Co., 1908.

**DISEASES OF THE SKIN AND THE ERUPTIVE FEVERS.** By Jay Frank Schamberg, A.B., M.D., Professor of Dermatology and Infectious Eruptive Diseases in Philadelphia Polyclinic and College for Graduates in Medicine. Cloth. Pp. 534, with illustrations. Price, \$3.00. Philadelphia: W. B. Saunders Co., 1908.

**THE ORIGIN AND PREVALENCE OF TYPHOID FEVER in the District of Columbia.** (1907.) Hygienic Laboratory Bulletin No. 44, May, 1908. Report No. 2. By M. J. Rosenau, L. L. Lumsden and Joseph H. Kastle. Paper. Pp. 63, with illustrations. Washington: Government Printing Office, 1908.

**FOURTH ANNUAL REPORT OF THE HENRY PHIPPS INSTITUTE for the Study, Treatment and Prevention of Tuberculosis.** Feb. 1, 1906, to Feb. 1, 1907. Edited by Joseph Walsh, A.M., M.D. Paper. Pp. 429, with illustrations. Philadelphia: Published by the Henry Phipps Institute, 1908.

**TEXT-BOOK OF HUMAN PHYSIOLOGY.** By George V. N. Dearborn, A.M. (Harv.) Ph.D., M.D. (Col.), Professor of Physiology in the Medical and Dental Schools of Tufts College, Boston. Cloth. Pp. 550, with illustrations. Price, \$4.00. Philadelphia: Lea & Febiger, 1908.

**TRANSACTIONS OF THE SOUTHERN SURGICAL GYNCOLOGICAL ASSOCIATION.** Vol. XX. Twentieth Session, Held at New Orleans, December, 1907. Edited by W. D. Haggard, M.D. Cloth. Pp. 570, with illustrations. Published by The Association, 1908.

**FURTHER STUDIES ON ANAPHYLAXIS.** Hygienic Laboratory Bulletin No. 45, June, 1908. By M. J. Rosenau and John F. Anderson. Paper. Pp. 61. Washington: Government Printing Office, 1908.



# PROGRESSIVE THERAPEUTICS

## THE THERAPEUTICS OF ORTHOFORM.

See description "New and Non-Official Remedies."

Bouveyron and Siraud<sup>1</sup> have been administering Orthoform in a total daily dose of two to three gms. (30 to 45 grs.), divided into four to six powders, with success against the essential headache of syphilis. Most frequently the smaller dose, namely, two gms. (30 grs.) in twenty-four hours, is sufficient to quiet all this rebellious pain. Usually a decrease takes place during the first night and after that the pain disappears entirely. In order to avoid recurrence it is necessary to continue the drug several days. The precise method of employing the drug necessitates distinction between continuous and intermittent headaches. For the intermittent headaches the best method is to take a powder containing 0.50 gm. (7½ grs.) of the drug about one hour before the expected time for the pain to appear, and two similar powders during the latter part of the night. For the continuous pain, four such powders should be given at regular intervals; for example, every six hours. Sometimes the ingestion of this drug provokes a sensation of heat or irritation in the stomach, which may be corrected by giving an equal quantity of sodium bicarbonate with each administration. On the other hand, Orthoform, when given internally, does not quiet in any degree dysphagia of syphilitics or other pains in the thorax, peritoniem or vital organs.

Dunbar Roy<sup>2</sup> details several cases of otitis media treated with Orthoform suspended in an oily menstruum. The mixture was warmed, shaken so as to thoroughly mix it, and the auditory canal half filled and the mixture allowed to remain, with the effect of entirely relieving pain. M. A. Reasoner<sup>3</sup> gives the history of a case of cystitis with enlarged prostate treated with Orthoform, injected into the bladder, suspended in water. One to four drams of a 1 per cent. solution of Orthoform was used once a day after washing out the bladder with hot boric acid solution. Bock used Orthoform as a dusting powder after operation in the nose, mixed with other substances, and secured perfect healing without the formation of pus and without pain, while Daniel found that the use of Orthoform allowed him to make endoscopic examinations of the urethra and cystoscopic examination of the bladder when the mucosa was highly sensitive, without pain or the unpleasant complications which frequently attend the use of cocaine.

August Luxenburger<sup>4</sup> has used Orthoform either pure or in combination with dermatol, zinc oxid, euophen, aristol, calomel, salicylic acid, etc., in bruised and cut hands and fingers, burns and scalds, ulcers—tubercular, running, traumatic, decubitic, trophic, and varicose; in chaneroid, carcinoma, ingrowing toe nails, fistula, amputations, tracheotomy, etc.

Three cases of stone in the bladder were treated with daily injections of 1 gm. Orthoform in sodium chlorid solution with excellent results. Tubercular cystitis was also benefited, but two cases of gonorrheal cystitis did not react. In only five of three hundred and thirty cases did local disturbances—vesicular or pustular eczema—occur in the neighborhood of the wound.

G. Spiess<sup>5</sup> believes that the laryngeal spasms of whooping-cough are due to irritation of the peripheral endings of the sensory nerves of the larynx, and has found that they can be obviated by anesthetization or rather hyperesthetization of the laryngeal mucous membrane by means of insufflations of Orthoform.

G. Spiess<sup>6</sup> recommends the pure powder or equal parts of it and bismuth subnitrate to alleviate and shorten the course of acute coryza; the powder is blown into the naso-pharynx several times a day.

B. Frankel, in *Berliner klin. Wochenschr.*, April 15, 1901, speaks of the use of Orthoform as a local anesthetic to be ap-

plied to the nose in reflex neuroses, such as asthma and hay fever.

P. S. Donnellan<sup>7</sup> says in speaking of laryngeal tuberculosis: "I have found Orthoform applied by means of a powder blower to ulcers with exposed nerve endings very useful in relieving dysphagia."

John Sendziak<sup>8</sup> states that in tuberculosis of the larynx Orthoform not only acts as an antiseptic and analgesic, but that it seems to act favorably upon the condition itself.

Edward W. Wright<sup>9</sup> reports on the treatment of hay fever and states that Orthoform allays the hypersensitiveness, hyperesthesia, and the paroxysmal sneezing. Its effects are in duration many times longer than from cocaine, and without toxic effects.

In a recent dissertation M. Vignat<sup>10</sup> describes Czerny-Trunczek's method of dealing with epithelial cancer. The treatment consists in the local application of arsenious acid, to which Orthoform may be added, as the acid causes severe and lasting pain. To begin with, the following solution is recommended:

Orthoform .....	1.0 gm.
Arsenious acid .....	0.1 gm.
Alcohol .....	7.5 gm.
Distilled water .....	7.5 gm.

The proportion of arsenic may be gradually increased until the following strength is reached:

Orthoform .....	1.0 gm.
Arsenious acid .....	1.0 gm.
Alcohol .....	40.0 gm.
Distilled water .....	40.0 gm.

Solutions of still higher strength may be gradually substituted for the above. After the crust has fallen off, the wound is irrigated with a solution of Orthoform, 1 gr. to 1 dr. of glycerin, to render the application of the acid painless.

Dr. C. W. Allen<sup>11</sup> uses a paste composed of equal parts of white arsenic and Orthoform in the treatment of epithelioma of the lip. He has employed this combination for a couple of years and states that the application gives very little pain.

Regarding the disagreeable after effects from the use of Orthoform, which have been reported, it seems that there is occasionally intolerance. The trouble, however, is usually a too free use of the remedy in the majority of cases, the physician leaving the application to the patient, and he, seeking only relief from pain, uses the remedy too freely.

Dr. G. Colburn Clement, Haverhill, Mass., reports in the *Therap. Progress*, May 1, 1901:

"Some time ago I saw the query, how long Orthoform could be used upon abraded surfaces. Two years ago I began dusting Orthoform over a large, deep and very painful ulcer upon the leg of a woman to-day passing her 91st birthday. It has been used continuously ad libitum! From the first it gave relief to pain, removed all fetid odor, and in a short time stimulated new granulations, so that six months ago the ulcer was healed. Occasionally, now, a superficial abrasion of small dimension appears, but its progress is stayed by the application of Orthoform. These are the results, with no untoward symptoms at any time, and to my mind settles the danger of toxemia from Orthoform."

There have been five cases of eczema said to be due to Orthoform in 330 cases treated (Luxenburger)<sup>12</sup>; gangrene not so frequent. Even malnutrition of the tissues due to infection or hyperemia are reported as predisposing causes to necrosis of the tissues, so how much should be charged to the effects of Orthoform, and how much to natural effects following the pathological condition, is hard to determine. Whenever eczematous conditions accompany the use of Orthoform it should be discontinued for several days, and, if pain is severe, tried again. If the same condition follows its use a second time, it should be abandoned.

7. Phila. Monthly Med. Journal.

8. Journal of Laryngology, Rhinology and Otology, vi, No. 5.

9. New York Medical Journal, May 6, 1899.

10. Klin. therap. Wchnschr., viii, No. 24.

11. The Post-Graduate, December, 1900.

12. Münchener Med. Wchnschr., Nos. 2 and 3, 1900.

The above excerpts abstracted by the firm of

**Victor Koechl & Co., NEW YORK, N. Y.**

1. La Sem. Méd., Dec. 4, 1901.

2. Therapeutic Progress, May, 1900.

3. Therapeutic Progress, May, 1900.

4. Münchener Med. Wchnschr., Nos. 2 and 3, 1900.

5. Münchener Med. Wchnschr., April 9, 1901.

6. Archiv. für Laryngologie, 12 Bd., 1 Heft.



# The Ruppert Tonsillotome

## THIS CURVE

permits the tonsillotome to lie closer to the pharyngeal wall and the cutting blades to be introduced between the faucial pillars so as to include the tonsil down to the base.

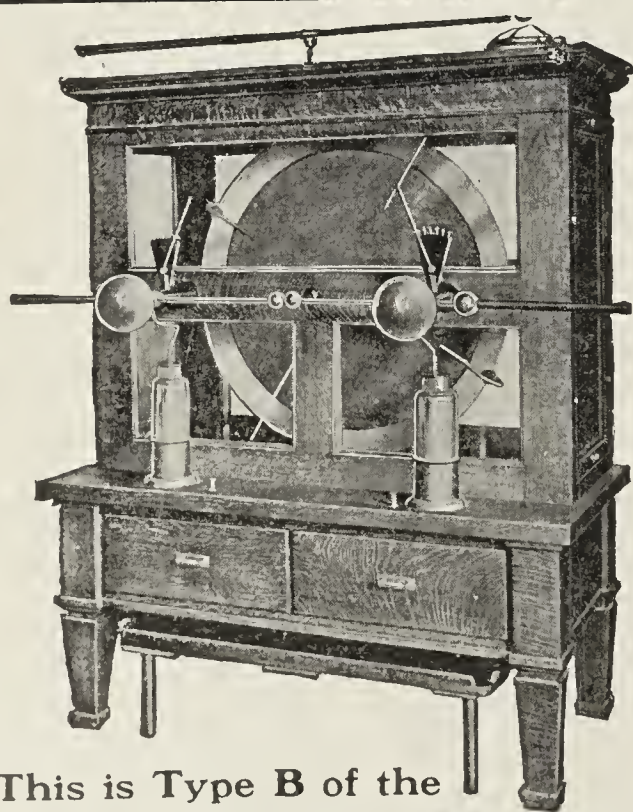
*You do more than merely shave off the top.*

Send for Bulletin No. 34.

*E. B. Meyrowitz*

Manufacturer of EYE, EAR, NOSE AND THROAT INSTRUMENTS, Electro-Therapeutical Equipment and Ophthalmological Apparatus.

104 E. 23d ST., NEW YORK, U. S. A.  
LONDON :: PARIS



## This is Type B of the Baker Static Machine

recognized by leading electro-practitioners as being the perfect static for advanced Radiographic work and High Frequency treatments. Performs the work of Coil and Static, enabling physician to accomplish everything within the range of Electro-Therapeutics with ONE apparatus. Rotating plates are of fibrous material capable of developing enormous voltage. Highest in mechanical efficiency. Strong and elegant in construction.

Write today for SPECIAL OFFER and CATALOG.

THE BAKER ELECTRIC COMPANY,

128 E. 23rd Street, New York

438 Asylum Street, Hartford

# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue :: :: Chicago, Ill.  
PHONE, NORTH 2023 CABLE ADDRESS: "MEDIC, CHICAGO"

Subscription price: \$5.00 per annum in advance  
\*Canadian Subscription \$6.50 per annum in advance  
Foreign Subscription, including Postage, £1 12s.

Postage in the United States, Cuba, Mexico, Hawaii, Guam, Porto Rico, and the Philippines, free. \*N. B.—A new postal ruling requires extra postage for Canada. Subscriptions may commence at any time. Volumes begin with the first issue of January and the first issue of July.

## MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

A member in good standing of the constituent association of the state in which he resides may become a member of the American Medical Association by presenting to the General Secretary: (1) Satisfactory evidence of the above qualification; (2) written application for membership on the prescribed form; (3) five dollars for the annual dues and subscription to THE JOURNAL. Applications should be sent to the American Medical Association, 103 Dearborn Ave., Chicago.

## FISCAL YEAR.

The fiscal year of the AMERICAN MEDICAL ASSOCIATION is from January 1 to December 31; and the annual dues paid by a new member cover only the fiscal year, no matter at what time of year the membership is obtained. Those who pay their dues and join the ASSOCIATION at the annual meeting in June, for instance, pay only for the fiscal year, which ends with the December following, and the annual dues for the following fiscal year are payable the succeeding January, at which time a statement is sent to each member. Such members, however, are entitled to THE JOURNAL for a full year, even though the membership be not continued.

## ORIGINAL PAPERS.

Articles are accepted for publication on condition that they are contributed solely to this journal.

## CONTRIBUTIONS TYPEWRITTEN.

It will be satisfactory to all concerned if authors will have their contributions typewritten before submitting them for publication. The expense is small to the author—the satisfaction is great to the editor and printer. We can not promise to return unused manuscript.

## ANONYMOUS COMMUNICATIONS.

Anonymous communications, whether for publication, for information, or in the way of criticism, are consigned to the wastebasket unread.

## NEWS.

Our readers are requested to send us items of news of a medical nature, also marked copies of local newspapers containing matters of interest to physicians. We shall be glad to know the name of the sender in every instance.

## ILLUSTRATIONS.

Half-tones, zinc etchings and other illustrations will be furnished by THE JOURNAL when satisfactory photographs or drawings are supplied by the author. Photographs and drawings will be returned after the article is published if the word "return" is written on the back of each.

## COPYRIGHT.

Matter appearing in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is covered by copyright, but as a general thing, no objection will be made to the reproduction in reputable medical journals of anything appearing in its columns if proper credit be given.

## ADVERTISEMENTS.

Advertising forms go to press eight days in advance of the date of issue. In sending in copy time must be allowed for setting up advertisements and for sending proofs. No proprietary medicines can be advertised until approved by the Council on Pharmacy and Chemistry.

## CHANGE OF ADDRESS.

In ordering a change of address it is important that both the old and new addresses be given. Change must reach us one week in advance if following Saturday's issue is to be forwarded to new address.

## REMITTANCES.

Remittances should be made by check, draft, registered letter, money or express order. Currency should not be sent, unless registered. Stamps in amounts under one dollar are acceptable. Make all checks, etc., payable to "AMERICAN MEDICAL ASSOCIATION."

## WARNING.

Pay no money to agents unless letter showing authority for making collection is presented.



# PROGRESSIVE THERAPEUTICS

## ATOXYL IN MALARIA.

(See "New and Non-Official Remedies," 3d Edition, page 19.)

By DR. GENNARO FUSCO.

Gazette des Hôpitaux, July 23, 1907.

Cases of acute malaria which I have thus far treated with Atoxyl are too few in number and with too short an observation period to permit of the drawing of fixed conclusions. The results obtained have nevertheless been prompt and pronounced enough to incite me to their immediate publication. I shall take up the matter later in a more pretentious and demonstrative work.

Uhlenhuth, Hoffmann and Hoscher (May, 1907), applied themselves to new studies bearing on the etiology of syphilis, and incidentally tested Atoxyl in the treatment of the latter. They established the fact that if the dose be sufficiently large, the drug has a remarkable action on the manifestations of syphilis, chiefly in the so-called malignant forms.

Shortly after this period Lassar also reported good effects of the same character, expressing his belief that the drug is almost a specific for the disease.

Atoxyl then has given good results in two diseases of protozoon origin, viz: trypanosomiasis and syphilis. The latter at least behaves much like a protozoon malady. The idea, therefore, occurred to me to extend the use of Atoxyl to other affections of the same origin and particularly to malaria, an affection which has long been treated with arsenic. While awaiting a supply of Atoxyl, Hallopeau communicated to the Academy of Medicine, Paris, the fact that he had already employed this substance in the disease in question. As far as I know, his is the sole report which has thus far been made on the subject. Hallopeau's results encouraged me in my first efforts and as soon as I had received my supply from abroad I began to test it with my colleague, Dr. L. Severino, in the various forms of malaria.

We know this, Ehrlich has succeeded by means of inoculations successively practiced in obtaining a species of trypanosome which resists trypan red. It is possible that the plasmodium of malaria and the spirochæte of syphilis may become habituated little by little to the action of specific remedies and eventually resist the latter. We know such cases of syphilis as syphilis maligna and may speak equally of a malignant malaria which resists the action of quinia. It is in such cases that Atoxyl shows its greatest efficacy.

**FIRST CASE.**—C. Torone, female, aged 35, peasant. Quotidian paroxysms since May 17. Treated with medium doses of quinia, given hypodermically, without apparent benefit. Evening temperature 40° C., and even higher, with the characteristic evidence of malaria. July 3, received her first injection of Atoxyl, 0.5 c.cm. of a 10 per cent. solution, given at noon. The temperature, which tended to rise, was rapidly lowered and the patient remained afebrile all the day. On July 4, a second injection was given with like result; no fever whatever developed during the day.

**SECOND CASE.**—A. Bennucci, female, aged 9 years. Quotidian fever. Evening access of disease typical of malaria, temperature mounting to 40° C. Disease dated from June 18. Quinia had been given hypodermically without benefit. On July 3, 9 o'clock, first injection of half a c.cm., 10 per cent. solution of Atoxyl. In the evening the temperature rose only to 37.5° C.—a few tenths of a degree. July 4, second injection. Complete apyrexia for day.

**THIRD CASE.**—S. Menli, male, aged 32 years. On July 3, first access of fever of malarial type. During the febrile period an injection of Atoxyl was given as in preceding cases. Temperature at times was 39° C. It lowered rapidly and on two following days patient was free from fever.

At what moment should we inject Atoxyl for malaria? The question is not readily answered. The recent researches of Cromer and Seligmann have shown that from 4 to 6 hours after injection, elimination occurs; hence I believe that we should inject about two hours before the febrile access.

## ATOXYL IN MALARIA.

By DR. GROSCH of Prymont.

(Reprinted from Medizinisch Klinch., 1907, No. 20.)

As a pendant to the exhaustive articles by Prof. Blumenthal, in No 12, of this journal on Atoxyl, I have taken the liberty of publishing an observation which may incite to further research—first, because the case has been under my observation from the outset, ten years ago, and has been subjected to most thorough study, and further because we are concerned with the successful exhibition of Atoxyl in a disease which has the greatest importance from the colonial aspect, viz: Malaria.

Some ten years ago patient, during an Italian journey in the Pontine swamps, developed malaria, which was later shown by the microscope to be a tertian duplex and quotidian, respectively. The first attack lasted 6 weeks, probably because quinia was not properly given (it was exhibited steadily throughout the day). It reappeared in consequence usually in the spring and fall, also in the interim as a result of dietetic errors or after sea bathing, the attacks being combated successfully by giving a gram of quinia 4 hours before the chill, for 4 or 5 days in succession. In the quiescent periods Koeh's prescription of a gram of quinia every 9 or 10 days was followed; likewise Plehn's advice, to give half a gram every fifth or sixth day. Nevertheless, the malarial attacks supervened as heretofore. In December, 1904, a typical attack, reacting properly to quinia, set in, necessitating a course of prophylactic treatment, taking half a gram one evening in May, 1905. But during the following night a severe but not excessive hemorrhage occurred from the gums and nose, and in the superficies of the skin, especially of the lower extremities. After the petechiæ had undergone absorption, quinia was resumed in 0.3 gm. doses, but the hemorrhages promptly recurred. The further use of quinia was now renounced, but the disposition to cutaneous hemorrhages persisted nevertheless. A kick from a fowling piece, for example, caused an intense blue-black discoloration of the skin in the shoulder region. Fowler's solution was now given for the hemorrhagic diathesis, but as it was ill borne, Atoxyl was substituted by advice of Dr. Alfred Wolff of Berlin. It was given subcutaneously, the initial dose being 0.01 gm. increased daily until 0.1 gm. was given, when it was again reduced to 0.01 gm. In all 1.46 gm. were given, with this result that the hemorrhages no longer appeared. A further and wholly unexpected result was the non-appearance of malarial paroxysms, even though sea baths were taken as a crucial experiment. Only a full two years later, at the close of February, 1907, a malarial attack suddenly supervened; the diagnosis was not established by the microscope because of external conditions, but the case was typical clinically with chills, fever, sweating and spleen-tumor, so that no doubt as to its nature could be entertained. With natural dread of quinia, and bearing in mind the favorable results of Atoxyl already narrated, patient received a hypodermic of the latter, 0.1 gm., four hours before the expected chill. As no benefit was experienced therefrom 0.2 gm. were injected on the following day. The chill which followed was abortive and during the night the temperature was but 37.5° C. (previous night 38.9°). The attack was at an end, but in order to guarantee the results and at the same time elevate the moral of the patient, 0.3 gm. Atoxyl was injected daily until he complained of palpitation and slight dyspnea. The injection was suddenly discontinued without harm. In all 3.15 gm. has been given.

While I am only too well aware that this one case proves nothing for the efficacy of Atoxyl in malaria, the result is encouraging in my opinion to further research, especially in such cases of malaria as are intolerant of quinia (black water fever). Further one may test the power of Atoxyl treatment to re-establish the tolerance to quinia. Finally the possible combination of Atoxyl with methylene blue, in many cases, comes into consideration.

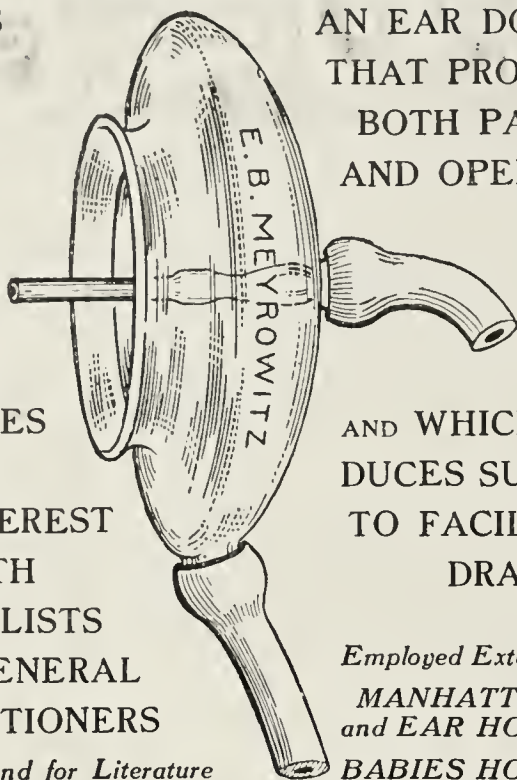
The above excerpts abstracted by the firm of

**Victor Koechl & Co., NEW YORK, N. Y.**



## DR. FOWLER'S SUCTION BELL EAR DOUCHE

THIS IS  
AN  
IMPOR-  
TANT  
IM-  
PROVE-  
MENT  
IN EAR  
DOUCHES  
AND IS  
OF INTEREST  
TO BOTH  
SPECIALISTS  
AND GENERAL  
PRACTITIONERS



AN EAR DOUCHE  
THAT PROTECTS  
BOTH PATIENT  
AND OPERATOR  
FROM  
THE  
BACK  
FLOW  
AND WHICH PRO-  
DUCES SUCTION  
TO FACILITATE  
DRAINAGE

*Employed Extensively at  
MANHATTAN EYE  
and EAR HOSPITAL  
BABIES HOSPITAL*

Send for Literature

*E.B. Meyrowitz*

Manufacturer of EYE, EAR, NOSE AND THROAT INSTRUMENTS,  
Electro-Therapeutical Equipment and Ophthalmological Apparatus.

LONDON 104 E. 23d St., NEW YORK, U. S. A. PARIS



## SPECIAL OFFER

We have on hand six Model A, four plate Static Machines which have been on our exhibition floor for a number of months. Aside from being slightly shopworn these machines are guaranteed to be in perfect condition, each being equally as efficient as a brand new static. In order to dispose of them quickly we are offering them at the unusually low price of \$250. This is an exceptional opportunity to secure the most perfectly constructed, high speed static apparatus on the market.

*The number is limited, so haste is necessary. Send today.*

**BAKER ELECTRIC CO.**

128 E. 23rd St., New York 439 Asylum St., Hartford

## THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue :: :: Chicago, Ill.

PHONE, NORTH 2023

CABLE ADDRESS: "MEDIC, CHICAGO"

Subscription price: \$5.00 per annum in advance  
\*Canadian Subscription \$6.50 per annum in advance  
Foreign Subscription, including Postage, £1 12s.

Postage in the United States, Cuba, Mexico, Hawaii, Guam, Porto Rico, and the Philippines, free. \*N. B.—A new postal ruling requires extra postage for Canada. Subscriptions may commence at any time. Volumes begin with the first issue of January and the first issue of July.

### MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

A member in good standing of the constituent association of the state in which he resides may become a member of the American Medical Association by presenting to the General Secretary: (1) Satisfactory evidence of the above qualification; (2) written application for membership on the prescribed form; (3) five dollars for the annual dues and subscription to THE JOURNAL. Applications should be sent to the American Medical Association, 103 Dearborn Ave., Chicago.

### FISCAL YEAR.

The fiscal year of the AMERICAN MEDICAL ASSOCIATION is from January 1 to December 31; and the annual dues paid by a new member cover only the fiscal year, no matter at what time of year the membership is obtained. Those who pay their dues and join the ASSOCIATION at the annual meeting in June, for instance, pay only for the fiscal year, which ends with the December following, and the annual dues for the following fiscal year are payable the succeeding January, at which time a statement is sent to each member. Such members, however, are entitled to THE JOURNAL for a full year, even though the membership be not continued.

### ORIGINAL PAPERS.

Articles are accepted for publication on condition that they are contributed solely to this journal.

### CONTRIBUTIONS TYPEWRITTEN.

It will be satisfactory to all concerned if authors will have their contributions typewritten before submitting them for publication. The expense is small to the author—the satisfaction is great to the editor and printer. We can not promise to return unused manuscript.

### ANONYMOUS COMMUNICATIONS.

Anonymous communications, whether for publication, for information, or in the way of criticism, are consigned to the wastebasket unread.

### NEWS.

Our readers are requested to send us items of news of a medical nature, also marked copies of local newspapers containing matters of interest to physicians. We shall be glad to know the name of the sender in every instance.

### ILLUSTRATIONS.

Half-tones, zinc etchings and other illustrations will be furnished by THE JOURNAL when satisfactory photographs or drawings are supplied by the author. Photographs and drawings will be returned after the article is published if the word "return" is written on the back of each.

### COPYRIGHT.

Matter appearing in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is covered by copyright, but as a general thing, no objection will be made to the reproduction in reputable medical journals of anything appearing in its columns if proper credit be given.

### ADVERTISEMENTS.

Advertising forms go to press eight days in advance of the date of issue. In sending in copy time must be allowed for setting up advertisements and for sending proofs. No proprietary medicines can be advertised until approved by the Council on Pharmacy and Chemistry.

### CHANGE OF ADDRESS.

In ordering a change of address it is important that both the old and new addresses be given. Change must reach us one week in advance if following Saturday's issue is to be forwarded to new address.

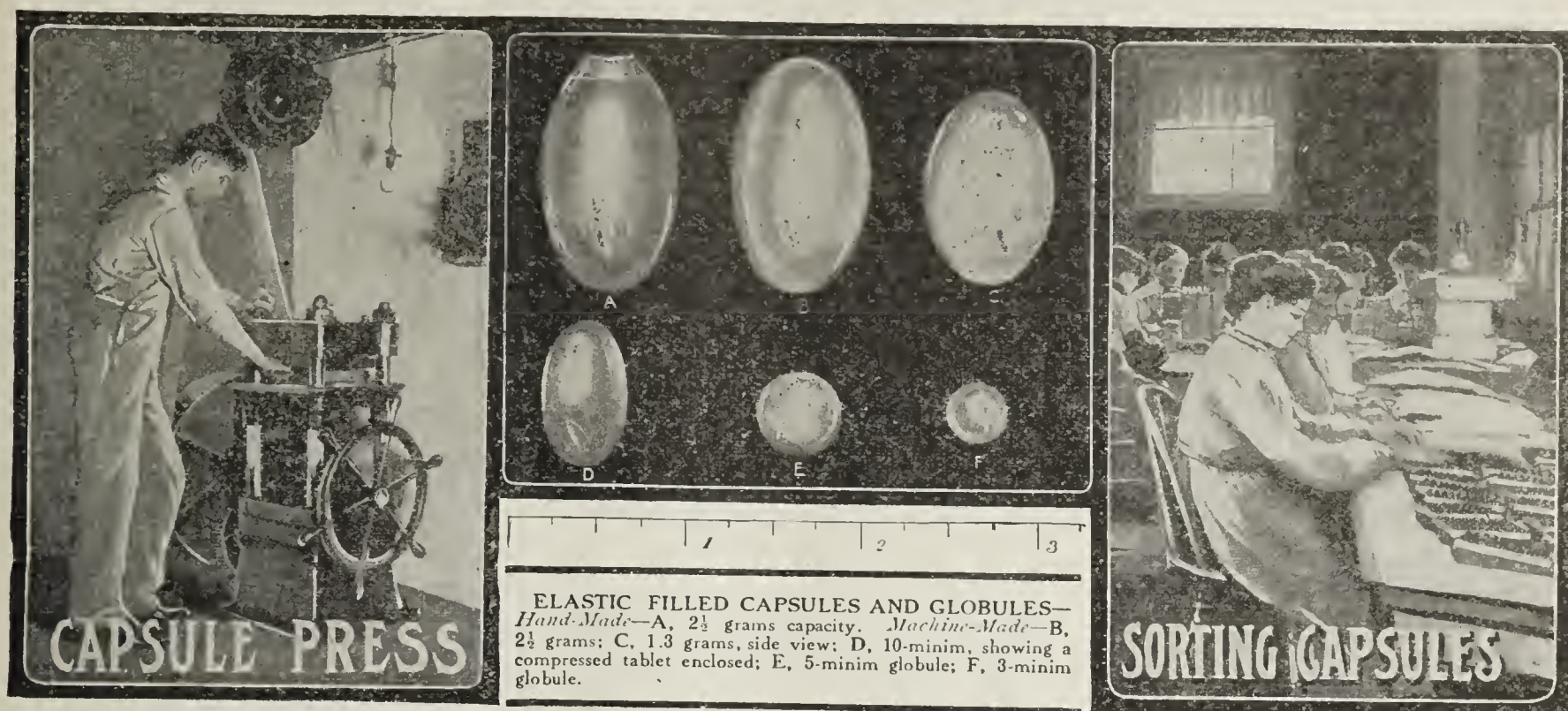
### REMITTANCES.

Remittances should be made by check, draft, registered letter, money or express order. Currency should not be sent, unless registered. Stamps in amounts under one dollar are acceptable. Make all checks, etc., payable to "AMERICAN MEDICAL ASSOCIATION."

### WARNING.

Pay no money to agents unless letter showing authority for making collection is presented.





## LILLY'S ELASTIC FILLED CAPSULES

It is easy to administer oils and nauseous semi-fluid mixtures acceptably to the patient if you prescribe them in our elastic filled capsules. Recognizing palatability as an important factor in the successful administration of nauseous remedies which must be taken in large or oft-repeated doses, we have given the subject special study and as a result have produced a line of over one hundred kinds of elastic filled capsules, embracing all of the commonly prescribed oils and their combinations.

Only the finest tested materials are used in the manufacture of our elastic filled capsules and particular attention is given to insure exactness of formula and accuracy of dosage.

All Lilly elastic filled capsules are critically inspected, then washed in alcohol before packaging, so that they present a clear, brilliant appearance which carries no suggestion of their nauseous contents.

*Supplied by the drug trade. Send for catalogue containing complete information.*

# ELI LILLY & COMPANY

INDIANAPOLIS

NEW YORK

CHICAGO

ST. LOUIS

KANSAS CITY

NEW ORLEANS



## NEW AND NON-OFFICIAL REMEDIES.

The following articles have been tentatively approved by the Council on Pharmacy and Chemistry:

- Acetozone (P. D. & Co.), Sept. 15, 1906.  
 Acetozone Inhalant (P. D. & Co.), Sept. 15, 1906.  
 Acet-theocinsodium (Farb. Elber. Co.), Sept. 15, '06.  
 Adnephrin Emollient (Stearns), Sept. 15, 1906.  
 Adnephrin Oil Spray (Stearns), Sept. 15, 1906.  
 Adnephrin Solution (Stearns), Sept. 15, 1906.  
 Adnephrin Suppositories (Stearns), Jan. 26, 1907.  
 Adrenalin (P. D. & Co.), Sept. 15, 1906.  
 Adrenalin Chloride Sol. (P. D. & Co.), Sept. 15, '06.  
 Adrenalin Inhalant (P. D. & Co.), Sept. 21, 1907.  
 Adrenalin Ointment (P. D. & Co.), Sept. 21, 1907.  
 Adrenalin Suppositories (P. D. & Co.), Sept. 15, 1906.  
 Adrenalin Tablets (P. D. & Co.), Sept. 21, 1907.  
 Adrenalin & Chloroform Oint. (P. D. & Co.), Sept. 21, '07.  
 Adrenalin & Cocain Tab. (P. D. & Co.), Sept. 21, '07.  
 Agurin (Farb. Elber. Co.), Sept. 15, 1906.  
 Aiol (Homann-La Roche C. Works), Sept. 15, '06.  
 Akralgia (W. S. Merrell Co.), April 20, 1907.  
 Albargin (Koechl & Co.), Jan. 26, 1907.  
 Alphozone (Stearns & Co.), Sept. 15, 1906.  
 Alphozone Tablets (Stearns & Co.), Sept. 15, 1906.  
 Alumol (Koechl & Co.), Sept. 15, 1906.  
 Alypin (Farb. Elber. Co.), Feb. 2, 1907.  
 Aminoform (Bischoff & Co.), Sept. 15, 1906.  
 Anesthesin (Koechl & Co.), Sept. 15, 1906.  
 Anthrasol (Knoll & Co.), Feb. 2, 1907.  
 Antipyrine Salicylate, Sept. 15, 1906.  
 Antiseptic Cr     (S. & G.), April 20, 1907.  
 Antithermoline (Carnrick), Sept. 15, 1906.  
 Antithyroidin (Merck & Co.), Sept. 15, 1906.  
 Antithyroid Preparations, Sept. 15, 1906.  
 Apiol, Oct. 19, 1907.  
 Argentamin (Schering & Co.), Sept. 15, 1906.  
 Argonin (Koechl & Co.), Sept. 15, 1906.  
 Argyrol (Barnes & Hille), Sept. 15, 1906.  
 Aristochin (Farb. Elber. Co.), Sept. 22, 1906.  
 Aristol (Farb. Elber. Co.), Sept. 22, 1906.  
 Aromatic Cordial P.-M. Co. (Pitman-Myers Co.).  
 Aspirin (Farb. Elber. Co.), Sept. 22, 1906.  
 Atoxyl (Koechl & Co.), Sept. 21, 1907.  
 Atoxyl, hypodermic tablets 1-3 gr. (Koechl & Co.).  
 Benzo-Formol Comp. (Mulford Co.), Nov. 16, '07.  
 Benzosal (Koechl & Co.), Sept. 22, 1906.  
 Bet-Eucaine Hydrochloride (S. & G.), Sept. 22, '06.  
 Beta-Eucaine Lactate (S. & G.).  
 Beta-Naphthol Benzoate (Merck) Sept. 22, 1906.  
 Betol (Heyden Chem. Works), Sept. 22, 1906.  
 Bismal (Merck & Co.) Sept. 22, 1906.  
 Bismuth Hydrate Comp. (H. K. Wampole & Co.).  
 Blandine Comp. (H. K. Mulford Co.), Nov. 16, '07.  
 Borochloreton (P. D. & Co.), Sept. 22, 1906.  
 Bromipin—10 per cent. (Merck), Sept. 29, 1906.  
 Bromipin—33 1-3 per cent. (Merck), Sept. 29, 1906.  
 Bromo-mangan (Reinschild Chem. Co.), Mar. 16, '07.  
 Bromural (Knoll & Co.), March 14, 1908.  
 Butyl-Chloralhydrate, Sept. 29, 1906.  
 Calcium Ichthyol (Merck & Co.), Sept. 29, 1906.  
 Calomelol (Heyden Chem. Works), Sept. 29, 1906.  
 Calomelol Ointment (Heyden), Sept. 29, 1906.  
 Capsules Glycerophosphates Comp. (Mulford Co.).  
 Casca-Laxative (H. K. Mulford Co.).  
 Cascara Evacuans (P. D. & Co.), Sept. 29, 1906.  
 Cascara Tonic Laxative Globules (P. D. & Co.), Sept. 29, 1906, Oct. 13, 1906.  
 Celloidin (Schering & G.), March 9, 1907.  
 Chinaphenin (Farb. Elber. Co.), Sept. 29, 1906.  
 Chloralamid (Schering & G.), Feb. 2, 1907.  
 Chlorbutanol, Sept. 29, 1906.  
 Chloreton (P. D. & Co.), Sept. 29, 1906.  
 Chloreton Inhalant (P. D. & Co.), Sept. 29, 1906.  
 Chologestin (F. H. Strong Co.), Oct. 19, 1907.  
 Citarin (Farb. Elber. Co.), Sept. 29, 1906.  
 Codrenin (P. D. & Co.), Sept. 21, 1907.  
 Colalin (Rufus Crowell & Co.), Sept. 21, 1907.  
 Coalin-Laxative (R. Crowell & Co.), Jan. 11, '08.  
 Collargol (Schering & G.), Feb. 2, 1907.  
 Collargol Ointment (S. & G.), Feb. 9, 1907.  
 Comp. Emulsion Petroleum (S. & G.), Mar. 9, '07.  
 Coryfin (Farb. Elber. Co.), Dec. 7, 1907.  
 Crema-Bismuth (H. K. Mulford Co.), Nov. 16, '07.  
 Creosote Carbonate, March 30, 1907.  
 Creosotal (Farb. Elber. Co.), March 30, 1907.  
 Creosotal-Heyden (S. & G.), March 30, 1907.  
 Cresylone (P. D. & Co.), Feb. 9, 1907.  
 Cupro-Ilemlol (Merck & Co.), Feb. 9, 1907.  
 Dentalone (P. D. & Co.), Oct. 6, 1906.  
 Dermatol (Koechl & Co.), Oct. 6, 1906.  
 Diabetin (Schering & G.), Oct. 6, 1906.  
 Diacetyl-Morphine, March 30, 1907.  
 Diacetyl-Morphine Hydrochloride, April 6, 1907.  
 Diazyme Essence (Fairchild Bros. & Foster), Oct. 19, '07.  
 Diazyme Glycerole (Fairchild Bros. & Foster), Oct. 19, '07.  
 Diouin (Merck & Co.), March 30, 1907.  
 Dinretin (Knoll & Co.), Oct. 6, 1906.  
 Dolomol (Pulvula Chem. Co.), April 20, 1907.  
 Dry Peptonoids (Soluble) (Arlington Chem. Co.).  
 Duotal (Farb. Elber. Co.), Oct. 6, 1906.  
 Duotal-Heyden (Schering & G.), March 9, 1907.  
 Duotonol (Schering & G.), Oct. 6, 1906.  
 Elixir Buchu, Juniper and Acetate Potass. P.-M. Co. (Pitman-Myers Co.), March 14, 1908.  
 Elixir of Enzymes (Armour), April 20, 1907.  
 Elixir Eupnein (Schieffelin & Co.), Oct. 6, 1906.  
 Elixir Saw Palmetto (P. D. & Co.), Oct. 6, 1906.  
 Emphyroform (Schering & G.), Oct. 6, 1906.  
 Emulsion Cloftlin (Cloftlin Chem. Co.), Oct. 19, '07.  
 Epicarin (Farb. Elber. Co.), Oct. 6, 1906.  
 Erpiol (Merrell Chem. Co.), Sept. 28, 1907.  
 Erythrol Tetranitrate (Merck), Oct. 6, 1906.  
 Essence of Pepsin (Fairchild B. & F.), Mar. 9, '07.  
 Ethylenediamine (Schering & G.), Oct. 6, 1906.  
 Ethyl-morphine Hydrochloride, March 30, 1907.  
 Eucaine, Oct. 6, 1906.  
 Eucaloids (Edward G. Binz Co.), Oct. 6, 1906.  
 Euca-mul (Edward G. Binz Co.), Oct. 13, 1906.  
 Euformol (P. D. & Co.), Feb. 9, 1907.  
 Eugallol (Knoll & Co.), Oct. 13, 1906.  
 Eumydrin (Farb. Elber. Co.), Oct. 13, 1906.  
 Euphorin (Fr     v. Heyden), Oct. 13, 1906.  
 Euphthalmin (Schering & G.), Oct. 13, 1906.  
 Eupyrin (Bischoff & Co.), March 16, 1907.  
 Euquinine (Merck & Co.), Oct. 13, 1906.  
 Eurosol (Knoll & Co.), Oct. 13, 1906.  
 Euresol Soap (Knoll & Co.), Oct. 13, 1906.  
 Europhen (Farb. Elber. Co.), Oct. 13, 1906.  
 Exodin (Schering & G.), Feb. 9, 1907.  
 Ferrichthyol (Merck & Co.), Oct. 13, 1906.  
 Ferripyrine (Koechl & Co.), Oct. 13, 1906.  
 Ferro-mangan (Reinschild Chem. Co.), Mar. 16, '07.  
 Ferropyrine (Knoll & Co.), Oct. 13, 1906.  
 Fibrolysin (Merck & Co.), March 9, 1907.  
 Formalin (Schering & G.), Oct. 13, 1906.  
 Fornin (Merck & Co.), Oct. 13, 1906.  
 Fortoin (Bischoff & Co.), March 16, 1907.  
 Gallogen (Bischoff & Co.), Oct. 13, 1906.  
 Germicidal Soap (P. D. & Co.), Oct. 13, 1906.  
 Glutol-Schleieh (Schering & G.), Oct. 13, 1906.  
 Glycerin Emollient (P. D. & Co.), Oct. 13, 1906.  
 Glycerodine (Wampole & Co.).  
 Glycerole Lecithin (Fairchild Bros. & Foster).  
 Glycerole Trypsin (Armour & Co.), Sept. 28, 1907.  
 Guaiacol Carbonate Comp. (Mulford), Jan. 11, '08.  
 Guaiacol-Salol (Merck & Co.), Oct. 13, 1906.  
 Guaiamar (Mallinckrodt C. Works), Oct. 20, 1906.  
 Guajasanol (Koechl & Co.), Oct. 20, 1906.  
 Haemoferrum (Stearns & Co.), Feb. 9, 1907.  
 Hedonal (Farb. Elber. Co.), Oct. 20, 1906.  
 Helmitol (Farb. Elber. Co.), Oct. 20, 1906.  
 Hemiceranin (Farb. Elber. Co.), Oct. 20, 1906.  
 Hemogallol (Merck & Co.), Oct. 20, 1906.  
 Hemol (Merck & Co.), March 9, 1907.  
 Hemoquinine (Schieffelin & Co.), Oct. 20, 1906.  
 Heroin (Farb. Elber. Co.), April 6, 1907.  
 Heroin Hydrochloride (Farb. Elber. Co.), Apr. 6, '07.  
 Heromal (Schieffelin & Co.), Oct. 20, 1906.  
 Heroterpine (Schieffelin & Co.), Oct. 20, 1906.  
 Hexamethylenamine Methylencitrate, Oct. 27, 1906.  
 Holadin (Fairchild Bros. & Foster), Nov. 9, 1907.  
 Holocaine Hydrochloride (Koechl), Oct. 27, 1906.  
 Hypnal (Koechl & Co.), Oct. 27, 1906.  
 Ichthalbin (Knoll), Oct. 27, 1906; Nov. 10, 1906.  
 Ichthammon (F. Reichelt), Oct. 27, 1906.  
 Ichthargan (Ichthyol Co.), Oct. 27, 1906.  
 Ichthermol (Merck & Co.), Oct. 27, 1906.  
 Ichthoform (Merck & Co.), Oct. 27, 1906.  
 Ichthyol (Merck & Co.), Oct. 27, 1906.  
 Ichthyolum Austriacum (G. Heil & Co.), Oct. 27, '06.  
 Iodalbum (P. D. & Co.).  
 Iodalbum Capsules (P. D. & Co.).  
 Iodipin—10 per cent. (Merck), Oct. 27, 1906.  
 Iodipin—25 per cent. (Merck), Nov. 3, 1906.  
 Iodoformogen (Knoll & Co.), Nov. 3, 1906.  
 Iodo-mangan (Reinschild Chem. Co.), Mar. 23, '07.  
 Iodothyrene (Farb. Elber. Co.), Nov. 3, 1906.  
 Iothion (Farb. Elber. Co.), Feb. 9, 1907.  
 Kasagra (Stearns & Co.), Nov. 3, 1906.  
 Kelene (Fries Bros.), Sept. 28, 1907.  
 Kola, Stearns (Stearns & Co.), Nov. 3, 1906.  
 Kresamine (Schering & G.), Nov. 3, 1906.  
 Lac Bismo (E. J. Hart & Co.), Nov. 3, 1906.  
 Laetophenin (Chem. Fabr. vrm., Goldenberg, Germany & Co.), Nov. 3, 1906.  
 Laminoids Ferruginous (Nascent) (Schieffelin & Co.), Nov. 3, 1906.  
 Lecibrin (Fairchild Bros. & Foster).  
 Lecithin, April 6, 1907.  
 Lecithin Solution (Fairchild Bros. & Foster).  
 Lecithol (Armour & Co.), March 21, 1908.  
 Lennigallol (Knoll & Co.), Nov. 3, 1906.  
 Liquid Peptonoids (Arlington Chem. Co.), June 1, '07.  
 Liquor Sedans (P. D. & Co.).  
 Liquor Sedans Rx 2 without sugar (P. D. & Co.).  
 Liquor Sedans with Cascara (P. D. & Co.).  
 Liquor Tritiei (P. D. & Co.), Nov. 3, 1906.  
 Lithium Ichthyol (Merck & Co.), Nov. 3, 1906.  
 Lubraseptic (Russell & Lawrie), April 20, 1907.  
 Lycetol (Farb. Elber. Co.), Nov. 3, 1906.  
 Lysidin (Koechl & Co.), Nov. 3, 1906.  
 Maltzyme, Plain (Malt-Diastase Co.), Jan. 11, '08.  
 Maltzyme with Cod Liver Oil (Malt-Diastase Co.).  
 Maltzyme with Cascara Sagrada ditto  
 Maltzyme with Hypophosphites ditto  
 Maltzyme with Yerba Santa ditto  
 Maltzyme with Iron, Quinia and Strychnia ditto  
 Maltzyme Ferrated ditto  
 Mercuran (Eusoma Pharm. Co.), Sept. 28, 1907.  
 Mercuriol (P. D. & Co.), Nov. 3, 1906.  
 Mesotan (Farb. Elber. Co.), Nov. 3, 1906.  
 Methaform (Stearns & Co.), Nov. 3, 1906.  
 Methyl-Santal (H. K. Mulford Co.), Nov. 16, '07.  
 Migrainin (Koechl & Co.), Nov. 3, 1906.  
 Monotal (Farb. Elber. Co.), Nov. 30, 1907.  
 Neurocaine (Schieffelin & Co.), Nov. 3, 1906.  
 Neuro-Lecithin (Abbott Alk. Co.), Mar. 21, 1908.  
 Neuronia (Schieffelin & Co.), Nov. 3, 1906.  
 Novargan (Heyden Chem. Works), Feb. 16, 1907.  
 Novaspirin (Farb. Elber. Co.), Dec. 7, 1907.  
 Novocaine (Koechl & Co.), Nov. 10, 1906.  
 Novocaine, hypodermic tab. 1-3 gr. (Koechl & Co.).  
 Nutrose (Koechl & Co.), Nov. 3, 1906.  
 Oil of Eucalyptus, globules (E. G. Binz Co.).  
 Oleoresin of Parsley Seed, Oct. 19, 1907.  
 Olcum Ricini Dulcis P.-M. Co. (Pitman-Myers Co.).  
 Orthoform-New Hydrochloride (Koechl), Nov. 10, '06.  
 Ovoferrin (Barnes & Hille), Nov. 10, 1906.  
 Oxaphor (Koechl & Co.), Nov. 10, 1906.  
 Panopepton (Fairchild Bros. & Foster), June 1, '07.  
 Pegnin (Koechl & Co.), Nov. 17, 1906.  
 Perhydrol (Merck), April 20, 1907.  
 Phenacetin (Farb. Elber. Co.), Nov. 10, 1906.  
 Phenocoll Hydrochloride (Schering), Nov. 10, '06.  
 Phenocoll Salicylate, Nov. 10, 1906.  
 Phenolphthalein, April 20, 1907.  
 Piperazine (Farb. Elber. Co., S. & G.), Nov. 17, '06.  
 Pollantin (Fritzsche Bros.), Nov. 17, 1906.  
 Pollantin Powder (Fritzsche Bros.), Nov. 17, 1906.  
 Protan (H. K. Mulford Co.), Nov. 30, 1907.  
 Protargol (Farb. Elber. Co.), Feb. 16, 1907.  
 Purgatin (Knoll & Co.), Nov. 17, 1906.  
 Pyramidon Acid Camph. (Koechl), Nov. 17, 1906.  
 Pyramidon (Koechl & Co.), Nov. 17, 1906.  
 Pyramidon Neutral Camph. (Koechl), Nov. 17, '06.  
 Pyramidon Salicylate (Koechl), Nov. 17, 1906.  
 Quantonol (Schering & G.), Nov. 24, 1906.  
 Quinine Lygositine (Bischoff & Co.), Mar. 23, '07.  
 Red Bone Marrow (Armour & Co.), Feb. 23, 1907.  
 Regulon (Reinschild Chem. Co.), Oct. 19, 1907.  
 Sajodin (Farb. Elber. Co.), Feb. 23, 1907.  
 Sal Ethyl (P. D. & Co.), Nov. 24, 1906.  
 Saliformin (Merck & Co.), Nov. 24, 1906.  
 Salit (Heyden Chem. Works), Nov. 24, 1906.  
 Salophen (Farb. Elber. Co.), Nov. 24, 1906.  
 Saloquinine (Merck & Co.), Nov. 24, 1906.  
 Saloquinine Salicylate (Merck), Nov. 24, 1906.  
 Santyl (Knoll & Co.), Feb. 23, 1907.  
 Sextonol (Schering & G.), Nov. 24, 1906.  
 Sidonal (Koechl & Co.), Nov. 24, 1906.  
 Silver Citrate, Sept. 28, 1907.  
 Silver Lactate, Sept. 28, 1907.  
 Silver Lactate Cr     (S. & G.), April 20, 1907.  
 Sodium Cacodylate, Nov. 24, 1906.  
 Sodium Cinnamate, Nov. 24, 1906.  
 Sodium Ichthyol (Merck & Co.), Dec. 1, 1906.  
 Sodium Lygositine (Bischoff & Co.), March 23, '07.  
 Stovaine (Walter F. Sykes), Dec. 1, 1906.  
 Stypticin (Merck & Co.), Dec. 1, 1906.  
 Styptol (Knoll & Co.), Dec. 1, 1906.  
 Styrcol (Knoll & Co.), Dec. 1, 1906.  
 Sublamine (Schering & G.), Dec. 8, 1906.  
 Sulphonal (Farb. Elber. Co.), Dec. 8, 1906.  
 Suprarenal Liquid (P. D. & Co.), Feb. 23, 1907.  
 Suprarenalin (Armour & Co.), Feb. 23, 1907.  
 Suprarenalin Ointment (Armour), Feb. 23, 1907.  
 Suprarenalin Solution (Armour), Feb. 23, 1907.  
 Suprarenalin Triturates (Armour), Feb. 23, 1907.  
 Syrup Cannabis Comp. P.-M. Co. (Pitman-Myers Co.), March 21, 1908.  
 Syrup Hydriodic Acid (R. W. Gardner).  
 Tablets Acet-Phenetidin Comp. P.-M. Co. (Pitman-Myers Co.).  
 Taka-Diastase (P. D. & Co.), Jan. 11, 1908.  
 Tannalbin (Knoll & Co.), Dec. 15, 1906.  
 Tannigen (Farb. Elber. Co.), Dec. 15, 1906.  
 Tannoform (Merck & Co.), Dec. 15, 1906.  
 Tannopin (Farb. Elber. Co.), Dec. 15, 1906.  
 Tanphenyform (Warner & Co.), Oct. 19, 1907.  
 Theobromine Sodium Salicylate, Dec. 15, 1906.  
 Theocin (Farb. Elber. Co.), Dec. 22, 1906.  
 Theophyllin, Dec. 22, 1906; Jan. 5, 1907.  
 Thiodin (Merck & Co.), Dec. 22, 1906.  
 Thiolcol (Hoffmann-LaR. C. Works), Dec. 22, '06.  
 Thiosinamine, Jan. 5, 1907.  
 Thyroidectin (P. D. & Co.), March 2, 1907.  
 Tonic Hypophosphites (S. & D.), March 2, 1907.  
 Tonols (Schering & G.), Dec. 22, 1906.  
 Triferin (Knoll & Co.), Jan. 5, 1907.  
 Triferol (Knoll & Co.), Jan. 5, 1907.  
 Trikerol (Schering & G.), Jan. 5, 1907.  
 Trional (Farb. Elber. Co.), Jan. 5, 1907.  
 Trioxymethylene (Merck & Co.), Jan. 5, 1907.  
 Triphenin (Merck & Co.), Jan. 12, 1907.  
 Tritipalm (Stearns & Co.), Jan. 5, 1907.  
 Trypsin (Armour & Co.), Sept. 28, 1907.  
 Trypsogen (G. W. Carnrick Co.), March 2, 1907.  
 Tumenol-Ammonium (Koechl & Co.), March 2, '07.  
 Tumenol (Koechl & Co.), Jan. 12, 1907.  
 Tussal (Koechl & Co.), Jan. 19, 1907.  
 Urethane (Merck & Co.), Jan. 19, 1907.  
 Uriform (Schieffelin & Co.), Jan. 19, 1907.  
 Uritone (P. D. & Co.), Jan. 19, 1907.  
 Uropherin, B. (Merck & Co.), Jan. 19, 1907.  
 Uropherin, S. (Merck & Co.), Jan. 19, 1907.  
 Urotropine (Schering & G.), Jan. 19, 1907.  
 Validol (Bischoff & Co.), March 2, 1907.  
 Validol Camphoratum (Bischoff & Co.), Mar. 2, '07.  
 Valyl (Koechl & Co.), Jan. 19, 1907.  
 Veroform Antiseptic (Veroform Hygienic Co.), March 28, 1908.  
 Veroform Germicide (Veroform Hygienic Co.), March 28, 1908.  
 Veronal (Merck & Co.), Jan. 26, 1907.  
 Vibutero (Stearns & Co.), Jan. 26, 1907.  
 Vinum Extracti Morrhuae (Stearns), Jan. 26, '07.  
 Vioform (Bischoff & Co.), March 9, 1907.  
 Vioform Gauze (Bischoff & Co.), March 9, 1907.  
 Xeroform (Heyden Chem. Works), Jan. 26, 1907.



# PROGRESSIVE THERAPEUTICS

## THE TREATMENT OF CHRONIC GONORRHOEA.

By M. A. FECHHEIMER, M.D.

Detroit, Mich.

The first requisite in the treatment is to obtain a clear, careful and concise history from the patient himself. This interrogation will include the number of attacks, their frequency, whether there has been a gluing together of the meatus, and also the "goutte militaire," and what is very important, whether or not he may have had an epididymo-orchitis or prostatitis, or other complication, as these latter will often aid in deciding where the lesions may be situated. This having been obtained, our next procedure is to make a careful examination of the discharge. Should this be absent, provided he has just previously urinated, thus flushing the canal, a drop is obtained, if possible, by expression of the urethra. If the main symptom of which he may complain be the "goutte militaire" or morning drop, two glass slides are entrusted to him upon which to collect the discharge, and he should also consult the physician in the morning, previous to urinating. The patient now urinates in two glasses, about one-half to one ounce in the first and the remainder in the second; or, if desired, the anterior urethra is first washed with sterilized water and this is collected in a glass. This washing should be continued until the returning fluid is absolutely clear. Then the patient urinates into two other glasses as described above. This process is ordinarily termed the three beaker test. Shreds varying in different degrees will be found in either case in the first vessel, and often in the second. These shreds should be "fished out," placed upon slides, dried, stained, and examined under the microscope.

The microscopic examination of the discharge and shreds will give us a precise diagnosis and often give a clue as to what treatment may be necessary. Should this examination reveal the presence of gonococci and much pus, instrumental examination is at this time contraindicated, owing to the possibility of complications. The treatment in these cases is copious irrigations, but in place of the permanganate of potash, weak solutions of silver albuminate preparations should be substituted. These irrigations are given twice daily, an anterior one in the morning and an intravesical one in the evening, for several days, then once daily for a week, and then gradually discontinued.

As much as one-quarter to one-half ounce of this solution may be used. This readily overcomes the resistance of the compressor urethra muscle. Forcing the solution into the bladder in attempting to overcome this spasm may result in the infection being carried into the ejaculatory ducts, seminal vesicles, vas deferens and testes.

In addition to this, the patient obtains a blunt pointed urethral syringe with a capacity of one-half ounce, and with the same solution first flushes out the anterior urethra several times and then injects a quantity to thoroughly distend this portion of the canal for at least ten minutes—if possible, longer. This he practices two or three times daily and, needless to say, after urination. I have for some time past used a solution of Albargin (see description "New and Non-Official Remedies") of the strength of 1 to 1,000. These silver albuminate preparations appear to have a decided specific action upon the gonococcus. After the disappearance of the gonococci, I substitute for the Albargin a solution of mercury oxycyanatum varying in strength from 1 to 4,000 to 1 to 2,000. This preparation is nonirritating and appears to have a sedative effect upon the urethra, and it acts as an admirable antiseptic. It is also extremely valuable in those cases of urethritis associated with other bacteria, as staphylococcus, streptococcus and colon bacillus.

This treatment, if carefully administered, will, in many cases, result as a cure.

Should this method fail to bring the desired results, we naturally must look for pathologic lesions, and prominent among these must be considered the prostate gland. In these cases lavage of the urethra is first practiced, and then about

five to six ounces of the oxycyanide of mercury solution is injected into the bladder, preferably by means of a blunt pointed syringe of this capacity. The prostate and seminal vesicles are then massaged, the patient being in the recumbent position. He then urinates, thus washing away all secretions. Then, if thought advisable, an instillation with either an Ultzmann or Guyon instrument is made. For this purpose a solution of lactate of copper in glycerine varying in strength from 1 to 3 per cent. acts admirably. Silver nitrate from 1 to 2 per cent. may, in selected cases, be serviceable. These instillations must be so performed that on the withdrawal of the instrument there is no escape of the solution from the meatus, and they may be repeated two or three times a week if well borne by the patient.

Other pathologic conditions, such as a narrow meatus, hypospadias, epispadias, paraurethral diverticula, may be the cause of a continued and relapsing and troublesome discharge. These conditions will oftentimes need the necessary treatment before the urethritis will subside. Strictures can very easily be diagnosed by the bougie a boucle and will require the passage of sounds before the discharge ceases and the patient is cured.

The use of the urethroscope is a most valuable aid to the surgeon. By the use of this instrument the early diagnosis of soft and hard infiltrations can be recognized. Also situated upon the superior wall the lacunæ of Morgagni are quite commonly the seat of inflammation. These infiltrations require the passage of full sized sounds, with massage of the urethra. The sound should be allowed to remain in the canal for at least fifteen minutes.

Where but one or two of the lacunæ of Morgagni are the seat of inflammation, the careful use of the galvano-cautery, the electrolytic needle, the slitting with intraurethral knives, or the direct applications of strong nitrate of silver solution will be successful in their destruction.

In other cases where many are affected, the use of the sound or dilator, will prove beneficial. These may be used in alternation with the Ultzmann anterior brushes, with the lactate of copper solution. Previous to making the application of the medicament the urethra is thoroughly cleansed of all secretions with water, by the aid of these same brushes. Then the brush is dipped into the solution and thoroughly applied to the upper wall of the urethra.

Other pathologic conditions caused by overgrowth of new tissue, etc., require the appropriate treatment of these cases.

In inveterate cases unassociated with pathologic lesions, an injection twice daily of four to five c.c. of a 5 to 10 per cent. solution of peroxide of hydrogen in distilled water is practiced. This is held in the urethra one to three hours by placing a piece of cotton over the meatus and tying with a cord around the cervix. This procedure, while more or less painful, has been the means of cure where other forms of treatment have failed.

In conclusion, it is true, I have avoided the mention of the various astringents oftentimes employed, and these, while efficacious in diminishing the discharge, rarely, if ever, produce a cure. One of these, in particular, the nitrate of silver, appears to be less frequently used than ever before, except in the cases as previously cited. Used in the acute stages in particular, and indiscriminately, it may be the cause of pathologic conditions which are seen late in the disease. Permanganate of potash should only be used late in the subacute, or in the chronic cases, and never in acute gonorrhea.

The internal medication need be but briefly mentioned. Of the balsams, sandalwood oil stands first. This may be given in ten to twenty minim doses, three times daily.

Dietary treatment is often helpful in the subacute cases, but in the late chronic states does not seem to exert the same influence. Alcohol should, for the greater part, be omitted, but late in the disease the occasional use of a little light wine or a glass or two of beer may be permitted and the results watched, this, of course, only being allowed in the absence of gonococci.

—Detroit Medical Journal, March, 1908.

The above excerpts abstracted by the firm of

**Victor Koechl & Co., NEW YORK, N. Y.**



## Contamination of Air in Public Buildings by Dust



### Treatment of Floors the Logical Preventative

**T**HE AIR in public buildings, schools, stores, etc., usually contains a greater or less quantity of impurities. Such contaminations of the air may not only be injurious to the respiratory organs, but they can also become a positive menace to health, particularly as such dust is almost invariably polluted with the bacilli of dangerous diseases.

The actual presence of these germs of disease in dust constitutes one of the greatest dangers to mankind, for in time these germs will multiply and mingle with the dust circulating throughout the building. When the room is vacated and quiet restored the dust and germs settle on the floors. If the floor surface is dry, any slight movement or air-current would be sufficient to whirl the dust into the air again. On the other hand, proper treatment of the floor will hold all dust that settles on it and prevent the dissemination of bacteria.

Standard Floor Dressing is a preparation made for that particular purpose. It is the logical preventive of dust and the transmission of disease by dust. By keeping wood floors at just the right degree of moisture it catches and holds every particle of dust and every germ touching it.

This treatment of floors is not merely a precautionary measure for the prevention of disease, but is a distinct benefit to the floors themselves. Standard Floor Dressing has a peculiarly beneficial action on the wood, for floors treated with the dressing will last for many years longer than those untreated, and moreover the wood will not crack or splinter.

Then, again, because a dressed floor eliminates dust, the actual labor of sweeping and caretaking is materially reduced, and at the same time the cost.

Standard Floor Dressing is *not* intended for household use, but *it* is indispensable for the treatment of wooden floors in every public building, every school, college, hospital or store.

To demonstrate that Standard Floor Dressing *will* eliminate dust and prevent the dissemination of disease germs, we will treat the floor in any one room or corridor in any public building **AT OUR OWN EXPENSE.**



We have a comprehensive book entitled "Dust and Its Dangers," which we will send gratis to all interested, together with testimonials and reports of those who have used and experimented with Standard Floor Dressing. Sent on request.

**STANDARD OIL COMPANY**  
(INCORPORATED)

## THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue :: :: Chicago, Ill.

PHONE, NORTH 2023

CABLE ADDRESS: "MEDIC, CHICAGO"

Subscription price: \$5.00 per annum in advance  
\*Canadian Subscription \$6.50 per annum in advance  
Foreign Subscription, including Postage, £1 12s.

Postage in the United States, Cuba, Mexico, Hawaii, Guam, Porto Rico, and the Philippines, free. \*N. B.—A new postal ruling requires extra postage for Canada. Subscriptions may commence at any time. Volumes begin with the first issue of January and the first issue of July.

### MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

A member in good standing of the constituent association of the state in which he resides may become a member of the American Medical Association by presenting to the General Secretary: (1) Satisfactory evidence of the above qualification; (2) written application for membership on the prescribed form; (3) five dollars for the annual dues and subscription to THE JOURNAL. Applications should be sent to the American Medical Association, 103 Dearborn Ave., Chicago.

### FISCAL YEAR.

The fiscal year of the AMERICAN MEDICAL ASSOCIATION is from January 1 to December 31; and the annual dues paid by a new member cover only the fiscal year, no matter at what time of year the membership is obtained. Those who pay their dues and join the ASSOCIATION at the annual meeting in June, for instance, pay only for the fiscal year, which ends with the December following, and the annual dues for the following fiscal year are payable the succeeding January, at which time a statement is sent to each member. Such members, however, are entitled to THE JOURNAL for a full year, even though the membership be not continued.

### ORIGINAL PAPERS.

Articles are accepted for publication on condition that they are contributed solely to this journal.

### CONTRIBUTIONS TYPEWRITTEN.

It will be satisfactory to all concerned if authors will have their contributions typewritten before submitting them for publication. The expense is small to the author—the satisfaction is great to the editor and printer. We can not promise to return unused manuscript.

### ANONYMOUS COMMUNICATIONS.

Anonymous communications, whether for publication, for information, or in the way of criticism, are consigned to the wastebasket unread.

### NEWS.

Our readers are requested to send us items of news of a medical nature, also marked copies of local newspapers containing matters of interest to physicians. We shall be glad to know the name of the sender in every instance.

### ILLUSTRATIONS.

Half-tones, zinc etchings and other illustrations will be furnished by THE JOURNAL when satisfactory photographs or drawings are supplied by the author. Photographs and drawings will be returned after the article is published if the word "return" is written on the back of each.

### COPYRIGHT.

Matter appearing in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is covered by copyright, but as a general thing, no objection will be made to the reproduction in reputable medical journals of anything appearing in its columns if proper credit be given.

### ADVERTISEMENTS.

Advertising forms go to press eight days in advance of the date of issue. In sending in copy time must be allowed for setting up advertisements and for sending proofs. No proprietary medicines can be advertised until approved by the Council on Pharmacy and Chemistry.

### CHANGE OF ADDRESS.

In ordering a change of address it is important that both the old and new addresses be given. Change must reach us one week in advance if following Saturday's issue is to be forwarded to new address.

### REMITTANCES.

Remittances should be made by check, draft, registered letter, money or express order. Currency should not be sent, unless registered. Stamps in amounts under one dollar are acceptable. Make all checks, etc., payable to "AMERICAN MEDICAL ASSOCIATION."

### WARNING.

Pay no money to agents unless letter showing authority for making collection is presented.



# PROGRESSIVE THERAPEUTICS

## PYRAMIDON AS AN ANTIPYRETIC

(See description "New and Non-Official Remedies.")

Dr. L. Ketley (Die Heilkunde, Wien, 1899) issued a report from the University Clinic of Prof. v. Ketty, Budapest, on the employment of Pyramidon as an antipyretic. He states that doses of 2 to 5 grains may be administered in the fever of consumptives without unpleasant symptoms and without danger; the temperature falls slowly and regularly and when once reduced rises again only very slowly. The febrile temperature sinks from  $1\frac{1}{2}$  to  $2^{\circ}$  C. in the course of 2 to 3 hours and remains at this temperature for 4 to 6 hours. The author comes to the conclusion that "we can therefore recommend Pyramidon as a very good antipyretic in phthisis and for chronic diseases accompanied by febrile symptoms in doses of 2 to 5 grains, even 3 to 4 times a day, as we obtained good results even in cases where other medicaments have produced less favorable effects, their action not being free from by-effects and the temperature not being reduced so slowly and permanently."

Dr. E. Feurstein (Centralblatt für die gesammte Therapie, Wien, October, 1897) has tried Pyramidon as an antipyretic and terms it a useful antifebrile, safe in its action. Unlike similar drugs unpleasant by-effects were not observed in any cases from the dosage (5 grains).

Dr. Roth (Wiener klinische Wochenschrift, 1897, No. 44) reports upon the experience gained with Pyramidon in various cases treated in the medical department of Dr. v. Limbeck. In the hectic fever of consumptives Pyramidon is, according to Roth, one of the most reliable of antipyretics, as in 32 cases out of 40 the results were most excellent. In acute articular rheumatism also Pyramidon has been administered by the author, who writes "the results were so favorable that it appears to us probable that this medicament may be employed as an advantageous substitute for salicylic acid, especially in such cases where the latter makes itself unpleasantly evident by the frequent appearance of perspiration, ringing in the ears, defects of hearing, dyspeptic troubles, and exanthema. The cases treated with Pyramidon were not only soon rendered febrile but the articular affections also disappeared in a relatively short time. We prescribed in these cases 5 grain doses five times daily without any disagreeable by-effects being developed."

Dr. A. Breyer (Inaugural-Dissertation, Breslau, 1899) writes of his experience made in the Breslau Medical University Clinic (Prof. Kast), "no deleterious influence whatever on the system could be observed on the administration of Pyramidon in doses of 4 to 8 grains as an antipyretic. The action of the heart remained good, there were no digestive disturbances, no derangement of the nervous system could be detected, the urine was not altered either in quantity or quality, and the general condition of the patient was satisfactory. If the temperature was maintained normal for a long period or permanently then, as might be expected, the general condition of the patient improved, both appetite and sleep were better and good steps were made towards convalescence." Further Breyer reports on 15 cases of acute articular rheumatism, 8 cases of muscular rheumatism, 2 cases of chronic articular rheumatism, 1 case of tendovaginitis of the hand, 1 case of ulcerus ventriculi, 1 case of tumor cerebri, which were treated with Pyramidon. Single doses ranged between 4 and 15 grains and the total quantities prescribed in a single day from 4 to 30 grains. The most striking effect of Pyramidon was apparent in the cases of acute articular rheumatism and rheumatic pains of the muscles. With two exceptions a prompt action was observed in all cases. Soon after administration the violent pains in the affected joints disappeared, swelling and redness rapidly abated and the temperature simultaneously sank to normal. This action was particularly favorable in one case, that of a medical student suffering from articular rheumatism, which had not been relieved by salicylic medication continued for 5 days outside the hospital. As soon as administration of Pyramidon

commenced a permanent improvement very quickly set in. Pyramidon proved equally favorable in muscular and chronic articular rheumatism.

Drs. Gerest and Rigot (Loire médicale, Nov. 15, 1900) have treated patients suffering from acute articular rheumatism with sodium salicylate, antipyrin and Pyramidon alternately. The patients gave preference to Pyramidon as it more quickly removed the pains, was better tolerated and was altogether more energetic in its action.

Dr. J. Pollak (Wiener klinische Wochenschrift, 1900, No. 3) reports from the Alland Sanatorium on numerous cases of febrile consumptives to whom Pyramidon was administered with good results; in some cases after three weeks' administration of 8 grains Pyramidon the medicament could be discontinued without the recurrence of fever.

Dr. Fritz Kohler, head physician to the Holsterhausen Sanatorium for Lung Diseases (Münchener medizinische Wochenschrift, 1901, No. 50) is a strong advocate of the view that the fever of consumptives should be combatted with antipyretics, amongst which he gives Pyramidon the preference on account of its gradual action. Under this treatment the temperature can be so regulated that the consumptives may be allowed careful exercise in the open air, which has a particularly good effect on the general health of the patients. The administration of antipyretics is moreover to be commended because, when the patients are free from fever they exhibit a much better appetite and a sufficient or even excessive supply of food is therefore much more easily partaken of. The author emphasizes that these favorable results of the therapeutical treatment of consumptives can not only be obtained in sanatoriums but also in private practice.

Dr. Gerest (Loire médicale, 15, November, 1900) has made a systematic trial of Pyramidon in a series of cases of typhus and obtained very satisfactory results. Gerest, a firm believer in the hydropathic treatment of fever, has given Pyramidon to those patients for whom the cold water treatment was a failure. A record of the temperature was taken every three hours and whenever it reached  $39^{\circ}$  C. ( $102^{\circ}$  F.) 4 grains Pyramidon was administered in the form of a powder. Administered in this way more than 15 grains daily was seldom required.

Prof. Huchard of Paris (La Semaine médicale, 8, May, 1897) has given Pyramidon in diseases of the heart and kidneys and never seen any bad results therefrom.

Dr. Beniasch publishes from Prof. Trutschel's Clinic (Zeitschrift für klinische Medizin, 1901, Nos. 1 and 2) an investigation on the influence of antipyresis on the coagulating power of the blood in typhoid patients. He comes to the conclusion that antipyretics, amongst which he employed Pyramidon, do not reduce the coagulating power and considers the stand taken by some physicians against the treatment of typhus with drugs is unjustified.

Dr. L. Byk of Berlin (Deutsche medizinische Wochenschrift, 1903, No. 3) cured a serious case of typhus in a boy of 12 years of age solely by treatment with antipyretics. Whilst 3 antipyrin powders of 12 grains each only procured a slight remission of temperature, 2 Pyramidon powders of 5 grains each given in the course of half an hour reduced the temperature throughout the night by  $4^{\circ}$  C. ( $8^{\circ}$  F.). This great reduction in temperature was not accompanied by any unpleasant by-effects; the pulse remained full and strong and the perspiration was moderate. The senses became perfectly clear. The temperature fell quite gradually and the rise on the following day was also gradual so that shivering fits were avoided. The author emphasizes that during the whole course of the illness, in spite of continued administration of Pyramidon, subsequently administered in wine, no analeptic was required. He writes, "I therefore believe that on the ground of this one observation I am justified in recommending to colleagues in private practice the employment of Pyramidon in typhus abdominalis."

The above excerpts abstracted by the firm of

**Víctor Koechl & Co., NEW YORK, N. Y.**



# THE NEW WAGNER HIGH-TENSION ELECTRIC GENERATOR

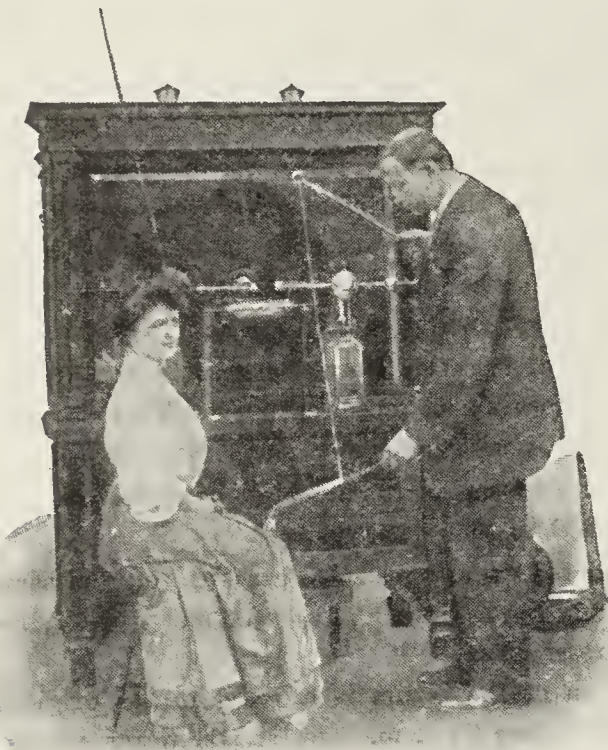
Constructed on scientific principles to secure a constant, one direction current of required voltage and amperage for:

*Radiography*

*X-ray Diagnosis*

*X-ray Therapy*

*High-Frequency Work*



This apparatus has been thoroughly tested in competition and is endorsed everywhere by physicians, colleges and laboratories, including those of Yale, Princeton, Columbia, Cornell, and many others.

It is a thoroughly practical X-ray outfit for the physician and so guaranteed by us. No physician's office is complete without it. We will demonstrate it in any physician's office within reasonable distance, and it may be settled for on agreeable terms when shown to be as represented.

Let us send you descriptive literature.

**R. V. WAGNER CO.,**

**140 Wabash Avenue CHICAGO**

## THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue :: :: Chicago, Ill.

PHONE, NORTH 2023

CABLE ADDRESS: "MEDIC, CHICAGO"

*Subscription price: \$5.00 per annum in advance*  
*\*Canadian Subscription \$6.50 per annum in advance*  
*Foreign Subscription, including Postage, £1 12s.*

Postage in the United States, Cuba, Mexico, Hawaii, Guam, Porto Rico, and the Philippines, free. \*N. B.—A new postal ruling requires extra postage for Canada. Subscriptions may commence at any time. Volumes begin with the first issue of January and the first issue of July.

### MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

A member in good standing of the constituent association of the state in which he resides may become a member of the American Medical Association by presenting to the General Secretary: (1) Satisfactory evidence of the above qualification; (2) written application for membership on the prescribed form; (3) five dollars for the annual dues and subscription to THE JOURNAL. Applications should be sent to the American Medical Association, 103 Dearborn Ave., Chicago.

### FISCAL YEAR.

The fiscal year of the AMERICAN MEDICAL ASSOCIATION is from January 1 to December 31; and the annual dues paid by a new member cover only the fiscal year, no matter at what time of year the membership is obtained. Those who pay their dues and join the ASSOCIATION at the annual meeting in June, for instance, pay only for the fiscal year, which ends with the December following, and the annual dues for the following fiscal year are payable the succeeding January, at which time a statement is sent to each member. Such members, however, are entitled to THE JOURNAL for a full year, even though the membership be not continued.

### ORIGINAL PAPERS.

Articles are accepted for publication on condition that they are contributed solely to this journal.

### CONTRIBUTIONS TYPEWRITTEN.

It will be satisfactory to all concerned if authors will have their contributions typewritten before submitting them for publication. The expense is small to the author—the satisfaction is great to the editor and printer. We can not promise to return unused manuscript.

### ANONYMOUS COMMUNICATIONS.

Anonymous communications, whether for publication, for information, or in the way of criticism, are consigned to the wastebasket unread.

### NEWS.

Our readers are requested to send us items of news of a medical nature, also marked copies of local newspapers containing matters of interest to physicians. We shall be glad to know the name of the sender in every instance.

### ILLUSTRATIONS.

Half-tones, zinc etchings and other illustrations will be furnished by THE JOURNAL when satisfactory photographs or drawings are supplied by the author. Photographs and drawings will be returned after the article is published if the word "return" is written on the back of each.

### COPYRIGHT.

Matter appearing in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is covered by copyright, but as a general thing, no objection will be made to the reproduction in reputable medical journals of anything appearing in its columns if proper credit be given.

### ADVERTISEMENTS.

Advertising forms go to press eight days in advance of the date of issue. In sending in copy time must be allowed for setting up advertisements and for sending proofs. No proprietary medicines can be advertised until approved by the Council on Pharmacy and Chemistry.

### CHANGE OF ADDRESS.

In ordering a change of address it is important that both the old and new addresses be given. Change must reach us one week in advance if following Saturday's issue is to be forwarded to new address.

### REMITTANCES.

Remittances should be made by check, draft, registered letter, money or express order. Currency should not be sent, unless registered. Stamps in amounts under one dollar are acceptable. Make all checks, etc., payable to "AMERICAN MEDICAL ASSOCIATION."

### WARNING.

Pay no money to agents unless letter showing authority for making collection is presented.





## Welch's Grape Juice

is nature's product  
—not a prepara-  
tion. It represents  
all that is of value  
in the grape and  
only what is of  
value. Of all food  
products none  
offers such easily  
digested nutri-  
ment in so con-  
venient and so  
palatable a form.

Sold by leading druggists everywhere. 3-oz. bottle by mail 6c. Pint bottle, express prepaid east of Omaha, 25c. You will be interested in our booklet, "The Food Value of the Grape," sent free to physicians.

THE WELCH GRAPE JUICE COMPANY  
WESTFIELD, N. Y.



## NEW AND NON-OFFICIAL REMEDIES.

The following articles have been tentatively approved by the Council on Pharmacy and Chemistry:

- Acetozone (P. D. & Co.), Sept. 15, 1906.  
 Acetozone Inhalant (P. D. & Co.), Sept. 15, 1906.  
 Acet-theocinsodium (Farb. Elber. Co.), Sept. 15, '06.  
 Adnephirin Emollient (Stearns), Sept. 15, 1906.  
 Adnephirin Oil Spray (Stearns), Sept. 15, 1906.  
 Adnephirin Solution (Stearns), Sept. 15, 1906.  
 Adnephirin Suppositories (Stearns), Jan. 26, 1907.  
 Adrenalin (P. D. & Co.), Sept. 15, 1906.  
 Adrenalin Chloride Sol. (P. D. & Co.), Sept. 15, '06.  
 Adrenalin Inhalant (P. D. & Co.), Sept. 21, 1907.  
 Adrenalin Ointment (P. D. & Co.), Sept. 21, 1907.  
 Adrenalin Suppositories (P. D. & Co.), Sept. 15, 1906.  
 Adrenalin Tablets (P. D. & Co.), Sept. 21, 1907.  
 Adrenalin & Chlorotone Oint. (P. D. & Co.), Sept. 21, '07.  
 Adrenalin & Cocain Tab. (P. D. & Co.), Sept. 21, '07.  
 Agurin (Farb. Elber. Co.), Sept. 15, 1906.  
 Aiol (Homann-La Roche C. Works), Sept. 15, '06.  
 Akaralgia (W. S. Merrell Co.), April 20, 1907.  
 Albargin (Koechl & Co.), Jan. 26, 1907.  
 Alphozone (Stearns & Co.), Sept. 15, 1906.  
 Alphozone Tablets (Stearns & Co.), Sept. 15, 1906.  
 Alumol (Koechl & Co.), Sept. 15, 1906.  
 Alynin (Farb. Elber. Co.), Feb. 2, 1907.  
 Aminoform (Bischoff & Co.), Sept. 15, 1906.  
 Anesthesin (Koechl & Co.), Sept. 15, 1906.  
 Anthrasol (Knoll & Co.), Feb. 2, 1907.  
 Antipyrine Salicylate, Sept. 15, 1906.  
 Antiseptic Cr  d   (S. & G.), April 20, 1907.  
 Antithermoline (Carnrick), Sept. 15, 1906.  
 Antithyroidin (Merck & Co.), Sept. 15, 1906.  
 Antithyroid Preparations, Sept. 15, 1906.  
 Apiol, Oct. 19, 1907.  
 Argentamin (Schering & G.), Sept. 15, 1906.  
 Argonin (Koechl & Co.), Sept. 15, 1906.  
 Argyrol (Barnes & Hille), Sept. 15, 1906.  
 Aristochin (Farb. Elber. Co.), Sept. 22, 1906.  
 Aristol (Farb. Elber. Co.), Sept. 22, 1906.  
 Aromatic Cordia P.-M. Co. (Pitman-Myers Co.).  
 Aspirin (Farb. Elber. Co.), Sept. 22, 1906.  
 Atoxyl (Koechl & Co.), Sept. 21, 1907.  
 Atoxyl, hypodermic tablets 1-3 gr. (Koechl & Co.).  
 Benzo-Formol Comp. (Mulford Co.), Nov. 16, '07.  
 Benzosal (Koechl & Co.), Sept. 22, 1906.  
 Beta-Eucaine Hydrochloride (S. & G.), Sept. 22, '06.  
 Beta-Eucaine Lactate (S. & G.).  
 Beta-Naphthol Benzoate (Merck) Sept. 22, 1906.  
 Betol (Heyden Chem. Works), Sept. 22, 1906.  
 Bismal (Merck & Co.), Sept. 22, 1906.  
 Bismuth Hydrate Comp. (H. K. Wampole & Co.).  
 Blandine Comp. (H. K. Mulford Co.), Nov. 16, '07.  
 Borochlorotone (P. D. & Co.), Sept. 22, 1906.  
 Brometone (P. D. & Co.), Sept. 22, 1906.  
 Bromipin—10 per cent. (Merck), Sept. 29, 1906.  
 Bromipin—33 1-3 per cent. (Merck), Sept. 29, 1906.  
 Bromo-mangan (Reinschild Chem. Co.), Mar. 16, '07.  
 Bromural (Knoll & Co.), March 14, 1908.  
 Butyl-Chloralhydrate, Sept. 29, 1906.  
 Calcium Ichthyol (Merck & Co.), Sept. 29, 1906.  
 Calomelol (Heyden Chem. Works), Sept. 29, 1906.  
 Calomelol Ointment (Heyden), Sept. 29, 1906.  
 Capsules Glycerophosphates Comp. (Mulford Co.).  
 Casca-Laxative (H. K. Mulford Co.).  
 Cascara Evacuante (P. D. & Co.), Sept. 29, 1906.  
 Cascara Tonic Laxative Globules (P. D. & Co.), Sept. 29, 1906, Oct. 13, 1906.  
 Celloidin (Schering & G.), March 9, 1907.  
 Chinaphenin (Farb. Elber. Co.), Sept. 29, 1906.  
 Chloralamid (Schering & G.), Feb. 2, 1907.  
 Chlorbutanol, Sept. 29, 1906.  
 Chlorotone (P. D. & Co.), Sept. 29, 1906.  
 Chlorotone Inhalant (P. D. & Co.), Sept. 29, 1906.  
 Cholesteglin (F. H. Strong Co.), Oct. 19, 1907.  
 Citarin (Farb. Elber. Co.), Sept. 29, 1906.  
 Codrenin (P. D. & Co.), Sept. 21, 1907.  
 Colalin (Rufus Crowell & Co.), Sept. 21, 1907.  
 Coalin-Laxative (R. Crowell & Co.), Jan. 11, '08.  
 Collargol (Schering & G.), Feb. 2, 1907.  
 Collargol Ointment (S. & G.), Feb. 9, 1907.  
 Comp. Emulsion Petroleum (S. & D.), Mar. 9, '07.  
 Coryfin (Farb. Elber. Co.), Dec. 7, 1907.  
 Crema-Bismuth (H. K. Mulford Co.), Nov. 16, '07.  
 Creosote Carbonate, March 30, 1907.  
 Creosotal (Farb. Elber. Co.), March 30, 1907.  
 Creosotal-Heyden (S. & G.), March 30, 1907.  
 Cresylene (P. D. & Co.), Feb. 9, 1907.  
 Cupro-Hemol (Merck & Co.), Feb. 9, 1907.  
 Dentalone (P. D. & Co.), Oct. 6, 1906.  
 Dermatol (Koechl & Co.), Oct. 6, 1906.  
 Diacetyl-Morphine, March 30, 1907.  
 Diacetyl-Morphine Hydrochloride, April 6, 1907.  
 Diazyme Essence (Fairchild Bros. & Foster), Oct. 19, '07.  
 Diazyme Glycerole (Fairchild Bros. & Foster), Oct. 19, '07.  
 Dionin (Merck & Co.), March 30, 1907.  
 Diuretin (Knoll & Co.), Oct. 6, 1906.  
 Dolomol (Pulvola Chem. Co.), April 20, 1907.  
 Dry Peptonoids (Soluble) (Arlington Chem. Co.).  
 Duotal (Farb. Elber. Co.), Oct. 6, 1906.  
 Duotal-Heyden (Schering & G.), March 9, 1907.  
 Duotonol (Schering & G.), Oct. 6, 1906.  
 Elixir Buchu, Juniper and Acetate Potass. P.-M. Co. (Pitman-Myers Co.), March 14, 1908.  
 Elixir of Enzymes (Armour), April 20, 1907.  
 Elixir Eupnein (Schieffelin & Co.), Oct. 6, 1906.  
 Elixir Saw Palmetto (P. D. & Co.), Oct. 6, 1906.  
 Empyiform (Schering & G.), Oct. 6, 1906.  
 Emulsion Cloftlin (Cloftlin Chem. Co.), Oct. 19, '07.  
 Epicarlin (Farb. Elber. Co.), Oct. 6, 1906.  
 Erpiol (Merrell Chem. Co.), Sept. 28, 1907.  
 Erythrol Tetranitrate (Merck), Oct. 6, 1906.  
 Essence of Pepsin (Fairchild B. & F.), Mar. 9, '07.  
 Ethylenediamine (Schering & G.), Oct. 6, 1906.  
 Ethyl-morphine Hydrochloride, March 30, 1907.  
 Eucaine, Oct. 6, 1906.  
 Eucaloids (Edward G. Binz Co.), Oct. 6, 1906.  
 Euca-mul (Edward G. Binz Co.), Oct. 13, 1906.  
 Euformol (P. D. & Co.), Feb. 9, 1907.  
 Eugallol (Knoll & Co.), Oct. 13, 1906.  
 Eumydrin (Farb. Elber. Co.), Oct. 13, 1906.  
 Euphorin (Fbrk. v. Heyden), Oct. 13, 1906.  
 Euphthalmin (Schering & G.), Oct. 13, 1906.  
 Eupyrin (Bischoff & Co.), March 16, 1907.  
 Euquinine (Merck & Co.), Oct. 13, 1906.  
 Euresol, (Knoll & Co.), Oct. 13, 1906.  
 Euresol Soap (Knoll & Co.), Oct. 13, 1906.  
 Europhen (Farb. Elber. Co.), Oct. 13, 1906.  
 Exodin (Schering & G.), Feb. 9, 1907.  
 Ferrichthylol (Merck & Co.), Oct. 13, 1906.  
 Ferripyrine (Koechl & Co.), Oct. 13, 1906.  
 Ferro-mangan (Reinschild Chem. Co.), Mar. 16, '07.  
 Ferropyrine (Knoll & Co.), Oct. 13, 1906.  
 Fibrolysin (Merck & Co.), March 9, 1907.  
 Formalin (Schering & G.), Oct. 13, 1906.  
 Formin (Merck & Co.), Oct. 13, 1906.  
 Fortoin (Bischoff & Co.), March 16, 1907.  
 Gallogen (Bischoff & Co.), Oct. 13, 1906.  
 Germicidal Soap (P. D. & Co.), Oct. 13, 1906.  
 Glutol-Schleich (Schering & G.), Oct. 13, 1906.  
 Glycerin Emollient (P. D. & Co.), Oct. 13, 1906.  
 Glycerodine (Wampole & Co.).  
 Glycerole Lecithin (Fairchild Bros. & Foster).  
 Glycerole Trypsin (Armour & Co.), Sept. 28, 1907.  
 Guaiacol Carbonate Comp. (Mulford), Jan. 11, '08.  
 Guaiacol-Salol (Merck & Co.), Oct. 13, 1906.  
 Guaiamar (Mallinckrodt C. Works), Oct. 20, 1906.  
 Guajasanol (Koechl & Co.), Oct. 20, 1906.  
 Haemoferrum (Stearns & Co.), Feb. 9, 1907.  
 Hedonal (Farb. Elber. Co.), Oct. 20, 1906.  
 Helmitol (Farb. Elber. Co.), Oct. 20, 1906.  
 Hemicanrin (Farb. Elber. Co.), Oct. 20, 1906.  
 Hemogallol (Merck & Co.), Oct. 20, 1906.  
 Hemol (Merck & Co.), March 9, 1907.  
 Hemoquinine (Schieffelin & Co.), Oct. 20, 1906.  
 Heroin (Farb. Elber. Co.), April 6, 1907.  
 Heroin Hydrochloride (Farb. Elber. Co.), Apr. 6, '07.  
 Heromal (Schieffelin & Co.), Oct. 20, 1906.  
 Heroterpine (Schieffelin & Co.), Oct. 20, 1906.  
 Hexamethylenamine Methylencitrate, Oct. 27, 1906.  
 Holadin (Fairchild Bros. & Foster), Nov. 9, 1907.  
 Holocaine Hydrochloride (Koechl), Oct. 27, 1906.  
 Hypnal (Koechl & Co.), Oct. 27, 1906.  
 Ichthalbin (Knoll), Oct. 27, 1906; Nov. 10, 1906.  
 Ichthammon (F. Reichelt), Oct. 27, 1906.  
 Ichthargan (Ichthyol Co.), Oct. 27, 1906.  
 Ichthermol (Merck & Co.), Oct. 27, 1906.  
 Ichthoform (Merck & Co.), Oct. 27, 1906.  
 Ichthyol (Merck & Co.), Oct. 27, 1906.  
 Iodabin (P. D. & Co.).  
 Iodabin Capsules (P. D. & Co.).  
 Iodipin—10 per cent. (Merck), Oct. 27, 1906.  
 Iodipin—25 per cent. (Merck), Nov. 3, 1906.  
 Iodoformogen (Knoll & Co.), Nov. 3, 1906.  
 Iodo-mangan (Reinschild Chem. Co.), Mar. 23, '07.  
 Iodothyrene (Farb. Elber. Co.), Nov. 3, 1906.  
 Iothion (Farb. Elber. Co.), Feb. 9, 1907.  
 Kasagra (Stearns & Co.), Nov. 3, 1906.  
 Kelene (Fries Bros.), Sept. 28, 1907.  
 Kola, Stearns (Stearns & Co.), Nov. 3, 1906.  
 Kresamine (Schering & G.), Nov. 3, 1906.  
 Lac Bismo (E. J. Hart & Co.), Nov. 3, 1906.  
 Lactophenin (Chem. Fbrk. vrm., Goldenberg, Germany & Co.), Nov. 3, 1906.  
 Laminoids Ferruginous (Nascent) (Schieffelin & Co.), Nov. 3, 1906.  
 Lecibrin (Fairchild Bros. & Foster).  
 Lecithin, April 6, 1907.  
 Lecithin Solution (Fairchild Bros. & Foster).  
 Lecithol (Armour & Co.), March 21, 1908.  
 Lennigallol (Knoll & Co.), Nov. 3, 1906.  
 Levulose, Schering (S. & G.), Oct. 6, 1906.  
 Liquid Peptonoids (Arlington Chem. Co.), June 1, '07.  
 Liquor Sedans (P. D. & Co.).  
 Liquor Sedans Rx 2 without sugar (P. D. & Co.).  
 Liquor Sedans with Cascara (P. D. & Co.).  
 Liquor Tritici (P. D. & Co.), Nov. 3, 1906.  
 Lithium Ichthyol (Merck & Co.), Nov. 3, 1906.  
 Lubraseptic (Russell & Lawrie), April 20, 1907.  
 Lycetol (Farb. Elber. Co.), Nov. 3, 1906.  
 Lysidin (Koechl & Co.), Nov. 3, 1906.  
 Maltzyme, Plain (Malt-Diastase Co.), Jan. 11, '08.  
 Maltzyme with Cod Liver Oil (Malt-Diastase Co.).  
 Maltzyme with Cascara Sagrada ditto  
 Maltzyme with Hypophosphites ditto  
 Maltzyme with Yerba Santa ditto  
 Maltzyme with Iron, Quinia and Strychnia ditto  
 Maltzyme Ferrated ditto  
 Mercuran (Eusoma Pharm. Co.), Sept. 28, 1907.  
 Mercurool (P. D. & Co.), Nov. 3, 1906.  
 Mesotan (Farb. Elber. Co.), Nov. 3, 1906.  
 Methaform (Stearns & Co.), Nov. 3, 1906.  
 Methyl-Santal (H. K. Mulford Co.), Nov. 16, '07.  
 Migrainin (Koechl & Co.), Nov. 3, 1906.  
 Monotal (Farb. Elber. Co.), Nov. 3, 1907.  
 Neurocaine (Schieffelin & Co.), Nov. 3, 1906.  
 Neuro-Lecithin (Abbott Alk. Co.), Mar. 24, 1908.  
 Neuronidia (Schieffelin & Co.), Nov. 3, 1906.  
 Novargan (Heyden Chem. Works), Feb. 16, 1907.  
 Novaspirin (Farb. Elber. Co.), Dec. 7, 1907.  
 Novocaine (Koechl & Co.), Nov. 10, 1906.  
 Novocaine, hypodermic tab. 1-3 gr. (Koechl & Co.).  
 Nutrose (Koechl & Co.), Nov. 3, 1906.  
 Oil of Eucalyptus, globules (E. G. Binz Co.).  
 Oleoresin of Parsley Seed, Oct. 19, 1907.  
 Oleum Ricini Dulcis P.-M. Co. (Pitman-Myers Co.).  
 Orthoform-New (Koechl & Co.), Nov. 10, 1906.  
 Orthoform-New Hydrochloride (Koechl), Nov. 10, '06.  
 Ovocerrin (Barnes & Hille), Nov. 10, 1906.  
 Oxaphor (Koechl & Co.), Nov. 10, 1906.  
 Panopepton (Fairchild Bros. & Foster), June 1, '07.  
 Pegnin (Koechl & Co.), Nov. 17, 1906.  
 Perhydrol (Merck), April 20, 1907.  
 Phenacetin (Farb. Elber. Co.), Nov. 10, 1906.  
 Phenocoll Hydrochloride (Schering), Nov. 10, '06.  
 Phenocoll Salicylate, Nov. 10, 1906.  
 Phenolphthalein, April 20, 1907.  
 Piperazine (Farb. Elber. Co., S. & G.), Nov. 17, '06.  
 Pollantin (Fritzsche Bros.), Nov. 17, 1906.  
 Pollantin Powder (Fritzsche Bros.), Nov. 17, 1906.  
 Protan (H. K. Mulford Co.), Nov. 30, 1907.  
 Protargol (Farb. Elber. Co.), Feb. 16, 1907.  
 Purgatin (Knoll & Co.), Nov. 17, 1906.  
 Pyramidon Acid Camph. (Koechl), Nov. 17, 1906.  
 Pyramidon (Koechl & Co.), Nov. 17, 1906.  
 Pyramidon Neutral Camph. (Koechl), Nov. 17, '06.  
 Pyramidon Salicylate (Koechl), Nov. 17, 1906.  
 Quantonol (Schering & G.), Nov. 24, 1906.  
 Quinine Lygositate (Bischoff & Co.), Mar. 23, '07.  
 Red Bone Marrow (Armour & Co.), Feb. 23, 1907.  
 Regulin (Reinschild Chem. Co.), Oct. 19, 1907.  
 Sajodin (Farb. Elber. Co.), Feb. 23, 1907.  
 Sal Ethyl (P. D. & Co.), Nov. 24, 1906.  
 Saliformin (Merck & Co.), Nov. 24, 1906.  
 Salit (Heyden Chem. Works), Nov. 24, 1906.  
 Salophen (Farb. Elber. Co.), Nov. 24, 1906.  
 Saloquinine (Merck & Co.), Nov. 24, 1906.  
 Saloquinine Salicylate (Merck), Nov. 24, 1906.  
 Santyl (Knoll & Co.), Feb. 23, 1907.  
 Sextonol (Schering & G.), Nov. 24, 1906.  
 Sidonal (Koechl & Co.), Nov. 24, 1906.  
 Silver Citrate, Sept. 28, 1907.  
 Silver Lactate, Sept. 28, 1907.  
 Silver Lactate Cr  d   (S. & G.), April 20, 1907.  
 Sodium Cacodylate, Nov. 24, 1906.  
 Sodium Cinnamate, Nov. 24, 1906.  
 Sodium Ichthyol (Merck & Co.), Dec. 1, 1906.  
 Sodium Lygositate (Bischoff & Co.), March 23, '07.  
 Stovaine (Walter F. Sykes), Dec. 1, 1906.  
 Stypticin (Merck & Co.), Dec. 1, 1906.  
 Styptol (Knoll & Co.), Dec. 1, 1906.  
 Styrcol (Knoll & Co.), Dec. 1, 1906.  
 Sublamine (Schering & G.), Dec. 8, 1906.  
 Sulphonal (Farb. Elber. Co.), Dec. 8, 1906.  
 Suprarenal Liquid (P. D. & Co.), Feb. 23, 1907.  
 Suprarenalin (Armour & Co.), Feb. 23, 1907.  
 Suprarenalin Ointment (Armour), Feb. 23, 1907.  
 Suprarenalin Solution (Armour), Feb. 23, 1907.  
 Suprarenalin Triturates (Armour), Feb. 23, 1907.  
 Syrup Cannabis Comp. P.-M. Co. (Pitman-Myers Co.), March 21, 1908.  
 Syrup Hydriodic Acid (R. W. Gardner).  
 Tablets Acet-Phenetidin Comp. P.-M. Co. (Pitman-Myers Co.).  
 Tannalbin (Knoll & Co.), Dec. 15, 1906.  
 Tannigen (Farb. Elber. Co.), Dec. 15, 1906.  
 Tannoform (Merck & Co.), Dec. 15, 1906.  
 Tannopin (Farb. Elber. Co.), Dec. 15, 1906.  
 Tanphenyform (Warner & Co.), Oct. 19, 1907.  
 Theobromine Sodium Salicylate, Dec. 15, 1906.  
 Theocin (Farb. Elber. Co.), Dec. 22, 1906.  
 Theophyllin, Dec. 22, 1906; Jan. 5, 1907.  
 Thermodin (Merck & Co.), Dec. 22, 1906.  
 Thiozol (Hoffmann-LaR. C. Works), Dec. 22, '06.  
 Thiosinamine, Jan. 5, 1907.  
 Thyroidectin (P. D. & Co.), March 2, 1907.  
 Tonic Hypophosphites (S. & D.), March 2, 1907.  
 Tonols (Schering & G.), Dec. 22, 1906.  
 Triferin (Knoll & Co.), Jan. 5, 1907.  
 Triferol (Knoll & Co.), Jan. 5, 1907.  
 Trikesol (Schering & G.), Jan. 5, 1907.  
 Trional (Farb. Elber. Co.), Jan. 5, 1907.  
 Trioxymethylene (Merck & Co.), Jan. 5, 1907.  
 Triphenin (Merck & Co.), Jan. 12, 1907.  
 Tritipalm (Stearns & Co.), Jan. 5, 1907.  
 Tropacocain Hydrochloride (Merck), Jan. 12, 1907.  
 Trypsin (Armour & Co.), Sept. 28, 1907.  
 Trypsogen (G. W. Carnrick Co.), March 2, 1907.  
 Tumamol-Ammonium (Koechl & Co.), March 2, '07.  
 Tumamol (Koechl & Co.), Jan. 12, 1907.  
 Tussol (Koechl & Co.), Jan. 19, 1907.  
 Urethane (Merck & Co.), Jan. 19, 1907.  
 Uriform (Schieffelin & Co.), Jan. 19, 1907.  
 Uritone (P. D. & Co.), Jan. 19, 1907.  
 Uropherin, B. (Merck & Co.), Jan. 19, 1907.  
 Uropherin, S. (Merck & Co.), Jan. 19, 1907.  
 Urotropine (Schering & G.), Jan. 19, 1907.  
 Validol (Bischoff & Co.), March 2, 1907.  
 Validol Camphoratum (Bischoff & Co.), Mar. 2, '07.  
 Valyl (Koechl & Co.), Jan. 19, 1907.  
 Veroform Antiseptic (Veroform Hygienic Co.), March 28, 1908.  
 Veroform Germicide (Veroform Hygienic Co.), March 28, 1908.  
 Veronal (Merck & Co.), Jan. 26, 1907.  
 Vibutero (Stearns & Co.), Jan. 26, 1907.  
 Vinum Extracti Morrhuae (Stearns), Jan. 26, '07.  
 Vioform (Bischoff & Co.), March 9, 1907.  
 Vioform Gauze (Bischoff & Co.), March 9, 1907.  
 Neroform (Heyden Chem. Works), Jan. 26, 1907.



# PROGRESSIVE THERAPEUTICS

## THE VALUE OF NOVOCAIN AS A LOCAL ANESTHETIC FOR SUBCUTANEOUS USE

(See description "New and Non-Official Remedies.")

In the *Edinburgh Medical Journal* for February, 1908, Struthers says that there are known a number of drugs, more or less closely allied to one another, which have the power of paralyzing nerve terminals or interrupting the conductivity of nerve trunks so completely that they may be successfully used to induce local anesthesia for operative purposes. The most recently discovered of these is a synthetic product which has been termed Novocain. Various advantages over similar drugs have been claimed for it, and it has in a short time attained great popularity, particularly in Germany, where it was discovered, or perhaps one should say elaborated, by Einhorn, and is now prepared in the laboratories of a well known chemical firm. During the last few months the author has made use of Novocain clinically for inducing local anesthesia by subcutaneous injection, and as he has found that the claims made for it seem well founded, he thought it might be of interest if he indicated briefly the evidence which his experience has afforded. His remarks are based on some eighty-six cases in which he has used Novocain and carefully noted the results, contrasting them with those obtained from the use of cocaine and eucain in some hundreds of similar cases. These results have been uniformly good, and although the number of cases may seem small on which to base an opinion, he is inclined to believe that Novocain is at least of equal and probably of greater value as a local anesthetic than cocaine or eucain for subcutaneous use.

In the first place, he states that the drug is very soluble, and that its solutions are stable and may be repeatedly sterilized by boiling without in the least losing their power of inducing anesthesia. He has tested this by making up a large quantity of a stock solution and using it over a period of several months, sterilizing it over and over again during that time. The solutions combine well with solutions of adrenal principle and do not in the least interfere with the vasoconstrictor action of the latter.

For infiltration anesthesia the author has found that a solution of Novocain in 0.75 per cent. saline solution of the strength of 1:400, plus one drop of the ordinary 1:1000 adrenalin solution to every two or three drams of solution used, the strength of solution originally recommended by Braun, answers admirably. It corresponds to what may be termed the standard solution for infiltration of 1:1000 cocaine, but has the advantage that it may be used in larger quantities; for while the limit of safety is reached when about four ounces of the cocaine solution has been used, at least six ounces and probably more of the Novocain solution may be employed for an adult without any risk. In addition to this, it diffuses readily and acts as quickly as the cocaine solution, anesthesia being satisfactory in ten or fifteen minutes after the injection is complete, and for this reason Novocain is to be preferred to eucain, for the latter may require as much as half an hour to take full effect. The duration of the anesthesia is always more than an hour, often as long as three or four hours. After it has passed off there is often, as with other drugs, a variable amount of burning and smarting pain in the wound, and the author has seen no reason to infer that this is either greater or less than with cocaine, eucain, etc. Sloughing of the skin, which occasionally follows the use of local anesthetics, the writer has never seen, nor has he seen it reported after the use of Novocain.

He has used infiltration anesthesia with Novocain—adrenalin solution of the strength indicated in the following operations: Tracheotomy, skin grafting, application of actual cautery, plastic operation on eyelid, exploration of sinns for foreign bodies, relief of paraphimosis; removal of testis, varicocele, tunica vaginalis for hydrocele, prepatellar bursa, olecranon bursa, carpal ganglion, fatty tumor, angioma, congenital mole,

sebaceous cysts, varicose veins of leg, adenoma of breast, small subcutaneous fibrosarcoma, tubercular ulcers.

The list is, the author thinks, fairly representative of the class of operations which may suitably be done under local anesthesia with success. A number of them have been done several times, and the total has afforded a satisfactory test of the efficacy of Novocain for infiltration anesthesia. Several of them, it may be mentioned, were done in children as young as 5 and 6 years of age. In no case was there any sign of toxic symptoms arising from the use of the Novocain adrenalin solution.

For regional anesthesia a 2 per cent. solution of Novocain with two drops of 1:1000 chlorid solution to each dram of solution used is necessary when nerves as large as the median at the wrist, or the ulnar at the elbow are being dealt with.

For anesthetizing digits by Oberst's method, the 2 per cent. solution may be used with perfect safety, but a 1 per cent. solution with adrenalin as before has been found quite strong enough to paralyze the relatively small digital nerves.

If a ring of this solution is injected around the base of a finger or toe into the subcutaneous tissue, the entire digit distal to the injection will be found anesthetic in ten minutes. It was formerly the custom to apply a rubber band to the finger to localize the anesthetizing solution. The addition of adrenalin to solutions for inducing local anesthesia, with the resulting anemia and localization of the anesthetic action, has rendered the application of the rubber band unnecessary, and it is now never used.

The use of a local anesthetic for anesthetizing digits by this method appears to afford perhaps as ready and accurate a method of comparing the relative strength of various drugs clinically as we possess, for the conditions in many cases are almost identical, and a given quantity of any drug can be accurately injected in each case and the effect easily watched and estimated. While a  $\frac{1}{2}$  per cent. cocaine adrenalin solution is strong enough to anesthetize a digit complete in ten minutes, a 1 per cent. Novocain adrenalin solution is required to insure anesthesia in the same time. While one would, however, hesitate to use more than 4 drams of a  $\frac{1}{2}$  per cent. cocaine solution, as much as 6 drams of the 1 per cent. Novocain solution may be used without any risk. In point of fact such a quantity of a 1 per cent. solution is rarely required.

It will be noticed that the doses indicated have not been stated as so many grains or centigrams of Novocain, but in drams or ounces of the solutions recommended for use. This has been done in order to emphasize the fact that in stating the safe dose of any local anesthetic the strength of solution must always be indicated, for a given quantity of Novocain, cocaine or other drug is much less toxic in a weak than in a strong solution. The actual amount of Novocain suggested as the maximum dose in 1 per cent. solution is just over 3 grains, while the amount in the  $\frac{1}{4}$  per cent. solution is over 6 grains.

As regards the use of Novocain for inducing regional anesthesia, the author has used it with success in opening whitlows of all degrees of severity, for the removal of ingrowing toe nails, of subungual exostosis, for the treatment of hammer toe by excising the head and part of the shaft of the first phalanx, for amputation of fingers at and distal to the metacarpophalangeal joint, for removing needles and other foreign bodies embedded in the hand or fingers, for the cleansing and stitching of severe lacerated wounds, etc.

It has proved as satisfactory for regional as for infiltration anesthesia, and in conclusion the author states that he believes the advent of Novocain marks a real, though perhaps slight advance in the possibilities attending the use of local anesthesia by subcutaneous injection. It is stable, readily sterilized, unirritating, and efficient as a local anesthetic when combined with adrenalin, and can apparently be used in doses to meet all requirements without any fear of serious toxic symptoms arising.—*The Therapeutic Gazette*, June 15, 1908.

The above excerpts abstracted by the firm of

**Victor Koechl & Co., NEW YORK, N. Y.**



## WAGNER High-Tension ELECTRIC GENERATOR

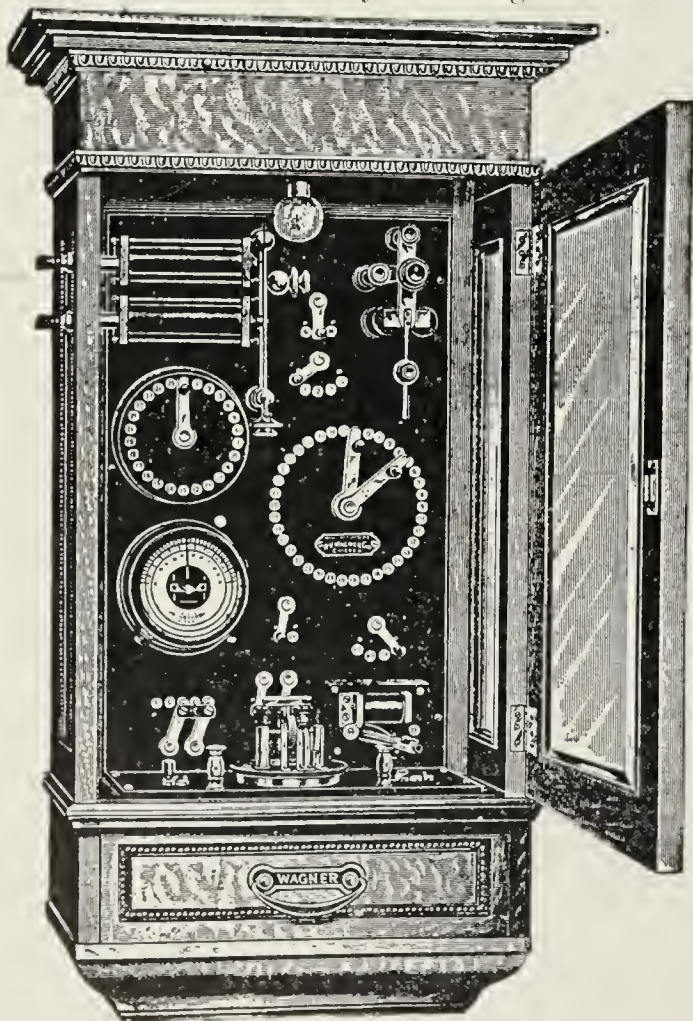
This Generator has a wider range of usefulness in a physician's office than any similar form of apparatus, coil or static machine.

Will do electrotherapeutic work:—spray, wave and induced currents, high-frequency, etc., with all radiographic work as required by the general practitioner.



This Generator is not an experiment. It has now been on the market for twelve years, and has given universal satisfaction.

No. 1 Wall Cabinet has a means of regulating the strength of the galvanic current, either by increasing or decreasing the



UNIVERSAL WALL PLATE.

voltage or by increasing and decreasing resistance. The faradic currents are obtained from two separate faradic coils, and may be regulated in regard to volume, as well as voltage or tension, and in any frequency of interruptions desired.

Write for catalog.

**R. V. Wagner Company, 140 Wabash Ave., Chicago**

## THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue :: :: Chicago, Ill.

PHONE, NORTH 2023

CABLE ADDRESS: "MEDIC, CHICAGO"

*Subscription price: \$5.00 per annum in advance*

*\*Canadian Subscription \$6.50 per annum in advance*

*Foreign Subscription, including Postage, £1 12s.*

Postage in the United States, Cuba, Mexico, Hawaii, Guam, Porto Rico, and the Philippines, free. \*N. B.—A new postal ruling requires extra postage for Canada. Subscriptions may commence at any time. Volumes begin with the first issue of January and the first issue of July.

### MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

A member in good standing of the constituent association of the state in which he resides may become a member of the American Medical Association by presenting to the General Secretary: (1) Satisfactory evidence of the above qualification; (2) written application for membership on the prescribed form; (3) five dollars for the annual dues and subscription to THE JOURNAL. Applications should be sent to the American Medical Association, 103 Dearborn Ave., Chicago.

### FISCAL YEAR.

The fiscal year of the AMERICAN MEDICAL ASSOCIATION is from January 1 to December 31; and the annual dues paid by a new member cover only the fiscal year, no matter at what time of year the membership is obtained. Those who pay their dues and join the ASSOCIATION at the annual meeting in June, for instance, pay only for the fiscal year, which ends with the December following, and the annual dues for the following fiscal year are payable the succeeding January, at which time a statement is sent to each member. Such members, however, are entitled to THE JOURNAL for a full year, even though the membership be not continued.

### ORIGINAL PAPERS.

Articles are accepted for publication on condition that they are contributed solely to this journal.

### CONTRIBUTIONS TYPEWRITTEN.

It will be satisfactory to all concerned if authors will have their contributions typewritten before submitting them for publication. The expense is small to the author—the satisfaction is great to the editor and printer. We can not promise to return unused manuscript.

### ANONYMOUS COMMUNICATIONS.

Anonymous communications, whether for publication, for information, or in the way of criticism, are consigned to the wastebasket unread.

### NEWS.

Our readers are requested to send us items of news of a medical nature, also marked copies of local newspapers containing matters of interest to physicians. We shall be glad to know the name of the sender in every instance.

### ILLUSTRATIONS.

Half-tones, zinc etchings and other illustrations will be furnished by THE JOURNAL when satisfactory photographs or drawings are supplied by the author. Photographs and drawings will be returned after the article is published if the word "return" is written on the back of each.

### COPYRIGHT.

Matter appearing in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is covered by copyright, but as a general thing, no objection will be made to the reproduction in reputable medical journals of anything appearing in its columns if proper credit be given.

### ADVERTISEMENTS.

Advertising forms go to press eight days in advance of the date of issue. In sending in copy time must be allowed for setting up advertisements and for sending proofs. No proprietary medicines can be advertised until approved by the Council on Pharmacy and Chemistry.

### CHANGE OF ADDRESS.

In ordering a change of address it is important that both the old and new addresses be given. Change must reach us one week in advance if following Saturday's issue is to be forwarded to new address.

### REMITTANCES.

Remittances should be made by check, draft, registered letter, money or express order. Currency should not be sent, unless registered. Stamps in amounts under one dollar are acceptable. Make all checks, etc., payable to "AMERICAN MEDICAL ASSOCIATION."

### WARNING.

Pay no money to agents unless letter showing authority for making collection is presented.



# THE JOURNAL

OF THE

## American Medical Association

Annual Subscription, \$5.00

PUBLISHED WEEKLY

Single Copies, 15 Cents

Volume LI

CHICAGO, ILLINOIS, SEPTEMBER 26, 1908

Number 13

### CONTENTS AND DIGEST

#### ADDRESSES.

Infant Mortality. Chairman's Address, Section on Diseases of Children. Edwin E. Graham, M.D., Philadelphia. ....1045

The statistics of infant mortality. Its causes. Town and country life. Outside employment of mothers. Faulty feeding. Opiates. Gastrointestinal diseases. The decrease of infant mortality and its causes.

Developmental Deformities of the Crystalline Lens. E. Treacher Collins, F.R.C.S., London, Eng. ....1051

The normal development of the lens. Arrests of development. Anterior polar cataract. Defect of posterior capsule. Posterior lenticonus. Defect of nuclear development. Congenital cataract. Suggestions as to treatment of congenital cataract.

#### ORIGINAL ARTICLES.

Spontaneous Arterial Degeneration in the Rabbit. Richard M. Pearce, M.D., Albany, N. Y. ....1056

The observations of Miles and Johnstone. Arterial degeneration less common than assumed by Miles and Johnstone. The importance of the lesions due to adrenalin.

Three Cases of Cerebellar Tumor. Operation in Two Cases. Recovery in One. Wharton Sinkler, M.D., Philadelphia. ....1057

Various opinions as to operation in cerebellar tumor. Points of interest in the author's cases. Histories of the cases. Discussed by Drs. Miles, Thomas, Church and Grinker.

The Meato-Mastoid Operation in Chronic Mastoiditis. The Technic, Rationale and Indications. William Lincoln Ballenger, M.D., Chicago. ....1062

The evolution of the mastoid operation. Special points of technic which largely influence the success of the meato-mastoid operation as performed by the author. The rationale of the operation. Contraindications.

Discussed by Drs. Jansen, Andrews, Murphy, Vall, Welty, Pierce, Hollinger, Sauer and Ballenger.

Restoration of the Conjunctival Cul-de-Sac for the Insertion of an Artificial Eye. M. Wiener, M.D., St. Louis 1070

Description of method. Case reports.

Discussed by Drs. Todd, Hotz, Collins, Wilder and Wiener.

#### CLINICAL NOTES.

Laryngectomy for Carcinoma of the Larynx. La Fayette Page, M.D., Indianapolis. ....1072

Double-Headed Monstrosity. George E. Orebaugh, M.D., Highland, Ohio. 1073

A Case of Suppurative Pyelonephritis, with Specimen. G. Shearman Peterkin, M.D., Seattle, Wash. ....1073

Two Adenomyomata of the Islands of Langerhans. Mary Elizabeth Morse, M.D., Boston. ....1075

Pellagra. N. M. Moore, M.D., Augusta, Ga. ....1076

Nasal Menstruation. F. E. Walker, M.D., Hot Springs, S. D. ....1077

#### NEW AND NONOFFICIAL REMEDIES

The Meeting of the Council on Pharmacy and Chemistry ....1078

Adoption of revised rules governing new and nonofficial remedies—Official rules of the Council—Rules governing admission of proprietary articles to the book N. N. R.—Explanatory comments.

#### THERAPEUTICS.

Hypnotics. Arsenic ....1082

#### EDITORIALS.

THE STRUGGLE AGAINST TUBERCULOSIS IN SWEDEN: Official communication to the International Congress on Tuberculosis reviewing the progress of the crusade against this disease in Sweden. Pro-

Continued on next page.

ENTERED AS SECOND-CLASS MATTER, JUNE 25, 1885, AT THE POSTOFFICE AT CHICAGO, ILLINOIS, UNDER ACT OF MARCH 3, 1879. NEXT ANNUAL SESSION, ATLANTIC CITY, N. J., JUNE 8-11, 1909. COPYRIGHT, 1908, BY THE AMERICAN MEDICAL ASSOCIATION.

### THE POST-GRADUATE MEDICAL SCHOOL OF CHICAGO

W. FRANKLIN COLEMAN, M.D., President. ARTHUR R. ELLIOTT, M.D., Vice-President. W. L. BAUM, M.D., Treasurer. F. A. BESLEY, M.D.

A school for practitioners of medicine and surgery. Teaching exclusively clinical. Abundance of material. Large hospital in school building. General course covering all subjects. In addition to general course, special courses may be arranged for in pathology, bacteriology, examination of blood and excretions, refraction, serum therapy, cystoscopy, operations on cadaver and animals, and infant feeding. Send for latest Bulletin of Information to

FRANKLIN H. MARTIN, Secretary,

2400 Dearborn St., CHICAGO

# Bonney's Pulmonary Tuberculosis

READY TO-DAY

AND ALL ITS COMPLICATIONS AND SECONDARY INVOLVEMENTS

W. B. SAUNDERS COMPANY

SEE PAGE 3

HENRY B. WARD,  
STATE UNIVERSITY,  
LINCOLN, NEBR.



## CONTENTS AND DIGEST—Concluded.

ceeds of the jubilee fund donated to the work. Establishment of sanitariums. Tuberculosis dispensaries. Insanitary sleeping arrangements. Mortality from this disease shown to be diminishing in Sweden .....1084	NORTH CAROLINA: Hines Memorial Meeting—Personal—Hospital Association Organized—Hydrophobia .....1089	Omentopexy—Motility of the Stomach and Gastric Lesions—Lupus Erythematosus—Paradoxes in Modern Phthisiotherapy—Dangers of Excessive Sunlight in Tuberculosis .....1106
HUMAN SERUM IN CEREBROSPINAL FEVER: Introduction of active therapeutic sera. Results obtained by use of serum. A source for antimeningococcal serum. Possibility that the serum of patients recovered from this disease contains antientotoxin in appreciable amounts...1085	PENNSYLVANIA: Personal—Typhoid Fever—Communicable Diseases—State Society Meeting. Philadelphia: Personal—Medical Schools Open—Health Report...1089	Metol Dermatitis—Internal Strangulated Hernia—Excision of the Rectum for Cancer—The Great Omentum—The Elastic Ligature in Anal Fistula—Gloves and Masks .....1107
DAMAGES FOR USE OF ALLEGED TESTIMONIAL: Fraudulent testimonial published by the Foster-Milburn Company, of Buffalo, in reference to Doan's Kidney pills. Verdict in favor of the plaintiff .....1086	SOUTH DAKOTA: County Society Organized—Antituberculosis Association Organized—State Society Meeting.....1089	Sacroiliac Diseases—Gonorrheal Infections—Mercury in Tuberculosis—Examination of Feces for Amebas—Kidney Secretion—Anastomosis of Oviduct—Hydrolysis of Vignin—The House Fly as a Disseminator of Infectious Diseases .....1108
THE MNEMONIC THEORY OF DEVELOPMENT: Darwin's address at the meeting of the British Association for the Advancement of Science. Its avowed adherence to the anti-Weismann doctrine of inheritance of acquired characteristics. Somatic inheritance at the root of all evolution. Development an actual instance of habit..1086	WASHINGTON: Society Favors New Law—Hospital Notes—Personal .....1089	Disinfection of Books—The Clotting Time of the Blood—Quacks and Quackery—Affections of the Gall Bladder.....1109
	GENERAL: Tuberculosis Conference—Personal—Warning Against Book Agent—Coming Meetings .....1090	Appendicectomy—Traumatism and Appendicitis—Bovine and Human Tuberculosis .....1110
	INTERNATIONAL CONGRESS ON TUBERCULOSIS .....1090	
	FOREIGN .....1092	Foreign Medical Journals.
	LONDON LETTER .....1093	Hernial Sac—Constriction Hyperemia in Chronic Empyema .....1111
	PARIS LETTER .....1094	Smoke Abatement—Administrative Treatment of Tuberculosis—Sewage Purification—Pulmonary Tuberculosis in School Children—Constriction Hyperemia—X-Rays in Leprosy—Rat Destruction..1112
	BERLIN LETTER .....1094	Acute Tuberculosis Simulating Typhoid—Duodenal Occlusion Curable by Posture—Hemolytic Streptococci in Puerperal Infection—Diabetes and Pregnancy....1113
	PHARMACOLOGY.	Fistula Between the Lung and Esophagus—Standards for Constituents of Normal Stools—Functional Tests for Diagnosis of Gastric Ulcer—Echinococcus Affections of the Long Bones .....1114
	Tuberculozyne .....1095	Tuberculous Pyonephrosis Without External Manifestations—Primary Tuberculosis of the Mesenteric Glands—Spondylitic Abscess in the Posterior Mediastinum—True Fracture of the Neck of the Femur in the Young—Injuries in the Region of the Ankle—Traumatic Abscesses of the Anterior Mediastinum—Relations Between Congenital and Acquired Muscle Defects—Treatment of Hydrocephalus—Funnel Hystereurynter .....1115
	CORRESPONDENCE.	Daily Variations in Temperature in Infants—Operative Treatment of Unilateral Pulmonary Phthisis—Hereditary Exophthalmic Goiter .....1116
	Marital Tuberculosis Infection.....1095	Missed Abortion—Practical Technic for Sterilization of Rubber Gloves—Technic of Serum Diagnosis of Syphilis—Anesthesia and Lecithin—Schultze's Swinging—Examination of Blood at the Periphery—Management of Childbirth After Vagino-fixation .....1117
	QUERIES AND MINOR NOTES.	The Curette in Treatment of Abortion—Pseudotuberculosis of the Peritoneum—Experimental Pericardectomy—Suppurative Pancreatitis—Extermination of Vermin .....1118
	Prescription Writing .....1096	
	Literature on Cystitis.....1096	
	THE PUBLIC SERVICE. 1096	
	BOOK NOTICES. 1097	
	MEDICAL EDUCATION AND STATE BOARDS.	
	Coming Examinations—Michigan May and June Reports—Illinois June Report—South Carolina June Report—Arkansas July Report—Colorado July Report—Connecticut July Report—New Hampshire July Report—Illinois July Report..1099	
	MARRIAGES. 1101	
	DEATHS. 1101	
	MEDICAL ECONOMICS.	
	Registration in Canada.....1102	
	The Attitude of the Public Toward Medical Legislation—Postgraduate Course for County Societies .....1103	
	MEDICOLEGAL.	
	Character of Railroad Employés' Hospital Association and Liability of It and Railroad Company; Letting Insane Patients Leave Unattended—Admissible Evidence in Alleged Malpractice Case.....1104	
	CURRENT MEDICAL LITERATURE.	
	American Medical Journals.	
	X-Ray and Fractures—Tuberculin Diagnosis of Pulmonary Tuberculosis....1105	
	BOOKS RECEIVED. 1118	

## LAWS

REGULATING  
THE PRACTICE  
OF MEDICINE  
IN THE  
UNITED STATES  
AND ELSEWHERE

Revised to June 1, 1908

Thirteenth Edition

The subject matter of this booklet has been revised to date. Five new charts have been added which illustrate very clearly the requirements of the various boards concerning preliminary education and arrangements now in effect for interstate reciprocity. Full information respecting medical registration and licensure in all states and all important foreign countries is given in this booklet.

Paper Cover. 137 pp. Price 30c. Stamps Acceptable. Sent by mail, prepaid, on receipt of price.  
AMERICAN MEDICAL ASSOCIATION 103 Dearborn Ave. CHICAGO

## ALL MEDICAL BOOKS

OF ALL MEDICAL PUBLISHERS CARRIED IN STOCK BY W. T. KEENER & COMPANY,  
90 WABASH AVENUE, CHICAGO, ILL.

SEE ADVERTISEMENT ON PAGE 6.

If you desire to rent or lease an office, office hours, etc., note in this issue adv. pg. 38



# Bonney's Pulmonary Tuberculosis

READY TO-DAY

COVERING ALL COMPLICATIONS  
AND ESPECIALLY EMPHASIZING  
DIAGNOSIS AND TREATMENT

189 ORIGINAL ILLUSTRATIONS  
INCLUDING 20 IN COLORS AND  
60 X-RAY PHOTOGRAPHS



*Special Illustration (Reduced)*

A CHEAP BUT COMFORTABLE TENT FOR SUMMER USE

DESIGNED FOR PRACTITIONERS

Dr. Bonney's work is a thorough and complete treatise on the entire subject of pulmonary tuberculosis and all its many complications and secondary involvements. It has been designed particularly for the general practitioner, and represents the results of a large practical experience. The section on Physical Signs of Pulmonary Tuberculosis is particularly thorough, being, indeed, a complete monograph on the physical diagnosis of diseases of the chest. As to be expected, treatment is unusually full and practical. There are chapters on prophylaxis; open-air treatment, fully illustrated; diet; sanitarium and climatic treatments; therapeutic measures to alleviate distressing symptoms; and drug and vaccine therapeutics. The very excellent presentation of the open-air treatment and the large amount of space devoted to the proper construction of tents, bungalows, etc., are features of unusual importance. Dr. Bonney has taken especial care to have his illustrations as practical as his text. There are nearly two hundred of these original pictures, twenty of them being in colors. Of special value will be found the sixty x-ray photographs. Indeed, it is the most practical work on Tuberculosis yet published, and the author's recognized pre-eminence stamps it with the mark of authority.

Octavo of 778 pages, fully illustrated. By SHERMAN G. BONNEY, M.D., Professor of Medicine, Denver and Gross College of Medicine, Denver.

Cloth, \$7.00 net; Half Morocco, \$8.50 net.

Send for Saunders' complete illustrated catalogue

**W. B. SAUNDERS COMPANY, Philadelphia and London**

AUSTRALIAN AGENCY: 430 Bourke St., Melbourne, where our books can be bought at London prices



# OFFICERS OF THE AMERICAN MEDICAL ASSOCIATION, 1908-1909

NEXT ANNUAL SESSION, ATLANTIC CITY, N. J., JUNE 8-11, 1909.

PRESIDENT—Herbert L. Burrell, Boston, Mass.  
 PRESIDENT-ELECT—William C. Gorgas, Ancon, Panama.  
 FIRST VICE-PRESIDENT—T. J. Murray, Butte, Mont.  
 SECOND VICE-PRESIDENT—J. A. Hatchett, El Reno, Okla.  
 THIRD VICE-PRESIDENT—T. A. Woodruff, Chicago, Ill.  
 FOURTH VICE-PRESIDENT—E. N. Hall, Woodburn, Ky.  
 GENERAL SECRETARY—George H. Simmons, Chicago, Ill.  
 TREASURER—Frank Billings, Chicago, Ill.  
 BOARD OF TRUSTEES—William H. Welch, Chairman, Baltimore, 1909; Miles F. Porter, Ft. Wayne, Ind., 1909; M. L. Harris, Secretary, Chicago, 1909; T. J. Happel, Trenton, Tenn., 1910; W. W. Grant, Vice-Chairman, Denver, Colo., 1910; Philip Marvel, Atlantic City, N. J., 1910; Wisner R. Townsend, New York, 1911; Philip Mills Jones, San Francisco, 1911; W. T. Sarles, Sparta, Wis., 1911.  
 JUDICIAL COUNCIL—C. E. Cantrell, Chairman, Greenville, Texas; J. F. Percy, Galesburg, Ill.; George Dock, Ann Arbor, Mich.; H. L. Alkire, Topeka, Kans.; Chas. J. Kipp, Newark, N. J.

COUNCIL ON MEDICAL EDUCATION—Arthur D. Bevan, Chairman, Chicago, 1909; W. T. Councilman, Boston, 1910; James W. Holland, Philadelphia, 1912; Victor C. Vaughan, Ann Arbor, Mich., 1913; J. A. Witherspoon, Nashville, Tenn., 1911.  
 COUNCIL ON PHARMACY AND CHEMISTRY—C. S. N. Hallberg, Chicago, 1909; L. F. Kebler, Washington, D. C., 1909; J. O. Schlotterbeck, Ann Arbor, Mich., 1909; F. G. Novy, Ann Arbor, Mich., 1910; George H. Simmons, Chairman, Chicago, 1910; H. W. Wiley, Washington, D. C., 1910; Otto Folin, Boston, Mass., 1911; Torald Sollmann, Cleveland, 1911; M. I. Wilbert, Philadelphia, 1911; Reid Hunt, Washington, D. C., 1912; J. H. Long, Chicago, 1912; Julius Stieglitz, Chicago, 1912; J. A. Capps, Chicago, 1913; David L. Edsall, Philadelphia, 1913; R. A. Hatcher, New York City, 1913; W. A. Puckner, Secretary, Chicago.  
 COMMITTEE ON MEDICAL LEGISLATION—Chas. A. L. Reed, Chairman, Cincinnati, 1909; Charles Harrington, Boston, 1911; C. S. Bacon, Chicago, 1910.

## OFFICERS OF SECTIONS

PRACTICE OF MEDICINE—Chairman, Joseph L. Miller, 100 State St., Chicago; Secretary, Wilder Tileston, 117 Beacon St., Boston. Executive Committee—Herbert C. Moffitt, San Francisco; Thomas D. Coleman, Atlanta, Ga.; C. F. Hoover, Cleveland.

OBSTETRICS AND DISEASES OF WOMEN—Chairman, W. P. Manton, 32 Adams Ave., W., Detroit; Vice-Chairman, H. G. Wetherill, Denver; Secretary, C. Jeff Miller, 124 Baronne St., New Orleans. Executive Committee—C. S. Bacon, Chicago; J. Wesley Bovée, Washington, D. C.; W. B. Dorsett, St. Louis.

SURGERY AND ANATOMY—Chairman, John C. Munro, 173 Beacon St., Boston; Vice-Chairman, J. E. Summers, Jr., Omaha; Secretary, John F. Binnie, Argyle Building, Kansas City, Mo. Executive Committee—Robert F. Weir, New York City; Arthur D. Bevan, Chicago; Rudolph Matas, New Orleans.

HYGIENE AND SANITARY SCIENCE—Chairman, Joseph H. White, 609 Canal-Louisiana Bldg., New Orleans; Vice-Chairman, J. N. Hurty, Indianapolis; Secretary, S. T. Armstrong, 144 East 37th St., New York City. Executive Committee—Denslow Lewis, Chicago; Prince A. Morrow, New York City; William C. Gorgas, Ancon, Panama.

OPHTHALMOLOGY—Chairman, Alvin A. Hubbell, 212 Franklin St., Buffalo; Vice-Chairman, Melville Black, Denver; Secretary, Albert E. Bulson, Jr., Fort Wayne, Ind. Executive Committee—Lewis H. Taylor, Wilkes-Barre, Pa.; G. C. Savage, Nashville, Tenn.; Wm. H. Wilder, Chicago.

DISEASES OF CHILDREN—Chairman, Thomas S. Southworth, 807 Madison Ave., New York City; Vice-Chairman, C. F. Wahrer, Fort Madison, Iowa; Secretary, W. W. Butterworth, 609 Macheca Building, New Orleans. Executive Committee—W. C. Hollopeter, Philadelphia; J. Ross Snyder, Birmingham, Ala.; E. E. Graham, Philadelphia.

STOMATOLOGY—Chairman, Edward C. Briggs, 129 Marlboro St., Boston; Vice-Chairman, Thomas L. Gilmer, Chicago; Secretary, Eugene S. Talbot, 103 State St., Chicago. Executive Committee—H. P. Carlton, San Francisco; M. I. Schamberg, New York City; E. A. Bogue, New York City.

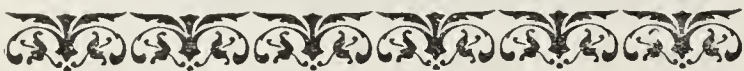
NERVOUS AND MENTAL DISEASES—Chairman, M. Allen Starr, 5 West 54th St., New York City; Secretary, Wm. Alexander Jones, Pillsbury Building, Minneapolis. Executive Committee—Wharton Sinkler, Philadelphia; Morton Prince, Boston; T. H. Weisenburg, Philadelphia.

CUTANEOUS MEDICINE AND SURGERY—Chairman, Wm. Allen Pusey, 72 E. Madison St., Chicago; Vice-Chairman, Grover W. Wende, Buffalo; Secretary, M. L. Heidingsfeld, 19 West 7th St., Cincinnati. Executive Committee—Douglas W. Montgomery, San Francisco; R. R. Campbell, Chicago; M. B. Hartzell, Philadelphia.

LARYNGOLOGY AND OTOTOLOGY—Chairman, W. Sohler Bryant, 57 West 53d St., New York City; Vice-Chairman, B. R. Shurly, Detroit; Secretary, Geo. E. Shambaugh, 100 State St., Chicago. Executive Committee—Otto T. Freer, Chicago; S. MacCuen Smith, Philadelphia; H. W. Loeb, St. Louis.

PHARMACOLOGY AND THERAPEUTICS—Chairman, Reid Hunt, 25th and E Sts., N.-W., Washington, D. C.; Vice-Chairman, W. W. Tompkins, Charleston, W. Va.; Secretary, C. S. N. Hallberg, 36 Twelfth St., Chicago. Executive Committee—Thomas F. Reilly, New York City; H. C. Wood, Jr., Philadelphia; M. H. Fussell, Philadelphia.

PATHOLOGY AND PHYSIOLOGY—Chairman, M. J. Rosenau, 25th and E Sts., N.-W., Washington, D. C.; Secretary, H. Gideon Wells, University of Chicago, Chicago. Executive Committee—Henry A. Christian, Boston; Walter L. Bierring, Iowa City, Iowa; W. B. Cannon, Boston.



# REGULIN

See description "New and Non-Official Remedies"



Has nothing in common with any *known* Laxative or Cathartic—it corrects and relieves Obstinate Constipation by its mechanical action primarily—its slight medication acting as an auxiliary for evacuation.

Postal us for sample and literature

THE REINSCHILD CHEMICAL CO.

71 Barclay Street, NEW YORK CITY

## Pollantin

See "New and Non-Official Remedies," 3rd Edition, page 100.

# HAY FEVER

Rose Fever June Cold

See Osler's *Modern Medicine*

Vol. III, Chapter XVI

Hay Fever

W. P. Dunbar, M.D.

Literature upon request

FRITZSCHE BROTHERS, NEW YORK



# UROTROPIN

See description "New and Non-Official Remedies."

The Original Product, manufactured under the supervision of Professor Nicolaier. Its absolute chemical purity and uniformity—shown by the dazzling white color of its large, regular, non-agglutinating crystals—guarantee the therapeutic effects recorded in the many hundred publications based on it.

**Professor A. L. Benedict** (*Medical Times*, June, 1906) calls attention to the following "Point in Ethics": "When a reputable firm places before the profession a valuable article, which is imitated without improvement, the profit should accrue to the original producer and competing firms should be told that the benefits of trade do not belong to them."

**Dr. W. J. Robinson** (*Critic and Guide*, March, 1906) writes in a paper on "Proprietary Remedies, from the Physician's Standpoint": "Urotropin was a distinctly new drug when introduced by its manufacturers, and they and Nicolaier have rendered a real service to humanity. Why should they not derive the pecuniary benefit? I am not at all sure that every non-descript brand is as pure, and the patient has to pay the same price."

**Dr. George Chismore** (*Journ. Cut. and Gen.-Ur. Dis.*, Sept., 1900) reported a case in which Urotropin was used with benefit until the druggist dispensed another product which was more wooly and less crystalline and which caused pain and burning. Resumption of Urotropin was followed by immediate disappearance of the distressing symptoms.

**Dr. H. P. Thompson** (*Edinburgh Med Journal*, Feb., 1907) concludes from his experimentation in the Edinburgh City Hospital with Urotropin and imitative products for the prophylaxis of scarlatinal nephritis: "The only drug that proved to be of any value is Urotropin. Hexamethylentetramine certainly did not diminish the nephritis. . . . Hexamethylentetramine was substituted because it was cheaper in treating a large number of patients, but I do not consider that it is the exact equivalent of Urotropin when considered from the point of view of clinical results. All cases of scarlatina should be treated with 5-gr. doses of Urotropin thrice daily for children up to 12 years, and 7½-gr. thrice daily for patients above that age."

**Dr. A. Goldberg** (*Münch. Med. Wochenschr.*, Aug. 19, 1905) says that Urotropin-Schering appears to be more effective than the products of any other origin.

**Dr. F. P. Guiard** (*Ann. mal. d. Org. Gén.-Ur.*, April to October, 1905) says that Schering's Urotropin is the most reliable and that many of the imitative products are of doubtful value or are positively injurious. His studies occupy 160 pages.

The best security against substitution is afforded by prescribing

## UROTROPIN TABLETS

which are stamped "E. Schering." Thus the cost of dispensing is also avoided.

LITERATURE  
FROM

# SCHERING & GLATZ

58 Maiden Lane, NEW YORK



## W. T. Keener & Co.'s Announcements

### Elements of Human Physiology

BY

Earnest H. Starling, M.D., Lond., F.R.C.P.

Jordell Professor of Physiology, University  
College, London

Eighth Edition, Revised, 8vo., 716 Pages, 323 Illustrations. Cloth, \$3.75 net.

"It is pleasing to see the eighth edition of the work on physiology by Starling. The book on the whole, is probably one of the most satisfactory that has ever been presented to the student of physiology. In these times, when text-books record the individuality of the author rather than the most important facts of physiology, this book deserves notice. The author's own work, which is extremely valuable, is given no more consideration than the work of others. Throughout he has buried his peculiarities in a desire to present that which is most valuable, and does this in a most satisfactory and yet modest manner. The subject has never been presented in a clearer and more concise manner. The book gives sufficient material as a working basis for the medical student, and at the same time does not overwhelm him with theories, hypotheses and the newer undigested material. The book will also be found equally valuable to the practitioner, who is compelled frequently to return to his physiological fundamentals for the interpretation of clinical phenomena. The illustrations are good and not overdone."—University of Pennsylvania Medical Bulletin, Jan. '03.

### A Manual of Midwifery

BY

T. W. Eden, M.D., C.M., F.R.C.P.

Assistant Obstetric Physician and Lecturer on Practical Midwifery, Charing Cross Hospital. Physician to Outpatients, Queen Charlotte's Lying-in Hospital. Examiner in Midwifery, Conjoint Board, R.C.P.S. Formerly Editor of the "Journal of Obstetrics and Gynaecology of the British Empire."

THE NEW BOOK **\$3.50 Net**  
ON MID-WIFERY

With 42 Plates and 231 Illustrations in the Text.

It appears that the present time is a suitable one for endeavoring to set forth a concise account of the present position of the theory and practice of midwifery. Many admirable and exhaustive treatises have been written during the last ten years, but they have reached a size which makes it difficult for the average student or practitioner to find time to read them. With such works this volume is not intended to compete. In writing it the aim has been, while omitting nothing which is essential either in theory or practice, to eliminate non-essential or collateral subjects, and to deal with every question briefly, and, as far as possible, from a practical standpoint. . . It may therefore be said that this manual is intended, not for the use of specialists, but as a guide to that practical and adequate knowledge of midwifery which is essential alike to the student who desires to satisfy examiners, and to the practitioner whose early years of practice are often so largely occupied with obstetric work.

**W. T. KEENER & COMPANY**  
MEDICAL PUBLISHERS, IMPORTERS  
AND BOOKSELLERS

90 Wabash Ave.,

CHICAGO

Chicago Depot for the  
Publications of the  
W. B. Saunders Co.American Agents for the  
Medical Publications of  
Cassell & Co., Ltd., London

## Calomelol Ointment

See description "New and Non-Official  
Remedies."

White ointment from soluble Calomel for the treatment of Syphilis and especially its cutaneous manifestations. Absolutely unirritating, no soiling of skin or underwear. CALOMELOL POWDER for local syphilitic lesions.

## Salit

See description "New and Non-Official  
Remedies."

Liquid Salicylic Acid Ester of Borneol for external application. Most effective in RHEUMATISM, NEURALGIA, LUMBAGO, etc. No odor, free from Formaldehyde, no unfavorable effect upon stomach, heart, or kidneys.

## Novargan

See description "New and Non-Official  
Remedies."

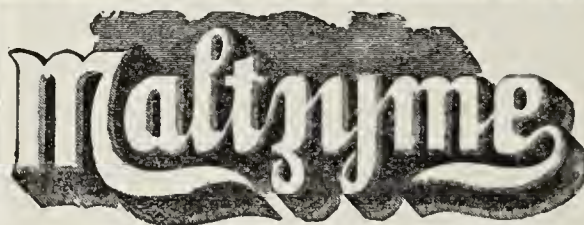
Proteinate of Silver containing 10% of metallic SILVER, distinguished by great solubility, profound penetration, powerful action in destroying gonococci and freedom from irritating effects. See literature for abortive treatment of Gonorrhœa.

Samples and literature gladly sent to physicians by

**THE HEYDEN CHEMICAL WORKS,**  
135 William St., New York.

Was not water made sweet with wood, that the virtue thereof might be known?—Ecclesiasticus XXXVIII-5.

The sweetness of sprouting grains made known the virtue of Malt.



See description "New and Non-Official Remedies."

MALTZYME

(Plain)  
with Cod Liver Oil.  
with Cascara Sagrada.  
with Hypophosphites.  
with Iron, Quinine and Strychine.  
Ferrated.  
with Yerba Santa.

In half-pint, pint and half-gallon bottles.

**Malt-Diastase Company, 79 Wall St., New York**

## The Pharmacopeia and the Physician

Second Edition

Just Issued

This book is a digest of the U. S. Pharmacopeia. It has been published with a view of bringing the Pharmacopeia prominently before the Medical profession and more particularly to present the contents of that book in such a way that it will be instructive and interesting to the physician.

The important preparations of important organic and inorganic drugs have been given careful description, their pharmacologic action elaborated upon and the special indications for the use of individual preparations in the treatment of certain forms of diseased conditions are pointed out.

The various drugs are classified into chapters according to their pharmacologic action and one long instructive chapter is devoted to a thorough discussion of anesthesia and anesthetics.

Throughout the book specimen prescriptions are given which serve as examples of the best combination and form in which the drug can be dispensed.

The physician who gives this book thorough study will have his knowledge of pharmacology so broadened that he will prescribe official remedies with precision, accuracy and absolute confidence.

485 pp. Cloth, Light Green, Flexible Cover, Price \$1.00.  
Sent by mail on receipt of price.

**AMERICAN MEDICAL ASSOCIATION, 103 DEARBORN AVE., CHICAGO**



# New Works and New Editions

## ADAMI'S PATHOLOGY

NEW WORK. VOLUME I  
JUST READY

**The Principles of Pathology.** Volume I, *General Pathology*. By J. GEORGE ADAMI, M.A., M.D., LL.D., F.R.S., Professor of Pathology in McGill University, Montreal. Volume II, *Systemic (including Special) Pathology*. By J. GEORGE ADAMI, M.D., and ALBERT G. NICHOLLS, M.A., M.D., F.R.S., Assistant Professor of Pathology in McGill University. The volume on *General Pathology* contains 948 octavo pages, with 322 engravings and 16 full-page plates. Cloth, \$6.00, *net*.

Hitherto the English-reading world of medicine has largely accepted its pathology from the greater activity of the Tenthon or from compilation. Excellent as these may be, they are less suitable for American needs than the first-hand work of a master. The peer of any as an authority, Professor Adami covers in this volume the general aspects of a subject which must be thoroughly understood before diagnosis and treatment can be intelligently undertaken. Broad and deep in its learning, this volume is charmingly written, focussing the attention and ensuring recollection through the understanding. A work equally useful to practitioners and students.

## GRAY'S ANATOMY NEW EDITION

JUST READY  
THOROUGHLY REVISED

**Anatomy, Descriptive and Surgical.** By HENRY GRAY, F.R.S., Late Lecturer on Anatomy at St. George's Hospital, London. New American edition, enlarged and thoroughly revised, by J. Chalmers Da Costa, M.D., Professor of Surgery and Clinical Surgery, and Edward Anthony Spitzka, M.D., Professor of Anatomy, in the Jefferson Medical College of Philadelphia. Imperial octavo, 1612 pages, with 1149 large and elaborate engravings. Price, with illustrations in colors, cloth, \$6.00, *net*; leather, \$7.00, *net*.

A new edition of the leading book in all medical literature is an event of obvious importance. Created by the transcendent genius of Henry Gray fifty years ago, and embodying the work of leading anatomists since his early death, the great *Anatomy* has become the unquestioned standard. None of the many competing works has even distantly approached its success. It halves the labor of student and teacher in laying the foundation of a medical education and doubles its permanence. The reason for this lies in the peculiar didactic quality of its text and its unrivalled illustrations bearing the names of the parts engraved upon them, obviating all the difficulties imposed on the reader of books employing the common and cheaper method of reference lines and letters. This new edition has been thoroughly revised throughout and the hitherto most difficult subject, the Nerve System, has been completely rewritten and reillustrated by Professor Spitzka, who unites the qualifications of an anatomist of the first rank and an artist as well.

## OSLER'S MODERN MEDICINE

VOLUME IV JUST READY  
VOLUME V IN PRESS

**Modern Medicine. Its Theory and Practice.** In Original Contributions by Eminent American and Foreign Authors. Edited by WILLIAM OSLER, M.D., Regius Professor of Medicine in Oxford University, England; Honorary Professor of Medicine in Johns Hopkins University, Baltimore; formerly Professor in the University of Pennsylvania, Philadelphia, and in McGill University, Montreal. In seven octavo volumes of about 900 pages each, illustrated. Per volume, cloth, \$6.00, *net*; leather, \$7.00, *net*; half-morocco, 7.50, *net*. For sale by subscription only. *Full prospectus on application.*

The fourth volume of this great work well sustains the high level of authority and practicality, for which *Modern Medicine* has already become notable. The series, to be finished in seven volumes, will furnish a complete working library of the utmost resourcefulness. Dr. Osler has known the best man to call on for each article, whether in America, Europe or Asia. The profession has been quick to appreciate the advantage of possessing the world's best knowledge in medicine. Even before the issue of this new volume, when as yet the work was not half completed, the equivalent of more than five ordinary editions had been purchased. The rapidly increasing sale as the work goes through press indicates that its indispensable value in practice is certain to be recognized by every physician who aims to be well equipped.

## PARK ON PATHOGENIC MICRO-ORGANISMS

New (3d) and Revised  
Edition. JUST READY

**Pathogenic Micro-organisms, including Bacteria and Protozoa.** A Practical Manual for Students, Physicians and Health Officers. By WILLIAM H. PARK, M.D., Professor of Bacteriology and Hygiene in the University and Bellevue Hospital Medical College, New York. New (third) edition, thoroughly revised and much enlarged. Octavo, of 625 pages, with 174 illustrations and 6 full-page plates. Cloth, \$3.75, *net*.

This work is unique both in supplying a text-book on protozoölogy and in handling it in connection with the larger subject of bacteriology, a rational combination of obvious advantage. In this single volume, therefore, students and practitioners have the whole field of pathogenic microorganisms placed at command. Clear, practical and clinical in its bearings, it serves equally as a text-book or laboratory guide and a reference work for the health officer and physician. The great advantages of this work have again brought it to a new edition, which the author has revised most thoroughly.

## COAKLEY'S LARYNGOLOGY

NEW (4th) EDITION. THOROUGHLY REVISED  
JUST READY

**A Manual of Diseases of the Nose and Throat.** By CORNELIUS G. COAKLEY, M.D., Clinical Professor of Laryngology in the University and Bellevue Hospital Medical College, New York. New (4th) edition, 12mo, about 604 pages, with 126 engravings and 7 colored plates. Cloth, \$2.75, *net*.

A compact but very comprehensive manual designed to answer the needs of both students and practitioners. It carries the reader from the beginning of the subject through to the end. Special attention has been devoted to the more practical sections—those on Examination, Diagnosis and Treatment. Appreciation of its value has brought this work to its fourth edition in nine years, a fact showing that it is established in favor and so frequently revised as to be always representative of a very progressive and important specialty.

PHILADELPHIA  
706-8-10 Sansom Street

LEA & FEBIGER  
Successors to  
LEA BROTHERS & CO.

NEW YORK  
111 Fifth Avenue



## REASONS FOR SPECIFYING

# Mulford's Antitoxin

---

1. Mulford's Diphtheria Antitoxin is several times the concentration of the old-time serum, consequently, the lesser bulk is more easily administered, is less objectionable to the patient, and probably reduces the percentage of skin eruptions noted at times with regular serum.

2. By prolonging the process of dialysis a purer Antitoxic Globulin is obtained.

3. To this Antitoxic Globulin is added the correct amount of c. p. sodium chloride to make the resultant product conform exactly to the physiological salt solution, thus avoiding the irritation which is noted with Antitoxins that depart from the normal salt solution.

4. Our improved process of precipitation, and our method of preparing the Antitoxin to conform to the physiological salt solution, avoid the irritation following the use of the product obtained by the old method of precipitation and undesirable salts.

## BEAR IN MIND THAT

Mulford's Biological Products are prepared by scientific experts in laboratories that are famous throughout the continent for their excellent construction and equipment.

We absolutely guarantee the quality of our Antitoxin.

We prevent any possibility of loss and deterioration by exchanging outdated for fresh serum.

The record of Mulford's Antitoxin is unsurpassed. Every published report proves that it is a thoroughly reliable product.

Improved methods of preparation, and the satisfactory experience of physicians using our Antitoxin, warrant your preference for this improved product.

Write for our new brochure, it is well worth reading.

---

## H. K. MULFORD COMPANY, Chemists

NEW YORK  
CHICAGO

PHILADELPHIA

ST. LOUIS  
MINNEAPOLIS



# Medical Books That Are Epoch Makers

**Diagnosis and Treatment of Diseases of Women.**  
By H. S. Crossen, M.D., Prof. of Clinical  
Gynecology, Medical Department, Washington  
University, Saint Louis, Mo.

816 pages. 700 illustrations. Price, cloth, \$6.00;  
Morocco, \$7.50.

## Crossen's Gynecology

The General Practitioner has needed a book that treated Medical Diseases of Women. One that takes up in detail, step by step, what to do and how to do it in a result getting manner. This need Doctor Crossen has supplied. Seventy-five medical colleges have adopted this book the first year of its publication.

*Illustrated Circulars sent free on request.*

**Suggestive Therapeutics, Applied Hypnotism and Psychic Science.** By H. S. Munro, M.D.,  
Ellaville, Ga., Supt. Poplar Grove Sanitarium.

360 pages. Price, \$3.00.

## Munro's Suggestive Therapeutics

The power of Suggestion as a therapeutic remedy has become an established fact. Its practical application in treating diseases is the chief concern of the progressive physician. Most of the Text-books of the present time are devoted to the ultra-scientific side of the subject. The reader is left with nothing to guide him in its practical application. Doctor Munro has filled the niche. The exhausting of a large edition in nine months speaks for its popularity.

*Circular sent upon request.*

**Diseases of the Skin.** By A. H. Ohmann-Dumesnil, A.M., M.D., F.R.C.S., England, Saint Louis, Mo. Third Edition. Entirely reset and rewritten.

617 pages. 150 illustrations. Price, cloth, \$4.00;  
Morocco, \$5.50.

## Ohmann-Dumesnil Diseases of the Skin

A hand-book that is practical, well illustrated, bristling with accurate descriptions of Symptoms and full of treatment, is the ideal book on any subject, for the busy practitioner. In Doctor Dumesnil's work on Skin Diseases, one will find just this kind of a book.

*Circular sent free upon request.*

C. V. MOSBY Medical Book and Publishing Company,  
Grand Avenue and Olive Streets, SAINT LOUIS, MO.



All the ADVANTAGES with none of the OBJECTIONABLE symptoms caused by Potassium Iodide, or other forms of Iodine medication.

No INDIGESTION, PROSTRATION or loss of APPETITE and NUTRITION while the patient is under active Iodine treatment.

PROMPT, EFFECTIVE and ACTIVE therapeutic effect with no disturbance of FUNCTIONAL ACTIVITY.

Effective in relatively SMALLER doses than any other form of Iodine. Differs from other Iodides in having an ACID reaction.

PALATABLE, NON-IRRITANT, and UNIVERSALLY TOLERATED in all indications.

An active form of Iodine capable of CONTINUOUS ADMINISTRATION when the stomach is FREE FROM FOOD, the MOST FAVORABLE time for immediate ABSORPTION and ACTIVITY.

NOT DECOMPOSED by stomach secretions, and consequently is not changed into INERT OR IRRITANT Iodine compounds in the stomach.

Excessively large doses are NOT REQUIRED for equal results in tertiary specific conditions.

It is important to produce the MOST EFFECTIVE RESULTS without harmful or objectionable secondary symptoms ; this cannot be denied.

Is it not to your interest, as well as to that of your patient, to employ such a remedy in all Iodine indications ?

These advantages have been demonstrated by professional use of Gardner's Original Syrup of Hydriodic Acid (Hydrogen Iodide), the first permanent and available preparation of Hydriodic Acid ever made, the employment of which for the past thirty years has established the remarkable reputation of Hydriodic Acid as a remedy.

Sufficient supply for clinical test cheerfully forwarded, without charge, to doubting physicians.

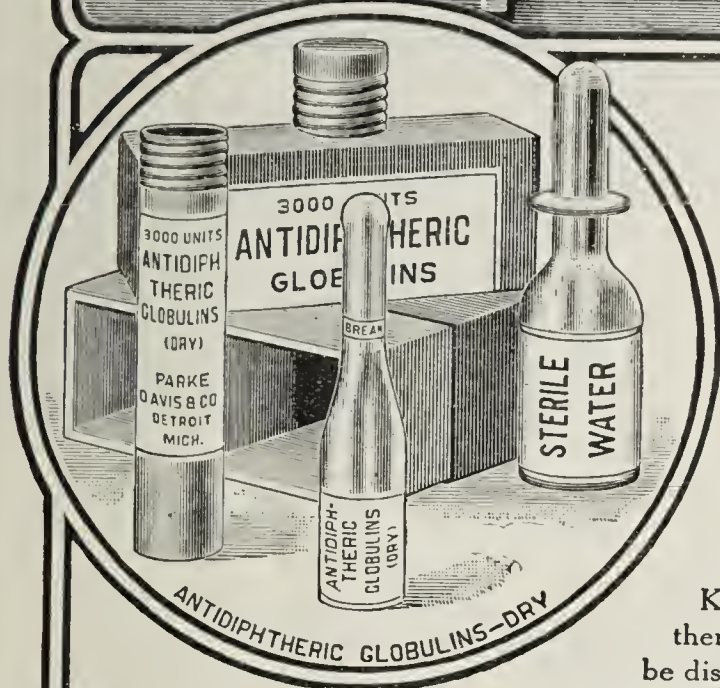
Avoid substitution by specifying on your prescriptions SYRUPUS ACIDI HYDRIODICI—(GARDNER).

Box 1525.

Firm of R. W. GARDNER, New York.



# Antidiphtheric Globulins



## LIQUID AND DRY.

**ANTIDIPHThERIC GLOBULINS, LIQUID**—The globulins of Antidiphtheric Serum precipitated and purified—diphtheria antitoxin from which the non-essential portions of the serum have been eliminated. Much more concentrated than the regular serum, the same number of antitoxic units being represented in much smaller bulk.

Piston-syringe containers—Six sizes:  
500, 1000, 2000, 3000, 4000 and 5000 units.

**ANTIDIPHThERIC GLOBULINS, DRY**—The globulins of Antidiphtheric Serum precipitated, purified and dried. Concentrated and permanent. Always active. Always ready for use. Keeps indefinitely. The package (bulb of 3000 units of Antidiphtheric Globulins and bulb of sterile water in which the antitoxin is to be dissolved) is readily carried in the medicine-case or vest-pocket. Injection may be made with any ordinary hypodermatic syringe.

## PARKE, DAVIS & COMPANY

HOME OFFICES AND LABORATORIES,  
DETROIT, MICHIGAN.



ANTIDIPHThERIC GLOBULINS-LIQUID. PISTON-SYRINGE-CONTAINER

# Antigonococcic Serum

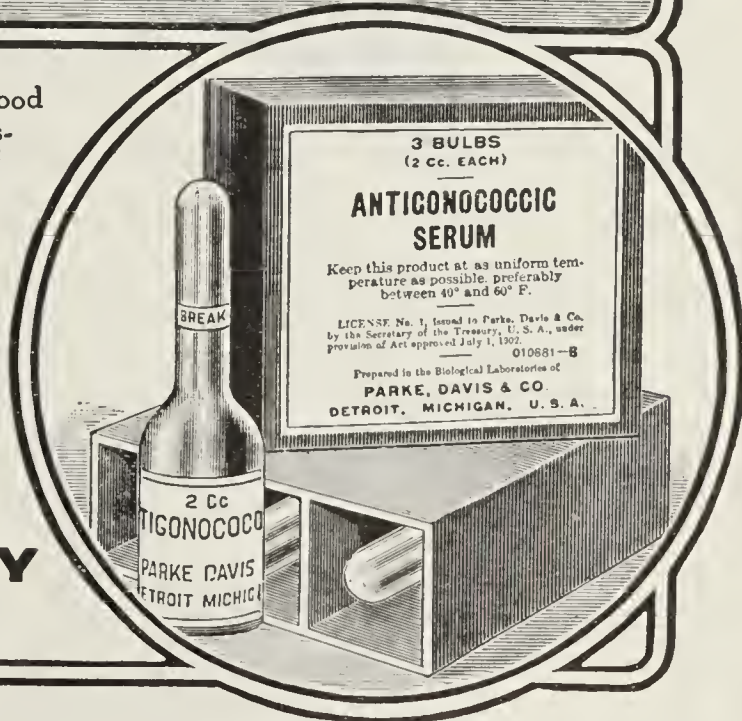
This serum is prepared in our Biological Laboratory from the blood of strong, healthy rams that have been treated with gradually increasing doses of dead and live cultures of the most virulent strains of gonococci obtainable from patients suffering with the disease, the process being essentially the same as in the production of our Antidiphtheric and other serums.

During the past year we have placed this serum in the hands of over one hundred careful clinicians, most of them specialists in genito-urinary work, asking for reports as to its worth. The best results were obtained in gonorrheal arthritis, over 90% of the cases reported being cured or benefited. The serum has also proved useful in epididymitis, prostatitis and orchitis. No claim is made as to its value in acute urethritis.

Sealed glass bulbs of 2 Cc., three bulbs in a package.

## PARKE, DAVIS & COMPANY

HOME OFFICES AND LABORATORIES, DETROIT, MICH.





# SPIRETS



Are hermetically sealed glass tubes containing 5 min. of C. P. Amyl Nitrite. Best and cheapest way to buy and use Amyl Nitrite because there is no loss by leakage or accidental breakage. Pearls break easily. That means loss and disappointment. May also mean death in an emergency. You can safely carry Spirets anywhere, even in your vest pocket, and they cost no more than the best pearls. Their actual cost is less because you can use every Spiret.

Price to physicians 75c per box of 12, through your druggist.



MADE EXCLUSIVELY BY  
**SHARP & DOHME**  
BALTIMORE

NEW YORK CHICAGO NEW ORLEANS ST. LOUIS ATLANTA

## HORLICK'S MALTED MILK

The Original  
and only Genuine

The Malted Milk that gives you the benefits of the pioneer manufacturer's experience of over thirty years. Ensures the nutritive effects of pure milk and select malted cereals with the minimum digestive effort. A food for infants that has practically the same caloric value as mother's milk. A welcome relief from the usual plain milk diet in cases of Typhoid Fever, Pneumonia, in Convalescence, Consumption, Neurasthenia, or after Surgical Operations.

That your patients may obtain the best as well as the original and only genuine, always specify "Horlick's."

*Samples sent, free and prepaid, to the profession, upon request.*

HORLICK'S MALTED MILK COMPANY, RACINE, WIS., U. S. A.  
LONDON, ENGLAND MONTREAL, CANADA







**CAPSULE PRESS**

**SORTING CAPSULES**

ELASTIC FILLED CAPSULES AND GLOBULES—  
*Hand-Made*—A, 2½ grams capacity. *Machine-Made*—B, 2½ grams; C, 1.3 grams, side view; D, 10-minim, showing a compressed tablet enclosed; E, 5-minim globule; F, 3-minim globule.

## LILLY'S ELASTIC FILLED CAPSULES

It is easy to administer oils and nauseous semi-fluid mixtures acceptably to the patient if you prescribe them in our elastic filled capsules. Recognizing palatability as an important factor in the successful administration of nauseous remedies which must be taken in large or oft-repeated doses, we have given the subject special study and as a result have produced a line of over one hundred kinds of elastic filled capsules, embracing all of the commonly prescribed oils and their combinations.

Only the finest tested materials are used in the manufacture of our elastic filled capsules and particular attention is given to insure exactness of formula and accuracy of dosage.

All Lilly elastic filled capsules are critically inspected, then washed in alcohol before packaging, so that they present a clear, brilliant appearance which carries no suggestion of their nauseous contents.

*Supplied by the drug trade. Send for catalogue containing complete information.*

# ELI LILLY & COMPANY

INDIANAPOLIS

NEW YORK

CHICAGO

ST. LOUIS

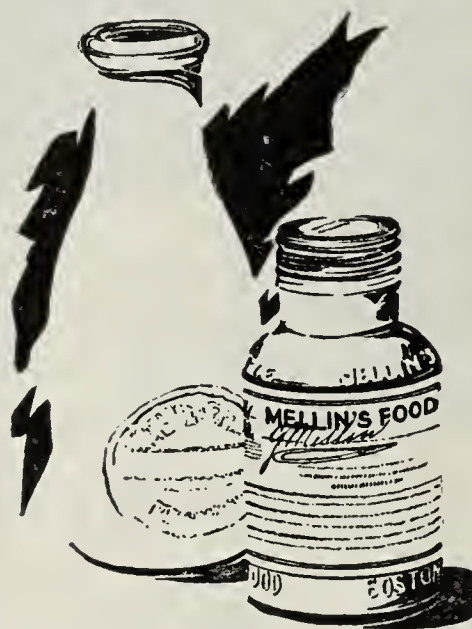
KANSAS CITY

NEW ORLEANS



¶ Doctor:

Fresh milk and Mellin's Food contain all the necessary nutritive elements, without introducing any insoluble or indigestible matter.



Literature and Samples upon request.

Mellin's Food Company,  
Boston, Mass

## THE QUESTION OF SUMMER FEEDING

In Summer more than at any other time, the busy practitioner finds the question of feeding a difficult and extremely serious one in his treatment of

### Infants, Invalids and the Aged

He seeks a food at once digestible, not too sweet, pleasant, possessing a high standard of nutrition, and one which has stood the test of time and experience.

**BENGER'S FOOD meets these requirements.** It has a value all its own, making it an ideal dietetic preparation, in that it is **self-digestive—not predigested**, and may be adapted by the physician to the most enfeebled and delicate digestive organism.

*Further information and samples to those interested on application to*

**BENGER'S FOOD, Ltd.**

Department 23

78 Hudson Street,

New York City

LAMONT, CORISS & CO., Sole Importers

**BENGER'S**  
**FOOD**



# CHICAGO POLICLINIC SUMMER COURSES

Beginning May 1st and continuing until October 1st we present a series of Clinical Courses at reduced rates. Throughout this period Prof. Gronnerud will personally conduct his Operative and Research work in the Anatomical Laboratories. There will also be Special Practical Courses in Bacteriology and Clinical Microscopy.

FOR FURTHER INFORMATION ADDRESS

**M. L. HARRIS, M.D., Secretary,**

**176 E. Chicago Avenue, Chicago**

W. A. FISHER, M.D., President

A. G. WIPPERN, M.D., Vice-President

**Chicago Eye, Ear, Nose and Throat College**

POST-GRADUATE INSTRUCTION

Diseases of the Eye, Ear, Nose and Throat and Fitting of Glasses.

Open the year round. Write for announcement to

J. R. HOFFMAN, M.D., Secretary, 206 EAST WASHINGTON STREET, CHICAGO

## LABORATORY OF DR. CHARLES E. SIMON

During the coming fall and winter I offer the following laboratory courses:

- I. General course in clinical laboratory methods . . . \$ 50.00  
(6-8 weeks duration)
- II. Special course in serum pathology . . . . . 50.00  
(4 weeks duration)
- III. Advanced course in clinical pathology . . . . . 100.00  
(6 months duration)

Applications should be directed to the undersigned

**CHARLES E. SIMON, - 1302 Madison Ave., Baltimore, Md.**

# ILLINOIS POST-GRADUATE MEDICAL SCHOOL

ONLY POST-GRADUATE SCHOOL IN CHICAGO'S GREAT MEDICAL CENTER

Physicians can matriculate at any time. Individual attention given. Operative work on the cadaver and Special Courses in Clinical Microscopy, Pathology and Electrotherapy presented. Special Courses are arranged for those wishing to prepare for State Board or Civil Service Examinations. Diversified schedule of Surgical and Medical Clinics occupying entire day. For announcement and general information, address

**DR. ALEX C. WIENER, Sec'y, 819 W. Harrison St., Chicago**

## PHILADELPHIA POLYCLINIC And College for Graduates in Medicine

For announcements and further information, address

**R. MAX GOEPP, M.D.,**

**- Dean**  
PHILADELPHIA, PA.

18TH and LOMBARD STS.,

With the opening of the Winter Term, THURSDAY, OCT. 1ST, Laboratory Courses in General and Clinical Pathology, Tropical Medicine and Special Operative Surgery will be resumed.

Send for the new announcement of the course in **EYE, EAR, NOSE and THROAT** which begins OCT. 1st.

DAILY DRILL IN REFRACTION is given as part of the regular course. A didactic and practical course in PHYSICAL DIAGNOSIS for insurance examiners has been added to the roster.

**COLLEGE OF MEDICINE, OF THE UNIVERSITY OF**  
**LOS ANGELES, CALIFORNIA**

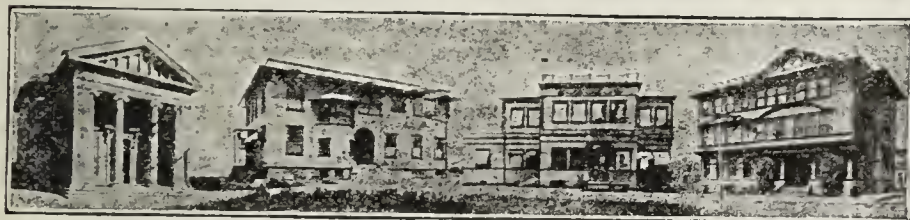
## SOUTHERN CALIFORNIA

Member Association American Medical Colleges.

Offers a medical education of highest grade—didactic, laboratory and clinical—in an unexcelled environment. Regular, Special and Post-Graduate Courses. Combined A.B. and M.D. and other Courses. Quiz Classes. 24th Annual Session begins October 1st.

For catalog or any other information address the Secretary.

**Dr. W. JARVIS BARLOW, Dean** **Dr. GEORGE H. KRESS, Secretary**  
601 Johnson Bldg., Los Angeles, Cal.



## The Harvard Medical School

THE new buildings, four of which are devoted entirely to laboratory teaching and research, were dedicated September 25, 1906. Abundant facilities for general and special clinical instruction in medicine and surgery are afforded by the numerous hospitals of Boston.

### Course for the Degree of M.D.

A four years' course open to bachelors of arts, literature, philosophy or science, and to persons of equivalent standing, leads to the degree of M.D. The studies of the fourth year are wholly elective; they include laboratory subjects, general surgery, and the special clinical branches. The School-year extends from the Thursday following the last Wednesday in September to the last Wednesday of June.

### Graduate Courses

Throughout the School-year, special courses open to graduates of recognized medical schools are offered in the various subjects of practical medicine and the medical sciences.

### Summer Courses

During the summer months, similar courses are open to both medical students and graduates.

### Research Work

In all the laboratories opportunity is given at all times for properly qualified persons to conduct original investigations.

### Special Students,

not candidates for the degree of M.D., are admitted, under certain conditions, to all courses in the school. For detailed announcements, address

**HARVARD MEDICAL SCHOOL - - - BOSTON, MASS.**

## The George Washington University

Department of Medicine

Established 1825

Annual session begins on the last Wednesday in September, and ends on the first Wednesday in June. Five separate and well equipped laboratories. Ample clinical facilities. The senior year's work is almost wholly clinical. For catalogues or other information, address

**W. F. R. PHILLIPS, M.D., Dean, 1325 H Street, N. W., Washington, D. C.**

## GEORGETOWN UNIVERSITY

School of Medicine and Dental Department

The Fifty-ninth Session will begin September 27, 1908, and continue eight and one-half months. Practical laboratory work, under special instructors, in Anatomy, Physiology, Chemistry, Histology, Pathology and Bacteriology. Ample facilities for clinical experience and practical work in hospitals of city and in the University Hospital, containing in all over 3000 beds. For circulars address the Dean,

**DR. G. M. KOBER, 1819 Q Street, Washington, D. C.**



## ALABAMA

BIRMINGHAM MEDICAL COLLEGE  
AND COLLEGE OF PHARMACY

This College is located in the greatest Industrial and Medical center in the South

**Fifteenth Annual Session Begins  
September 30, 1908.**

The college building is a large modern building, constructed according to the most approved architectural designs for the teaching of Medicine and Surgery. Commodious and well equipped Chemical, Bacteriological, Anatomical, Histological and Pathological laboratories are provided. The Hillman Hospital, one of the largest hospitals in the South, adjoins the college building. Dissecting and Pathological material abundant. Medical and Surgical Clinical advantages unsurpassed. Large corps of Professors and Instructors who are Specialists in their departments.

*For Catalogue and Further Information, Address*

**E. P. HOGAN,**  
Secretary, Birmingham Medical College  
BIRMINGHAM, ALA.

## CALIFORNIA

## LOS ANGELES

## COLLEGE OF PHYSICIANS AND SURGEONS

LOS ANGELES - CALIFORNIA

The session of 1908-09 will begin September 24th and continue nine months. One of the most modern and complete college buildings on the coast; college amphitheatres seated with opera chairs; capacious and thoroughly equipped laboratories in all departments. College building thoroughly heated, lighted and ventilated and adjoins the *Angelus*, the most modern hospital in the west. An abundance of clinical material. This college offers the very best there is in modern medical and surgical teaching. Requirements for matriculation and graduation the same as those prescribed by the Association of American Medical Colleges. A Post-graduate or Practitioners course of eight weeks, beginning as follows: October 12th, January 4th and March 15th. This course is practical and thorough in all departments of medicine and surgery. For catalogue and specific information address the Dean.

**CH. W. BRYSON, A.B., M.D.,** **JAMES H. SEYMOUR, M.D.**  
Dean of Faculty, Delta Bldg. Pres. Board of Trustees.

## COLORADO

## Denver and Gross College of Medicine

MEDICAL DEPARTMENT UNIVERSITY OF DENVER

Four years' graded course. Sessions of eight months each. 28th Annual Session begins Sept. 8, 1908. Matriculation fee, \$5.00. Tuition fee, \$100.00. Well-equipped laboratories in all departments and excellent clinical advantages in dispensary and hospitals.

The climate of COLORADO offers many advantages to students whose health compels them to leave the east.

Catalogue on application.

**W. A. JAYNE, M.D., Dean**  
**ROBERT LEVY, M.D., Secretary.**  
**FROST C. BUCHTEL, M.D., Assistant Secretary,**  
1441 GLENARM PLACE.

## ILLINOIS

College of Physicians and Surgeons of Chicago  
College of Medicine of the University of Illinois

Collegiate Year, October to June



Investigation of advantages cordially invited. Four years' course. Students permitted to specialize in electives. Completely equipped laboratories. For Catalogue No. 7 and information address

**Dr. FRANK B. EARLE, Secretary,**  
Congress and Honore Streets, CHICAGO

## RUSH MEDICAL COLLEGE

IN AFFILIATION WITH

## THE UNIVERSITY OF CHICAGO

AUTUMN QUARTER COMMENCES OCTOBER 1, 1908.

Best time to enter for students with full preparation. All courses open to practitioners. For full information address

**RUSH MEDICAL COLLEGE, Chicago, Ill.**

## Northwestern University Medical School

(CHICAGO MEDICAL COLLEGE)

**DR. ARTHUR R. EDWARDS, Dean.**

This Medical School is centrally located, convenient to large hospitals affording abundance of clinical material. The laboratories and lecture rooms are commodious, well-lighted and generously supplied with all modern appliances to aid in carrying on in the most effective manner the study of medicine.

The classes are divided into small sections, thus affording to students better opportunities or the advantages of individual instruction. This feature as well as a graded curriculum characterize the work in all the departments.

For further particulars address the Secretary.

**Dr. CHARLES LOUIS MIX, :: :: 2431 Dearborn St., Chicago**

## IOWA

## KEOKUK MEDICAL COLLEGE

## COLLEGE OF PHYSICIANS AND SURGEONS

THESE TWO SCHOOLS CONSOLIDATED IN 1899.

Regular Winter Session begins Sept. 15, 1908, and will continue to May 25, 1909. The Faculty is composed of men in active practice and with experience in College work. Course of instruction extends over four years and is graded. Under the above combination, facilities have been very much increased. Didactic, Clinical and Laboratory Work very thorough.

Fees and General Ticket, \$50.00; Laboratory Courses each \$5.00; Hospital Ticket, \$5.00 per year. Fees for Dental Department, \$100.00; for Pharmacy Course, \$3.00 per year. For circular of information address the Secretary, **W. B. La Force, M.D., Keokuk, Iowa.**

**DRAKE UNIVERSITY** First two years work taken at University  
**COLLEGE of** where anatomy, physiology, chemistry and  
**MEDICINE** other fundamentals are taught. Each department has thoroughly equipped laboratories.

**DES MOINES,** Last two years taken at New Medical Bldg.

**IOWA** Centrally located, clinical advantages unsurpassed.  
Clinics in hospitals and college free dispensary.

Combined Courses leading to the degree of B.A. and M.D., or B.S. and M.D. ANNUAL SESSION commences Sept. 14, 1908, and closes June 16, 1909. Expense Moderate—Students often obtain employment, so reducing cost.

**DR. F. J. SMITH, Sec. DR. D. S. FAIRCHILD, Dean.**

## LOUISIANA

TULANE UNIVERSITY OF LOUISIANA  
Medical Department

Its advantages for practical instruction, both in ample laboratories and abundant hospital materials, are unequalled. Free access is given to the great Charity Hospital with 900 beds and 30,000 patients annually. Special instruction is given daily at the bedside of the sick. Department of Pharmacy also. The next session begins October 1, 1908. For catalog and information Address **DR. ISADORE DYER, Dean, P. O. Drawer 261, NEW ORLEANS, LOUISIANA.**

## MARYLAND

## THE BALTIMORE MEDICAL COLLEGE

Preliminary Fall Course begins Sept. 1. Regular Fall Course begins Sept. 21

Liberal teaching facilities; modern college buildings; comfortable lecture hall and amphitheatre, large and completely equipped laboratories; capacious hospitals and dispensary; lying-in department for teaching clinical obstetrics; large clinics. Send for catalogue, and address **DAVID STRETT, M.D., DEAN,**

**BALTIMORE MEDICAL COLLEGE** N.E. Cor. Madison St. and Linden Av. **BALTIMORE, MD.**



## COLLEGE of PHYSICIANS and SURGEONS

—OF BALTIMORE, MARYLAND—

37th Annual Session begins October 1st

Modern equipment building; unsurpassed laboratories; large and independent Lying-in Asylum for practical Obstetrics; department for prevention of hydrophobia and many hospitals for clinical work present to the medical student every advantage. For catalogue and other information apply to

CHARLES F. BEVAN, M.D., Dean,  
Cor. Calvert and Saratoga Sts., BALTIMORE, MD.

## MASSACHUSETTS

### Tufts College Medical School

BOSTON, MASSACHUSETTS

This School offers to men and women a four years' graded course, including all departments of the study of Medicine.

Its Laboratory facilities and Clinical advantages are unsurpassed. The next session begins the last Wednesday in September and continues until June. For further information or for catalogue address

FREDERIC M. BRIGGS, M.D., Secretary  
Tufts College Medical School, Boston, Mass.

## MICHIGAN

### DETROIT COLLEGE OF MEDICINE

Departments of Medicine and Dental Surgery

40th Annual Session opens Sept. 16, 1908, closes May 27, 1909. Four years graded course in medicine; three years' course in dental surgery. Buildings new. Laboratory courses thorough; equipment modern and complete. Superior clinical advantages in St. Mary's, Harper, the Children's Free, and the Woman's Hospitals and the House of Providence. For particulars address

H. O. WALKER, Secretary,  
612 Washington Arcade, Detroit, Michigan

## MINNESOTA

### UNIVERSITY OF MINNESOTA

College of Medicine and Surgery

COLLEGE OPENS SEPT. 15, 1908. The equivalent of two full years' work in College of Science, Literature and the Arts of this University, which must include physics, chemistry, French or German, and general biology or botany, must be presented for entrance to this College. Adequate modern equipment and laboratory, dispensary and hospital facilities are available. All of the clinical facilities of the Twin Cities, whose population is 500,000, and others in the state are fully utilized.

For information concerning entrance requirements, combined A.B. and M.D., or B.S. and M.D. courses or graduate work, address THE DEAN, COLLEGE OF MEDICINE AND SURGERY, The University of Minnesota, Minneapolis, Minn.

## NEW YORK

### THE NEW YORK EYE and EAR INFIRMARY

School of Ophthalmology and Otolaryngology—For Graduates of Medicine.

Clinics daily by the Surgical staff of the Infirmary. Special courses in Ophthalmology, Refraction, Operative Surgery of the Eye and Ear, and Pathology.

The abundant clinical material at this well-known institution affords students an unusual opportunity for obtaining a practical knowledge of these special subjects. Two vacancies in the House Staff exist in January and July of each year. For particulars address the Superintendent.

ALEXANDER H. CANDLISH, New York Eye and Ear Infirmary.

### 1807 College of Physicians and Surgeons 1908

Columbia University  
in the City of New York

Including Vanderbilt Clinic and Sloane Maternity Hospital

Carefully coordinated, laboratory courses, supplemented by museum preparations—Quizzes—Close personal contact with instructors in clinics at Vanderbilt Clinic and the wards of 18 New York Hospitals.

Annual tuition, covering all the above, \$250. Students' Loan Fund and Committee to aid Students in securing employment. \$3,250 in Annual Scholarships. Facilities for graduate study. Summer Session in Medicine.

Applications for admission to advanced standing will be dealt with upon their individual merits. For Catalogues and further information, address The Secretary of Columbia University, New York City

### LONG ISLAND COLLEGE HOSPITAL,

SESSION 1908-1909

REGULAR SESSION BEGINS OCTOBER, 1908.

Unexcelled Clinical Facilities. The teaching staff is represented in nearly all the hospitals on the east side of New York Harbor, and clinics held in these institutions are open to the students of this college. In the College Hospital and Dispensary 48,900 patients were treated in 1907. Practical clinical courses given in all special branches. Unexcelled laboratory facilities in Microscopy, Bacteriology, Chemistry, Pharmacy, and Anatomy. Out-patient service in Obstetrics a part of regular curriculum. Send for announcement to

JOSEPH H. RAYMOND, M.D., Secretary of Faculty,  
Long Island College Hospital, Borough of Brooklyn, New York City.

Hoagland Laboratory  
and Polhemus Memorial Clinic

### GUIDE TO CURRENT MEDICAL LITERATURE

A ready reference, in fact an index medicus to the medical literature of the world published during the first six months of 1908. Vol. I, January to June, 1908, now ready. Paper cover. 150 pages. Price, 50c.

AMERICAN MEDICAL ASSOCIATION, 103 Dearborn Ave., Chicago, Ill.

## Cornell University Medical College

ITHACA and NEW YORK CITY, N. Y.

Beginning with the class entering in September, 1908, an Academic or Scientific college degree will be required for admission. The session opens on the last Wednesday in September.

The first two years are devoted to Anatomy, Chemistry and Physiology, and may be taken either in Ithaca or New York City. The last two years are chiefly clinical and must be taken in New York City. For further information address,

WM. M. POLK, M.D., LL.D., Dean, Cornell University Medical College  
First Avenue and 28th St., NEW YORK CITY

### Standard of Requirement High

### College of Medicine--Syracuse University

Four years' course  
Special study room for  
women—Clinics  
in three hospitals

Syracuse, N. Y.

Half-tono pictures,  
laboratories,  
study rooms, etc., sent  
with pleasure.

## PENNSYLVANIA

### University of Pennsylvania

1765

DEPARTMENT OF MEDICINE

1907

#### UNDERGRADUATE DEPARTMENT

The one hundred and forty-third session of the School begins September 25, 1908. The course which covers a period of four years of eight and one-half months each is eminently practical, properly graded, beginning with instruction in the fundamental subjects, and concluding with a comprehensive course of bedside instruction terminating in the fourth year with assignment of each student as a clinical clerk in the University Hospital. Ninety per cent of the graduating classes secure Hospital appointments. The applications for graduates from this school are so great that every student could be placed.

#### REQUIREMENTS FOR ADMISSION

For the sessions beginning 1908, 1909 and 1910 respectively the requirements for admission will be briefly as follows:

For 1908, one year's work in biology, chemistry and physics and at least two foreign languages, one of which must be French or German.

For 1909, in addition to the above, the successful completion of work equivalent to that prescribed for the Freshman Class in a recognized literary college.

For 1910, in addition to the requirements in biology, chemistry and physics the successful completion of work equivalent to that prescribed for the Freshman and Sophomore classes in a recognized literary college.

For further information send for catalogue.

#### GRADUATE DEPARTMENT

The Laboratories and Clinics are open throughout the year to those who may desire to engage in post-graduate work.

Address: Dean of the Medical Department, 36th and Pine Sts., Philadelphia

### THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA

Founded 1825.

A Chartered University Since 1838.

New College Building

New Laboratories

New Hospital

Eighty-fourth Annual Session begins September 24, 1908, and continues eight and one-half months. Clinics and bedside ward work in small groups, a prominent feature of the curriculum. The new Jefferson Hospital built at cost of \$1,500,000 with unsurpassed facilities for clinical teaching, entirely owned and controlled by the College, is devoted to the instruction of students. Lying-in cases at the Jefferson Maternity. Clinical instruction at the Philadelphia, Pennsylvania, German, St. Agnes and Municipal Hospitals. Three-fourths of the graduates enter hospitals. For circular and information, address

ROSS V. PATTERSON, M.D., Sub.-Dean.

### Western Pennsylvania Medical College, PITTSBURG, PENN'A.

Sessions of 1908-9.

Twenty-third Year.

#### MEDICAL DEPT. OF THE WESTERN UNIVERSITY OF PENNSYLVANIA

Graded course of eight months, commencing October, 1908. Four years required. Instruction practical. Superior clinical advantages offered students. College and clinic buildings commodious. Extensive Laboratories and Apparatus. Hospital Medical Clinics and Ward-bedside Clinics; Surgical and Medical Operating, and Maternity, and Dispensary and Out Door Clinics daily. Laboratory work continuous. Quizzes regular. For particulars address

PROF. J. C. LANGE, M.D., Dean, "Hotel Annex," Pittsburg, Pa., or DR. W. J. ASDALE, Secretary Board of Trustees, 5523 Ellsworth Ave., E. E., Pittsburg.

## VERMONT

### University of Vermont College of Medicine

The fifty-sixth session of this College of Medicine will open November 11, 1908, and continue seven and one-half months. A new building with every facility for medical instruction. Moderate expense. For information address

J. N. JENNE, M.D., Secretary, Burlington, Vermont.

## VIRGINIA

### MEDICAL COLLEGE OF VIRGINIA

Christopher Tompkins, M.D., Dean

Medicine

Dentistry

Pharmacy

Excellent theoretical course as well as thorough practical and clinical instruction in State Institutions and hospitals and laboratories of the College. This school conforms to the requirements of the Council on Medical Education of the American Medical Association, regarding preliminary education and curriculum.

For announcement of the 71st session, which will commence September 17, 1908, address FRANK M. READE, M.D., Secretary, Richmond, Va.



# AREND-ADAMICK KUMYSS

AREND-ADAMICK KUMYSS agrees with the weakest stomach and will be retained when other forms of nourishment are rejected. We have hundreds of clinical reports from the profession to substantiate this claim.

ESPECIALLY PREPARED for administration during the course of all acute infectious diseases, gastro-intestinal disorders and conditions of enfeebled digestive power due to any cause.

REMARKABLE RESULTS have followed the use of AREND-ADAMICK KUMYSS in mal-nutrition and enteric diseases of infants.

THIRTY-TWO YEARS this preparation has been prescribed with increasing popularity by the medical profession.

Write us for price list, descriptive circulars and instructive and interesting clinical reports.

**A. AREND DRUG CO.**  
Manufacturing Chemists  
189 E. MADISON ST., - Chicago, Ill.  
Phone Main 3506

## HYDROPHOBIA

PASTEUR DEPARTMENT  
OF THE  
College of Physicians and Surgeons  
BALTIMORE, MD.

Founded for the preventive treatment of  
HYDROPHOBIA

### Pasteur Method

The method in use is identical in *every detail* with that of the "Institut Pasteur" in Paris, France; and is the result of personal study at that institution.

Our report of June 1907 shows that one thousand (1000) persons completed treatment and in only one of this number was it unsuccessful.

For further information, address

N. G. KEIRLE, A.M., M.D., Sc.D., Director  
BALTIMORE, MD., City Hospital

# Borden's EAGLE BRAND Condensed MILK



When properly administered as an infant food, makes a  
Sure Foundation for Permanent Vigorous Health

**Borden's Condensed Milk Co.**

"Leaders of Quality"

Est. 1857

New York



**Hollantin**

See "New and Non-Official Remedies," 3rd Edition, page 100.

# HAY FEVER

Rose Fever June Cold

See Osler's *Modern Medicine*  
Vol. III, Chapter XVI  
Hay Fever  
W. P. Dunbar, M.D.

Literature upon request

**FRITZSCHE BROTHERS, NEW YORK**

Was not water made sweet with wood, that the virtue thereof might be known?—*Ecclesiasticus XXXVIII-5.*

The sweetness of sprouting grains made known the virtue of Malt.

## Maltzyme

Is an Epitome of Malt Virtues. One table-spoonful of Maltzyme will produce approximately Fifteen Hundred (1500) grains of Normal Malt Sugars in Thirty (30) minutes.

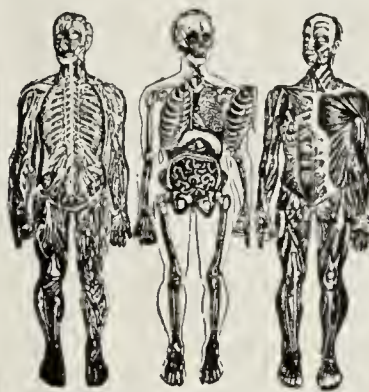
See description "New and Non-Official Remedies."

**MALTZYME** { (Plain)  
with Cod Liver Oil.  
with Cascara Sagrada.  
with Hypophosphites.  
with Iron, Quinine and Strychine.  
Ferrated.  
with Yerba Santa.

In half-pint, pint and half-gallon bottles.

**Malt-Diastase Company, 79 Wall St., New York**

## Pilz Anatomical Manikin



### 'THE MASTERPIECE'

Adopted by the Medical Department, U S.A.

Present in LIFE SIZE and in NATURAL COLORS the relations of all the structures of the body, and the contents, in normal position, of various cavities. Made of Indestructible Linen cardboard.

Female Manikin with Obstetrical Supplement \$15.00

Sexless or Male Sex . . . \$12.00

Sent C.O.D., or on receipt of N.Y. current funds. Guaranteed exactly as represented.

Write for full description in pamphlet form.

**AMERICAN THERMO-WARE COMPANY**

Sole Importers

New York

16 A Warren Street



**Not \$45, Only \$15**

WITH THREE FOLD CUSHION  
U. S. ARMY CHAIR TABLE

All Steel, 5 coat white enamel, hand rubbed, oven baked, leg holders and stirrups, so evenly balanced that a boy can obtain any position with the heaviest patient.

For September with Cushions, **\$15**  
Only . . . . .

Send \$5 and pay balance on arrival.



**SPECIAL ON THE BOSTON**

Others sell for \$80 to \$100. For September **\$42.50**  
with cushions, etc., free.

**FRANK S. BETZ & CO.**  
HAMMOND, INDIANA

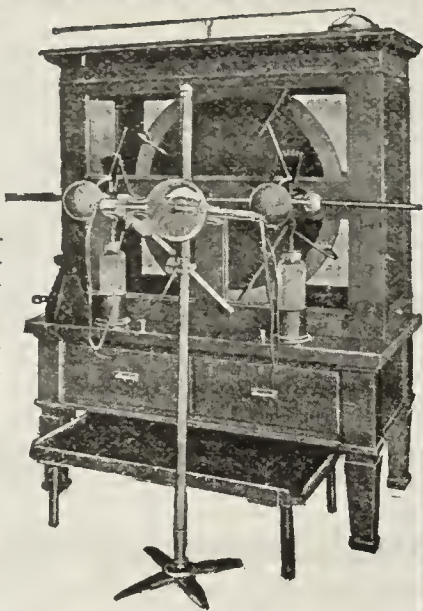


## How to Perform Successful Radiography

The value of a Static Machine depends upon the volume of energy it can develop.

A certain amount of X-Ray work is possible with the ordinary Static Machine, but when it is necessary to make a radiograph of the denser parts of the body then it must be a BAKER.

Because *no other* Static Machine possesses its ability to develop a perfectly constant uni-directional current of the tremendous volume essential to successful radiography.



Type B Baker Static Machine  
With X-Ray Attachment.

## Baker Static Machine

is pre-eminently a high-speed apparatus in which the rotating plates are constructed of fibrous material and are wholly covered by patents. These fibrous plates are capable of being rotated at enormously high speed, and consequently produce an extremely large amount of energy at high tension in constant and flowing direction.

Baker Static Machines not only *excel* in radiography but for *every* X-Ray and Electro-Therapeutic requirement.

Send to-day for our 32-page illustrated catalog. Of absorbing interest to Physicians and Electro-practitioners.

### BAKER ELECTRIC CO.

128 E. 23d STREET  
NEW YORK

438 ASYLUM STREET  
HARTFORD, CONN.

## THE MARPLE Electrically Lighted Ophthalmoscope

(Dr. W. B. MARPLE, NEW YORK)

### Distinctive Features:

- 1. The U-Shaped Mirror**  
The only mirror which illuminates the *whole* Fundus and having no annoying reflexes.
- 2. Adjustable Focus**  
The light may be focused while the instrument is being used.
- 3. Size**  
The lighting apparatus is compact. The instrument may be brought as close to the eye as an ordinary Ophthalmoscope.

SEND FOR REPRINT

*E. B. Meyrowitz*

Manufacturer of EYE, EAR, NOSE AND THROAT  
INSTRUMENTS, Electro-Therapeutical Equip-  
ment and Ophthalmological Apparatus.

104 E. 23d ST., NEW YORK, U. S. A.  
LONDON :: PARIS

Will Exhibit at the A. M. A.

# Oxolint

## ABSORBENT LINEN

absorbs instantly yet will not mat or pack. It is most gratefully cooling and soothing to any wound.

Physicians and Surgeons appreciate the superiority of Pure Linen as an absorbent. Oxolint is every particle linen, and is so guaranteed.

Oxolint is pronounced by Physicians, Surgeons, Nurses and Druggists who have examined it to be "the ideal dressing"—hygienic, non-irritating, antiseptic, and is as remarkable for its retentiveness as for its absorbency. It is also peculiarly free from adhesive fuzz.

Oxolint is the result of a recently discovered process of separating flax from straw and converting it into pure linen at a saving of many weeks over the old method, and at a great reduction from the former cost of production.

This process is controlled by the Oxford Linen Mills. We would like very much to have every physician prove to his own satisfaction the superiority and general excellence of Oxolint.

### A SAMPLE FOR TESTING

purposes will be sent free on request.

### OXFORD LINEN MILLS

85 Oxford St., North Brookfield, Mass., U.S.A.



## THE ALLISON SYSTEM OF Office Appliances.

With the progress of medicine the busy practitioner grows busier every day and the many details of his office consume his time and energy.

### An Allison Outfit

will so systematize his work that he will be relieved of the many aggravating and time-consuming troubles so common in his office practice. It will make his skill more effective, thus enabling him to carry on his practice more satisfactorily to both himself and patient.

OUR ILLUSTRATED CATALOG  
SHOWS HOW IT IS DONE.

### W. D. ALLISON CO.

915 N. Alabama St., Indianapolis.

110 E. 23rd St., New York  
711 Boylston St., Boston  
321 Mint Arcade,  
Philadelphia  
35 East Randolph St.,  
Chicago





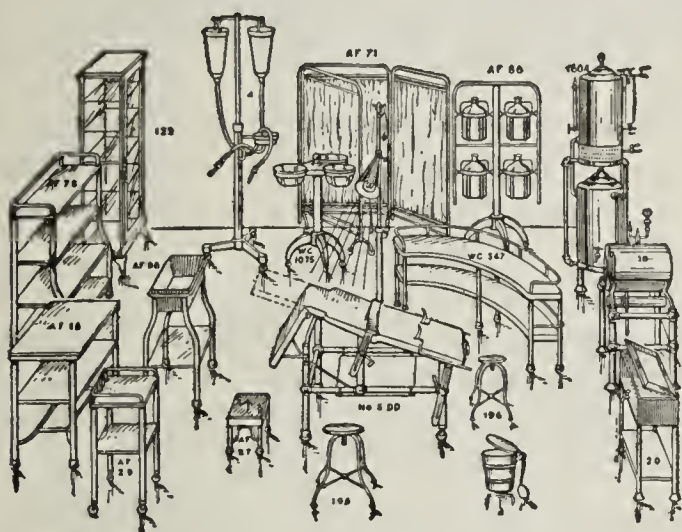
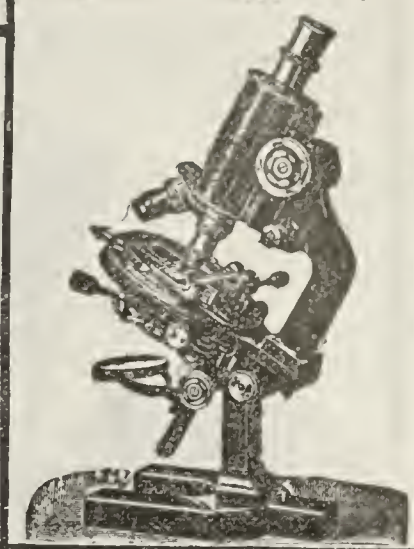
# Voigtländer MICROSCOPES

embody such exceptional optical qualities, and such superior mechanical skill. that their preferment by critical experts is not surprising.

A good microscope is the requisite of successful microscopy. VOIGTLANDER Microscopes make possible the highest degree of scientific accuracy, inasmuch as the VOIGTLANDER eye-pieces and objectives are the best obtainable in the essential details of optical efficiency and clarity.

Careful and prompt attention given to duty-free importations for institutions of learning or research. Catalog No. 325 free on receipt of request referring to this journal.

**VOIGTLANDER and SOHN, A. G. OPTICAL WORKS — NEW YORK — 225 Fifth Avenue**  
Or any other dealer in the United States  
Factory: BRUNSWICK, GERMANY.



*The Cincinnati Operating Outfit*

## Up-to-date Hospital Furniture and Sterilizers

### THE 5DD. NEW BALDWIN AUTOMATIC OPERATING TABLE

Built like a watch by expert mechanics. Conceded by the most eminent Operators as the most satisfactory table on the market. Hundreds of hospitals have it. We refer to the following, who are using it: Drs. J. F. Baldwin, R. B. Hall, C. A. L. Reed, E. G. Zinke, Arthur W. Elting, W. J. Mayo, Jos. Ransohoff, T. Abell, S. Stark, Horace Whitacre, A. F. House, M. F. Porter, etc.

THE NEW ELEVATOR ON SAME, for gallstone, kidney, or stomach operations has no ratchets or catches, but operates with worm screw and sets automatically where placed.

We issue the most complete book (Department 5) on Hospital equipment containing thousands of new items. Sent upon request. Electrical and X-Ray (Department 4) also sent upon request.

### THE MAX WOCHER & SON CO.,

Hospital and Office Furniture, Gauze, Sterilizers, Glassware, Surgical Instruments,  
THE GROSSE FLAMME X-RAY COIL 19 to 23 West Sixth Street, Cincinnati

## ROCHESTER STERILIZING OUTFIT

AN INSTRUMENT STERILIZER

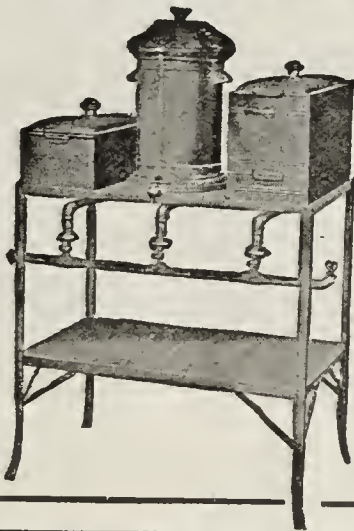
A WATER STERILIZER

A DRESSING STERILIZER

The three great sterilizing necessities in one apparatus.

Additional WATER STERILIZER for cold sterile water if desired.

All fitted to a neat, strong, heavily enameled stand, tube or angle iron.



Equipped with gas, alcohol or gasoline burner under each Sterilizer or a shelf for Primus Oil Stoves. Also furnished with electric heaters.

The fumes of gas can never enter the chamber of the Dressing Sterilizer.

Catalog at your dealers or by mail.

**WILMOT CASTLE CO.,**

605 St. Paul Street,  
ROCHESTER, NEW YORK

## Laws Regulating the practice of medicine in the United States and elsewhere.

Invaluable to State Board candidates. This booklet gives all essential information regarding medical registration.

## Reciprocity

Thirty states have now formulated rules whereby interstate reciprocal registration has become established between them. All data on reciprocity, etc., are contained in this booklet. Price, 30c. Stamps acceptable.

American Medical Association, 103 Dearborn Avenue, Chicago, Ill.

## Catgut Cardinals

1. **STERILITY.** Every lot tested *Bacteriologically*.
2. **TENSILE STRENGTH.** Tested before and after sterilizing.
3. **ABSORBABILITY.** Graded to the surgeon's needs.

Next to the surgeon's skill comes dependability of Catgut  
THOMAS' CATGUT is Insurance for the Surgeons

**F. H. THOMAS COMPANY**

727 Boylston St., BOSTON

SEND FOR SAMPLES



## The HOLSMAN Automobile

Seven  
Years  
of  
Success

Rides  
Like a  
Carriage



**1907 Sales Over \$600,000.00.**

THE STANDARD of high-wheeled automobiles and the pioneer of this type. The only highwheeled automobile manufactured that has a perfect record in a public reliability contest—and Holsman records date back to 1902. Every part of every machine guaranteed.

**Repairs Average Less than 10 Cents a Day**

High wheels allow solid rubber tires to be used without affecting riding qualities, and this insures "going the journey." A blacksmith or wagonmaker can make all ordinary repairs. Splendid hill-climbing power. Send for illustrated catalogue.

**The Oldest and Largest Manufacturers of Carriage Automobiles in the World.**

**The Holsman Automobile Company**

Room 582, Monadnock Block

CHICAGO, ILL., U. S. A.

## The Lambert



**\$800**

**\$800**

Order received one day—Car shipped the day following

**Proven the Best by Practical Crucial Test.**

Modern ingenuity and mechanical skill cannot produce a more serviceable,—or a better appearing—car. Over good roads in good weather, or bad roads in bad weather—it will bear you quickly and surely and is *always ready* to go when you are ready.

**Strong and Durable. The Lambert has the Friction Drive. Ask anyone who knows.**

**IT WILL STAND MORE USE AND ABUSE,  
WITH LESS REPAIRS THAN ANY  
OTHER CAR MADE**

THE BUCKEYE MFG. CO.

Write for  
CIRCULAR 19

ANDERSON, IND.



## Dust Poisoning Can Be Avoided

ONE OUT OF EVERY SEVEN  
DEATHS IS CAUSED BY TUBERCULOSIS

This statement is proved by statistics. Moreover, medical science demonstrates that a large proportion of these cases are caused by *dust poisoning*, which, in future, *can be avoided*.

The first step is the elimination of dust—and the millions and millions of germs that are always found with it. The most satisfactory method of accomplishing this has been found in the treatment of all wooden floors with

## STANDARD FLOOR DRESSING

A dry floor will *not* hold dust—every air current sets the particles circulating through the air. Standard Floor Dressing keeps the wood at just the right degree of moisture to *hold* all dust, thus practically eliminating all danger of disease contagion. Three or four applications a year yield the best results. Will not evaporate. Sold everywhere in barrels, half-barrels, and in one and five gallon cans.

*Standard Floor Dressing is not intended for household use.*

*To prove that Standard Floor Dressing will eliminate dust, we will dress the floor of one room or corridor in any school or other public building AT OUR OWN EXPENSE.*

Particulars, testimonials, reports and our book, "Dust and Its Dangers," furnished on request.

**STANDARD OIL COMPANY**  
(Incorporated)







## The RELIABLE DAYTON MOTOR CAR.

### THE FIRST REAL SUCCESSOR TO THE HORSE

*Doctors, think this over.*

You can't buy pure drugs for the price of the adulterated article, nor can you buy a high grade motor car for the price of the inferior one. You encounter many instances when nothing but the purest drug will do and you will encounter many instances with motor cars when nothing but the highest efficiency will do.

The Reliable Dayton Motor Car is not the lowest in price, but it is the cheapest in the end, has the necessary quality of materials to endure the rigors of long hard service. It combines with the elimination of the ordinary motor car's expensive features, the highest possible efficiency and reliability of the carriage motor car and the greatest dollar for dollar return in service for both first cost and maintenance. Fifteen horse power motor under the hood at front, slide gear transmission—double chain drive. Our catalog describing fully on request.

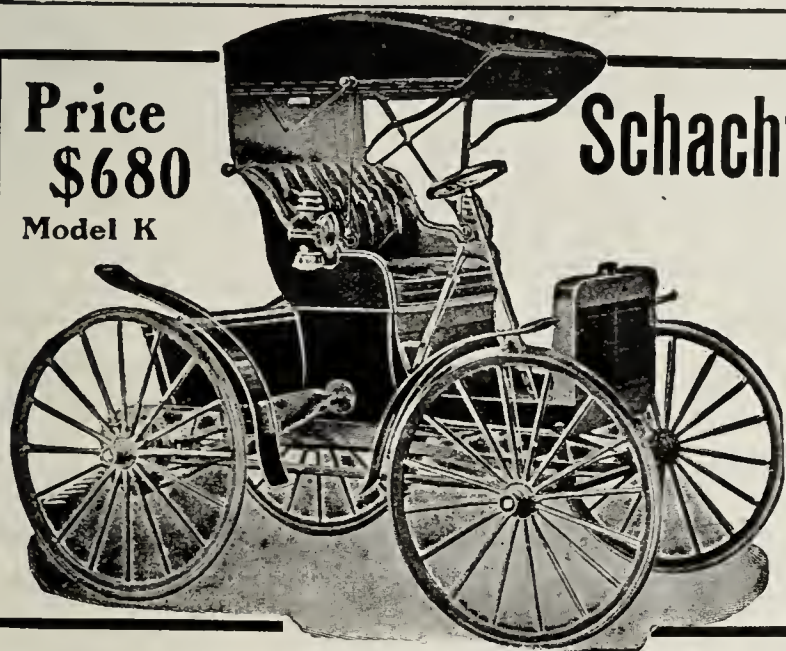
Two Passenger Car, \$780. (without Tops) Four Passenger Car \$925.

RELIABLE DAYTON MOTOR CAR CO.

Dept. 29 - CHICAGO, - ILLINOIS.

Price  
\$680

Model K



## Schacht Auto-Runabout THE INVINCIBLE

### 1909 Model Now Ready

Built especially to meet every requirement of the physician's work. Simple in construction, economical to operate. 16 H.P. Friction Drive. Gearless and Clutchless. High Cushion Tired Wood Wheels. Concord Springs. A reputation behind our Auto-Runabout. Every machine guaranteed.

Address J. A. HARRIS, Sales M'g'r. WRITE FOR CATALOGUE

THE SCHACHT MFG. CO., Cincinnati, Ohio

Iowa Distributors: Campbell & Earl, Fairfield, Ia.

Nebraska Distributors: The Central Impt. Co., Omaha, Neb.

## —A Standard Prescription Necessary for Every Physician—

is my advice to try the use of a Maxwell Automobile. I say "try" intentionally, because I know of no physician who has ever, with good reason, returned to the use of horse and buggy after trying

*The*  
**"Maxwell"**

Every Doctor—and it makes no difference whether he practices his profession in the city or in the country—who persists in the use of flesh and blood in old-fashioned transportation does himself a positive injustice in this case.

**THE DIAGNOSIS** shows Loss of Time in Reaching the Patient; the Limitation of a Large and Lucrative Practice to the Speed and Endurance of the Horse. The physician who curtails his time expenditure by one-half, doubles his time for relaxation and study; he is able to visit his patients in half time, or call upon twice their number within the same time, with a consequent increase in his own value.

**THE REMEDY** is a Maxwell, two distinct types of which are manufactured for the physician's particular use. One is a 12-horsepower, two-cylinder Runabout, seating two comfortably and selling at \$825, and the other a 20-horsepower Runabout, which has been dubbed the "Doctor" Maxwell on account of its extensive use by physicians. The requirements of the physician in regard to an automobile are no doubt more exacting than the demands that are reasonable and legitimate for the average non-professional motorist, and they are met in the Maxwell by a construction more reliable and more simple than can be found in any other American automobile.

What a Maxwell will do for you, is best gathered from the statements of other physicians as to what it has done for them. Dr. C. W. HOPKINS, one of Chicago's best-known practitioners, has this to say:

"Your letter of 21st, asking me for my experience with the 'Maxwell' car and its value to the physician, received.

In reply I will say, that as to my experience with my runabout, have none, except to get there when I start out and to come back in a hurry when I am through.

I have run my car about six months now and have used her every day since the 15th of November, 1907, covering about 8000 miles over all kinds of roads, all kinds of weather, snow, sleet, ice, mud, rain and everything else that the weather man has handed us in that time, making some days as high as 85 miles, and with one exception, I have not been delayed one minute, and that was a few days ago when the commutator spring snapped; I replaced it in about ten minutes and went on my way rejoicing. My wife often when riding with me, asked me why we are never pulled up against the sidewalk or to the side of the road for repairs, and I tell her that she must remember that we are driving a 'Maxwell.' I am getting about 20 miles to the gallon of gasoline, and using about one pint of lubricating oil a day, and with that slight expense I cover more mileage than any car in my garage, where I keep it and am able to

overtake most anything on the road and keep ahead, much to the surprise of many of the drivers of the big cars who try to catch me.

As for the value of the car to me in my profession, all I can say is, that I could not get along without it, as it has become an absolute necessity. Many calls that I used to have to refuse when they were at a great distance in the suburbs, I am now making, and have therefore about doubled my family practice, and with it all have twice as much time to myself, besides having my wife in the air and sunshine with me and making every trip, night or day, a pleasure trip. I often wonder how I ever got along without it. Several of my friends who paid two and three times as much for their cars as I did for mine, are laid up half the time; tied up on the road very often; have much more tire trouble than I do, and pay two and three times as much for operating. My car runs better than when new, improves all the time, and in fact is noiseless, and looks about as well as when new. However, when this one is worn out, it will be a 'Maxwell' of the same type for mine."

Yours truly,

C. W. HOPKINS, M.D.,  
56 East Kinzie Street.

But there is more than that to be said about Maxwells, and it should interest you as much as an important advancement in medical science. Let me tell you about it and send you some of our literature which contains a mine of general automobile information that must be of value to every progressive Doctor.

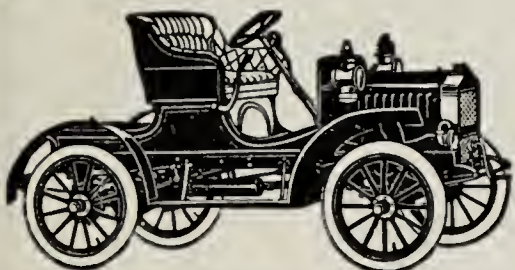
BENJAMIN BRISCOE, President

MAXWELL-BRISCOE MOTOR COMPANY,

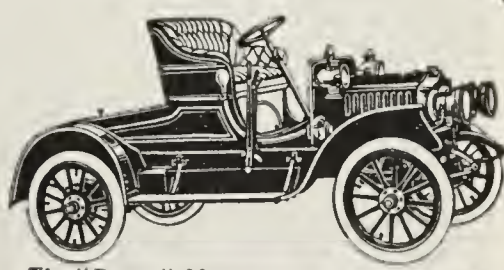
Standard Manufacturers, A. M. C. M. A.

P. O. Box 112, TARRYTOWN, N. Y.

Factories: Tarrytown, N. Y., Newcastle, Ind., Pawtucket, R. I.



Maxwell 14 H. P. 2-cylinder Runabout, \$825



The "Doctor" Maxwell 20 H. P. 2-cylinder \$1350 (with equipment)










## THE MILWAUKEE SANITARIUM

### FOR NERVOUS AND MENTAL DISEASES

Situated in the beautiful suburb, WAUWATOSA, WISCONSIN. The new buildings and other improvements recently made, together with the well known facilities previously in use, provide an equipment of great completeness.

An especial merit is the wide separation of the FIVE different houses, giving individualized treatment and environment to all.

Ideally beautiful grounds (25 acres) "set on a hill." Modern bath house. All approved uses of water, electricity, heat, light, etc.

The Sanitarium is secluded yet convenient of access. On C. M. & St. P. R'y., 2 1/4 hours from Chicago; 15 minutes from Milwaukee. Two lines street cars, 5 minutes walk from all cars.

Address—

CHICAGO OFFICE, Venetian Bldg.  
34 Washington St., Wednesdays.  
Hours 2 to 4 (except July and August.)  
Telephone, long distance, Milwaukee exchange, Wauwatosa 16.

DR. RICHARD DEWEY,  
Medical Superintendent,  
WAUWATOSA, WISCONSIN.

## Lake Geneva Sanitariums

LAKE GENEVA, - WIS.





DR. OSCAR A. KING, Supt. Chicago Office 72 Madison St., Cor. State St. Hours: 10 to 2 Tuesdays and Fridays.

# KENILWORTH SANITARIUM

TELEPHONES { KENILWORTH 78  
EVANSTON 778

Kenilworth, Illinois

(C. & N. W. RAILWAY. SIX MILES NORTH OF CHICAGO)




100 State Street, Chicago

Built and equipped for the treatment of nervous and mental diseases. Approved diagnostic and therapeutic methods. Special system of ventilation. Rooms impervious to noise. Elegant appointments. Bath rooms en suite, steam heating, electric lighting, electric elevator.

**SANGER BROWN, Physician in Charge**


Telephone Central 3707



## Waukesha Springs Sanitarium

FOR THE CARE AND TREATMENT OF NERVOUS AND MENTAL DISEASES. *New, absolutely fireproof building*

BYRON M. CAPLES, M.D., Supt. - - - WAUKESHA, WIS.



## The Battle Creek Sanitarium

FREE from the noise and excitement of the ordinary summer resort; a delightful climate; large outdoor gymnasium for open air treatment; sun baths; large indoor and outdoor swimming baths; muscle training under expert gymnasts; scientific regulation of diet to suit individual needs; walking clubs; boating; school of health with daily lectures and demonstrations free to guests. A homelike atmosphere; skilled physicians; well trained nurses.

Physicians, tear out this advertisement, send it to us with your address, and we will mail you our 200-page illustrated booklet describing the Battle Creek Sanitarium system of therapeutics.

THE BATTLE CREEK SANITARIUM  
BATILE CREEK, MICH.



## TUBERCULOSIS THE ALBERT BALDWIN SANATORIUM EL PASO, TEXAS



For incipient and suitable cases of tuberculosis and kindred diseases; admitted only on examination in advance. Hopeless cases not admitted. Patients taken on thirty days trial. A modern, thoroughly equipped institution. Situated at the foot of Mt. Franklin overlooking the city and Rio Grande valley. El Paso's altitude, 3,764 feet; sanatorium about one hundred feet higher. On account of its natural location being protected on three sides by a semicircular mesa, the sanatorium is absolutely free from dust storms, prevalent throughout the arid region lacking in such protection. A commodious structure of solid stone, 10,000 square feet of covered porches converted into individual outdoor living quarters separated by canvas partitions, ventilated on three sides, with call bell, electric light extensions; bed rooms used only for dressing or otherwise if specially directed. Sun rooms; steam heat, running water, telephones, etc., in each room. Accommodations limited. Modern hygienic treatment; competent corps of trained nurses night and day. Experienced matron, dietetic cook; home comforts. Vaccine and serum treatments; Opsonic Index; Resident Physicians. El Paso has an equable climate. Less than three cloudy days per month. Eight railroads, of which six are trunk lines. X-Ray; Masseurs for giving baths as prescribed. For further information, sample menus, climate article, Government statistics, etc., address THE SUPERINTENDENT.

We credit patient for examination by home physician on admission, presenting certificate. We have no extras excepting personal laundry and drugs, averaging for both, \$1.50 weekly.

## Waldheim Park

A modernly equipped home for the cure and treatment of chronic and nervous diseases and an excellent place for the convalescent. Located in the lake region of Waukesha County, on the north shores of Oconomowoc Lake, and surrounded by 35 Acres of Park.

For particulars write to

**Dr. J. H. VOJE, Prop.**  
Oconomowoc, Wis.

## Oxford Retreat

A PRIVATE HOSPITAL FOR THE TREATMENT OF  
Insanity, Nervous Disorders, Inebriety and  
Opium Habit. For Men and Women.

Facilities and advantages are unsurpassed for the proper care and treatment of all forms of the above named disorders. Careful attention is given to the proper classification of patients. Average one attendant to every four patients. Supervision at all hours. Every needed convenience and any accommodation that may be desired. Retired and homelike. Site elevated, beautiful and salubrious. 39 miles from Cincinnati, 84 miles from Indianapolis, 8 trains daily. Terms moderate. For references, terms, etc., address

**G. F. COOK, M.D., Physician in Charge**  
OXFORD, Butler Co., OHIO

## Oak Grove Hospital

For Nervous & Mental Diseases



Grounds comprise sixty acres of stately oaks, and are picturesque and secluded. Buildings roomy, homelike and free from institutional features. Interiors bright and cheerful. Luxurious furnishings, superior appointments and skilled attendance. First-class cuisine. Equipment for hydrotherapeutic and electric treatment complete and modern. Static, Galvanic and Faradic Apparatus, Electric Bath, Turkish and Russian Baths, and Massage. Use of Gymnasium, Billiard Room, Bowling Alley, and Carriages, Free.

**Prosit** A therapeutic, antacid table water, from a flowing well 265 ft. in depth, used in the Hospital.

For terms address

**DR. C. B. BURR Medical Director, FLINT, MICH.**

## THE CINCINNATI SANITARIUM

Private Hospital and Residence

Incorporated 1873

Proprietary interest strictly non-professional. Both sexes and all classes of Mental and Nervous Diseases provided for.

DETACHED APARTMENTS FOR NERVOUS  
INVALIDS, OPIUM HABIT, INEBRIETY, ETC.

Electric Cars from City to Entrance :: Long Distance Telephone, P. 135

**F. W. LANGDON, M.D., Medical Director**  
**B. A. WILLIAMS, M.D., Senior Resident Physician**  
**JOHN C. SHEETS, Business Mgr., College Hill, O.**

## The Pines

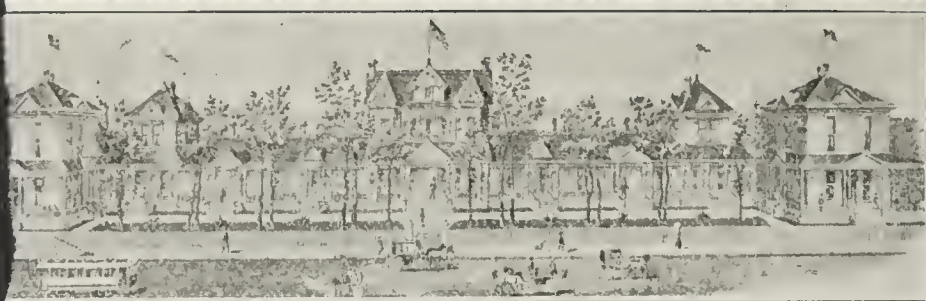
Private Sanitarium for Nervous Disorders  
and Morphine Habitués. For Women Only.

Insane not admitted. Every facility for proper treatment. Careful supervision at all times.

Retired, accessible; surroundings beautiful. Modern in all its appointments, lighted by electricity and heated by steam. Sanitation perfect. Send for descriptive circular.

Under the same control and Medical Management as the Oxford Retreat.





## The Briggs Sanatorium, Dallas, Tex.

Private Institution for the Treatment of Throat and Lung Diseases.

Ideal climate for consumptives. Restoration to good health is brought about by an immunizing process with the culture products of the Tubercle Bacilli.

For particulars, address **GEORGE R. TABOR, M.D., Superintendent.**  
President American International Tuberculosis Congress and late State Health Officer of Texas,  
**DALLAS, TEX.**

### UNDER NEW MANAGEMENT

**Ethically Conducted.**  
Thoroughly equipped with Pathological,  
Chemical and Bacterio-Therapeutic  
Laboratories

Physicians are invited to bring their patients and inspect the manner of treatment. Beautifully located on the Prairie Heights, west of Oak Cliff, the pretty suburb of Dallas.

Scientific feeding, bathing, riding, exercise and regular habits.

**PURE FRESH AIR**  
**PURE ARTESIAN WATER**

On the Dallas-Fort Worth Interurban; on the Dallas Street Railway; accessible to any place in Dallas by car.

MEMPHIS

## LYNNHURST

TENNESSEE

### A Private Sanitarium for Nervous Diseases, Mild Mental Disorders and Drug Addictions

A Restful Home for Nervous Invalids and Convalescents, requiring environments differing from their home surroundings. Number limited to 15 select patients. Large grounds. Two buildings. New and



modern equipment. Hydrotherapy, Electrotherapy, Massage and the Rest Treatment. Experienced nurses; also a woman physician on duty. Climate mild, equable and salubrious. Artesian chalybeate and soft waters.

**S. T. RUCKER, M. D., Medical Superintendent, Memphis, Tenn.**



## THE GLEN SPRINGS

**Watkins Glen-on-Seneca, N. Y.**  
**THE AMERICAN NAUHEIM**

**A Health Resort and Hotel of the Highest Class.**

All approved forms of Hydrotherapy, the Electric Light Bath and Electricity in all forms. The Vibrator and Swedish Movement treatments, Massage, Turkish and Russian Baths. The most completely equipped and modern bathing establishment in America.

**THE NAUHEIM BATHS** for Diseases of the Heart and Blood Vessels. The brine from our Nauheim Spring is a stronger iodo-bromo-muriated brine than that of Bad Nauheim.

**VALUABLE MEDICINAL MINERAL SPRINGS** for the treatment of Gout, Rheumatism, Diabetes, Digestive Disorders, Anemia and Neurasthenia.

Location overlooks thirty miles of Seneca Lake. Golf Links, Tennis Courts, Bowling Alleys, etc. No insane or other objectionable cases received. Correspondence with physicians solicited. For illustrated booklet and further particulars please address

**WM. E. LEFFINGWELL, President, • WATKINS, N. Y.**




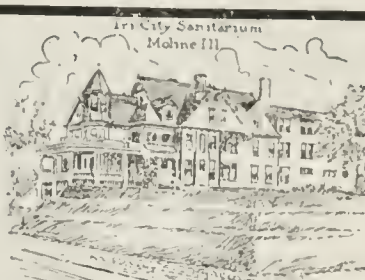

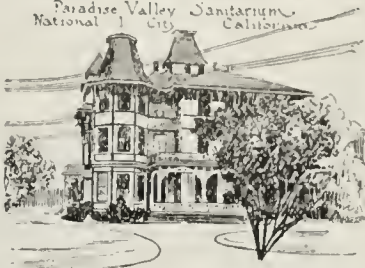





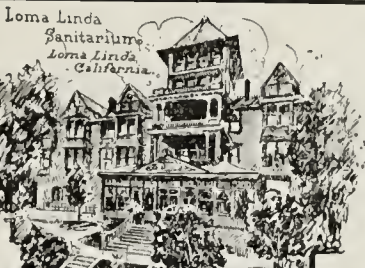
## Gulf Coast Health Resort

**BILOXI**  
**Mississippi**

Sea breezes and sunshine. Outdoor the year round. An ideal place for **CONVALESCENTS**. Patients with insomnia, neurasthenia, and indigestion especially benefited here. System of balneotherapy thorough, and includes **HOT SEA BATHS**. Rates from \$15 to \$60 per week. Equipment complete.

**BILOXI SANATORIUM**  
**H. M. Folkes, M.D., Pres.**



 <p>Glendale Sanitarium Glendale, Cal.</p>	<p><b>Seventh Day Adventist</b> <b>SANITARIA</b></p> <p>A world-wide system comprising nearly a half hundred Sanitaria devoted to the scientific treatment of</p> <p><b>Chronic and Other Difficult Cases</b></p> <p>by Physiological Therapeutics.</p> <p>Qualified physicians in charge of each institution. Graduate nurses in attendance. Physicians entrusting patients and guests to these Sanitaria are assured that their rights and privileges will be respected, and that their patients will receive the best attention and treatment.</p> <p>Hydro-, Electro-, Mechano-, Helio-, Radio-Therapeutics are specialties. Diet, graduated exercises, and other natural remedies receive careful attention.</p> <p><b>ETHICAL, SCIENTIFIC, PROGRESSIVE</b></p> <p><b>ADDRESS</b></p> <p><i>Sanitarium nearest you for information and illustrated booklet</i></p> <p><b>Directory next week. Further illustrated list next month.</b></p>	 <p>Iris City Sanitarium Mohave, Ill.</p>
 <p>Washington Branch Sanitarium 1212 Iowa Circle Washington, D.C.</p>		 <p>Paradise Valley Sanitarium National City, California</p>
 <p>Colorado Sanitarium Boulder, Colorado</p>		 <p>Nashville Sanitarium Nashville, Tenn.</p>
 <p>Madison Sanitarium Madison, Wis.</p>		 <p>Kansas Sanitarium Wichita, Kansas</p>
 <p>Grayville Sanitarium Grayville, Tenn.</p>	 <p>Loma Linda Sanitarium Loma Linda, California</p>	



# THE POTTENCER SANATORIUM

for  
**Diseases of the Lungs and Throat**

**MONROVIA, CALIFORNIA**

**F. M. POTTENCER, A.M., M.D. } Medical**  
**CHARLES C. BROWNING, M.D. } Directors**

constructed expressly to meet the most approved methods of carrying out the open-air cure. All rooms large, sunny, well ventilated, with bay-window frontage. Lighted throughout by electricity; an abundant supply of pure mountain water; complete heating and sewerage systems. The fresh-air-hygienic-dietetic treatment is reinforced by all scientific measures which will aid in bringing about a cure of the patient. Close personal attention. Comforts of home afforded.

For particulars address

One thousand feet above the sea. Sixteen miles from Los Angeles. Location unsurpassed. In the foot-hills of the SIERRA MADRE MOUNTAINS, overlooking the beautiful San Gabriel valley, with its world famed orange groves. Surrounded by mountain scenery with gorges and canyons near by. One of the best all year round climates in the world. Everything new. Buildings and tents constructed expressly to meet the most approved methods of carrying out the open-air cure.

**POTTENCER SANATORIUM, Monrovia, Cal.**

or

**601-3 O. T. JOHNSON BUILDING, Los Angeles, Cal.**



## The Homewood Sanitarium

GUELPH, ONTARIO, CANADA

(Founded in 1883)

FOR MENTAL AND NERVOUS DISEASES



### UNEQUALLED IN BUILDINGS AND EQUIPMENT

Conducted on strictly ethical principles and recognized by the Medical Profession of the Dominion of Canada.

Handsome new buildings, splendidly equipped, erected in 1907.

Most improved Hydrotherapeutic apparatus.

Special attention to mental cases requiring gynecological treatment.

A limited number of habit cases received in a separate department.

Beautiful, secluded, well wooded grounds—essentially private.

Has an altitude of 1000 feet above the Lakes.

Provision for recreation according to season.

Situated in the garden of Ontario, 70 miles from Niagara Falls on Canadian Pacific and Grand Trunk Railroads.

For information and booklet apply to

**DR. A. T. HOBBS, Medical Superintendent**

## Two Weeks of Perfect Rest

The soothing calm of nature in a quiet mood enfolds the tired spirit from the cities at

## French Lick West Baden Springs

No famous foreign spa can equal the curative properties of these waters, which are unsurpassed in the treatment of Kidney, Liver and Stomach troubles.

Hotel accommodations are ideal and unique in offering the seeker of health, perfect rest and quiet as well as ample opportunity for indulging in his favorite recreation. Many indoor and outdoor amusements—the most attractive health resort in America. Beautifully situated in Southern Indiana on the

**MONON ROUTE**

Write for descriptive booklet, rates, etc.

**B. E. TAYLOR, Gen'l Mgr.,**

**FRANK J. REED, G.P.A.**

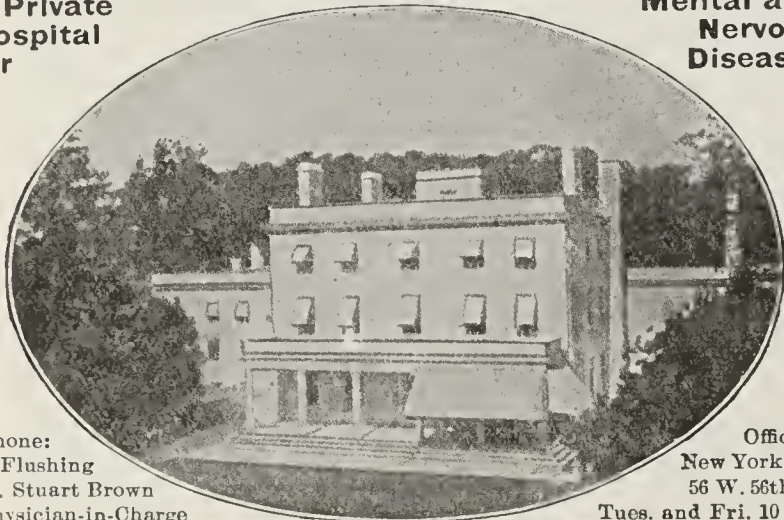
Custom House Place, CHICAGO

## SANFORD HALL FLUSHING, N. Y.

Established 1841

A Private  
Hospital  
for

Mental and  
Nervous  
Diseases



Phone:  
17 Flushing  
W. Stuart Brown  
Physician-in-Charge

Office in  
New York City  
56 W. 56th St.  
Tues. and Fri. 10 to 12

## FAIRMOUNT HOME

A WELL-EQUIPPED INSTITUTION,

exclusively for the scientific treatment of narcotic and alcoholic addictions. No pain, diarrhea, profuse sweating or extreme nervousness. For detailed method, write for circular and reprints of papers read at the American Medical Association.



A. J. Pressey, M.D.

F. C. Hoskins, M.D., Physician-in-Charge

W. H. Hoskins, Manager

900 Fairmount St.

CLEVELAND, OHIO

2219 Fairmount Rd. (New)

## Our Rates are Lowest and our Equipment

Surpasses any other  
American Sanitarium



Any approved treatment given in any Sanitarium in the world is given here. Meets every personal and professional requirement. Sixty Zander Swedish machines. All kinds of baths and massage, X-ray and all electrical appliances.

Special attention given rheumatism or its sequelae in the treatment of which we have been singularly successful. This institution offers unusual facilities for modern scientific treatment of nervous and organic diseases as well as all acute or chronic non-

contagious affections. No insane cases admitted. Correspondence solicited with the profession. Write for booklet.

**DR. S. S. STACK, Sacred Heart Sanitarium, MILWAUKEE, WIS.**



"Patient Sleeping Out." Guest on Veranda.

## Asheville- Biltmore Sanitarium

Asheville P. O.  
North Carolina

2,000 ft. altitude. Best all year round climate. Absolute outdoor life night and day, any season and in any sort of weather. Protection against colds and congestions. The original and only "IN AND OUT SLEEPER." Ethical management. Write for prospectus.



# NEW MEXICO COTTAGE SANATORIUM

Physician-in-Chief:  
E. S. BULLOCK, M.D.

SILVER CITY, NEW MEXICO

Manager:  
WAYNE MACV. WILSON

Pathologist:  
FRANK NOBLE MARTIN, M.D.

*For Suitable Cases of Pulmonary and Laryngeal Tuberculosis*

Assistant Manager:  
FRANK H. MORONEY

## DIRECTORS

E. S. Bullock, M.D., Silver City, N. M.  
Hon. Percy Wilson, Silver City, N. M.

Wayne MacV. Wilson, Silver City, N. M.  
Frank Graham Thomson, Philadelphia, Pa.

Andrew S. McCreath, Silver City, N. M.  
John W. Converse, Philadelphia, Pa.

The institution has an ideal situation in the mountains of southern New Mexico, at an altitude of 6000 ft., in the midst of beautiful scenery. The climatic conditions are perfect. The summers are cool and delightful and the winters moderate. A flood of sunshine at all seasons of the year. The food is excellent and abundant. All the milk our patients can consume from our own dairy. The charge is moderate and based upon maintenance. The institution is partly endowed. Separate comfortable cement cottages for patients. Complete hospital building for febrile cases. Amusement pavilion. Resident physicians in constant attendance. Extensive vegetable garden under irrigation. Livery for the use of patients. Well equipped laboratory. Tuberculin administered in suitable cases. The institution is, in fact, complete in every particular and admirably adapted to its purpose. Patients received only through physicians. Silver City may be reached via Santa Fe, Rock Island or Southern Pacific railroad.

*For particulars write the MANAGER.*

## BEECHHURST SANITARIUM

LOUISVILLE, KY.

**Mental and Nervous Diseases, Drug and Drink Habit.**

M. H. YEAMAN, M.D., SUPT. (Late Supt. Central Kentucky Asylum)  
H. B. SCOTT, A.M., M.D. Asst. Physician

LONG DISTANCE PHONES; Cumberland East 257-A Home 3565

Ample Buildings, Detached Apartments for Special Cases. Twenty-six Acres Wooded Lawn, High and Retired. Treatment such as is commonly employed in Institutions of like character. For particulars address

Dr. M. H. YEAMAN, Superintendent

## HOWELL PARK SANITARIUM

For Treatment of Mild Mental and Nervous Diseases. West End, Atlanta, Ga.  
**Beautiful, Quiet, Restful and Homelike**

IS HOWELL PARK SANITARIUM, which is situated in the most attractive suburb of Atlanta, and fronting a most luxurious park. Most excellent apartments. Hot water heating, and electric lighting.

Special attention is given to such therapeutic agents as; Drugs, Hydrotherapy, Phototherapy, Baths, Electricity, Dietetics, Massage and Rest Cure.

Each patient comes under the direct care of Dr. King, who has prepared himself in the study of these cases at the best medical centers in this country and in Europe. The most authentic references given if desired. A high-class Sanitarium with the impressions of an Ideal Home are combined. Booklets are sent on request and correspondence with physicians is solicited. Address

J. CHESTON KING, M.D., :: Medical Director and Proprietor

## THE WINYAH SANITARIUM, Asheville, N. C.

ESTABLISHED 1888

Dr. Karl von Ruck, Med. Director

A modern and completely equipped Institution for the Treatment of Tuberculosis; high-class accommodations. Strictly scientific methods. For particulars and rates

WRITE TO

(Please mention this Journal.) Wm. Schoenheit, Business Mgr.

## DR. BARNES SANITARIUM

STAMFORD, CONN.

(50 minutes from New York City)

**FOR MILD MENTAL AND NERVOUS TROUBLES**

Also cases of Neurasthenia and Nervous Prostration. Splendid location overlooking Long Island Sound and City. Cuisine made a special feature. Nursing and attendance first class in all departments. Rates reasonable for excellent accommodations. For terms and information apply to

F. H. BARNES, M.D., Stamford, Conn.

Long Distance Telephone, 9 Stamford

Asheville's elevation is 2500 feet, Asheville's scenery is remarkable, Asheville's summers are cool, Asheville's water is pure.

Doctor Carroll's Sanitarium is an institution employing all rational methods for the treatment of Nervous, Habit and mild Mental cases; especially emphasizing the natural curative agents—Rest, Climate, Water and Diet.

ROBT. S. CARROLL, M.D., Asheville, N. C.

## FAIR OAKS SUMMIT, N. J.

For the care and treatment of nervous affections, neurasthenia, states of simple depression due to business or other stress, exhaustion psychoses, and selected habit cases. Voluntary cases only. No objectionable case of any kind accepted. Summit is twenty miles from and the highest point within thirty miles of N. Y. City upon the D. L. & W. R.R. Convalescents will find Fair Oaks an ideal place for rest and recuperation.

DR. ELIOT CORTON

(Formerly First Asst. Physician to the N. J. State Hospital at Morris Plains).  
SUMMIT, N. J. L. D. Phone 143

NEW YORK CITY OFFICE:

DR. T. P. PROUT

152 West 57th Street, 11:30 to 2  
Phone 601 Col.

## The RIVERSIDE SANITARIUM

MENLO PARK, MILWAUKEE, WIS.

*For Mild Mental and Nervous Diseases—with a separate building for Non-Mental Cases : : :*

An elegantly equipped institution under experienced management, possessing every advantage of a modern Psychopathic Hospital.

Address, F. C. STUDLEY, M.D.,

MEDICAL DIRECTOR

## "ON-THE-HILL"

WATERTOWN, Litchfield Co., CONNECTICUT

Just the place you are looking for to regain your health, among the Litchfield Hills. A modern Sanatorium for Nervous and Chronic Invalids, Convalescent, Medical and Surgical Cases. Operative Surgical Cases also received. Location excellent, surrounded by 25 acres of land, fine views, walks and drives. Terms moderate. Telephone connection.

Apply to CHARLES WARREN JACKSON, M.D.

## DAYTON SANITARIUM

For Mental and Nervous Diseases

Location ideal and retired. Buildings surrounded by ten acres of lawn and forest trees. Street car service convenient. Individual treatment. No ward service. Cuisine excellent. Number limited to 18.

J. M. RATLIFF, M.D., Supt., Dayton, Ohio

Dr. Ratliff was superintendent and physician for 22 years in the State Hospitals at Dayton and Cincinnati, Ohio. REFERENCES: Superintendents of Ohio State Hospitals and the medical profession of Dayton, Ohio.

We give special attention to Aged and Chronic Cases, Both Sexes

## SOUTHERN CALIFORNIA

The Pottenger Sanatorium For Diseases of the LUNGS and THROAT  
MONROVIA, CALIFORNIA

offers an opportunity for the cure of TUBERCULOSIS, in one of the best ALL-YEAR-ROUND CLIMATES in the world, 1000 feet elevation.

Besides open-air and good food, all scientific measures which have proven of value are used in selected cases.

Everything new and modern; electric lights, mountain water, valley and mountain scenery unsurpassed.

F. M. POTTENGER, A.M., M.D. } Medical Directors  
CHAS. C. BROWNING, M.D. } Los Angeles, Office  
601-3 O. T. Johnson Bldg.

## "NORWAYS"

Dr. Sterne's Sanatorium for Nervous Diseases, 1820 East Tenth St. (facing Woodruff Park), INDIANAPOLIS, IND.

A thoroughly modern, well-equipped institution for the treatment of nervous and other constitutional diseases, the various drug habits and alcoholism. Paralytic children and those in need of the "rest cure" are especially treated. No mental cases are taken. Beautiful location and extensive grounds.

For information apply to

DR. ALBERT E. STERNE.

## Maplewood A PRIVATE RESIDENTIAL REST HOME

(INCORPORATED)

JACKSONVILLE, ILLINOIS

Organized and equipped for the treatment of Nervous and Mild Mental Diseases. No noisy, violent or otherwise objectionable cases will be received. Two buildings, 13 acres of ground. Gravel springs water. Consulting Staff:—Dr. Frank R. Fry, Dr. C. C. Chaddock, Dr. M. A. Bliss, St. Louis, Mo.; Dr. Hugh T. Patrick, Dr. Harold N. Moyer, Chicago, Ill. For further particulars, address

Frank P. Norbury, M.D., Medical Superintendent,

420 West State Street, Jacksonville, Illinois

St. Louis Office:

301 HUMBOLDT BLD'G.

11 A.M. to 1 P.M.

First and Third Wednesdays of each month.



**Dr. Moody's Sanitarium, San Antonio, Texas,** For Nervous and Mental Diseases, Drugs and Alcohol Addictions. Modern buildings, equipments and conveniences for genial home environments, comforts, and for rational scientific treatment, which is strictly along ethical lines. Location and locality ideal for health rest and recuperation. Address, G. H. MOODY, M.D., 315 Brackenridge Ave. (Formerly Asst. Phys. to State Asylums at Austin and San Antonio, Tex.)

## TEXAS SANITARIUM FOR TUBERCULOSIS

LLANO, TEXAS. A thoroughly Equipped Institution. An Ideal Winter Climate. All Modern Conveniences. Strictly Ethical.

For further information and descriptive literature, address G. P. PIPKIN, M.D., Treasurer and Medical Director, Llano, Texas, or M. M. SMITH, M.D., Secretary, Wilson Building, Dallas, Texas

## THE ATTLEBORO Home Sanitarium

A Sanitarium for a select and limited number of patients. Women suffering from Neurasthenia and diseases peculiar to their sex, also convalescents, receive here the personal attention of a woman physician of thirty years experience. The HOME atmosphere is emphasized, and combined with the modern methods of treatment used in all Sanitaria, such as Hydro- Electro- and Photo-Therapy, etc., offers superior advantages for improvement and cure.

REV. ELLEN C. GUSTIN, Supt.  
Laura V. Gustin-Mackle, M.D. Attleboro, Mass.

## HALL - BROOKE

A licensed private Hospital for Mental and Nervous diseases. Alcoholism and the Drug Habit. The houses are equipped with every modern appliance for the treatment and comfort of their patients. The grounds, of over 100 acres, are retired and inviting. Patients received from any location. Terms moderate.

DR. D. W. MCFARLAND, Green's Farms, Conn.

## CHICAGO PASTEUR INSTITUTE

For the Preventive Treatment of Hydrophobia and the study of Infectious Diseases.

228 Dearborn Avenue, - Chicago

ANTONIO LAGORIO, M.D., G. B. BRUNO, M.D.  
Director. Assistant.

Established 1890.

## Dr. H. A. Rodebaugh's Sanatorium

FOR NERVOUS DISEASES

Established 1886

New building, especially constructed and equipped for the treatment of Drug Habits, Alcoholism and Neurasthenia.

71 Winner Ave.,

COLUMBUS, OHIO

## MARY C. RUDOLPH MATERNITY HOME



Ethical  
Exclusive  
Home Like  
Situation  
Retired

Homes for infants provided by adoption, if desired. Terms reasonable. Address,  
RUDOLPH MATERNITY HOME  
219 Spring St. Nashville, Tenn.

## Dr. Stockard's Sanatorium

No. 30 Crew Street, - ATLANTA, GA.

A Private Sanatorium for the Treatment of DRUG HABITS and NERVOUS DISEASES with a separate floor for SURGERY.

ALL NEW AND FIRST-CLASS

DR. C. C. STOCKARD, - Proprietor

## Dr. Broughton's Sanitarium

FOR Opium and Other Drug Addictions, including Alcohol and Special Nervous Cases.

Methods easy, regular, humane. Good heat, light, water, help, board, etc. Number limited to 44. A well kept home. Address

R. BROUGHTON, M.D.,

PHONE 536 2007 S. Main St., ROCKFORD, ILL.

## "Beverly Farm"

Home and School for Nervous and Backward Children.

If interested communicate with

WILLIAM H. C. SMITH, M.D., Supt.

Godfrey, Madison Co. Illinois

## Dr. Davis Lying-in and Convalescent Home.

Home-like, exclusive, strictly ethical. Home for infant provided if desired. Have you any patients who wish to adopt one.

Correspondence solicited from physicians only.

DR. EDWARD G. DAVIS,

Harvard, - Illinois.

## RIVERCREST SANITARIUM

Licensed by the State Commission in Lunacy.

Astoria, L. I., New York City

For Nervous and Mental Diseases

Home-like private retreat. Beautifully located. Easily accessible. Detached building for alcoholic and drug habits. Hydrotherapy, Electricity, Massage. J. JOS. KINDRED, M.D. WM. E. DOLL, M.D. President. Physician in Charge.

New York office, No. 616 Madison Ave., cor., 58th St.

## THE RICHARD GUNDRY HOME

Established 1891

Harlem Lodge, Catonsville, Baltimore, Md.

A well-equipped Sanitarium for the care and treatment of Nervous and Mental Diseases, Alcoholic and Drug Habitués. For rates, etc., address DR. RICHARD F. GUNDRY.

REFERENCES - Dr. Wm. Osler, Oxford, Eng., Dr. Henry M. Hurd, Johns Hopkins Hospital; Dr. George G. Preston, Baltimore; Dr. William S. Thayer, Baltimore; Dr. I. T. Stone, Wash., D. C.

## Dr. Kidder's House

A Sanatorium for the treatment of

EPILEPSY AND ALLIED NEUROSES

Correspondence Solicited. Address.

W. H. KIDDER, M.D., :: OSWEGO, N. Y.

## PASADENA SANITARIUM

Located near Interurban Electric line between

LOS ANGELES and PASADENA, CALIFORNIA

For Nervous and Mental Diseases ALCOHOLISM and DRUG ADDICTIONS

Homelike, private place. Located in most beautiful portion of Southern California, thirty acres tropical grounds. Cottage plan. Delightful home for Chronic Cases. Lady physician on staff Individual treatment. Scientific equipment. Address Dr. T. W. BISHOP, South Pasadena, Cal., 600-601 Auditorium Building, Los Angeles, Cal.



**SCOTCH COLLIES** of the very best breeding, have the intelligence of a human. For particulars address, DEER LAKE PARK, SEVERY, KAN.

## BOOK BINDING

For \$1.50 per volume we will bind THE JOURNAL in half leather, cloth joints, leather corners, cloth sides. This price applies also to other journals of a similar size. OUR STRONG POINT is magazine binding. Send your books or send a postal to

THE BOOK SHOP BINDERY  
Tel. Main 4421. 39 Fifth Ave., Chicago

STREETER HOSPITAL



## Streeter Hospital

2646 Calumet Avenue  
CHICAGO, ILL.

## Open to the Profession

Physicians have absolute control of their patients. All private rooms. Graduate or Training School nurses provided.

Telephone Calumet 90



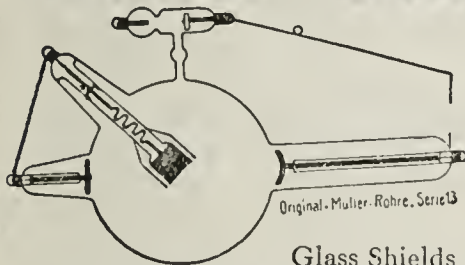


## DOCTOR:

The New Richards Tonsil Grasping Forceps will suit YOU, whether you use a Tonsil Snare, Tonsillotome or simply a pair of Scissors. (See article in *A.M.A. Journal*, June 27, 1908.) Price, \$3.50.

If it is a new Instrument for any purpose write to  
**V. MUELLER & CO., 264-66 Ogden Ave., Chicago**  
*Makers of Instruments for the Specialists in every Branch of Surgery.*

## Müller X-Ray Tubes



Unequalled for  
**Penetration**  
and  
**Definition**

Glass Shields and Tube Stands affording  
**Protection from the X-Rays**  
**X-OL, the Wonderful New Developer for X-Ray Plates**  
Send for circulars.

**WILLIAMS, BROWN & EARLE,**  
Wholesale and Retail Agents for the Queen-Müller tubes.  
Dept. "Q," 918 Chestnut St., Philadelphia, Pa., U. S. A.

The reason why the **LUTHER HAND-MADE GLOVE** WON'T RIP

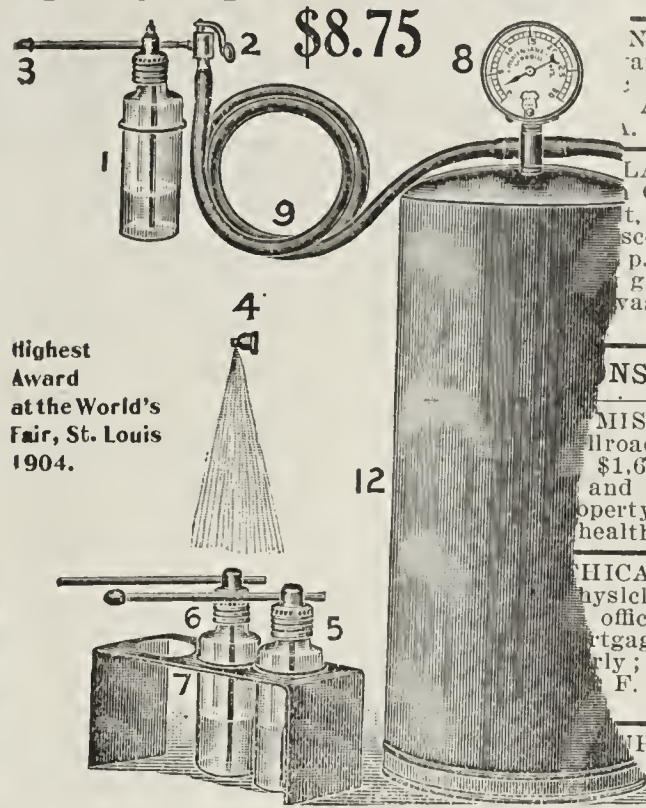
Machine sewing cuts itself. Hand sewing cannot.

**A DOCTOR'S DRIVING GLOVE, HAND-CUT, HAND-SEWED and HAND-FINISHED.** A glove made for practical, comfortable durability. May be washed with hot water and soap without injury. We make other styles and make gloves to measure. Illustrated booklet and samples on request.  
No. 308 (see cut), any size, \$2.00; to measure, \$2.50.

J. P. LUTHER GLOVE CO., 522 Pearl St., BERLIN, WIS.



## Spraying and Nebulizing



Highest Award  
at the World's  
Fair, St. Louis  
1904.

**SURGICAL CHAIR**  
clon; cost \$75; will  
Surgical Anatomy at  
obel, 284 E. Main St.,  
N

**NE ELECTRO-THERA-**  
atic machine, complete,  
; and faradic wall cabl-  
A snap for somebody.  
N

**LATE STATIC AND X-**  
German Resonator and  
t, pole changer, muffler,  
scope, electrodes, three  
p., direct 110 V. motor  
good order; price, \$100.  
wash, 42 E. Madison, St.,  
N

**NS FOR SALE.**

**MISSOURI — CENTRAL**  
broad town in rich agri-  
\$1,600 practice, with pur-  
and telephone stock; will  
property; reason for selling,  
health. Add. 6127, %AMA.O

**CHICAGO—THE BEST LO-**  
physician on the North Side;  
office; \$20,000 will take  
mortgage; income from prac-  
tice; reason for selling, ill  
F. Petersen, 49 Wabash  
O

**PERIOR, CAL.—\$3,000**  
general practice given  
ern 10-room house;  
sult; going to city;  
hurch and school;  
western man. Add.  
O

To keep our factory running through the dull times we have put this fine outfit at the very low price of \$8.75—direct to you. It does everything that can be done with a \$50 or \$75 outfit and requires less than half the labor to operate. The outfit sprays oil as well as water and has universal nozzle which can spray in any direction. The Nebulizer, powder-blower and ad schools, automatic cut-off are better than others sold at high prices. Send \$8.75 and get the complete outfit. Money positively returned by return mail if you are not satisfied.

Here are a few samples of the expressions of approval which we are daily receiving:

"I have received the outfit. Am well pleased. It is a beauty for the price."—Dr. N. J. Minter, Chattanooga, Tenn.

"The outfit is certainly fine."—Dr. T. J. Jensen, Beaver Creek, Minn.

"Outfit received all right and is perfectly satisfactory."—Dr. H. L. Smith, Cleveland, Ohio.

"The outfit is far above my expectation. Positively the best investment I ever made."—Dr. Leroy C. Waggoner, Brownsville, Pa.

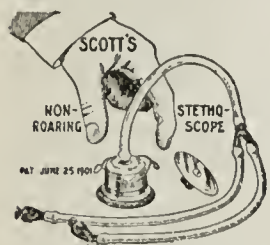
"Outfit received O. K. and am greatly pleased with my investment. I have treated a number of patients already and it works like a charm."—Dr. G. E. Truitt, Guadalajara, Mexico.

"I bought your outfit at Chicago (A. M. A. meeting) and am highly pleased with it."—Dr. J. J. Reynolds, Defiance, Ohio.

**THE ROBERTSON MFG. CO., 122 Opera Place, CINCINNATI, O.**

## Doctor: CLOSE YOUR EAR WITH THE INDEX FINGER

You hear the Roaring in the Stethoscope. Now close it with a plug of hard or soft rubber or wood—No Roaring is Present. Note the contrast. It's the contact of your finger and thumb with the Stethoscope, Doctor; but it is entirely eliminated in—



Scott's  
**"Non-Roaring"**  
Stethoscope

10,000 SOLD IN  
UNITED STATES

\$3.50 Postpaid

Literature on request.

**SCOTT MFG. CO., Adel, Iowa.**

**PHYSICIANS' MANUAL of the  
U. S. PHARMACOPEIA and  
the NATIONAL FORMULARY**

197 pp. Cloth Price 40c

AMER. MED. ASSN., 103 Dearborn Ave., Chicago

## DE PREE'S FORMALDEHYDE FUMIGATOR

Each  
Fumigator  
will  
actually disin-  
fect 1000 cubic  
feet of space.



Of the  
Efficiency  
Required  
by Health Boards.  
A Postal brings  
Particulars.

**The DE PREE CHEMICAL CO. HOLLAND, MICH.**



## Dr. Moody's Fied Ads

for genial home environment  
rest and recuperation. Ad.

## TEXAS SANITARIUM

LLANO, TEXAS. A thorough  
Winter Climate. All Mo  
For further information and desc.

## THE ATTLE Home San

A Sanitarium for a se  
number of patients. Wome  
Neurasthenia and diseases  
sex, also convalescents, re  
personal attention of a wom  
thirty years experience. Th  
phere is emphasized, and con  
modern methods of treatme  
Sanitaria, such as Hydro-Ele  
to-Therapy, etc., offers super  
for improvement and cure.

REV. ELLEN C. GUS

Laura V. Gustin-Mackle, M.D.

## HALL - B

A licensed private Hos  
vous diseases. Alcohol  
The houses are egr

appliance for the tr  
patients. The  
retired and je  
any location  
Dr. D. 5ths' postgraduate eye and ear; experi  
enced and well up in general medicine; good  
address; would buy if suited. Add. 6151.  
% AMA.

WANTED—POSITION AS ASSISTANT  
to busy doctor; nine years' experience in  
general practice; competent in laboratory  
work, x-ray and electricity; wish regular  
hours, plenty of work and fair remunera-  
tion; Chicago preferred; U. of P. graduate;  
married; 36 years old; best of references.  
Add. 6090, % AMA.

WANTED—BY PHYSICIAN, AGED 28,  
unmarried, graduate of 1904, a position  
with mining camp or other company or  
assistantship to busy practitioner; have had  
2½ years in hospitals, mostly in New York  
City; special training in obstetrics and  
pediatrics; references as to character and  
ability furnished. Add. 6113, % AMA.

WANTED—POSITION IN HOSPITAL OR  
sanitarium by woman physician. Gradu-  
ate P. & S. College, Chicago. Registered in  
seven states. Experienced in hospital man-  
agement, having acted as business manager  
and superintendent in various institutions.  
Surgical and Nervous. Is also a graduate  
nurse. References given. Add. 6010, %  
A. M. A.

WANTED—BY MAN AND WIFE, POSI-  
tion in hospital, sanitarium, or with min-  
ing, railroad or other company; both grad-  
uates of reputable medical schools; age 38;  
extensive experience; will consider proposi-  
tion to manage hospital or sanitarium for  
share of profits, or will purchase contract  
practice paying not less than \$2,000. Add.  
7032, % AMA.

WANTED—BY A PHYSICIAN WHO HAS  
had much experience treating alcoholism  
and drug habitués, also specific cases, a po-  
sition with private patient, either traveling  
or at home; willing to treat under local  
physician's advice; my method of treatment  
is a satisfactory and pleasing one to pa-  
tient and the cure is permanent. Add. John  
E. Fitzgerald, M.D., Burlington, Vt.

WANTED — BACTERIOLOGIST AND  
pathologist, experienced and competent,  
desires charge of municipal or state  
health laboratory; fully conversant with  
modern methods for a diagnosis of  
diphtheria, typhoid, tuberculosis, malaria,  
rabies, etc.; also bacteriological and chem-  
ical analyses of urine, milk, water, etc.;  
have considerable experience in postmortem  
and tissue work; references. Add. 6130,  
% AMA.

## State Board Quiz

PHYSICIANS PREPARED FOR  
Army, Navy, Marine-Hospital Service; Hospital Ex-  
aminations; State Medical Examining Boards

Many vacancies in Army at present. Course  
of instruction may begin at any time. Candi-  
dates instructed separately.

Address, naming this Journal

H. LYONS HUNT, M.D., L.R.C.S. Edin.  
412 West End Avenue - - - NEW YORK CITY

## STATE BOARDS AND UNITED STATES QUIZ MEDICAL SERVICES

Physicians prepared for U. S. Army, Navy  
and Marine Hospital Service; Hospitals and  
State Medical Examining Boards. For further  
information, address

DR. WM. A. KIMMET,  
463 Fullerton Avenue, Chicago, Ill

## SCHOOL OF PATHOLOGY AND OPERATIVE SURGERY

Gives complete Operative Courses on the Cadaver,  
in surgery of the Ear, Nose, Throat, and Accessory  
Sinuses. Also in Genito-urinary, Rectal, Gynecolog-  
ical and General Surgery. The courses continue  
throughout the entire year.

For full particulars, address

DR. JOHN McALLISTER, 255 West 43d St., New York City

## ARMY AND NAVY QUIZ

Conducted by Drs. Cabell, Riggles and  
White. Many vacancies at present. Course  
may begin at any time. Address

Dr. Julian Mayo Cabell, U. S. Army, Retired,  
The Rochambeau, Washington, D. C.

## Northwest Quiz Masters' Association Prepares Physicians for State Medical Examinations

The whole field of medicine covered in a seven  
weeks review twice each year.

The benefit that can be derived from a thorough  
systematic, up-to-date quiz can best be appreciated  
by those who have attempted such a review unaided.  
The next quiz begins Nov. 14, 1908.

For further particulars address DR. CHARLES  
A. WARHANIK, Secy., Eitel Bldg., Seattle, Wash.

## PRIVATE POST GRADUATE COURSES

In all branches of Genito-Urinary Surgery. Par-  
ticular attention given to Cystoscopy, and Ure-  
teral Catheterization. Personal supervision of all  
cases. Classes limited. For particulars, address

LEWIS WINE BREMERMAN, M.D.  
Suite 803-809, 72 Madison St., CHICAGO, ILL.

## MANHATTAN EYE, EAR & THROAT HOSPITAL

210 E. 64th Street, :::: NEW YORK CITY

Courses of instruction are given to limited  
classes in Diseases of the Eye, Ear, Throat and  
Nose. FEES: 3 months, \$60.00; 2 months, \$45.00;  
1 month, \$30.00. Operative courses at moderate  
cost. For further information, address

SECRETARY OF SCHOOL COMMITTEE

## The Milwaukee County Hospital Training School For Nurses

Incorporated under Laws of the State of  
Wisconsin.

Offers a superior course of training in  
nursing to bright ambitious women between  
the ages of 20 and 35 years, who desire to  
enter the profession of nursing. Monthly  
cash allowance.

Requirements for admission: Good English  
education and good moral character. Applica-  
tion papers and further information furnished  
on request. Address all communications to the

SECRETARY,

Milwaukee County Hospital Training School  
for Nurses, Wauwatosa, Wis.

WANTED—POSITION AS TRAVELING  
companion or attendant, by a woman  
physician, experienced in care of tuber-  
cular and nervous patients through the  
Southwest. Graduate, 1901, of regular  
reputable medical school. References. Add.  
6146, % A.M.A.

WANTED—BY PHYSICIAN, AGED 38;  
A.B., M.D. (College of P. and S., New  
York); highly prepared; years' experience  
in five New York hospitals; 12 years' prac-  
tice; desires pediatric connection with  
hospital or teaching facilities in growing  
city; opportunity above remuneration;  
highest references given; only first class  
connections considered; legitimate cause for  
removal. Add. 6085, % AMA.

WANTED — POSITION AS SUPERIN-  
tendent of nurses, as superintending phy-  
sician or assistant in hospital or sanita-  
rium; south or southwestern state pre-  
ferred; have had six years' experience; two  
years hospital; familiar with laboratory  
methods; executive ability; can teach  
nurses if desired; graduate high-grade med-  
ical college, '02; literary degree also; high-  
est references. Add. 6114, % AMA.

## LOCATIONS WANTED.

WANTED—UNOPPOSED PRACTICE IN  
Illinois or reciprocating state; will buy  
outfit at full value; prefer to rent prop-  
erty for term of years, but might buy if  
big bargain; contract practice will be con-  
sidered. Add. 6086, % AMA.

WANTED — LOCATION IN COUNTRY  
town in Illinois, Nebraska or South Da-  
kota; unopposed; with or without drug  
store. German-American community pre-  
ferred. Am anxious to close a deal at once.  
Have the cash. Add. 6153, % A.M.A.

WANTED — AN OPENING FOR EYE,  
ear, nose and throat practice, exclusive.  
Prefer the West. Have had eight months'  
postgraduate work in New York City, and  
one year's experience. Will pay \$50 for  
information leading to a selected opening.  
Add. Doctor, Box 71, Edon, Ohio.

WANTED—A PHYSICIAN OF FIFTEEN  
years' experience; Minnesota or Iowa pre-  
ferred; county seat town of 1,000 or more;  
general practice that will pay from start;  
would make reasonable investment or pay  
reasonable price to one that will cite a loca-  
tion that I accept. Add. 5946, % AMA.

WANTED—A LOCATION FOR EYE, EAR,  
nose and throat practice (exclusive).  
by an experienced M.D., with 1 year's  
training as house surgeon in one of the  
largest eye, ear, nose and throat hospitals  
in the U. S.; would consider an assistant-  
ship or locum tenens proposition. Add.  
5961, % AMA.

WANTED — PRACTICE IN OHIO OR  
states reciprocating, at once; must pay  
\$3,000 or over annually; railroad town.  
1,000 or over, piked roads; have had exten-  
sive experience in practice and will pay  
cash for real estate if price is right; give  
full particulars first letter. Add. "W." No.  
29 East 7th Ave., Columbus, Ohio.

WANTED—TO BUY UNOPPOSED PRA-  
ctice in either Illinois, Wisconsin or Michi-  
gan, paying \$3,000 or better; will buy no  
real estate at present; prefer German set-  
tlement; must be able to show up practice  
as represented; state price and particulars  
in full; have the cash and willing to pay  
for something good. Add. 7036, % AMA.

WANTED—GOOD MEDICAL PRACTICE;  
not less than \$2,500 per year; where  
fees and collections are good and people  
agreeable to work with; or will exchange  
growing practice in one of the best towns  
in Kansas for practice in smaller town;  
Nebraska, Kansas, South Dakota or states  
reciprocating preferred. Add. 6088, %  
AMA.

WANTED—NEW YORK OR NEW JER-  
sey. Unopposed practice or practice with  
any light competition, paying not less than  
\$2,000 annually, where fees and collections  
are good. Would buy office equipment if  
price is right; rent real estate with privi-  
lege of buying later. Would consider good  
paying contract practice or partnership with  
chance to buy out. Must bear close investi-  
gation. Add. 6120, % A. M. A.

(Continued on next page.)



**WANTED—UNOPPOSED PRACTICE IN**  
New York; will buy outfit or will buy  
real estate if a bargain; give full descrip-  
tion, price, etc. Add. 6135, % AMA. C

**ASSISTANTS WANTED.**

**WANTED—A YOUNG GERMAN CATH-**  
olic physician as assistant to general  
practitioner doing large amount of surgery;  
must be well trained in bacteriology and  
microscopy; an excellent opportunity for  
the right man. Add. 6126, % AMA. D

**WANTED—ASSISTANT PHYSICIAN IN**  
state hospital for insane; temporary serv-  
ice; possibility of permanent position; one  
experienced in mental and nervous diseases  
preferred; service must begin immediately;  
reference and recommendations required.  
Add. 6134, % AMA. D

**WANTED — CONSUMPTIVE PHYSI-**  
cian as assistant; compensation, board  
and treatment in the best climate of New  
Mexico; please state fully in first letter age,  
physical condition, professional qualifica-  
tion and hospital experience. Add. J. W.  
Laws, M.D., Ranch Sanatorium for Tuber-  
culosis, Lincoln, New Mexico. D

**PARTNERS WANTED.**

**WANTED—TWO OFFICE ASSOCIATES**  
by doctor locating in good Indiana city;  
one for general medicine, other for eye, ear,  
nose, throat; considering small private hos-  
pital; exceptional opportunity; applicants  
must be hustling, aggressive, scientific, hon-  
est, strictly moral and able to meet ordinary  
expenses while getting established; answer  
in detail regarding self. Add. 6128, %AMA.F

**MISCELLANEOUS—WANTED.**

**WANTED—A BRIGHT YOUNG PHYSI-**  
cian and surgeon; a fine location for a  
good man who wishes to locate in a small  
country town; no deadheads wanted; big  
money for right man. Add. L. D. Tooth-  
man, Keswick, Keokuk Co., Iowa. K

**WANTED—TEXAS—IN TOWN OF VER-**  
non—a good eye, ear, nose and throat  
specialist. Vernon is a growing town of  
4,500 people, surrounded by a fine country;  
two railroads; a fine location. The right  
man can get the support and influence of a  
majority of the physicians here. Add.  
J. E. Dodson, M.D., Vernon, Texas. K

**WANTED—MEDICAL DIRECTOR FOR**  
tuberculosis sanitarium; salary \$2,000  
and all furnishings; party must furnish best  
qualifications and references; must become  
financially interested; now paying good rate  
of interest; institution well established and  
ethical; will meet by appointment any  
interested party at Tuberculosis Congress  
in Washington. Add. Sanitarium, % Cum-  
berland Hotel, New York City. K

**APPARATUS, ETC., WANTED.**

**WANTED — EYE, EAR, NOSE AND**  
throat equipment, in good condition; for  
cash; as: chair, cabinet, ophthalmometer,  
atomizer, instruments, books, journals, etc.  
Add. 6070, % AMA. L

**APPARATUS, ETC., FOR SALE.**

**FOR SALE — BEAUTIFUL WALNUT**  
desk with book or instrument case; espe-  
cially suitable for physicians. Cost \$90;  
will sell for \$20. Add. 507 LaSalle Ave.,  
Chicago, Ill. N

**FOR SALE—HAVE TWO NEEL, ARM-**  
strong oxyline machines—one direct and  
one alternating current; will sell either one,  
but one only, very cheap. Add. Box 263,  
Kankakee, Ill. N

**FOR SALE—ANESTHETIC APPARATUS**  
as illustrated and explained in J. A. M. A.,  
issue of April 28, 1908, by Dr. O. J. Cun-  
ningham; apparatus never used; cost \$100;  
price \$60, including carrying case. F. E.  
Wallace, M.D., Pueblo, Colo. N

**FOR SALE—NEW YORK—A FINANCIAL**  
interest in the original United States  
patent and manufacture of the best electric  
cautery and diagnostic machine ever  
made; indispensable to physicians in nose  
and throat work and in discovering obscure  
diseases; machines now ready for delivery;  
splendid margin of profit; purchasers want-  
ed as sales agents. Add. 6091, % AMA. N



**Primrose  
Maternity  
Home**

Ethical, Quiet and  
Exclusive  
Homes Provided  
Terms Moderate  
Dr. and Mrs. C. V. Gray  
Balavia, N. Y.

**WASHINGTON.**

**QUIZZING** for this and other State  
Medical and Dental Exam-  
ining Boards. For full information as to  
requirements, time, and place of meetings,  
fees, etc., address **DR. ARTHUR JORDAN,**  
Nos. 301-302 Oriental Block, SEATTLE, WASH.

**NURSES' TRAINING SCHOOL  
Children's Memorial Hospital**

The Children's Memorial Hospital,  
Fullerton Avenue and Orchard Street, Chicago, Ill.,  
offers a three years course for nurses

consisting of two months probation, 4 months  
academic work, one year in Children's Hospital,  
one year in Presbyterian Hospital, (adult nurs-  
ing) two months visiting nurse work and 4  
months as head nurse in Children's Hospital.

Comfortable house for nurses and no addition-  
al expense for board and laundry. Nurses will  
be paid \$5.00 a month, after the two months proba-  
tion. Detailed information can be obtained  
from

**Miss RENA S. WOOD,**  
Principal of Training School

**Prof. Karl Hofman** ARTIFICIAL  
ANATOMICAL  
WORK  
(FORTY YEARS' PRACTICE)



**SPECIALTY—Artificial** | 343 N. Hermitage Ave.  
Noses, Ears and Masks | CHICAGO, ILL.

**OFFICE INDICATORS**

Furnished with  
your name at the  
top or with just  
"The Doctor,"  
lettered in gold.

The INDICATOR  
states that you will  
return in 15 min-  
utes, in 30 minutes,  
1 hour, 2 hours, 3 hours,  
4 hours, 5 hours, 6 hours,  
7 hours, 8 hours, 9 hours,  
10 hours, 11 hours, 12 hours,  
1 day, 2 days, 3 days, 4 days,  
5 days, 6 days, 7 days, 8 days,  
9 days, 10 days, 11 days, 12 days,  
1 week, 2 weeks, 3 weeks, 4 weeks,  
5 weeks, 6 weeks, 7 weeks, 8 weeks,  
9 weeks, 10 weeks, 11 weeks, 12 weeks,  
3 months, 4 months, 5 months, 6 months,  
7 months, 8 months, 9 months, 10 months,  
11 months, 12 months, 1 year, 2 years, 3 years,  
4 years, 5 years, 6 years, 7 years, 8 years,  
9 years, 10 years, 11 years, 12 years,  
13 years, 14 years, 15 years, 16 years,  
17 years, 18 years, 19 years, 20 years,  
21 years, 22 years, 23 years, 24 years,  
25 years, 26 years, 27 years, 28 years,  
29 years, 30 years, 31 years, 32 years,  
33 years, 34 years, 35 years, 36 years,  
37 years, 38 years, 39 years, 40 years,  
41 years, 42 years, 43 years, 44 years,  
45 years, 46 years, 47 years, 48 years,  
49 years, 50 years, 51 years, 52 years,  
53 years, 54 years, 55 years, 56 years,  
57 years, 58 years, 59 years, 60 years,  
61 years, 62 years, 63 years, 64 years,  
65 years, 66 years, 67 years, 68 years,  
69 years, 70 years, 71 years, 72 years,  
73 years, 74 years, 75 years, 76 years,  
77 years, 78 years, 79 years, 80 years,  
81 years, 82 years, 83 years, 84 years,  
85 years, 86 years, 87 years, 88 years,  
89 years, 90 years, 91 years, 92 years,  
93 years, 94 years, 95 years, 96 years,  
97 years, 98 years, 99 years, 100 years,  
101 years, 102 years, 103 years, 104 years,  
105 years, 106 years, 107 years, 108 years,  
109 years, 110 years, 111 years, 112 years,  
113 years, 114 years, 115 years, 116 years,  
117 years, 118 years, 119 years, 120 years,  
121 years, 122 years, 123 years, 124 years,  
125 years, 126 years, 127 years, 128 years,  
129 years, 130 years, 131 years, 132 years,  
133 years, 134 years, 135 years, 136 years,  
137 years, 138 years, 139 years, 140 years,  
141 years, 142 years, 143 years, 144 years,  
145 years, 146 years, 147 years, 148 years,  
149 years, 150 years, 151 years, 152 years,  
153 years, 154 years, 155 years, 156 years,  
157 years, 158 years, 159 years, 160 years,  
161 years, 162 years, 163 years, 164 years,  
165 years, 166 years, 167 years, 168 years,  
169 years, 170 years, 171 years, 172 years,  
173 years, 174 years, 175 years, 176 years,  
177 years, 178 years, 179 years, 180 years,  
181 years, 182 years, 183 years, 184 years,  
185 years, 186 years, 187 years, 188 years,  
189 years, 190 years, 191 years, 192 years,  
193 years, 194 years, 195 years, 196 years,  
197 years, 198 years, 199 years, 200 years,  
201 years, 202 years, 203 years, 204 years,  
205 years, 206 years, 207 years, 208 years,  
209 years, 210 years, 211 years, 212 years,  
213 years, 214 years, 215 years, 216 years,  
217 years, 218 years, 219 years, 220 years,  
221 years, 222 years, 223 years, 224 years,  
225 years, 226 years, 227 years, 228 years,  
229 years, 230 years, 231 years, 232 years,  
233 years, 234 years, 235 years, 236 years,  
237 years, 238 years, 239 years, 240 years,  
241 years, 242 years, 243 years, 244 years,  
245 years, 246 years, 247 years, 248 years,  
249 years, 250 years, 251 years, 252 years,  
253 years, 254 years, 255 years, 256 years,  
257 years, 258 years, 259 years, 260 years,  
261 years, 262 years, 263 years, 264 years,  
265 years, 266 years, 267 years, 268 years,  
269 years, 270 years, 271 years, 272 years,  
273 years, 274 years, 275 years, 276 years,  
277 years, 278 years, 279 years, 280 years,  
281 years, 282 years, 283 years, 284 years,  
285 years, 286 years, 287 years, 288 years,  
289 years, 290 years, 291 years, 292 years,  
293 years, 294 years, 295 years, 296 years,  
297 years, 298 years, 299 years, 300 years,  
301 years, 302 years, 303 years, 304 years,  
305 years, 306 years, 307 years, 308 years,  
309 years, 310 years, 311 years, 312 years,  
313 years, 314 years, 315 years, 316 years,  
317 years, 318 years, 319 years, 320 years,  
321 years, 322 years, 323 years, 324 years,  
325 years, 326 years, 327 years, 328 years,  
329 years, 330 years, 331 years, 332 years,  
333 years, 334 years, 335 years, 336 years,  
337 years, 338 years, 339 years, 340 years,  
341 years, 342 years, 343 years, 344 years,  
345 years, 346 years, 347 years, 348 years,  
349 years, 350 years, 351 years, 352 years,  
353 years, 354 years, 355 years, 356 years,  
357 years, 358 years, 359 years, 360 years,  
361 years, 362 years, 363 years, 364 years,  
365 years, 366 years, 367 years, 368 years,  
369 years, 370 years, 371 years, 372 years,  
373 years, 374 years, 375 years, 376 years,  
377 years, 378 years, 379 years, 380 years,  
381 years, 382 years, 383 years, 384 years,  
385 years, 386 years, 387 years, 388 years,  
389 years, 390 years, 391 years, 392 years,  
393 years, 394 years, 395 years, 396 years,  
397 years, 398 years, 399 years, 400 years,  
401 years, 402 years, 403 years, 404 years,  
405 years, 406 years, 407 years, 408 years,  
409 years, 410 years, 411 years, 412 years,  
413 years, 414 years, 415 years, 416 years,  
417 years, 418 years, 419 years, 420 years,  
421 years, 422 years, 423 years, 424 years,  
425 years, 426 years, 427 years, 428 years,  
429 years, 430 years, 431 years, 432 years,  
433 years, 434 years, 435 years, 436 years,  
437 years, 438 years, 439 years, 440 years,  
441 years, 442 years, 443 years, 444 years,  
445 years, 446 years, 447 years, 448 years,  
449 years, 450 years, 451 years, 452 years,  
453 years, 454 years, 455 years, 456 years,  
457 years, 458 years, 459 years, 460 years,  
461 years, 462 years, 463 years, 464 years,  
465 years, 466 years, 467 years, 468 years,  
469 years, 470 years, 471 years, 472 years,  
473 years, 474 years, 475 years, 476 years,  
477 years, 478 years, 479 years, 480 years,  
481 years, 482 years, 483 years, 484 years,  
485 years, 486 years, 487 years, 488 years,  
489 years, 490 years, 491 years, 492 years,  
493 years, 494 years, 495 years, 496 years,  
497 years, 498 years, 499 years, 500 years,  
501 years, 502 years, 503 years, 504 years,  
505 years, 506 years, 507 years, 508 years,  
509 years, 510 years, 511 years, 512 years,  
513 years, 514 years, 515 years, 516 years,  
517 years, 518 years, 519 years, 520 years,  
521 years, 522 years, 523 years, 524 years,  
525 years, 526 years, 527 years, 528 years,  
529 years, 530 years, 531 years, 532 years,  
533 years, 534 years, 535 years, 536 years,  
537 years, 538 years, 539 years, 540 years,  
541 years, 542 years, 543 years, 544 years,  
545 years, 546 years, 547 years, 548 years,  
549 years, 550 years, 551 years, 552 years,  
553 years, 554 years, 555 years, 556 years,  
557 years, 558 years, 559 years, 560 years,  
561 years, 562 years, 563 years, 564 years,  
565 years, 566 years, 567 years, 568 years,  
569 years, 570 years, 571 years, 572 years,  
573 years, 574 years, 575 years, 576 years,  
577 years, 578 years, 579 years, 580 years,  
581 years, 582 years, 583 years, 584 years,  
585 years, 586 years, 587 years, 588 years,  
589 years, 590 years, 591 years, 592 years,  
593 years, 594 years, 595 years, 596 years,  
597 years, 598 years, 599 years, 600 years,  
601 years, 602 years, 603 years, 604 years,  
605 years, 606 years, 607 years, 608 years,  
609 years, 610 years, 611 years, 612 years,  
613 years, 614 years, 615 years, 616 years,  
617 years, 618 years, 619 years, 620 years,  
621 years, 622 years, 623 years, 624 years,  
625 years, 626 years, 627 years, 628 years,  
629 years, 630 years, 631 years, 632 years,  
633 years, 634 years, 635 years, 636 years,  
637 years, 638 years, 639 years, 640 years,  
641 years, 642 years, 643 years, 644 years,  
645 years, 646 years, 647 years, 648 years,  
649 years, 650 years, 651 years, 652 years,  
653 years, 654 years, 655 years, 656 years,  
657 years, 658 years, 659 years, 660 years,  
661 years, 662 years, 663 years, 664 years,  
665 years, 666 years, 667 years, 668 years,  
669 years, 670 years, 671 years, 672 years,  
673 years, 674 years, 675 years, 676 years,  
677 years, 678 years, 679 years, 680 years,  
681 years, 682 years, 683 years, 684 years,  
685 years, 686 years, 687 years, 688 years,  
689 years, 690 years, 691 years, 692 years,  
693 years, 694 years, 695 years, 696 years,  
697 years, 698 years, 699 years, 700 years,  
701 years, 702 years, 703 years, 704 years,  
705 years, 706 years, 707 years, 708 years,  
709 years, 710 years, 711 years, 712 years,  
713 years, 714 years, 715 years, 716 years,  
717 years, 718 years, 719 years, 720 years,  
721 years, 722 years, 723 years, 724 years,  
725 years, 726 years, 727 years, 728 years,  
729 years, 730 years, 731 years, 732 years,  
733 years, 734 years, 735 years, 736 years,  
737 years, 738 years, 739 years, 740 years,  
741 years, 742 years, 743 years, 744 years,  
745 years, 746 years, 747 years, 748 years,  
749 years, 750 years, 751 years, 752 years,  
753 years, 754 years, 755 years, 756 years,  
757 years, 758 years, 759 years, 760 years,  
761 years, 762 years, 763 years, 764 years,  
765 years, 766 years, 767 years, 768 years,  
769 years, 770 years, 771 years, 772 years,  
773 years, 774 years, 775 years, 776 years,  
777 years, 778 years, 779 years, 780 years,  
781 years, 782 years, 783 years, 784 years,  
785 years, 786 years, 787 years, 788 years,  
789 years, 790 years, 791 years, 792 years,  
793 years, 794 years, 795 years, 796 years,  
797 years, 798 years, 799 years, 800 years,  
801 years, 802 years, 803 years, 804 years,  
805 years, 806 years, 807 years, 808 years,  
809 years, 810 years, 811 years, 812 years,  
813 years, 814 years, 815 years, 816 years,  
817 years, 818 years, 819 years, 820 years,  
821 years, 822 years, 823 years, 824 years,  
825 years, 826 years, 827 years, 828 years,  
829 years, 830 years, 831 years, 832 years,  
833 years, 834 years, 835 years, 836 years,  
837 years, 838 years, 839 years, 840 years,  
841 years, 842 years, 843 years, 844 years,  
845 years, 846 years, 847 years, 848 years,  
849 years, 850 years, 851 years, 852 years,  
853 years, 854 years, 855 years, 856 years,  
857 years, 858 years, 859 years, 860 years,  
861 years, 862 years, 863 years, 864 years,  
865 years, 866 years, 867 years, 868 years,  
869 years, 870 years, 871 years, 872 years,  
873 years, 874 years, 875 years, 876 years,  
877 years, 878 years, 879 years, 880 years,  
881 years, 882 years, 883 years, 884 years,  
885 years, 886 years, 887 years, 888 years,  
889 years, 890 years, 891 years, 892 years,  
893 years, 894 years, 895 years, 896 years,  
897 years, 898 years, 899 years, 900 years,  
901 years, 902 years, 903 years, 904 years,  
905 years, 906 years, 907 years, 908 years,  
909 years, 910 years, 911 years, 912 years,  
913 years, 914 years, 915 years, 916 years,  
917 years, 918 years, 919 years, 920 years,  
921 years, 922 years, 923 years, 924 years,  
925 years, 926 years, 927 years, 928 years,  
929 years, 930 years, 931 years, 932 years,  
933 years, 934 years, 935 years, 936 years,  
937 years, 938 years, 939 years, 940 years,  
941 years, 942 years, 943 years, 944 years,  
945 years, 946 years, 947 years, 948 years,  
949 years, 950 years, 951 years, 952 years,  
953 years, 954 years, 955 years, 956 years,  
957 years, 958 years, 959 years, 960 years,  
961 years, 962 years, 963 years, 964 years,  
965 years, 966 years, 967 years, 968 years,  
969 years, 970 years, 971 years, 972 years,  
973 years, 974 years, 975 years, 976 years,  
977 years, 978 years, 979 years, 980 years,  
981 years, 982 years, 983 years, 984 years,  
985 years, 986 years, 987 years, 988 years,  
989 years, 990 years, 991 years, 992 years,  
993 years, 994 years, 995 years, 996 years,  
997 years, 998 years, 999 years, 1000 years,  
1001 years, 1002 years, 1003 years, 1004 years,  
1005 years, 1006 years, 1007 years, 1008 years,  
1009 years, 1010 years, 1011 years, 1012 years,  
1013 years, 1014 years, 1015 years, 1016 years,  
1017 years, 1018 years, 1019 years, 1020 years,  
1021 years, 1022 years, 1023 years, 1024 years,  
1025 years, 1026 years, 1027 years, 1028 years,  
1029 years, 1030 years, 1031 years, 1032 years,  
1033 years, 1034 years, 1035 years, 1036 years,  
1037 years, 1038 years, 1039 years, 1040 years,  
1041 years, 1042 years, 1043 years, 1044 years,  
1045 years, 1046 years, 1047 years, 1048 years,  
1049 years, 1050 years, 1051 years, 1052 years,  
1053 years, 1054 years, 1055 years, 1056 years,  
1057 years, 1058 years, 1059 years, 1060 years,  
1061 years, 1062 years, 1063 years, 1064 years,  
1065 years, 1066 years, 1067 years, 1068 years,  
1069 years, 1070 years, 1071 years, 1072 years,  
1073 years, 1074 years, 1075 years, 1076 years,  
1077 years, 1078 years, 1079 years, 1080 years,  
1081 years, 1082 years, 1083 years, 1084 years,  
1085 years, 1086 years, 1087 years, 1088 years,  
1089 years, 1090 years, 1091 years, 1092 years,  
1093 years, 1094 years, 1095 years, 1096 years,  
1097 years, 1098 years, 1099 years, 1100 years,  
1101 years, 1102 years, 1103 years, 1104 years,  
1105 years, 1106 years, 1107 years, 1108 years,  
1109 years, 1110 years, 1111 years, 1112 years,  
1113 years, 1114 years, 1115 years, 1116 years,  
1117 years, 1118 years, 1119 years, 1120 years,  
1121 years, 1122 years, 1123 years, 1124 years,  
1125 years, 1126 years, 1127 years, 1128 years,  
1129 years, 1130 years, 1131 years, 1132 years,  
1133 years, 1134 years, 1135 years, 1136 years,  
1137 years, 1138 years, 1139 years, 1140 years,  
1141 years, 1142 years, 1143 years, 1144 years,  
1145 years, 1146 years, 1147 years, 1148 years,  
1149 years, 1150 years, 1151 years, 1152 years,  
1153 years, 1154 years, 1155 years, 1156 years,  
1157 years, 1158 years, 1159 years, 1160 years,  
1161 years, 1162 years, 1163 years, 1164 years,  
1165 years, 1166 years, 1167 years, 1168 years,  
1169 years, 1170 years, 1171 years, 1172 years,  
1173 years, 1174 years, 1175 years, 1176 years,  
1177 years, 1178 years, 1179 years, 1180 years,  
1181 years, 1182 years, 1183 years, 1184 years,  
1185 years, 1186 years, 1187 years, 1188 years,  
1189 years, 1190 years, 1191 years, 1192 years,  
1193 years, 1194 years, 1195 years, 1196 years,  
1197 years, 1198 years, 1199 years, 1200 years,  
1201 years, 1202 years, 1203 years, 1204 years,  
1205 years, 1206 years, 1207 years, 1208 years,  
1209 years, 1210 years, 1211 years, 1212 years,  
1213 years, 1214 years, 1215 years, 1216 years,  
1217 years, 1218 years, 1219 years, 1220 years,  
1221 years, 1222 years, 1223 years, 1224 years,  
1225 years, 1226 years, 1227 years, 1228 years,  
1229 years, 1230 years, 1231 years, 1232 years,  
1233 years, 1234 years, 1235 years, 1236 years,  
1237 years, 1238 years, 1239 years, 1240 years,  
1241 years, 1242 years, 1243 years, 1244 years,  
1245 years, 1246 years, 1247 years, 1248 years,  
1249 years, 1250 years, 1251 years, 1252 years,  
1253 years, 1254 years, 1255 years, 1256 years,  
1257 years, 1258 years, 1259 years, 1260 years,  
1261 years, 1262 years, 1263 years, 1264 years,  
1265 years, 1266 years, 1267 years, 1268 years,  
1269 years, 1270 years, 1271 years, 1272 years,  
1273 years, 1274 years, 1275 years, 1276 years,  
1277 years, 1278 years, 1279 years, 1280 years,  
1281 years, 1282 years, 1283 years, 1284 years,  
1285 years, 1286 years, 1287 years, 1288 years,  
1289 years, 1290 years, 1291 years, 1292 years,  
1293 years, 1294 years, 1295 years, 1296 years,  
1297 years, 1298 years, 1299 years, 1300 years,  
1301 years, 1302 years, 1303 years, 1304 years,  
1305 years, 1306 years, 1307 years, 1308 years,  
1309 years, 1310 years, 1311 years, 1312 years,  
1313 years, 1314 years, 1315 years, 1316 years,  
1317 years, 1318 years, 1319 years, 1320 years,  
1321 years, 1322 years, 1323 years, 1324 years,  
1325 years, 1326 years, 1327 years, 1328 years,  
1329 years, 1330 years, 1331 years, 1332 years,  
1333 years, 1334 years, 1335 years, 1336 years,  
1337 years, 1338 years, 1339 years, 1340 years,  
1341 years, 1342 years, 1343 years, 1344 years,  
1345 years, 1346 years, 1347 years, 1348 years,  
1349 years, 1350 years, 1351 years, 1352 years,  
1353 years, 1354 years, 1355 years, 1356 years,  
1357 years, 1358 years, 1359 years, 1360 years,  
1361 years, 1362 years, 1363 years, 1364 years,  
1365 years, 1366 years, 1367 years, 1368 years,  
1369 years, 1370 years, 1371 years, 1372 years,  
1373 years, 1374 years, 1375 years, 1376 years,  
1377 years, 1378 years, 1379 years, 1380 years,  
1381 years, 1382 years, 1383 years, 1384 years,  
1385 years, 1386 years, 1387 years, 1388 years,  
1389 years, 1390 years, 1391 years, 1392 years,  
1393 years, 1394 years, 1395 years, 1396 years,  
1397 years, 1398 years, 1399 years, 1400 years,  
1401 years, 1402 years, 1403 years, 1404 years,  
1405 years, 1406 years, 1407 years, 1408 years,  
1409 years, 1410 years, 1411 years, 1412 years,  
1413 years, 1414 years, 1415 years, 1416 years,  
1417 years, 1418 years, 1419 years, 1420 years,  
1421 years, 1422 years, 1



**FOR SALE — ILLINOIS—\$2,500 CASH** practice, town of 500, for price of office, drugs and driving outfit; will invoice about \$1,000; house, three-room office and barn rent for \$12 per month; rich farming community; collections good; one railroad, good school and churches; opposition right; 12 miles nearest town. Add. 6133, %AMA. O

**FOR SALE — ILLINOIS — CHICAGO** Fourteen years' practice of a well-known physician, in the best part of the south side; home and downtown office in the best building in the city, for rent; rarest opportunity for years; doctor leaving the state; will introduce purchaser who must be first class; answer promptly. Add. 6059, %AMA. O

**FOR SALE—NEBRASKA—\$8,000 PRAC-** tice; for price of property; \$4,000; includes 12-room house, with furnace, water system, lights, cement basement; good barn and outbuildings; two lots; cement sidewalks; town 250; close to state university; do not answer unless you mean business; reason, going to city. Add. 6075, %AMA. O

**FOR SALE — KENTUCKY, NORTHERN** part — \$3,000, unopposed country practice for price of property; house, 5 rooms and cellar; barn, outbuildings, garden and fruit; roads pike, 4 miles from railroad; office 3 rooms, drugs at invoice; equipments if desired; cheap, and terms easy if sold within 30 days; going to city. Add. 7016, %AMA. O

**FOR SALE — ILLINOIS — GENERAL** practice in fine German-American community, \$4,500 practice with modern 9-room house, barn and office, near Chicago; town 1,200; good schools and churches; will sell and give thorough introduction for value of real estate; terms, if desired; collections 98 per cent.; good reason for selling. Add. 6042, %AMA. O

**FOR SALE—TEXAS—IN THE PAN-** handle section—A nice drug store and practice that runs from \$9,000 to \$12,000 a year, in a county seat town and has more nice houses than any town of its size in northern part of this state; drugs and fixtures invoice \$3,500, business property \$4,500; good reasons for selling. Add. 7010, %AMA. O

**FOR SALE — OHIO — NORTHWESTERN** part—Unusually favorable opportunity to secure paying, long established general practice, equipment and favorable lease on new office, with or without fine home property, in desirable residence part of one of the most prosperous cities; \$1,500 to \$2,500 cash required, balance on time. Add. 7030, %AMA. O

**FOR SALE—MICHIGAN — SOUTHERN** part—\$3,000 unopposed practice, drug stock, office fixtures, buggy, single harness, double harness, Portland cutter, \$400 cash; in town of 300 inhabitants; good roads, school, church; collections 95 per cent; will rent or sell property; failing health; do not answer unless you mean business; must sell. Add. 6148, %AMA. O

**FOR SALE—OHIO—CENTRAL PART—** Village property, consisting of a 7-room house, 3-room office, barn; will turn over my practice, amounting, last year, to \$4,400, to purchaser; possession given at any time; terms, \$1,600; \$1,000 cash, \$600 on mortgage; good school; farming community; on important railroad; collections good. Add. 7020, %AMA. O

**FOR SALE — NEW YORK — SOUTH-** western part—Established \$3,000 practice in growing town of 1,200 population; on main line railroad; high school; four manufactories; large surrounding country; opposition light; good 8-room house with bath; office and barn; will sell for value of property, \$3,000; terms right; fine place for active man; reason, specializing. Add. 6065, %AMA. O

**FOR SALE — NEBRASKA — MODERN** physician's residence, 12 rooms, drug and office rooms associated, with fine barn and lawn; everything new three years ago; day and night electric current, hot and cold water, hot-water, heating system; large general practice of 7 years; located northeast corner public square; model town; 2,000; large, rich country; will sell for value of property; part cash, balance on terms to suit purchaser; will bear strictest investigation; reason, desire to specialize; ideal place for right party. For particulars Add. Dr. Howard Marsh, Humboldt, Neb. O

Fifty million successful  
vaccinations attest  
the merit of  
**NATIONAL**  
(the original)  
**GLYCERINIZED**  
**VACCINE.**

It is always pure,  
always potent.  
Good pharmacies  
everywhere sell it at ten  
cents the point or  
tube; one  
dollar the package  
of ten. Refuse  
imitations.

**NATIONAL VACCINE &  
ANTITOXIN INSTITUTE**

"Oldest in America"

WASHINGTON, D. C.

**FOR SALE—CHICAGO—MODERN TWO-** story and basement, stone front, physician's residence for 12 years, 12 rooms, oak finish, electric light and gas, new heating plant; size of lot 36x150 feet; light all around; barn for three horses and auto; situated in the finest part of the Northwest side; elevated and surface lines one block each way; 18 minutes from loop; valuation, \$15,000; will exchange for improved farm. Add. Suite A 1412, Heyworth Bldg., Chicago, Ill. O

**FOR SALE—NEW YORK—PRACTICE IN** the heart of the Mohawk Valley on N. Y. C., and W. S. R. R.; village of 3,000, large rich surrounding country, with very moderate competition; established 15 years, and amounts to \$5,000 per year, have done as high as \$7,000 with an assistant; good property with all modern improvements; price for property, practice, partial office equipment and introduction, \$5,400, half cash; can form partnership for few months; only man in town doing optical work; reasons for selling. Add. 7006, %AMA. O

**FOR SALE — WISCONSIN — CENTRAL** part—In city of 16,000; practice established 22 years; modern house and good barn; centrally located; good opportunity for German-speaking physician able to do major surgery; new "sisters" hospital, 40 beds; practice \$10,000 annually, collections 90 per cent; price of real estate \$12,000, part on time; office fixtures and furniture optional at moderate figure; reason for selling, poor health; do not write unless you mean business. Add. 7028, %AMA. O

**FOR SALE — ILLINOIS — CITY PRAC-** tice; population 1,600; garden spot of U. S.; the place where large crops of corn, wheat, oats, hay, clover, timothy and most all fruits and garden stuff grows; for this reason I am doing \$3,500 to \$4,000 cash business; all Americans, no negroes or foreigners; high school, churches, water works, electric lights, Masonic, Odd Fellows, Pythian, Woodman, Red Men Lodges; my office 3 rooms; lot 20 feet front, 80 deep; my practice first class; will take \$3,000 for all, one-half cash, balance to suit purchaser; will stay four months as partner to introduce and turn over entire practice to successor; inclose addressed stamped envelope. Add. 6138, %AMA. O

**FOR SALE — PENNSYLVANIA — \$4,500** practice; collections 94 per cent, and only drug store in town of 850 population, doing a cash business between \$2,000 and \$3,000 a year independent of practice; large surrounding territory, with no immediate competition; drug store, office and 9-room frame dwelling all in one; good schools and churches; two railroads, farming and mining industries; can hand over to purchaser railroad and insurance appointments. Price, \$5,000; terms, \$3,000 cash; balance on good security. This includes practice, dwelling, drug store and stock, driving outfit and office equipment. Reasons for selling, ill health of wife. Will bear strict investigation. This is an opportunity seldom obtained. Don't write unless you have the money and mean business. Add. 6122, %A. M. A. O

**PRACTICES FOR SALE.**

**FOR SALE—WYOMING—\$5,000 PRAC-** tice, including \$140 per month appointments; oldest practice in town of 3,000; mountain country; fine climate. Add. 6115, %AMA. P

**FOR SALE — ILLINOIS — UNOPPOSED** practice of \$4,500 a year to purchaser of office equipment and driving outfit in corn belt; thorough introduction; price \$2,000; \$1,200 down; rent for modern home and office, \$250 a month. Add. 7024, %AMA. P

**FOR SALE—NEW JERSEY—FINE MED-** ical and surgical practice, with up-to-date office and driving outfit; in a rapidly growing manufacturing town of 6,000; last year's income, \$3,300; going abroad to specialize; thorough introduction given; a bargain at \$1,900. Add. 6066, %AMA. P

**FOR SALE—MASSACHUSETTS—HAMP-** den County—3 villages and country \$2,500 practice; population 1,000; collections 90 to 95 per cent.; unopposed; A1 road horse, runabout, top buggy, top sleigh, robes, blankets, some office furniture; immediate possession; price \$700 cash. Add. Box 40, Granville, Mass. P

(Continued on next page.)



## COSMETIC SURGERY

By Charles C. Miller, M.D.

"Crowded with good solid facts which are reinforced by 98 illustrations which go far to elucidate the text. The question of Cosmetic Surgery is attracting widespread attention all over the world among the medical profession and such works as this find ready readers in its ranks. It is well written in a very easy style and is up to date. No wonder a second edition has been called for."—NEW ENGLAND MED. MO. Prepaid \$1.50

Published by the Author, 70 State Street, Chicago

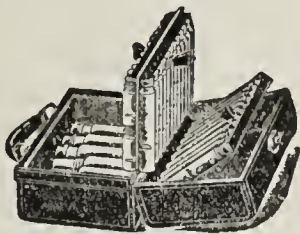
## CASE RECORDS

of the Eye, Ear, Nose and Throat, Rectal Diseases, Gynecology, Obstetrics, Urinalysis, Day Book and Ledger, Visiting Lists, Bill Books, Office Duplicating Prescription Books, Pocket Duplicating Prescription Books, Blanks. Send for price lists.

August Reif

Publisher, Printer and Stationer for the Medical Profession Exclusively.

77-79 S. CLARK STREET - - - CHICAGO



SEND FOR CATALOGUE ILLUSTRATING OVER 150 SIZES AND STYLES OF

## PHYSICIANS' BAGS and CASES

WESTERN LEATHER MFG. CO.

MAKERS

48 Wabash Ave.

Chicago

## Near-Brussels Art-Rugs, \$3.50

Sent to your home by express prepaid

Sizes and Prices	
9 x 6 ft.,	\$3.50
9 x 7½ ft.,	4.00
9 x 9 ft.,	4.50
9 x 10½ ft.,	5.00
9 x 12 ft.,	5.50
9 x 15 ft.,	6.50

Beautiful and attractive patterns. Made in all colors. Easily kept clean and warranted to wear. Woven in one piece.



Both sides can be used. Sold direct at one profit. Money refunded if not satisfactory.

New Catalogue showing goods in actual colors sent free

ORIENTAL IMPORTING CO.

921 Bourse Building,

Philadelphia, Pa.

## INFECTION, IMMUNITY AND SERUM THERAPY

By H. T. RICKETTS M.D.

(INSTRUCTOR IN PATHOLOGY, UNIVERSITY OF CHICAGO.)

The physician often desires to know more about the recent advances in these subjects and more especially to learn why serum therapy has not been worked out on a broader scale so as to be successfully used in the treatment of all infectious and contagious diseases. The author has endeavored to discuss and explain these subjects in as simple a manner as possible, and thereby enable the practitioner to obtain a clear understanding of these somewhat confusing questions.

600 pp. Cloth. Price \$2.00 (Reduced from \$2.50) Prepaid on Receipt of Price

AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVE., CHICAGO

**FOR SALE — WISCONSIN — CENTRAL** part—village of \$2,000; general practice of \$2,000 to \$3,000 annually; including practice, drugs and office equipment; collections good; competition light; price \$200 cash or secured; must be taken at once; reason for selling, poor health. Add. 6139, % AMA. P

**FOR SALE — NORTH DAKOTA—\$6,500** practice in county seat town; complete driving and office equipment; several good appointments, etc., for \$1,500; practice can be materially increased by surgeon; do not answer unless you have the money and are not afraid of hard work; going abroad. Add. 6129, % AMA. P

**FOR SALE — ILLINOIS — CENTRAL PART** — well-equipped office and practice averaging \$3,000 annually; good schools; town of 1,200; old line insurance companies and one railroad appointment; no real estate; reason for selling given if interested; will sell for price of drugs and fixtures. Add. 6137, % A.M.A. P

**FOR SALE — OHIO — NORTHWESTERN** part—\$2,200 practice in town of 300; no other doctor; can make money from the start; will sell for price of office furniture, drugs and driving outfit, \$475; do not answer unless you mean business; this ad. appears but once; am going to city. Add. 6140, % AMA. P

**FOR SALE — NEW YORK — AN OLD** Army surgeon, who has built up an exclusive nose and throat, office practice, doing from \$5,000 to \$7,000 a year, wishes to retire, and would sell out for \$3,000, one-half cash, balance arranged to suit; will give thorough introduction to successor. Add. 7038, % AMA. P

**FOR SALE — COLORADO — ETHICAL** practice in this state, paying \$2,500 per year; within 60 miles of Denver, in a beautiful mountain town of 4,000 population; the climate is unexcelled for lung troubles; good roads, schools, churches and public library; practice can be doubled by good man. Add. 6060, % AMA. P

**FOR SALE — CHICAGO — GERMAN-** speaking physician can buy \$4,000 cash practice, established 12 years, including office and household furniture for the price of \$600, if taken at once; practice can easily be increased to \$6,000 annually. Strictly honest deal. Do not answer unless you mean business. Add. 6143, % A.M.A.

**FOR SALE — ILLINOIS — AT ONCE—** Actual \$3,000 medical practice and only drug store in village of 500 on the "Burlington," 70 miles from Chicago; large territory of best farms in this state; all business good as gold; stock and fixtures new, clean and up to date; invoice \$2,750; price \$2,500; good reason for selling. Add. 6141, % AMA. P

**FOR SALE — INDIANA, NORTH CENTRAL** part—\$3,500 practice, established over five years, with complete office equipment; best location on public square in city of over 15,000; best section of state; price, \$650 cash; will introduce and guarantee paying business from start if sold soon; reason, wish to specialize. Add. 6104, % AMA. P

**FOR SALE — IDAHO — UNOPPOSED,** well established practice, with large territory, in village 10 miles from railroad; nearest town 7 miles; team, buggy, sleigh, static machine, hot-air outfit, nebulizer, fixtures; practice, 1907, netted \$3,440; first half 1908 netted \$1,875; with introduction, price \$1,000; going to city. Add. 7017, % AMA. P

**FOR SALE—EYE, EAR, NOSE AND** throat practice in western New England; city of 25,000; direct center for 60,000; established 3 years; annual collections, \$4,000; easily increased to \$6,000; competition fair; thorough introduction given; price for good will, \$1,200; do not reply unless in earnest. Add. 6069, % AMA. P

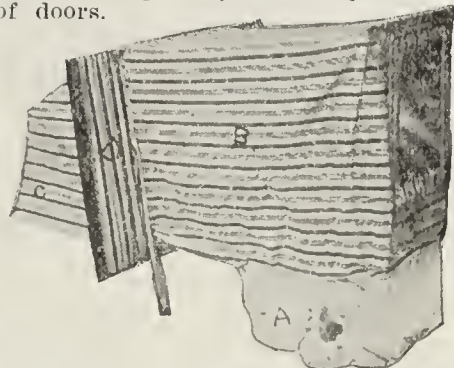
**FOR SALE — NEBRASKA — FREE, MY** well-established office practice, including eye, ear, nose and throat work, to purchaser of my furniture, office equipment, small library and a few instruments. Business in 1907, \$3,000. No competition in specialty. Exceptional opportunity to increase practice. Prosperous community. County seat. Fine climate. Large territory. Add. 6145, % A.M.A. P

(Continued on next page.)

## In Time of Heat Prepare for Cold

DOCTOR: Give your patients fresh air while they sleep.

Any night at this time of year your delicate patients may go to bed with the windows up and the outside temperature fairly warm and have bed covering accordingly, and yet before morning we may have a killing frost. It is these sudden changes that kill delicate people. If there is any night you can not sleep with the face up to an open window without being chilled, order a WALSH WINDOW TENT that gives you air equal to out of doors.

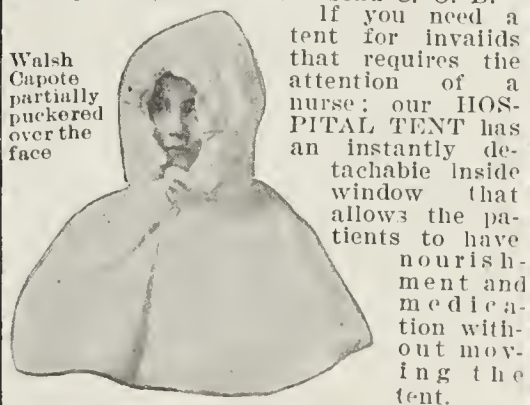


The tent (B) comes in over the side of the bed, onto the pillow. While lying comfortably in bed, you slip your head through an elastic opening shown in the long loose skirt-shaped piece (A) of muslin or flannel that is laced into the bottom of the tent (B) and get crisp, cold air. The outside awning (C) is let down for wind and storm.

The standard straight tent can be made to fit any window by the adjustable sides (D). The regular size fits any lower sash from 26 up to 38 inches wide, and over 26 inches high. With no extra charge they can be made to fit any window. If you order direct from this, send the width and height of lower sash. There is nothing to screw on, no nails. The tent can be put in or taken out instantly by tightening the set screws, and can be moved from one window to another of different widths, or taken out, folded up and slipped under the bed when not in use. With each tent, we send a capote in which the hood is double, and the cape covers the shoulders. The outside hood can be puckered down over the nose in extreme cold weather. There is also an insect screen to protect against flies and mosquitoes, and an extra detachable skirt. Complete outfit, \$15.00. On receipt of \$2.00 we will send C. O. D.



Tent Folded



Cover can be laundered. Sputum cup can be attached to any tent. ANGULAR TENT fits over the bed at any angle to the window.

Write for literature or order direct. Being in this JOURNAL is a guarantee that you take no chances.

Walsh Window Tent Co.

NO. 10 FRANKLIN ST., MORRIS, ILL. Peterborough, Ont.



## BREATHING CRISP WINTRY AIR

at night while sleeping in a warm comfortable room is one of the advantages of having the **Allen Health Tent**. It permits the window to be opened at both top and bottom giving ventilation equal to out of doors, the indoor air being entirely shut off from the sleeper.



Cut away showing occupant with hood on.

In all sorts of weather the tent is a most agreeable companion to those seeking fresh circulating air for starved lungs. It folds neatly against the upper part of window when not in use, and ample provisions are made for keeping it clean and healthful. Discount to physicians. If your Supply House does not keep it, write direct for **FREE** booklet and prices.

**INDOOR WINDOW TENT CO.,**  
PEORIA, ILL.

## Justrite Sanitary Waste Pail

Most sanitary and convenient receptacle for physicians, Dentists, and Hospital Use.

Opens with foot pressure. Maintains an aseptic condition of the physician's hands. Our best seller at recent A.M.A. meeting, the 6 gal. paint enamel on galvanized iron. Sent to any physician in the U.S., prepaid upon receipt of price, \$3.40, or C. O. D. if preferred. Catalog quoting various sizes and finishes free on application.

THE JUSTRITE CO., 218 Lake St., CHICAGO, ILL., U.S.A.

## DOCTOR

We can save you one half the price by ordering your

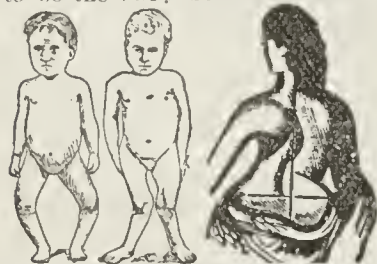
## DEFORMITY APPARATUS

direct from us, the largest manufacturers of this kind in the U. S.



Braces for Lateral or Anterior-Posterior Curvature of the Spine, Hip Joint Splints, Knock Knee, Bow Leg, Weak Ankle, and Club Foot. Braces of every description, also Trusses \$1.50 up. Elastic Stockings \$1.50 up. Artificial Limbs with a 5-year guarantee, etc. The head of the department is Dr. R. Wolfertz, a competent Anatomist and Orthopedic Specialist, with 20 years' experience. Our Appliances are guaranteed to be the very best and latest.

One trial order will convince you of the above facts. We allow you a **DISCOUNT of 40% OFF** from the prices at our and any other Catalog. Measurements and particulars of every case correctly sent with the use of our application blanks. Catalog on request. Physicians' patronage everywhere solicited and correspondence invited. **THE WOLFERTZ DEFORMITY APPLIANCE & TRUSS MFG. CO. DR. ROBT WOLFERTZ, President.** Founded 1886. Incorporated 1906. 59 1-2 FIFTH AVENUE, CHICAGO, ILL.



**FOR SALE — WISCONSIN—\$250 BUYS** my stock of drugs, contract position, paying \$500 per year and the practice for about a thousand people in one of the richest and most prosperous townships in this state; not necessary to buy my real estate, team, etc., to get my "good will." Add. Dr. G. F., Detroit Harbor, Washington Island, Wis. P

**FOR SALE—CALIFORNIA—200 MILES** from San Francisco; a location and practice paying \$500 a month in the best town of 10,000 inhabitants in this state; fees high and collections good; will sell and introduce purchaser for value of equipment and vehicles, about \$1,000; must be cash; am going abroad; this ad. appears but once. Add. 6152, % AMA. P

**FOR SALE—KANSAS—A WELL-ESTABLISHED** practice paying \$175 a month in growing town of 200; two good railroads, churches, schools; good country; competition light; mostly American people; unexcelled opportunity; price \$1,250; \$800 to be cash, balance to suit purchaser; this ad. appears but twice; reason for selling, going to city. Add. 5977, % AMA. P

**FOR SALE—CONNECTICUT, WESTERN** part—town of 15,000 and one of the most progressive in the state; \$900 buys a \$4,500 practice, with office equipment, furniture, instruments, etc.; also driving outfit, consisting of horse, carriage, harness and robes; office established 11 years; reason for selling, going abroad for specialty work. Add. 6046, % AMA. P

**FOR SALE—RHODE ISLAND — GOOD** practice in Providence, a beautiful city of 200,000; complete office outfit; rare opportunity for recent graduate or country practitioner; good chance to specialize; excellent educational advantages; desire to retire and other interests reasons for selling; office outfit invoices about \$1,500; price \$2,000. Add. Box 166, Providence, R. I. P

**FOR SALE—SOUTH DAKOTA—MY OFFICE** equipment, practice and good will; practice has averaged \$3,300 annually for past five years; a German-speaking physician able to do refracting, some eye, ear, nose and throat work and familiar with electrotherapy would have best opportunity; have mostly office work; expenses light. Add. Dr. H. J. G. Koobs, Scotland, S. D. P

**FOR SALE—\$6,000 PRACTICE IN BEST** city of the Northwest; 100,000 inhabitants; established 7 years; average cash collected \$6,000 per annum; 1907, \$7,700; largely electro-therapeutic; price \$3,000 cash, including x-ray, static, galvanic and Faradic machines, surgical instruments, office furniture, horse, two buggies, etc.; must be sold at once; do not answer unless you have the cash and good reference. Add. 6142, % AMA. P

**FOR SALE — NEW YORK, EASTERN** part—\$3,000 practice to purchaser of driving outfit and office chair, which amounts to about \$475; population 5,600; on main line of railroad, 100 miles from New York City and in heart of boarding section; practice can easily be increased if party is a hustler; insurance work is \$25 to \$30 per month; can be transferred; removing to city for special work. Add. 6064, % AMA. P

**FOR SALE — CHICAGO — COMPLETE** office equipment, with desirable location; Van Houten and Tenbroeck static machine, high frequency, x-ray, motor, galvanic and faradic wall plate, Sheldon vibrator, compressed air tank, microscope, centrifuge, red and white blood counter, hemoglobinometer, chemical laboratory, stains, and a large stock of U. S. P. preparations for dispensing; reason for selling, change of climate; don't answer unless you mean business. Add. 7018, % AMA. P

**FOR SALE—ILLINOIS—QUICK — BUSINESS,** four-room office equipment, consisting of reception room, consultation room, operating and treatment room and drug room and drugs. Mechanical; Electrical apparatus, ear, nose and throat, compressed air, nebulizer and accessories, gas apparatus, super-heated air, etc. General Business: \$2,500 cash—side specialty making \$900 last year; increasing rapidly; something doing for the man who gets it; \$1,500 cash or bankable paper for that amount; do not answer unless able to handle financially; quick. Add. 6131, % AMA. P

(Continued on next page.)

## ORDER FRACTURES

The Ambulatory Pneumatic Splint

Of HIP, THIGH or LEG. Set for Bed or Walking Treatment. Secures Better Fees, Results, Comfort, Strength, and Health. **RECOMMEND IT TO PATIENTS.** Supplied direct or thru Dealers. Discount, terms, prices and booklet on request. Write us.

Amb. Pneu. Splint Mfg. Co., 60(a) Wabash Av., Chicago



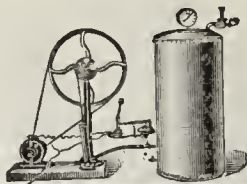
## GUM GLUTEN FLOUR

GUARANTEED UNDER THE FOOD AND DRUGS ACT. JUNE 30, 1906. SERIAL No. 5715

FOR SALE BY ONE LEADING GROCER IN EACH CITY—WRITE FOR HIS NAME AND BOOK OF RECIPES—MENTION PUBLICATION

**THE PURE GLUTEN FOOD CO.,**  
90 WEST BROADWAY, NEW YORK.

## AIR AND VACUUM PUMPS



Automatic Electric Air Compressors. Our outfits are noiseless. Write for catalog. A full line of motors to run static machines. **MARTIN & ANSON CO.**  
Tel. Cal. 1119  
2226-8 Ind. Ave., Chicago

## DOLLARS and SENSE

140,000 Physicians in the United States.  
14,000 need Operating Tables or Chairs.  
\$50 saved on each table.

—\$700,000 in total savings.

The 14,000 Physicians who will buy office Operating Tables or Chairs, can save \$50.00 on each table, by purchasing the "Standard" Table, manufactured by **THE PERFECTION CHAIR CO., INDIANAPOLIS, IND.** Write for details. Get your share of the savings.

## NEW IDEAS

**Dr. Baird's Uterine Air-Cushion** corrects all uterine versions and flexions, such as prolapsus, retroversion, cystocele, etc. Send for large descriptive booklet.



The **Huston Automatic Truss** will retain any case of Inguinal Hernia; easily adjusted; minimum pressure. 50 per cent. discount to physicians on our entire line of trusses. Send for special orthopedic catalog.

**Huston's Special Abdominal Supporter** produces exceptionally satisfactory results in the treatment of large pendulous abdomen and enteroptosis.

## VARICOCELE

treated by **Dr. Brewer's Special Suspensory**. A new method, simple and easy, entirely obviates all surgical operation. Write for illustrated pamphlet giving full information.

Huston Bros. Co., 35 E. Randolph Street, Chicago.

## BOOTH OXYGEN GENERATOR

(Patents Pending)



Will assist in sustaining life during acute and subacute pulmonary congestions, toxemia, etc.

Doctor, would you like to know how you can make 100 per cent pure oxygen any time and place at a cost of 33 1/3 cents per tank? **New Method is Perfectly Safe and Reliable.**

Are you interested? If so, write for my book on "Oxygen and its Uses." **Dr. W. H. BOOTH Manager**

**BOOTH OXYGEN GENERATOR CO., ASHTABULA, OHIO**

## Practices - Locations - Positions

WE ARE MEDICAL BROKERS

and offer exceptional opportunities to the profession. If you wish to dispose of your practice, secure an assistantship, location, salaried position, or purchase a practice, write for our plan.

**National Medical Exchange**  
P. O. Box 2284 WASHINGTON, D. C.



## German-American Surgical Co.

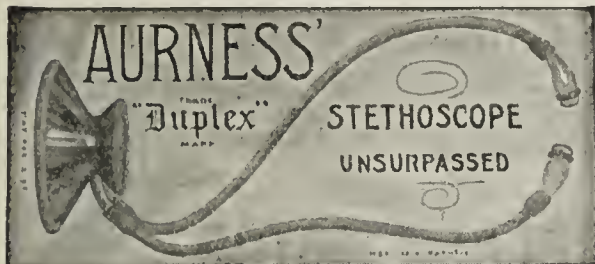
Wholesale Dealers in Physicians' Supplies, 138 Wells St., Chicago  
**DOCTOR**—You can save 10 per cent off any firm's price by buying all your supplies of us. Special Price on tables, cases, cotton, plasters, gauze, rubber goods.



SPIRAL FLOW SYRINGE

Price, \$1.50

Nozzle Fits Any Syringe

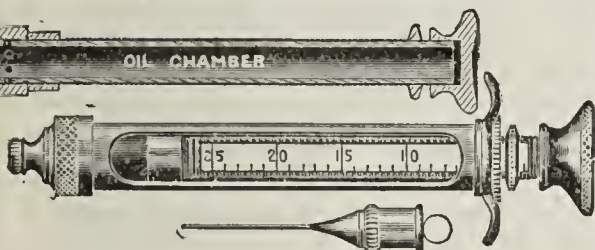


### Efficiency and Compactness

A large and small receiver, specially constructed. Half turning of plug connects one, closes the other. Regulates column of air (only one in the world that does). Is **Non-Roaring**, disconnected receiver serving as handle. No auto-adventitious sounds. No metallic tube noise. **Portable like a watch.** Price postpaid, in fine portemonnaie \$3.50. Checks accepted.

Sole Mfrs. **American Rubber Co., MINNEAPOLIS, MINN., U. S. A.**  
 Ask your dealer or write us.

## "WHEN GETTING — GET THE BEST."

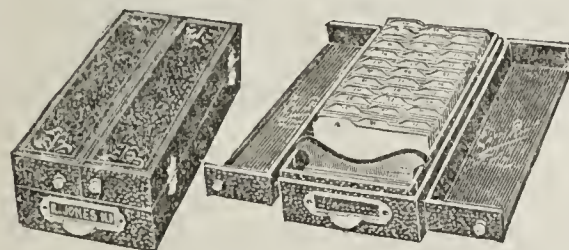


Our Hypodermic Syringes all have the new patent **HOLLOW Piston**, which is filled with oil **clear to the outer end**, so that the packing NEVER dries out, the Piston NEVER works hard, the Syringe NEVER leaks, the oil being 5% carbolated keeps the Syringe automatically aseptic—without boiling, and if broken, can be repaired on the spot by the physician himself. Send for our new descriptive Catalogue.

**THE W. SUPPLY CO., Canton, Ohio**  
 N.B.—Pistons of old style Syringes replaced with our new **HOLLOW Piston** and returned same day.

## CARD INDEX SYSTEMS

have been adopted by the largest commercial concerns as far superior to the Old Time Ledger, and most prominent Practitioners everywhere are installing the **"Ever Ready File"**



As the **"One Correct System"** for their needs as to keeping accounts, case history, notes, etc. Cabinets of Oak or Keratol Cover. Ten styles of cards.

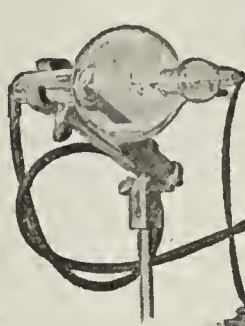
Write for Descriptive Catalogue at once.

## Ever Ready Mfg. Co.

14th & Plum Sts.,  
**CINCINNATI, - OHIO**

## DOCTOR, increase your revenue.

You can do it with a **CAMPBELL**



**X-RAY and HIGH FREQUENCY COIL.**

Seven different characters of current. For almost every known form of electrical treatment.



**CAMPBELL ELECTRIC CO., MAIN OFFICES AND FACTORY, LYNN, MASS.**  
 BRANCH OFFICES: LOS ANGELES: 316 W. 5th St. PHILADELPHIA: 310 Mifflin Arcade

COUPON.

Name.....  
 Street.....  
 City.....  
 State.....

## PORTABLE POWERFUL PRACTICAL

Sign, tear off and mail above coupon. We will send you our unusual proposition, showing you how one of our outfits can be procured by you with practically no investment on your part.

Sign and Mail NOW

## HOSPITALS AND SANITARIA.

**FOR SALE—PRIVATE HOSPITAL AND** practice in one of the best towns in Northwest. Income from hospital and practice, \$26,000 to \$30,000 yearly. Equipment of hospital and office rooms unexcelled. Price, \$30,000 and 60 per cent. cash; balance to suit. Writ for particulars. Reason for selling, sickness. Add. 6144, % A.M.A.

**FOR SALE—AN IDEAL PLACE FOR A** rest cure home or sanatorium; 53 miles from New York, known as the Elmer House; high elevation overlooking the Hudson; pure mountain air and water; 60 rooms, hot-water heating, electric lighting, fine lawns and shade, good drainage, beautiful river and mountain scenery. Add. W. B. Elmer, Cornwall-on-Hudson, N. Y. S

**FOR SALE—SANATORIUM SITE; AC-** knowledged one of the most ideally located and adapted buildings and grounds for a sanatorium to be found anywhere in this country; with water, gas, electricity, railroad facilities, fine, well shaded grounds, scenery, etc.; located in the middle states, where large patronage should be drawn; price, \$75,000. Add. 6078, % A.M.A. S

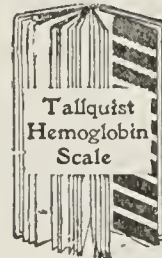
**FOR SALE—OHIO—THE E. A. SWAN** Sanitarium, located in the beautiful little city of Bellefontaine, on T. & O. C. and New York Central Railroads; 10,000 inhabitants; no other hospital or sanatorium; centrally located; long established office and general practice goes with the property; for further information and full particulars. Add. John A. Parker, Bellefontaine, Ohio. S

**FOR SALE—ILLINOIS—AT LOCKPORT,** a large house and garden. House has 20 rooms—11 bed rooms with room on third floor for 7 more. Third floor at present finished as ball room. Two bath rooms with modern plumbing. Immense kitchen fitted to use both coal and gas. Cold storage ice box built in. Outside buildings are conservatory, tool house, carriage house, stable with room for five horses and a gardener's house containing laundry and servants' rooms. Electric lighting throughout. Artesian water. House thoroughly heated by both furnace and hot water. The garden is one of the most beautiful in the State. The lower garden has three terraces. Terraces, walks and steps are of cut stone. Fountain and stone vases give the effect of an old English garden. Stone wall with an iron fence on top surrounds the place. The upper garden has a large lawn with elm and acacia trees over 50 years old upon it, and a vegetable garden with grape arbors, fruit trees, summer houses, etc. This place would make an ideal sanitarium or rest cure. Owner will lease for a term of years or will sell for \$12,000, which is a mere fraction of original cost. Lockport is a quiet, old-fashioned town, 30 miles south of Chicago on C. A. and St. L. Santa Fe and Joliet and electric roads. Arrangements can be made for seeing the property by applying to John W. Norton, Lockport, Ill.

(Continued on next page.)

A HELP TO A

## Better Diagnosis



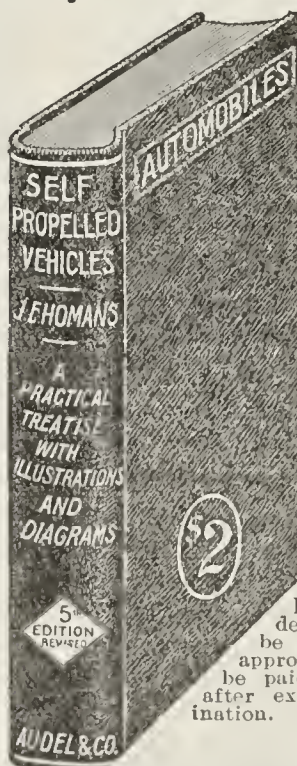
Pat. June 26, 1902

tion no more of an undertaking than feeling the pulse." White absorbent paper to take the specimen, a scale of ten standard tints for comparison, in a little book that slips into the pocket. \$1.50 postpaid. If your dealer hasn't it order direct. Special Circular.

**EDWARD PENNOCK, Sole American Agent**  
 36th & Woodland Ave., - PHILADELPHIA

## How to Run an Auto

Are you interested in Automobiles?



If you are, an early purchase of "Homan's Self Propelled Vehicles" will prove a good investment.

This work is now the accepted standard on the practical care and management of motor cars—explaining the principles of construction and operation in a clear and helpful way, and fully illustrated with many diagrams and drawings.

The presentation of subjects has been determined by consideration of the needs of the man behind the wheel. It is clear and concise in its treatment, and comprehensible to the most inexperienced automobilist, at the same time it is so thorough that the expert will learn much from its pages.

This good book will be sent to any address in the world, postpaid, upon receipt of two dollars, or if desired, will be sent on approval, to be paid for after examination.

No money in advance required. Sign and return. Theo. Audel & Co., 63 Fifth Ave., New York  
 I will immediately remit \$2.00 for return book to you.

Contains 608 pp., over 400 diagrams and illustrations printed on fine paper size 5 1/2 x 8 1/2 in. with generously good binding. Highly endorsed.

## Write for ad. rates



# MONEY

AND

TIME

AND

TROUBLE

# ALL SAVED

If you use

## FISK TIRES

HEAVY CAR TYPE

You can get them for any rims—Regular Clinchers, Quick Detachables or Fisk Rims. The new

## FISK REMOVABLE RIM

WITH INFLATED TIRE

permits of changing tire and rim in less than five minutes. Call and get a demonstration.

**FISK Inner Tubes**  
Improve Any Tire

**THE FISK RUBBER COMPANY**

CHICOPEE FALLS, - MASS.

Branches in eighteen cities

## Collections in Chicago and Outside

Twenty years' experience. Thousands of the best physicians in Chicago our patrons. 45 employees. Prompt remittances.

## Our Original Entry and Perpetual Reminder System

for physicians, does away with the old method of keeping books and daily visiting lists. The Reminder a wonderful convenience! Write us for full particulars.

**C. F. MEYER & CO.**

1415 Ashland Block

CHICAGO

**FOR SALE — NEW MEXICO — SANATORIUM** in the most equable climate; one mile from town; good market; large assembly building; 20 separate cottages designed for outdoor treatment; all completely furnished; stables, carriage barn, chicken house, store rooms, with horses, cows, etc.; vegetable garden; commanding magnificent view; price \$9,000; easy terms. Add. 6147. % AMA. S

### AUTOMOBILES AND CARRIAGES.

**FOR SALE—FORD 1908 MODEL S** Runabout. Run less than 3,000 miles; top, gas lamps and generator; Gabriel horn; odometer; chain tire grips; six tires. All complete and in good running condition; \$600 if taken at once. Am buying touring car. J. T. Dunn, 'D., Wykoff, Minn. W

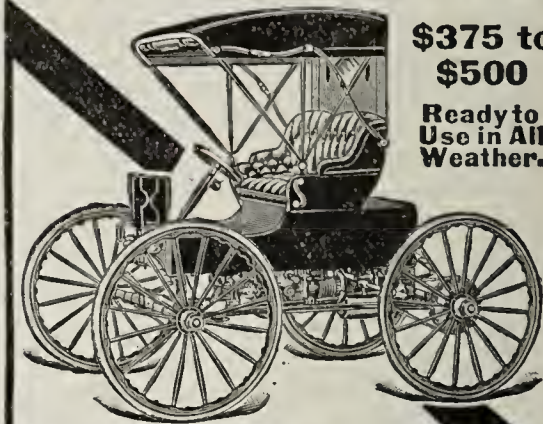
**FOR SALE—ONE HAND FORGED VICTOR** automobile, Model 1907, high wheeled, solid rubber tires, 7 horse-power; single large seat; no top; made strong and durable and in perfect running order; any speed; will crate and ship for \$250 quick cash; a bargain for some one. Add. 6136. % AMA. W

**FOR SALE — NEW BENDIX HIGH** wheel, 5-passenger surrey, with top, glass front and full equipment; run less than 50 miles; good as new; list price \$1,510; selling price \$1,200; owner quitting business; descriptive catalog on application; can furnish references. L. B. Kirkpatrick, Rochester, N. Y. W

**PLEASE DISCONTINUE MY AD. IN** THE JOURNAL as the first week's insertion brought me satisfactory results. Yours truly.

(Continued on next page.)

## Investigate by Writing For Our Free Book and Terms



**\$375 to \$500**

**Ready to Use in All Weather.**

## BLACK MOTOR Buggies for Service

Get our interesting "Black Motor Buggy" Book about the only motor buggies that are good city or country road "mudders" and "hill climbers" and built for practical use. No jarring—No blowups on tires—Speed 2 to 25 miles an hour—Run 30 miles on one gallon of gasoline—Safe—Reliable—Especially equipped for professional use—10 horse power—"Get there" and "back again" every trip, and save time, worry and expense. Right prices and terms. Write for Book A-24

**BLACK MFG. CO.**

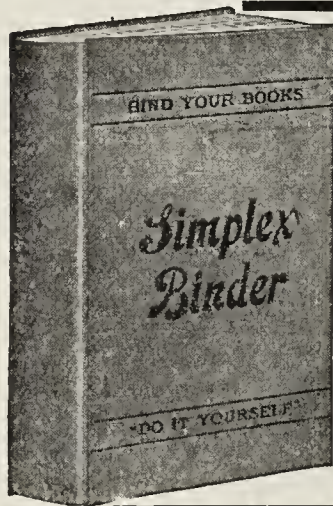
124 E. Ohio St.

Chicago, Ill.

## Berlin Docent Association for Physicians' Vacation Courses

The next course commences October 1, and continues until October 28, 1908

The lecture schedule will be sent free of charge and particulars furnished by Mr. Melzer, Berlin, Germany, Ziegelstrasse, 10/11 (Langenbeck-House.) Prof. Dr. D. v. Hansemann, President.



## BIND YOUR A. M. A. JOURNALS FOR FUTURE REFERENCE

BEST AND MOST SATISFACTORY BINDER ON THE MARKET

## THE SIMPLEX ADJUSTABLE BINDER

Presents the handsome appearance of an elegantly bound book and your office attendant can do the work in a few minutes.

A BINDER for The A. M. A. JOURNAL, 60c. Each  
BINDERS for every magazine published. Prices range from 50c. to 90c. Send for Catalogue.

**SIMPLEX PRINTING & BINDER CO.**  
PRINTERS--ENGRAVERS--BINDERS

511-13 W. 69th Street,

CHICAGO, ILL

## The PHARMACOPEIA and the PHYSICIAN

SECOND EDITION

485 pp., Cloth, Light Green, Flexible Cover.

JUST ISSUED

A commentary on the U. S. Pharmacopeia, presenting the essential features of that book in a way that is instructive, interesting and easily remembered. Drugs are classified according to their pharmacologic action. The indications for the use of certain preparations in preference to others in the treatment of the various forms or stages of the same disease are pointed out. Throughout the book specimen prescriptions are given which may be modified or improved upon by the physician but which serve as examples of the best form and combination in which the drug can be dispensed.

Price \$1.00. Book forwarded promptly by mail, to any address, on receipt of price.

AMERICAN MEDICAL ASSOCIATION, 103 Dearborn Avenue, CHICAGO

## WHAT ARE THE INGREDIENTS OF CATAPLASMA KAOLINI?

The ingredients, doses and principal uses of every official preparation are briefly stated in the **PHYSICIANS' MANUAL of the U.S.P. and N.F.** Price 40c., postpaid, stamps accepted. AMERICAN MEDICAL ASSOCIATION, 103 Dearborn Ave., CHICAGO.



**FOR SALE—\$500 TAKES 1908 SCHACHT** auto-runabout, used only four weeks, first-class condition; equipped storm-front, top, lamps and horn; best machine for business; reason for selling, wish to take postgraduate work; 16 horse-power, of latest model, used just enough to run good. Add. 6132, % AMA.

**FOR SALE OR TRADE—ILLINOIS—**'07, model C, 20-24 H.P., 2-cyl. Jackson touring car; new tires, mud chains, 5 lamps, gas generator; fine condition; powerful and fast; \$1,000 cash or \$750 cash and \$300 in horses or cows; prefer to demonstrate to buyer's satisfaction. Add. 7007, % AMA. W

**FOR SALE—TWO-CYLINDER '04 WIN-**ton touring car, new gas and oil lamps, generator, horn, clock, odometer, French hood, new fenders and R. B. glass front; newly painted; holds six people; original cost \$3,000; good as new; handsome car; first check for \$500 takes it; guaranteed. Add. W. Pursell, 1349 Michigan Ave., Chicago. W

**FOR SALE—SUCCESS AUTOBUGGY;** guaranteed by manufacturers against defects in material or workmanship; euglene broke after running two miles, because had no lock bolts or cotter pins in working parts; manufacturers offer to furnish new engine for \$80; will sell cheap to get out bad bargain. Carter Weisger, M.D., Cumberland, Va. W

#### ACCESSORIES.

**FOR SALE—\$7.50 6-VOLT 60 AMPERE** sparking batteries; they are a well known make and brand; new perfect goods; regular price \$27.50; can also be used for lighting and fans; a rare bargain while they last; I have only 200; Sterling spark plugs, guaranteed 5,000 miles, \$1.00. S. Breakstone, 900 Fisher Bldg., Dearborn and Van Buren Sts., Chicago, Ill.

**AUTO TOPS, \$15.00 AND UP; RUMBLE** seat covers, express prepaid, \$2.00; \$19.50 buys a folding plate glass front; \$11.50 a plate glass wind-shield; mention name and model of car on a postal card today. Auto Accessories Co., Lock Box 275, Chicago, Ill. X

#### FOR RENT.

**FOR RENT—LARGE BACK PARLOR,** with extension, in private house, for doctor's office; use of front parlor; telephone and hall service; previously occupied by physician; calls carefully attended; terms \$10 per week. E. Enright, 241 W. 137th St., New York City. Y

**FOR RENT—CHICAGO—HOURS 4 TO 6** in thoroughly equipped office; four rooms and waiting room; attendant, electric power, compressed air, gas, and hot and cold water in each room, with shower bath in another room. Dr. H. J. Burwash, 1411-1412 Heyworth Bldg., Chicago, Ill. Y

#### COMMERCIAL ANNOUNCEMENTS

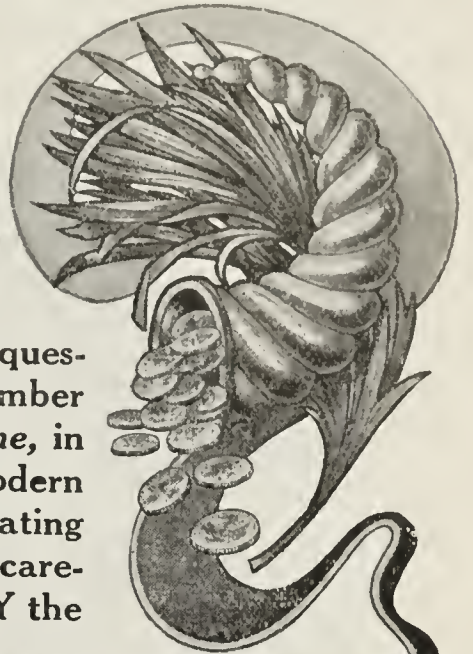
Advertisements under this heading, 50 words or less, \$2.50 per insertion; additional words 50c. each. Write for special rates on yearly orders. (No display type except first two words.) Remittance must accompany order.

**FOR SALE—BARGAINS IN SECOND-**hand physician's chairs, tables and cabinets. We have chairs and tables of all the leading makes, some practically new, taken in exchange on our automatic tables. Prices from \$10 up. Sold on easy payments. Ask for list 2-H. Add. W. D. Allison Co., 915 N. Alabama St., Indianapolis, Ind. Z

**A. M. A. CONVENTION SMOKER—AS A** souvenir of this notable event your readers will be interested in knowing that I can supply a splendid photograph of this entertainment, as the print is exceptionally clear and several thousand faces are recognizable; size of print, 8x10; neatly mounted on mat, 11x14; price, postage paid, 85 cents. W. Littlewood, 309 N. 50th Court, Austin, Chicago, Ill. Z

(Continued on next page.)

# WHY THE UNDERFEED Furnace



A SATISFACTORY answer to this question may be found in the September edition of the *Cosmopolitan Magazine*, in an exhaustive editorial article on "Modern Heating", written by an expert on heating apparatus. If you will read this article carefully, you will readily understand WHY the

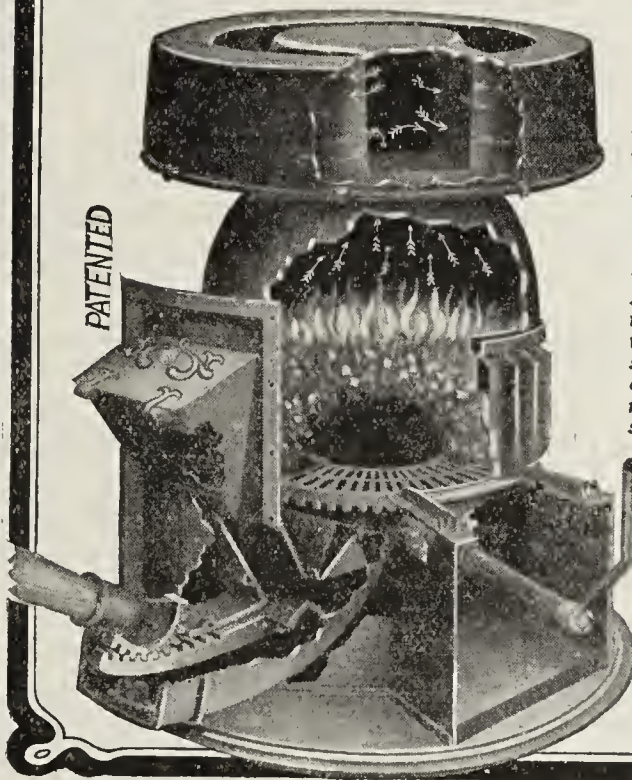
## Peck-Williamson UNDERFEED Furnace

Saves One-Half to Two-Thirds of Coal Bills

#### SAYS THE COSMOPOLITAN:

"One of the most interesting improvements in hot air heaters is decidedly revolutionary. The advocates of this very novel method claim that the ordinary way of feeding the coal from above onto the fire is entirely wrong and exceedingly wasteful, inasmuch as it allows the products of combustion, the smoke and gases, to pass immediately out and up the chimney. This recent furnace, on the contrary, provides for the introduction of the coal into the grate from below. By this means the smoke and gases of the new coal as it burns are obliged to pass up through a bed of fire and are thus entirely consumed."

Illustration shows furnace without casing, cut away to show how coal is forced up under fire, which burns on top.



"In detail, this striking device consists of a curved coal chute beginning with a funnel-shaped hopper on the outside and ending in a round hole in the middle of the grate. The coal is introduced into the hopper and forced by means of a plunger through the chute up onto the grate and under the fire bed. By this means every possible unit of heat is said to be extracted from the coal. Moreover, the lowest grade of coal obtainable is burned in this furnace. The saving from these two sources is placed at from one-half to two-thirds. The coal, too, burns more slowly because of this unusual arrangement, and this means less ashes to remove. The much greater cleanliness attendant upon such complete smoke consumption is also a great recommendation."

Thousands between the oceans call the Underfeed Furnace the Savings Bank of the Cellar. In our Underfeed Booklet—Sent for the asking—you'll find a lot of fac-simile letters—testimonials from those who have been glad to voluntarily write about their experiences with this most economical furnace.

Heating plans and services of our Engineering Department are yours—all free. Write to-day, giving name of local dealer with whom you prefer to deal.

**THE PECK-WILLIAMSON CO.**  
313 W. Fifth St., CINCINNATI, O.  
Physicians Should Write for Our Winning Fall Proposition



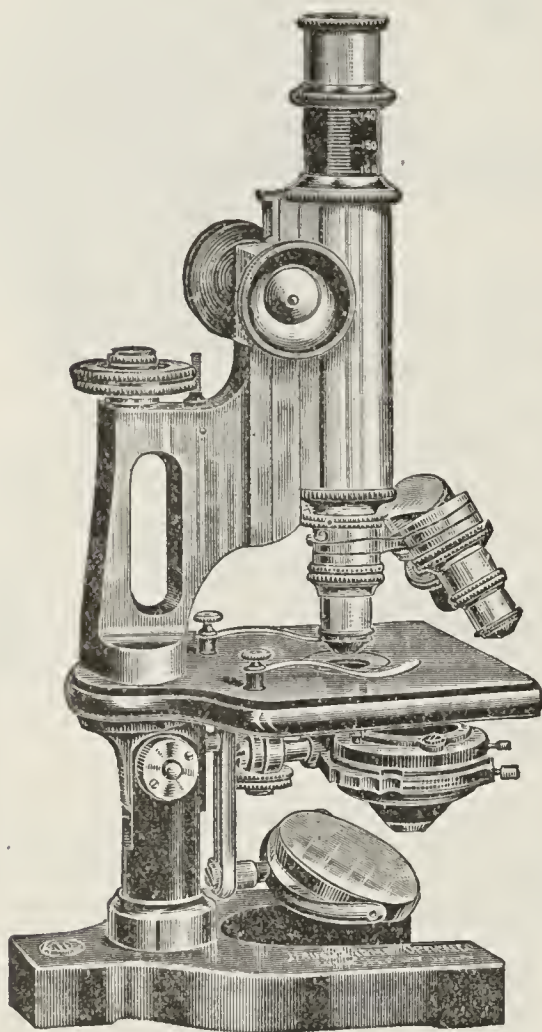
## NON SKID, SOLID CUSHION TIRES THAT BEND

The New Motz has been thoroughly tested on all kinds of roads, proving its practical worth. Excels ALL OTHERS in road traction. Most resilient and there with THE WEAR. FITS UNIVERSAL AND STANDARD CLINCHER RIMS. WE FURNISH TOOL FOR APPLYING.

Get our circular F for further information and prices.

**THE MOTZ CLINCHER TIRE & RUBBER COMPANY**  
Akron, Ohio





## Microscopes and Laboratory Apparatus for Physicians

**T**HE use of the microscope has become so general in practice today, for examination and diagnosis, that the question of the instrument itself takes on a new interest. We call attention to our

### Bausch & Lomb BBH Microscope

which is especially recommended, having been designed for physicians' use.

☐ Complete with the swing-out condenser, 25mm and 50mm eyepieces, 16mm and 4mm dry, and 1.8mm oil immersion objectives, \$95.00.

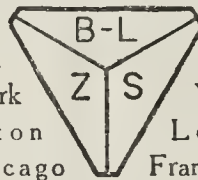
☐ We carry in stock practically everything that the physician needs for his laboratory, and we shall be glad to send our special catalog upon this subject.

☐ OUR NAME ON A MICROSCOPE, FIELD GLASS, PHOTOGRAPHIC LENS, LABORATORY APPARATUS, SCIENTIFIC OR ENGINEERING INSTRUMENT IS OUR GUARANTEE.

Bausch & Lomb Optical Co., Rochester, N. Y.

CARL ZEISS, JENA

Offices:  
New York  
Boston  
Chicago



GEO. N. SAEGMULLER

San Francisco

Washington

London

Frankfort

**WE WILL FURNISH YOU LETTER**  
Heads, Envelopes, Statements, Prescription Blanks and Labels and collect our pay from your dead beat accounts. Write us for particulars and samples of printed matter. PDA, Earl Park, Ind. Z

**Anglo-American Medical Association in Berlin.**

Meeting every Saturday evening at Restaurant Heidelberger in Central Hotel at 7:30 p. m. For particulars address Dr. J. H. Honan, president, Lützowstrasse 78, Berlin, Germany.

**WANTED — SEVERAL FIRST-CLASS** physicians in York State and Pennsylvania to devote all or a portion of their time representing one of the best known and most substantial investment houses of New York City; securities interest bearing and non-speculative; commissions liberal; many physicians are adding materially to their income representing us. If you are ambitious to improve your present conditions, Add. Field Superintendent, O'Neil Bldg., Binghamton, N. Y. Z

**"OUR PHYSICIANS ARE ALL OF THE OPINION** that it is the most satisfactory vaccine on the market," writes an Ohio druggist of National (the original) Glycerinized Vaccine. For over a quarter of a century it has been the standard. Used by the U. S. Government and recommended by thousands of health officers and practitioners. Sold by good druggists everywhere. Free samples on request. National Vaccine and Antitoxin Institute (oldest in America), Washington, D. C. Z

### PRACTICES FOR SALE

**EYE AND EAR PRACTICE OF \$5,000** cash a year in one of the largest cities in Iowa, Case records, Furniture and Equipment with an introduction, all for \$1,000.

**UNOPPOSED PRACTICE OF \$3,000.** Well established, for price of seven room house on one-fourth block, office and outfit \$2,500.

**LIGHT COMPETITION PRACTICE** in Iowa town of 500, a fine opening for price of outfit, \$500. Will bear strictest investigation.

**NEBRASKA PRACTICE OF \$2,600** a year in finest farming country, doctor to take Post work. Outfit with Motor Buggy, new, \$1,000. Good place.

**GERMAN CATHOLIC WITH \$1,500**, balance in two years, can make from \$3,000 to \$5,000 a year in Iowa town of 500. Must be taken at once as doctor wants to leave for West on account of asthma.

Many locations unopposed in new towns and small places in Iowa, Wisconsin, South Dakota and other states. Address **Western Medical and Dental Exchange**, Jt 461, Sac City, Iowa.

### LABELS AND STATIONERY FOR PHYSICIANS

Gummed Labels, Printed and Engraved Stationery, History Sheets, Collection System.

**CLARENCE M. JACOBUS**

Send for Catalogues 612 W. Madison St., Chicago

**PHYSICIANS, ATTENTION — IF YOU** are figuring on going into the drug business either as proprietor or clerk or manager, write me. If you own a drug store and want a registered clerk, write me. Positions and drug stores anywhere desired in U. S. or Canada, with and without practices. On easy terms, small payments, etc. F. V. Kniest, R. P., "The Drug Store Man," Omaha, Neb., U. S. A. Estab. 1904. Z

**WANTED — SALESMEN, AGENTS; A** few capable and reliable representatives to sell Campbell x-ray and high-frequency apparatus; the most practical apparatus and quickest selling that has ever been placed upon the market; it is the physicians' investment for increased revenue; those experienced in use of medical appliances preferred: see advertisement on page 41; write us now. Campbell Electric Co., Lynn, Mass.

**FOR THIRTY DAYS ONLY. NOTE OUR** illustrated ad. on page 23, this issue. We are offering to the medical profession, for thirty days only, our three-fold cushion U. S. Army Chair Table at a reduction of over 50 per cent. This table is finished in a most substantial and elaborate manner. It is also so evenly balanced that a youth can obtain any position with the heaviest patient. We will gladly forward this table at once, to any physician, upon receipt of \$5.00 — the balance, \$10.00, to be remitted when table is received. We also manufacture several other styles of operating tables. Write for our catalog, giving full particulars. Mention THE JOURNAL A. M. A. when writing. Add. F. S. Betz & Company, Hammond, Ind. Z

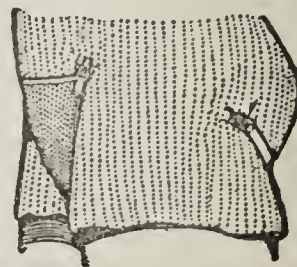


## THE GOODFORM SUSPENSORY

Gives perfect support, yielding to any and every bodily pose. Holds the undergarment in position and avoids the disagreeable band around the body. The suspensory is itself supported by the undershirt to which it attaches by convenient means and affords the ideal support; either for athletic or surgical purposes it is unequalled.

Sold by Druggists or mailed for 50c.

**THE GOODFORM COMPANY, 115 Franklin St., Chicago**





"Excuse me—I know what I want, and I want what I asked for—**TOASTED CORN FLAKES**—Good day"

The package of the genuine bears this signature

*W. K. Kellogg*



*The sweetheart of the corn*

**TOASTED CORN FLAKES**

The package of the genuine bears this signature

*W. K. Kellogg*

Toasted Corn Flake Co., Battle Creek, Mich.  
Canadian Trade Supply by the Battle Creek Toasted Corn Flake Co., Ltd., London, Ontario



**THE MOST RELIABLE DIURETICS**



**AGURIN**

*Acettheobrominesodium*



**ACET-THEOCIN-SODIUM**

*Soluble Theocin*

*See description "New and Non-Official Remedies."*

In the dropsy of cardiac disease and chronic renal affections Theocin has been found the promptest and most efficient diuretic. Agurin though less powerful is more persistent in its action and may be administered to maintain the diuresis which has been initiated with Theocin.

Send for Samples and Literature to  
**FARBENFABRIKEN OF ELBERFELD CO.**  
NEW YORK

P. O. Box 2162

117 Hudson Street



# LECITHOL

See description "New and Non-Official Remedies."

A palatable emulsion of lecithin. Rich in organic phosphorus. Stimulates nutrition, increases hemoglobin and leucocytes and improves the appetite. LECITHOL is indicated in rickets, infantile atrophy, pancreatic diabetes, chlorosis, tuberculosis, and as a tonic for the aged and overworked.

**ARMOUR AND COMPANY**



*Dr. Deimel*  
(LINEN-MESH)  
*Underwear*

Do you wear or recommend Woolen Underwear?

Our booklet, "The Protective Feature of Underwear," explodes the Wool Theory and proves conclusively that the Dr. Deimel Underwear is the cleanest and most protective body garment.

Booklet free upon request.

**Deimel Linen-Mesh Co., 491 Broadway, N.Y.**

BRANCHES

SAN FRANCISCO WASHINGTON, D.C. BROOKLYN BALTIMORE  
DETROIT MONTREAL, CAN. LONDON, W. O., ENG.

Dr. Deimel Linen-Mesh Supporters, Suspensories, etc., are made and sold exclusively by J. ELLWOOD LEE CO., Conshohocken, Pa.

## Medical Protective Co.

FORT WAYNE, INDIANA

### Our Contract Provides:

- 1st—All suits for alleged civil malpractice for which our contract holder or his estate is sued, whether the act was his own or that of any other person, based on past or future services (no limitations) —are defended.
- 2nd—All suits for alleged civil malpractice arising in suits involving the collection of fees for services—are defended, and a service that secures the fee.
- 3rd—All claims arising in autopsies, inquests and the prescribing and handling of drugs and medicine—are defended.
- 4th—Defense to the court of last resort, at our expense with no limit as to amount.
- 5th—Another distinction: These agreements are in the contract.























UNIVERSITY OF ILLINOIS-URBANA



3 0112 110714430